

**SMALL WATERSHED ROTATING BASIN MONITORING PROGRAM
YEAR 2: UPPER NORTH CANADIAN, CIMARRON,
AND UPPER ARKANSAS BASINS**

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FINAL REPORT
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TABLE OF CONTENTS

LIST OF TABLES	3
LIST OF FIGURES	3
1.0 INTRODUCTION	
1.1 PROJECT BACKGROUND.....	4
1.2 PROJECT DESCRIPTION.....	6
2.0 MATERIALS AND METHODS	
2.1 WATER QUALITY MONITORING.....	10
2.2 BIOLOGICAL MONITORING	
2.2.1 Habitat Assessment.....	10
2.2.2 Fish.....	13
2.2.3 Macroinvertebrate.....	15
2.3 WATERSHED ASSESSMENT.....	18
2.4 BENEFICIAL USE SUPPORT ASSESSMENT.....	18
3.0 RESULTS AND DISCUSSION	
3.1 WATER QUALITY MONITORING.....	18
3.2 BIOLOGICAL MONITORING	
3.2.1 Habitat Assessment.....	34
3.2.2 Fish.....	37
3.2.3 Macroinvertebrate.....	44
3.2.4 Overall Biological Assessment.....	52
3.3 WATERSHED ASSESSMENT.....	56
3.4 BENEFICIAL USE SUPPORT ASSESSMENT.....	62
4.0 LITERATURE CITED	64
APPENDIX A WATER QUALITY DATA	
A.1 Raw chemical and physical water quality data.....	65
A.2 Raw bacterial data.....	104
A.3 Descriptive statistics by site for water quality parameters.....	120
APPENDIX B FISH DATA	163
APPENDIX C MACROINVERTEBRATE DATA	188
APPENDIX D BENEFICIAL USE SUPPORT ASSESSMENT DATA	
D.1 OCC assessment results for beneficial use support.....	269
D.2 Key for beneficial use support assessment codes and impairment cause and source codes.....	299
APPENDIX E HIGH QUALITY SITES DATA	
E.1 Raw chemical and physical water quality data.....	300
E.2 Fish and habitat data.....	313
E.3 Macroinvertebrate data.....	314

LIST OF TABLES

Table 1. Site list for Rotating Basin Monitoring Program Year 2.....	8
Table 2. Index of Biotic Integrity (IBI) scoring criteria for fish.....	15
Table 3. Index of Biotic Integrity score interpretation for fish.....	15
Table 4. Bioassessment scoring criteria for macroinvertebrates.....	17
Table 5. Bioassessment score interpretation for macroinvertebrates.....	17
Table 6. Mean physical water quality values for monitoring sites.....	19
Table 7. Low dissolved oxygen values (DO<5.0 mg/l).....	21
Table 8. Mean chemical water quality values for monitoring sites.....	23
Table 9. Mean bacteria values for monitoring sites.....	26
Table 10. Comparison of water quality data from previous projects.....	32
Table 11. Habitat assessment values for monitoring sites.....	34
Table 12. Fish metrics for monitoring sites.....	37
Table 13. IBI fish scores based on Oklahoma Fish and Wildlife Propagation biocriteria and OCC modified RBP method.....	39
Table 14. Comparison of fish data from previous projects.....	43
Table 15. Mean macroinvertebrate values for each monitoring site.....	44
Table 16. Bioassessment score summary for macroinvertebrates.....	49
Table 17. Watershed landuse for monitoring sites.....	57
Table 18. Permitted landuse activity in each watershed.....	60
Table 19. Comparison of NPDES types on nutrient levels.....	61
Table 20. Beneficial use support assessment.....	62

LIST OF FIGURES

Figure 1. Small Watershed Rotating Basin Monitoring Schedule and Year 2 Monitoring Sites...5	5
Figure 2. Selected mean chemical water quality parameters by ecoregion.....	28
Figure 3. Selected mean physical water quality parameters by ecoregion.....	30
Figure 4. Habitat score by ecoregion.....	36
Figure 5. IBI score (fish) for each site by ecoregion.....	42
Figure 6. Total macroinvertebrate metric scores by ecoregion.....	50
Figure 7. Comparison of habitat, fish, and bug scores in each ecoregion.....	53

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

The Clean Water Act has charged each state's nonpoint source (NPS) pollution agency with two primary tasks: 1) identify all waters being impacted by NPS pollution, and 2) develop a management program describing NPS pollution programs to be implemented to correct any identified problems. In addition, each state's NPS agency is charged with identification of all programs which are actively planning or enforcing NPS controls in order to reduce NPS pollution in cooperation with local, regional, and interstate entities. The state NPS agency can then report on total program status with regard to efforts to address NPS impacts and improve water quality. The Oklahoma Conservation Commission (OCC) is the organization charged by Oklahoma state statute with the task of monitoring NPS impacts to state waters. Assessment of the state's water quality is the foundation for meeting the long-term goals of the Oklahoma NPS program.

Historically, Oklahoma has not had a consistent, statewide ambient monitoring program that allowed for the identification of nonpoint source (NPS) affected waters. Instead, pollution monitoring has been confined to project-specific areas, or has been conducted on such a large scale that it has not been effective in identifying sources of impairment. Without a comprehensive approach to monitoring and evaluation of the state's waters, it has been difficult to accurately assess the impact of NPS pollution throughout the state, identify the sources of the pollution, and determine the success of measures to improve water conditions.

As the state's technical lead agency in NPS issues, the Oklahoma Conservation Commission (OCC) initiated in 2001 a new monitoring program, coordinated with other monitoring programs in the state, to address NPS issues on a larger, more continuous scale than previously done. This program, referred to as the "Small Watershed Rotating Basin Monitoring Program," is based on a staggered, rotational sampling protocol such that outlets of complete watersheds at an eleven digit scale (HUC-11) are sampled for a period of two years on a five year rotational cycle, resulting in approximately 40% of the state being monitored at any given time (see Figure 1). The program was designed to accomplish the state's NPS monitoring needs in four stages. The first stage includes a comprehensive, coordinated investigation and analysis of the causes and sources of NPS pollution throughout the state—Ambient Monitoring. The second stage involves more intensive, specialized monitoring designed to identify specific causes and sources of NPS pollution—Diagnostic Monitoring. The data from diagnostic monitoring can be used to formulate an implementation plan to specifically address the sources and types of identified NPS pollution. The third stage of monitoring is designed to initiate remedial and/or mitigation efforts to address the NPS problems—Implementation Monitoring. Finally, the fourth stage evaluates the effectiveness of the implementation through assessment and post-implementation monitoring—Success Monitoring. This assessment program will provide a thorough and statistically sound evaluation of Oklahoma's waters every five years, which will help focus NPS program planning, education, and implementation efforts in areas where they can be most effective. The current project includes components of stages 1 and 2.

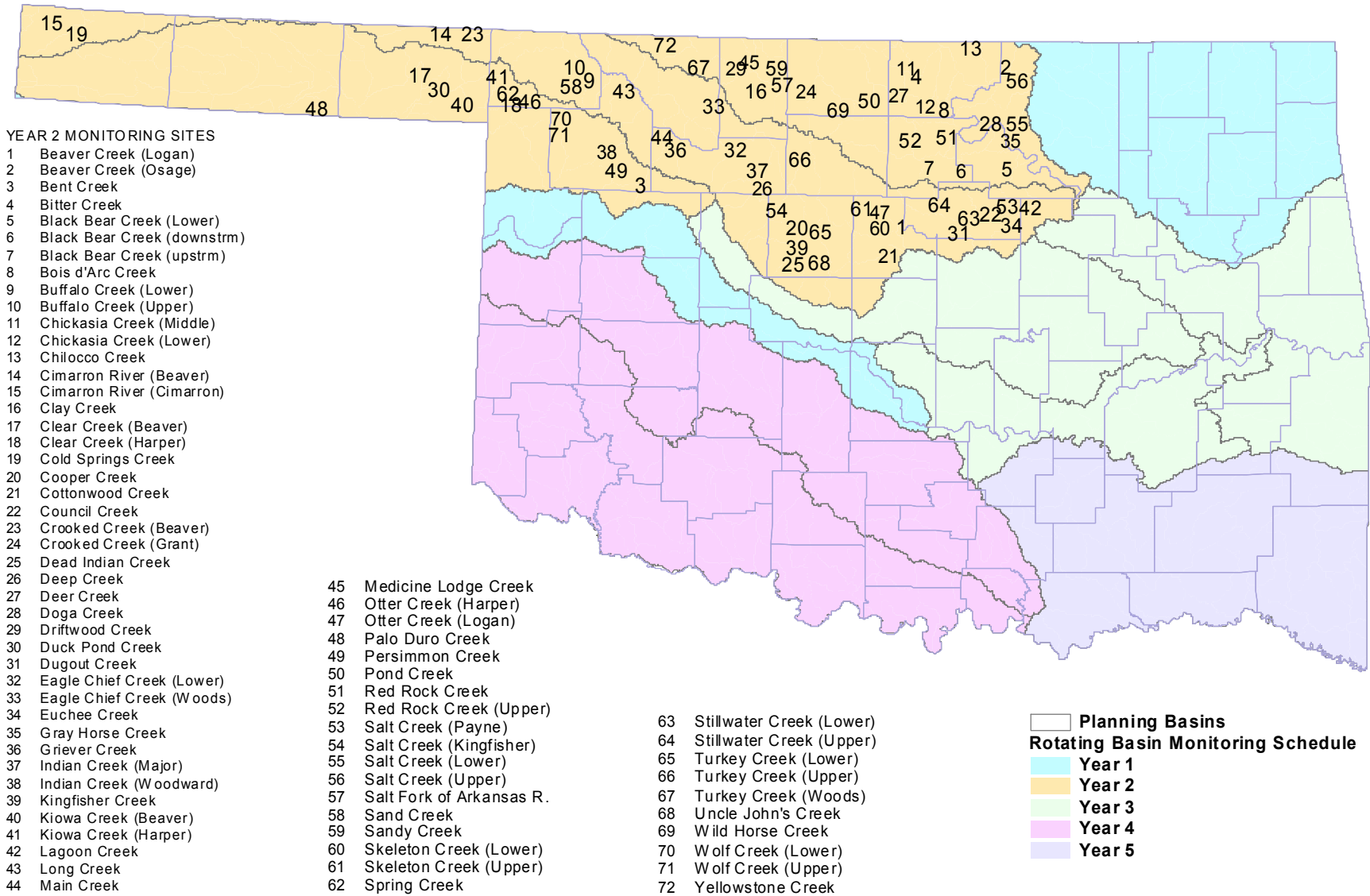


Figure 1. Monitoring Schedule and Year 2 Monitoring Sites for the Small Watershed Rotating Basin Monitoring Project.

The Small Watershed Rotating Basin Monitoring Program as a whole considers the following specific questions in the context of Oklahoma Water Quality Standards and Use Support Assessment Protocols (USAPs) to address NPS pollution:

1. Which HUC 11 waterbodies are non-supporting due to NPS or NPS+PS pollution?
2. Which waterbodies show elevated or increasing levels of NPS or NPS+PS pollutants, which may threaten water quality?
3. What are the sources and magnitude of pollution loading within threatened or impaired waterbodies?
4. Which land uses or changes in land use are sources or potential sources for pollutants causing beneficial use impairment?

This monitoring program will provide an assessment of water quality, watershed conditions, and support status for selected streams statewide with regard to NPS pollution, as well as allow planning of mitigation efforts and eventual evaluation of those efforts.

1.2 PROJECT DESCRIPTION

Oklahoma contains all or part of 414 USGS 11-digit HUC basins which have been collated into eleven planning basins for water quality management purposes. The sampling units for the Small Watershed Rotating Basin Monitoring Program are based at the outlets of HUC 11 watersheds which are located entirely in the state, with secondary sites upstream in selected watersheds. This report focuses on the second set of planning basins to be monitored, the Upper North Canadian, Cimarron, and Upper Arkansas basins (see Figure 1). These basins were selected to coordinate with the Oklahoma Department of Environmental Quality (ODEQ) efforts to implement whole basin planning and were monitored routinely for two consecutive years.

In this first phase of the Small Watershed Rotating Basin Monitoring Program, ambient monitoring, which consists of collecting routine physical, chemical, and biological parameters, and diagnostic monitoring, which attempts to identify causes and sources of NPS pollution, were performed. This level of assessment fulfilled three primary objectives:

1. To identify NPS and/or NPS+PS threatened and impaired waterbodies.
2. To check water bodies previously identified as affected by NPS pollution to determine if threats or impairment continue, and to verify that previously identified non-impaired streams have remained non-impaired.
3. To gather data to more intensively assess impaired streams to verify the causes of impairment, identify categorical and geographical sources, and allow planning of restoration strategies.

The implementation of the Rotating Basin Program has provided a thorough and current assessment of water quality and watershed conditions in the Upper North Canadian, Cimarron, and Upper Arkansas basins and assignment of beneficial use support status for the selected streams with regard to NPS pollution.

Specifically, watersheds that were located entirely within the state of Oklahoma were monitored at their outlet, and samples were collected at the outlet to allow for a general representation of

water quality for the entire watershed. Watersheds that did not have perennial water, referring specifically to the presence of water but not flow, and watersheds that were actually a segment of a larger river being sampled by another agency were not monitored. All sites were located far enough upstream of the receiving waterbody so that backwater effects were negated. This included alluvial water of the receiving waterbody as well as surface water. Where the watershed is monitored by another entity for other purposes, the site was dropped if the monitoring met the NPS assessment data quality objectives. When the designated watershed was in a large river segment, the OCC monitored a stream with perennial water that was a tributary to that large river. In addition to the main outlet stream, a lower order stream situated higher in the watershed was occasionally monitored concurrently. Secondary sites within the watershed were selected depending on available resources. When there was a choice between several streams in such a watershed, an effort was made to monitor a stream draining an area of land use different from the majority of the other streams being monitored in that region.

After reconnaissance of the watersheds within these three basins and removal of those sites which did not meet the sampling criteria, 72 sites were monitored regularly from July 2002 to June 2004 (Table 1). Water chemistry data was collected approximately 20 times over the two-year monitoring period (every five weeks), and one intensive habitat assessment and fish collection was performed for each site. Four macroinvertebrate collections were attempted per site over the monitoring period; however, lack of water or flow at some sites at certain times of the year may have prevented some of the collections.

Data was compared within ecoregions in order to account for the natural differences in physical and chemical water parameters that constitute healthy streams in a particular area. Ecoregions are the spatial framework for a number of states' water quality standards programs and allow the creation of regional criteria (Gallant et al., 1989). Data values which differ from the expected regional criteria values may be used to determine attainment or non-attainment for water bodies (Gallant et al., 1989). The sites monitored in the Upper North Canadian basin occur over two level-three ecoregions: Southwestern Tablelands (SWT) and Central Great Plains (CGP) (Woods et al., 2005). In the Upper Arkansas basin, sites are located in the Southwestern Tablelands, Central Great Plains, or Flint Hills (FH) ecoregions. The Cimarron basin includes sites in the Southwestern Tablelands and Central Great Plains ecoregions, as well as one site in the Cross Timbers (CT) ecoregion; however, the site in the CT ecoregion (Lagoon Creek) has a heavy CGP influence (i.e., it is very close to the ecoregion border and its water originates in the CGP ecoregion), so it was grouped with the CGP sites when compared to reference conditions. A few other sites were grouped with the ecoregion from which a large influence was exerted, as shown in the "modified ecoregion" column in Table 1: Gray Horse Creek and Doga Creek (located in CGP but influenced by FH), Otter Creek Harper Co. and Wolf Creek Upper (located in CGP but influenced by SWT).

Table 1. Site List for Rotating Basin Monitoring Program (Year 2).

Site Name	WBID	Latitude	Longitude	Legal	County	Ecoregion	Modified Ecoregion
Lagoon Creek	OK620900-01-0180J	36.1260	-96.5746	nc 16 19n 7e	Creek	CT	CGP
Euchee Creek	OK620900-01-0290D	36.0172	-96.6426	wb 23 18n 6e	Payne	CGP	CGP
Salt Creek: Payne Co.	OK620900-02-0020D	36.1159	-96.7390	sections 14/23 19n 5e	Payne	CGP	CGP
Council Creek	OK620900-02-0050H	36.0831	-96.8193	wb 31 19n 5e	Payne	CGP	CGP
Dugout Creek	OK620900-03-0080C	35.9564	-97.0161	ne ne ne 18 17n 3e	Payne	CGP	CGP
Beaver Creek: Logan Co.	OK620900-03-0230C	36.0193	-97.3715	sw nw sw 24 18n 2w	Logan	CGP	CGP
Stillwater Creek: Lower	OK620900-04-0040C	36.0400	-96.9445	wb 13 18n 3e	Payne	CGP	CGP
Stillwater Creek: Upper	OK620900-04-0070T	36.1305	-97.1401	ne 13 19n 1e	Payne	CGP	CGP
Cooper Creek	OK620910-02-0040C	35.9830	-97.9965	sw nw nw 6 17n 7w	Kingfisher	CGP	CGP
Salt Creek: Kingfisher Co.	OK620910-02-0100D	36.1027	-98.1926	sw sw sw 20 19n 9w	Kingfisher	CGP	CGP
Deep Creek	OK620910-02-0250C	36.1994	-98.2639	sw nw nw 22 20n 10w	Major	CGP	CGP
Indian Creek: Major Co.	OK620910-02-0310C	36.2897	-98.2999	sw sw sw 17 21n 10w	Major	CGP	CGP
Skeleton Creek: Lower	OK620910-03-0010F	36.0144	-97.4914	sw se sw 23 18n 3w	Logan	CGP	CGP
Skeleton Creek: Upper	OK620910-03-0010S	36.0978	-97.6569	ne se ne 30 19n 4w	Logan	CGP	CGP
Otter Creek: Logan Co.	OK620910-03-0040C	36.0724	-97.5613	sw se sw 31 19n 3w	Logan	CGP	CGP
Cottonwood Creek	OK620910-04-0010D	35.8416	-97.4399	sw sw sw 20 16n 2w	Logan	CGP	CGP
Kingfisher Creek	OK620910-05-0010J	35.8576	-97.9944	sw sw sw 18 16n 7w	Kingfisher	CGP	CGP
Uncle John's Creek	OK620910-05-0030C	35.8276	-97.9215	sw sw sw 26 16n 7w	Kingfisher	CGP	CGP
Dead Indian Creek	OK620910-05-0080D	35.8247	-97.9945	sw nw nw 31 16n 7w	Kingfisher	CGP	CGP
Turkey Creek: Lower	OK620910-06-0010B	35.9784	-97.9228	nw sw nw 2 17n 7w	Kingfisher	CGP	CGP
Turkey Creek: Upper	OK620910-06-0010T	36.3473	-98.0098	nw ne nw 36 22n 8w	Garfield	CGP	CGP
Griever Creek	OK620920-01-0130G	36.3915	-98.7998	se se se 9 22n 15w	Major	CGP	CGP
Main Creek	OK620920-01-0180F	36.4920	-98.8898	ne ne ne 10 23n 16w	Major	CGP	CGP
Long Creek	OK620920-02-0080D	36.7107	-99.1179	nw ne ne 27 26n 18w	Woodward	CGP	CGP
Eagle Chief Creek: Lower	OK620920-04-0010C	36.4053	-98.4465	sw se se 2 22n 12w	Major	CGP	CGP
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	36.6363	-98.5582	wb 24 25n 13w	Woods	CGP	CGP
Buffalo Creek: Lower	OK620920-05-0010G	36.7707	-99.3668	nw sw sw 33 27n 20w	Harper	CGP	CGP
Buffalo Creek: Upper	OK620920-05-0010P	36.7996	-99.4499	se se sw 22 27n 21w	Harper	CGP	CGP
Sand Creek	OK620920-05-0050G	36.7174	-99.4920	nw nw sw 20 26n 21w	Harper	CGP	CGP
Cimarron River: Beaver Co.	OK620930-00-0010T	36.9758	-100.3136	sw nw nw 24 6n 25e	Beaver	SWT	SWT
Crooked Creek: Beaver Co.	OK620930-00-0100G	36.9759	-100.1151	sw nw nw 23 6n 27e	Beaver	SWT	SWT
Wild Horse Creek	OK621000-02-0040F	36.6236	-97.8033	sw sw sw 24 25n 6w	Grant	CGP	CGP
Bois d'Arc	OK621000-03-0010C	36.6375	-97.1206	se 18 25n 2e	Kay	CGP	CGP
Deer Creek	OK621000-04-0010D	36.7096	-97.3813	ne ne nw 26 26n 2w	Kay	CGP	CGP
Pond Creek	OK621000-05-0010D	36.6815	-97.5881	se se se 35 26n 4w	Grant	CGP	CGP
Crooked Creek: Grant Co.	OK621000-06-0010C	36.7412	-97.9826	nw sw sw 8 26n 7w	Grant	CGP	CGP
Salt Fork of Arkansas River	OK621010-01-0010D	36.7519	-98.1280	ne ne ne 11 26n 9w	Alfalfa	CGP	CGP
Clay Creek	OK621010-01-0090R	36.7234	-98.3068	eb 19 26n 10w	Alfalfa	CGP	CGP
Turkey Creek: Woods Co.	OK621010-01-0230G	36.8238	-98.6839	sections 14/15 27n 14w	Woods	CGP	CGP
Yellowstone Creek	OK621010-01-0270C	36.9814	-98.8691	wb 19 29n 15w	Woods	CGP	CGP
Sandy Creek	OK621010-02-0010D	36.8405	-98.2026	sb 6 27n 9w	Alfalfa	CGP	CGP
Medicine Lodge Creek	OK621010-03-0010D	36.8406	-98.3334	sb 1 27n 11w	Alfalfa	CGP	CGP

Site Name	WBID	Latitude	Longitude	Legal	County	Ecoregion	Modified Ecoregion
Driftwood Creek	OK621010-03-0030C	36.8407	-98.3466	sb 2 27n 11w	Alfalfa	CGP	CGP
Chickaskia River: Lower	OK621100-00-0010B	36.6374	-97.2327	sb 18 25n 1e	Kay	CGP	CGP
Chickaskia Creek: Middle	OK621100-00-0010M	36.8403	-97.3019	ne ne ne 9 27n 1w	Kay	CGP	CGP
Bitter Creek	OK621100-00-0100G	36.8366	-97.2834	sw nw nw 11 27n 1w	Kay	CGP	CGP
Gray Horse Creek	OK621200-01-0400C	36.5020	-96.6914	ne 8 23n 6e	Osage	CGP	FH
Doga Creek	OK621200-02-0020C	36.5647	-96.7959	nb 17 24n 5e	Osage	CGP	FH
Black Bear Creek: Lower	OK621200-03-0010D	36.3399	-96.6921	31/32 22n 6e	Pawnee	CGP	CGP
Black Bear Creek (downstream)	OK621200-03-0010M	36.3068	-96.9960	wb 9 21n 3e	Noble	CGP	CGP
Black Bear Creek (upstream)	OK621200-03-0010W	36.3463	-97.2109	eb 32 22n 1e	Noble	CGP	CGP
Salt Creek: Lower	OK621200-04-0010F	36.5649	-96.6888	sw 8 24n 6e	Osage	FH	FH
Salt Creek: Upper	OK621200-04-0010P	36.8683	-96.6573	ne 33 28n 6e	Osage	FH	FH
Red Rock Creek	OK621200-05-0010K	36.4942	-97.0725	sw sw se 3 23n 2e	Noble	CGP	CGP
Red Rock Creek: Upper	OK621200-05-0160G	36.4743	-97.3183	sw nw nw 16 23n 1w	Noble	CGP	CGP
Beaver Creek: Osage Co.	OK621210-00-0050L	36.8689	-96.7454	nb 34 28n 5e	Osage	FH	FH
Chilocco Creek	OK621210-00-0270C	36.9674	-96.9573	wb 26 29n 3e	Kay	CGP	CGP
Bent Creek	OK720500-01-0070D	36.1920	-99.0091	se ne se 21 20n 17w	Woodward	CGP	CGP
Persimmon Creek	OK720500-01-0150G	36.2619	-99.1737	nw nw nw 31 21n 18w	Woodward	CGP	CGP
Indian Creek: Woodward Co.	OK720500-01-0200D	36.3659	-99.2283	ne se se 21 22n 19w	Woodward	CGP	CGP
Otter Creek: Harper Co.	OK720500-02-0050B	36.6182	-99.7597	ne sw nw 26 25n 24w	Harper	CGP	SWT
Clear Creek: Harper Co.	OK720500-02-0070G	36.6222	-99.8510	se sw sw 24 25n 25w	Harper	SWT	SWT
Spring Creek	OK720500-02-0100D	36.6504	-99.8911	nw nw nw 15 25n 25w	Harper	SWT	SWT
Kiowa Creek: Harper Co.	OK720500-02-0130C	36.7374	-99.9804	nw nw nw 14 26n 26w	Harper	SWT	SWT
Kiowa Creek: Beaver Co.	OK720500-02-0130K	36.6160	-100.1647	se se se 20 2n 27e	Beaver	SWT	SWT
Duck Pond Creek	OK720500-02-0250F	36.6886	-100.3148	nw nw ne 36 3n 25e	Beaver	SWT	SWT
Clear Creek: Beaver Co.	OK720500-02-0300F	36.7317	-100.4531	ne ne ne 15 3n 24e	Beaver	SWT	SWT
Palo Duro Creek	OK720500-02-0500G	36.5437	-101.0807	se se se 14 1n 18e	Texas	SWT	SWT
Wolf Creek: Lower	OK720500-03-0010C	36.5659	-99.5510	se se ne 9 24n 22w	Woodward	CGP	CGP
Wolf Creek: Upper	OK720500-03-0010G	36.4493	-99.5882	ne ne ne 30 23n 22w	Woodward	CGP	SWT
Cold Springs Creek	OK720900-00-0100D	36.8715	-102.6339	se se nw 28 5n 4e	Cimarron	SWT	SWT
Cimarron River: Cimarron Co.	OK720900-00-0180C	36.9124	-102.8202	sw nw sw 11 5n 2e	Cimarron	SWT	SWT

2.0 MATERIALS AND METHODS

All sampling and analyses performed during this project were conducted under a Quality Assurance Project Plan (QAPP) approved by EPA Region VI and on file at the OCC Water Quality Division, the Oklahoma Secretary of the Environment (OSE), and EPA Region VI in Dallas. The reader is encouraged to obtain and consult the QAPP for specific questions concerning laboratory analytical methods, detection limits, and accuracy and precision limits. All sampling and measurement activities of OCC Water Quality staff followed procedures outlined in the appropriate OCC Standard Operating Procedure (OCC SOP 2006). Water quality

chemical analyses were conducted by the Oklahoma Department of Agriculture, Food and Forestry (ODAFF) laboratory.

2.1 WATER QUALITY MONITORING

Starting in June 2002, sites were monitored for physical and chemical parameters on a fixed interval schedule of ten sampling events per year (five-week intervals) through June 2004 (usually 20 total events per site). This sampling frequency exceeds state data requirements for beneficial use assessment and meets a sample number necessary to provide a 90% level of confidence for principal water quality data (specifically phosphorus, a critical NPS concern) as determined from EPA's DEFT software. Samples were collected during both base flow and high flow conditions. All sampling and measurement activities followed procedures outlined in the appropriate OCC SOP (2006). *In-situ* water quality parameters were measured at a standard location and included the following parameters: water temperature (YSI Model 55), dissolved oxygen (YSI Model 55), pH (YSI Model 60), specific conductance (YSI Model 30), alkalinity (Hach Digital Titrator Model 16900-01), turbidity (Hach Portable Turbidimeter Model 2100P), and instantaneous discharge (Marsh-McBirney Flo-Mate Model 2000).

One water sample was collected per site per 35-day interval in two, new, sample-rinsed HDPE bottles; one was preserved to a pH <2 with H₂SO₄, and both were stored and delivered on ice or at 4° C. Quality assurance/control samples were collected in accordance with the project QAPP. Samples were submitted to the ODAFF Laboratory for analysis of the following parameters: nitrate (NO₃), nitrite (NO₂), orthophosphate (PO₄), total phosphorous (TP), total Kjeldahl nitrogen (TKN), ammonia (NH₄), chloride (Cl), sulfate (SO₄), total suspended solids (TSS), total dissolved solids (TDS), 5-day biochemical oxygen demand (BOD₅), and total hardness. Total soluble nitrogen (excluding soluble organic nitrogen) was calculated by summing the values of nitrite, nitrate, and TKN for each sample. Available nitrogen was calculated by summing the values of ammonia, nitrite, and nitrate.

Separate samples were collected and submitted concurrently for analysis of *E. coli* and *Enterococcus* bacteria during the time period of one-month prior to, during, and after each recreational season (May 1 – September 30) so that approximately 12 samples were assessed per site over the two-year monitoring period. In addition, observations and quantities of odor, excessive bottom deposits, surface scum, oil/grease, and foam were recorded each time to facilitate assessment of the aesthetics beneficial use. All data were compiled and entered into an Access database for later analysis. Upon retrieval, data were proofed and quality assured, and the descriptive statistics were generated for each parameter using the statistical software package *Minitab V. 14*.

2.2 BIOLOGICAL MONITORING

2.2.1 Habitat Assessment

In the summers of 2002 and 2003, OCC staff conducted instream and riparian habitat assessments at sites concurrent with fish collections. All assessments were conducted in accordance with procedures outlined in the OCC Habitat Assessment SOP (OCC SOP 2006). The OCC's habitat assessment adheres to a modified version of the EPA Rapid Bioassessment Protocols (RBP) (Plafkin et al., 1989) and is designed to assess habitat quality in relation to its ability to support biological communities in the stream. The assessment is based on particular

parameters grouped into three categories for a total of eleven components (Plafkin et al., 1989). The eleven components are discussed in more detail below. The three primary categories assessed include micro scale habitat, macro scale habitat, and riparian/bank structure. Micro scale habitat includes substrate makeup, stable cover, canopy, depth, and velocity. Macro scale assesses the channel morphology, sediment deposits, and other parameters. The third category looks at the riparian zone quality, width, and general makeup (trees, shrubs, vines, and grasses) as well as bank features. Bank erosion and streamside vegetative cover are incorporated into this section.

OCC's habitat assessment components include:

(1) **Instream cover** is the component of habitat that organisms hide behind, within, or under. High quality cover consists of things like submerged logs, cobble and boulders, root wads, and beds of aquatic plants. Cover required by smaller members of the stream community will consist of gravel, cobbles, small woody debris, and dense beds of fine aquatic plants. At least 50% of the stream's area should be occupied by a mixture of stable cover types for this category to be considered optimal.

(2) **Pool bottom substrate** describes the type of stream bed found in pools. Pools are depositional areas of the stream, and as such, are easily damaged by materials that settle. A loose shifting pool bottom will not provide substrate for burrowing organisms and will not allow bottom-spawning fish to successfully spawn. It will not provide habitat to the smaller vertebrates and invertebrates that are necessary to support many of the pool dwelling fish. At least 80% of all pool bottoms must have stable substrate for a reach to be considered optimal for this habitat component.

(3) **Pool variability** describes the depth of pools. A healthy, diverse community of aquatic organisms requires both deep and shallow pools. A fairly even mix of pool depths from a few centimeters to 0.5 meters or greater is optimal.

(4) **Canopy cover** assesses the shading of the stream section. Plants lie at the base of almost all food chains. Since plants require light for growth and survival, a stream that is functioning well needs some amount of light. Moderation is optimal, however, because light is associated with heat, and most aquatic organisms are more stressed by the warmer waters and the lower oxygen solubility and higher metabolic rates that accompany the warming of water.

(5) The **percent of rocky runs and riffles** is calculated for the fifth component. Rocky runs and riffles offer a unique combination of highly oxygenated, turbulent water, flowing over high quality cover and substrate. Turbulence prevents the formation of nutrient concentration gradients from cell membranes outward so that algae and other plants grow at a much higher rate than they would at the same concentration in pools. More food means more growth. Larger crops of algae are translated into larger invertebrate crops. It is these invertebrates, reared in riffle areas, that feed many of the fish in the stream. Because turbulent water is well oxygenated, there has been no selection pressure for riffle dwelling organisms to develop tolerance to poorly oxygenated waters. These are often the first animals to disappear from the stream if oxygen

becomes scarce. The presence of rocky runs and riffles offers habitat for many highly adapted animals that will increase diversity of samples collected from the streams they occupy.

(6) **Discharge** at representative low flow reflects stream size. Water is the most basic requirement of aquatic organisms. Larger streams tend to have more water, and thus, more varied high quality habitat. Overall habitat quality should rise as streams increase in size and discharge, other factors being equal.

(7) **Channel alteration** is the seventh category. The presence of newly formed point bars and islands is very significant. Unstable streambeds support fewer types of animals than those that are stable. This is because unstable streambeds tend to have unstable pool bottom substrate, riffle areas whose cobbles are embedded in finer material, and little cover because it is continually being buried. Few or no signs of channel alteration are considered optimal.

(8) **Channel sinuosity** measures how far a channel deviates from a straight line. More sinuous channels tend to have more undercut banks, root wads, submerged logs, etc. IBI scores should be higher as channels become more sinuous. Sinuosity was calculated from digital ortho quad maps using Geographic Information System technology (GIS).

(9) The **bank erosion** index assesses the stability of the stream bank. Stable stream banks tend to increase IBI scores for many reasons. Most importantly, they do not contribute sediment to the stream channel. As a rule, channels with stable banks tend to be deeper and narrower than channels with unstable banks. Because of the increased depth and decreased width, they tend to be cooler and they also tend to grow less algae for a given amount of nutrients than do shallow, wide channels. Overall habitat quality should increase as bank stability increases.

(10) The **vegetative stability of the stream bank** is an important component. Stream banks can be stabilized with a number of materials including rock, concrete, and fabric. Banks that are stabilized with vegetation benefit the aquatic community more than those stabilized with other materials. This is because the vegetation offers several extra advantages beyond that of bank stability. The riparian plants of the stream bank offer a high quality source of food and shade to the aquatic community. Riparian vegetation stabilizes point bars and contributes greatly to structure in the form of root wads and woody debris. Overall habitat quality should improve as bank vegetative stability increases.

(11) The last category is **streamside cover**. A large part of the energy and food input to the stream comes from the terrestrial vegetation along the banks. A mixture of grasses, forbs, shrubs, vines, saplings, and large trees transfer these necessities to the stream more effectively than does any single type of vegetation. Habitat quality should increase as the form of bank vegetation increases in diversity.

Each stream segment was surveyed for 400 meters upstream or downstream of the starting point (usually a road crossing). Investigators recorded data for the described parameters for 20 stations at 20 meter intervals. Habitat data were entered, metrics were computed, and a "total habitat score" was rendered via *Access* programming. The total habitat score, which can reach a maximum of 180 points, was calculated based on quantitative weighting given to each of the

habitat parameters in relation to their biological significance. Scores were computed for each of the eleven categories, summed, and assigned as an evaluation of that stream section and riparian zone.

2.2.2 Fish

In the summers of 2002 and 2003, fish were collected from a 400-meter reach at all sites using a combination of seining and electroshocking according to procedures outlined in OCC SOP (2006). The collection of fish follows a modified version of the EPA Rapid Bioassessment Protocol V (Plafkin et al., 1989) supplemented by other documents. Specific techniques and relative advantages of seining and electrofishing vary considerably according to stream type and conductivity. Depending upon workable habitat, seining was performed first at all sites and was accomplished by use of either 6' X 10' or 6' X 20' seines of ¼ inch mesh equipped with 8' brailes. Electroshocking was undertaken at all sites with suitable conductivities (usually < 1000 µS/cm) and involved the use of a Coffelt CPS backpack shocker powered by a 300 ma, 120 V Honda generator. For sites possessing long pools too deep to seine or backpack shock, OCC field personnel employed a boat electrofishing unit consisting of a Smith-Root GPP 5 shocking unit powered by a Honda 5kw generator.

Except for those individuals readily identifiable, fish were placed in 10% formalin upon capture and identified to species by a professional taxonomist. Fish species identified and released in the field were photographed on print film for reference. All fixed fish samples were transferred to ethanol and retained for future reference.

Fish data were compiled and analyzed by site following the state biocriteria for attainment of Fish and Wildlife Propagation (see Oklahoma Water Resource Board, 2002, for specific protocol). In addition, each site was assessed using a modified version of Karr's Index of Biotic Integrity (IBI) (adapted from Plafkin et al., 1989). Descriptive statistics were determined for each metric using the *Minitab V. 14* software. The condition of the fish community was based on indices of species richness, community quality, trophic structure, and by comparison to the average scores of high-quality streams in that ecoregion. An overall fish score was calculated using the following assessed categories:

- (1) The **total number of fish species** decreases with decreasing water or habitat quality.
- (2) The **number of sensitive benthic species (darters, madtoms, sculpins)** decreases with increasing siltation and increasing benthic oxygen demand. Many of these fish actually live within the cobble and gravel interstices and are very good indicators of conditions that make this environment inhospitable. These species are weak swimmers that do not readily travel up and down a stream, so their presence or absence at a site relates well to both past and present habitat and water quality conditions at that site.
- (3) The **number of sunfish species** decreases with decreasing pool quality and with decreasing cover. Sunfish also require a fairly stable substrate on which to spawn, so their long-term success is also tied to conditions that affect the amount of sediment that enters and leaves the stream.

(4) The **number of round bodied suckers** is used as a long-term integration of both physical and chemical quality. As a group, these fish are sensitive to both chemical water quality and physical habitat quality. They are long-lived so their presence is a good indicator of overall long-term quality.

(5) The **number of intolerant species** is a characteristic of the fish community that separates high quality from moderate quality sites. A high quality stream will have several members of the fish community that are intolerant to environmental stress. A stream of only moderate quality will have fish that are moderately and highly tolerant of environmental stress. The intolerant species will not be present in the moderate quality stream.

(6) The **proportion of tolerant individuals** is a characteristic that allows moderate quality streams to be separated from low quality streams. These are opportunistic, tolerant fish that dominate communities that have lost their competitors through loss of habitat or water quality.

(7) The **proportion of individuals as omnivores** increases as stream quality decreases. Omnivores are well suited to prosper in streams that are unstable. This prosperity comes at the expense of fish that have more restrictive diets.

(8) The **proportion of individuals as insectivorous cyprinids** increases as the quality and quantity of the invertebrate food base increases. These are the dominant minnows in North American streams but are replaced by either omnivorous or herbivorous minnows as the quality of the food base deteriorates. Often, as the density of aquatic invertebrates decreases, the standing crop of algae increases. This is because the aquatic invertebrates are the largest group of primary consumers. Fish that can switch their diet to algae or fish that eat only algae will replace fish that cannot adapt to the new conditions.

(9) The **proportion of individuals as top carnivores** decreases as the quality of the stream decreases. Many top carnivores are popular sports fish, so their absence does not necessarily mean life in the stream is stressful in and of itself. If angling pressure can be ruled out as a cause of low predator numbers, their scarcity is a good indicator and integrator of the sum total of life in the stream since they are dominant in the food web.

(10) The **number of individuals in the sample** varies by ecoregion, but within an ecoregion it can indicate problems. It is expressed as catch per unit effort, and generally decreases with decreasing stream quality. It can also increase with nutrient enrichment as the food base grows, provided that no other limiting conditions exist (e.g. low nighttime dissolved oxygen levels). An increase in density due to nutrient enrichment can be especially pronounced if piscivores (top carnivores) are decreasing at the same time.

For each of these ten metrics, a score of 5, 3, or 1 was assigned (see Table 2, below), and these scores were summed to get a total IBI score for each site, with a maximum of 50 points. For all “proportion” metrics, the score was based on the actual metric. For all non-proportion metrics, the score was determined by dividing the monitoring site’s metric by the average high quality site metric in a particular ecoregion. Each monitoring site’s total score was then compared to the high quality site total score in that ecoregion and given an integrity rating (as established and

suggested by the EPA RBP; see Table 3, below). IBI scores that fell between the assessment ranges were classified in the closest scoring group. This score indicates the quality of the fish community (higher scores indicate higher quality) but says nothing about whether any deficiencies are due to degraded water quality or to degraded habitat.

Table 2. Index of Biotic Integrity (IBI) scoring criteria for fish.

<i>Metrics</i>	<i>5</i>	<i>3</i>	<i>1</i>
Number of species	>67%	33-67%	<33%
Number of darter species	>67%	33-67%	<33%
Number of sunfish species	>67%	33-67%	<33%
Number of sucker species	>67%	33-67%	<33%
Number of intolerant species	>67%	33-67%	<33%
Proportion tolerant individuals	<10%	10-25%	>25%
Proportion omnivorous individuals	<20%	20-45%	>45%
Proportion insectivorous cyprinid individuals	>45%	20-45%	<20%
Proportion individuals as top carnivores	>5%	1-5%	<1%
Total number of individuals	>67%	33-67%	<33%

Table 3. Index of Biotic Integrity (IBI) score interpretation for fish.

% Comparison to the Reference Score	Integrity Class	Characteristics
>97%	Excellent	Comparable to pristine conditions, exceptional species assemblage
80 - 87%	Good	Decreased species richness, especially intolerant species
67 - 73%	Fair	Intolerant and sensitive species rare or absent
47 - 57%	Poor	Top carnivores and many expected species absent or rare; omnivores and tolerant species dominant
26 - 37%	Very Poor	Few species and individuals present; tolerant species dominant; diseased fish frequent

2.2.3 Macroinvertebrates

Collection of macroinvertebrates was attempted at all sites for both the winter and summer index periods of June 2002 through June 2004 according to procedures outlined in the OCC SOP (2006). Index periods represent seasons of relative community stability that afford opportunity for meaningful site comparisons. For Oklahoma, the summer index occurs from July 1 to September 15; the winter index is from January 1 to March 15. Sampling efforts included attempts to procure animals from all available habitats at a site; thus, total effort at a site may entail up to three total samples with one from each of the following habitats: rocky riffles, streamside vegetation, and woody debris.

Collection methods involved sampling each of the habitats similar to methods outlined in the EPA Rapid Bioassessment Protocols (Plafkin et al., 1989). Riffle sampling effort consisted of three, one meter squared kicknet samples in areas of rocky substrate reflecting the breadth of the velocity regime at a site. Riffles with substrates of bedrock or tight clay were not sampled. Any streamside vegetation in the current that appeared to offer fine structure was sampled by agitation within a #30 mesh dip net for three minutes total agitation time. Any dead wood with or without bark which was in current fast enough to offer suitable habitat for organisms was sampled by agitation or by scraping/brushing upstream of a #30 mesh dip net for 5 minutes. Woody debris sampled generally ranged in size from 1/4" to about 8" in diameter. Each sample type was preserved independently in quart mason jars with ethanol, labeled, and sent to a professional taxonomist for picking and identification.

Data was compiled, collated by year, season, and sample type and entered into a spreadsheet for metric calculations. The six metrics used to assess the macroinvertebrate community include the following:

(1) The **number of taxa** refers to the total number of taxonomically different types of animals in the sample. As is the case with the fish, this number rises with increasing water and/or habitat quality (Plafkin et al., 1989).

(2) The **Modified Hilsenhoff Biotic Index (HBI)** is a measure of the invertebrate community's tolerance to organic pollution. It ranges between 0 and 10 with 0 being the most pollution sensitive. The index used in the RBP Manual is based on the pollution tolerance of invertebrates from the Upper Midwest. The Index used here is calculated the same way, but uses tolerance values of North Carolina invertebrates (Plafkin et al., 1989).

(3) The **percent EPT** is a measure of how many individuals in the sample are members of the EPT group. This metric helps to separate high quality streams from those of moderately high quality. The highest quality streams will have many individuals of many different taxa of EPT. As conditions deteriorate, animals will begin to die or to drift downstream. At this point, the community will still have many taxa of EPT, but there will be fewer individuals (Plafkin et al., 1989).

(4) The **EPT Index** is the number of different taxa from the orders Ephemeroptera, Plecoptera, and Trichoptera, the mayflies, stoneflies, and caddis flies respectively. With few exceptions, these insects are more sensitive to pollution than any other groups. As a stream deteriorates in quality, members of this group will be the first to disappear. This robust metric allows discrimination between all but the worst of streams (Plafkin et al., 1989).

(5) **Percent dominant taxa** is the percentage of the collection composed of the most common taxa. As more and more species are excluded by increasing pollution, the remaining species can increase in numbers due to the unused resources left by the excluded animals. This metric helps to separate the high quality streams from those of moderate quality (Plafkin et al., 1989).

(6) The **Shannon-Weaver Species Diversity Index** measures the evenness of the species distribution. It increases as more and more taxa are found in the collection and as individual taxa become less dominant. This metric increases with increasing biotic quality (Plafkin et al., 1989).

Descriptive statistics of each season-specific sample type (e.g., summer riffle, winter vegetation, summer woody) for each site were determined via *Minitab V. 14* and were compared to the average respective metric of high-quality streams in the ecoregion. A bioassessment score was calculated similarly to the IBI score for fish. For each site, scores of 6, 4, 2, or 0 were assigned for each metric (according to the criteria in Table 4, below) and then summed to get a total bioassessment score for each site, with a maximum of 36 points. For taxa richness and EPT taxa richness, the percentages used to assign scores were obtained by dividing each monitoring site metric by the average high quality site metric in a particular ecoregion. For the HBI metric, the high quality site value was divided by the monitoring site value (high quality site metric / monitoring site metric). For the remaining metrics, the score was based on the actual values obtained instead of being relative to the high quality site metric. Each monitoring site's total score was then compared to the average high quality sites' total score (in that ecoregion) and classified according to the condition gradient outlined in Table 5, below (adapted from Plafkin et al., 1989).

Table 4. Bioassessment scoring criteria for macroinvertebrates. *Modified HBI Using North Carolina Tolerance Values, **RBP for Use in Streams and Rivers 1989, *Modified by OCC**

<i>Metrics</i>	<i>6</i>	<i>4</i>	<i>2</i>	<i>0</i>
Taxa Richness**	>80%	60-80%	40-60%	<40%
Modified HBI* (**)	>85%	70-85%	50-70%	<50%
EPT/Total***	>30%	20-30%	10-20%	<10%
EPT Taxa**	>90%	80-90%	70-80%	<70%
Dominants to Total**	<20%	20-30%	30-40%	>40%
Shannon-Weaver***	>3.5	2.5-3.5	1.5-2.5	<1.5

Table 5. Bioassessment score interpretation for macroinvertebrates.

% Comparison to the Reference Score	Biological Condition	Characteristics
>83%	Non-impaired	Comparable to the best situation expected in that ecoregion; balanced trophic and community structure for stream size
54 - 79%	Slightly Impaired	Community structure and species richness less than expected; percent contribution of tolerant forms increased and loss of some intolerant species
21 - 50%	Moderately Impaired	Fewer species due to loss of most intolerant forms; reduction in EPT index
<17%	Severely Impaired	Few species present; may have high densities of 1 or 2 taxa

2.3 WATERSHED ASSESSMENT

GIS coverage was used to determine the landuse in each watershed (USGS, 1992). The number of oil and gas wells, confined animal feeding operations, national pollution discharge elimination system permit holders, total retention sites, active municipal landfills, and biosolid land application sites was recorded for each watershed, in addition to calculating the percent landuse in terms of bare rock/sand/clay, vegetation (broken into several categories, both natural and agricultural), open water, and residential/commercial/industrial uses (divided into several categories). This data was used to determine possible sources of NPS pollution when a stream was found to be impaired.

2.4 BENEFICIAL USE SUPPORT ASSESSMENT

The support status of each stream site for agriculture, aesthetics, primary body contact, secondary body contact, public and private water supply, sensitive water supply, and fish and wildlife propagation beneficial uses was evaluated following the protocols outlined in the state's *Continuing Planning Process, Integrated Water Quality Report Listing Methodology* (Oklahoma Department of Environmental Quality, 2002) and per *Implementation of Oklahoma's Water Quality Standards, Subchapter 15: Use Support Assessment Protocols* (OAC 785:46-15; Oklahoma Water Resource Board, 2002). Streams were considered non-supporting when Oklahoma Water Quality Standards were violated as determined by criteria and rules listed in these documents. Parameters not addressed in OAC 785:46-15 were assessed using applicable state and federal rules and regulations to determine non-support. Assessment results were submitted to the ODEQ for final assimilation in the state's 2004 Integrated Report to EPA Region VI in November 2004.

3.0 RESULTS AND DISCUSSION

3.1 WATER QUALITY MONITORING

All chemical and physical water quality data collected for the project can be found in Appendix A.1. Appendix A.2 gives all bacteria data. Table 6 (below) gives the mean values of physical water quality parameters for each site based on approximately 20 visits to each site (includes elevated and base flow). Since dissolved oxygen (DO) concentration is strongly dependent on time of day, which is not controlled for in OCC sampling protocol (most sampling occurs between 10:00 AM and 2:00 PM), the mean DO collected for sites may not be very informative. Instead, the absolute minimum DO concentration is the factor that influences biological communities, so Table 7 indicates the percentage of water samples which had DO concentrations below 5.0 for each site, as well as the actual low values. For discharge (Table 6), all elevated flow measurements were omitted so that the value given is the mean base flow. Table 8 provides the means for chemical parameters used to assess water quality, and Table 9 shows the geometric mean of *Enterococcus* and *E. coli* bacteria for each site over the two-year monitoring period. Descriptive statistics for each site for water quality parameters are presented in Appendix A.3.

Table 6. Mean Physical Water Quality Values for Year 2 Monitoring Sites.

Site Name	WBID	DO (mg/L)	DOPerSat	Temp (°C)	Alkalinity (CaCO ₃)	Total Hardness (mg/L as CaCO ₃)	Cond (uS/cm)	pH (SU)	Turb (NTU)	Flow (cfs)	Base Flow (cfs)
Lagoon Creek	OK620900-01-0180J	7.94	76.97	15.8	136.1	197.7	569.7	7.57	37.6	4.96	2.56
Euchee Creek	OK620900-01-0290D	10.10	104.29	18.0	148.3	169.1	451.1	8.02	50.1	3.85	3.85
Salt Creek: Payne Co.	OK620900-02-0020D	7.81	78.72	16.8	174.9	287.5	1274.0	7.76	28.4	4.16	4.16
Council Creek	OK620900-02-0050H	8.57	85.21	16.7	168.3	207.1	556.6	7.93	18.4	2.24	2.24
Dugout Creek	OK620900-03-0080C	7.23	69.28	15.9	231.9	289.8	937.5	7.82	48.3	0.88	0.88
Beaver Creek: Logan Co.	OK620900-03-0230C	9.40	99.66	18.7	220.8	282.8	1045.6	8.10	49.5	6.56	4.70
Stillwater Creek: Lower	OK620900-04-0040C	8.34	84.58	17.7	100.4	181.7	870.4	7.64	77.7	22.49	10.83
Stillwater Creek: Upper	OK620900-04-0070T	6.62	64.42	16.8	208.4	222.6	601.6	7.55	46.5	13.80	3.68
Cooper Creek	OK620910-02-0040C	9.99	100.35	17.7	295.8	568.6	2355.0	8.14	45.9	5.42	5.42
Salt Creek: Kingfisher Co.	OK620910-02-0100D	12.77	129.22	20.2	147.7	1416.8	14686.0	8.06	10.1	13.91	13.91
Deep Creek	OK620910-02-0250C	10.23	108.83	19.0	225.8	870.3	1970.0	8.09	61.6	4.18	4.18
Indian Creek: Major Co.	OK620910-02-0310C	11.15	118.22	19.0	233.8	387.5	1184.9	8.22	7.6	8.59	8.59
Skeleton Creek: Lower	OK620910-03-0010F	10.07	104.56	18.0	260.3	355.5	1580.6	8.38	69.4	45.45	31.45
Skeleton Creek: Upper	OK620910-03-0010S	9.40	94.45	17.2	285.1	407.1	1891.4	8.24	103.4	22.55	22.55
Otter Creek: Logan Co.	OK620910-03-0040C	8.87	89.58	16.9	232.9	272.4	838.8	8.15	51.2	12.28	5.51
Cottonwood Creek	OK620910-04-0010D	9.43	99.11	18.0	168.8	314.2	1176.4	8.06	66.2	47.34	41.76
Kingfisher Creek	OK620910-05-0010J	9.76	99.12	16.8	254.1	746.9	2422.0	7.99	50.6	14.14	14.14
Uncle John's Creek	OK620910-05-0030C	10.99	116.45	20.1	253.2	407.1	1217.6	8.24	10.4	6.82	6.82
Dead Indian Creek	OK620910-05-0080D	10.37	105.97	17.9	254.8	610.6	1754.0	8.08	24.5	2.05	2.05
Turkey Creek: Lower	OK620910-06-0010B	8.99	88.93	16.5	282.5	313.7	1261.1	8.22	108.2	75.20	28.33
Turkey Creek: Upper	OK620910-06-0010T	10.57	100.16	16.0	322.4	338.6	1548.0	8.24	38.6	15.43	15.43
Griever Creek	OK620920-01-0130G	10.20	95.38	13.9	175.9	1797.7	3394.0	8.03	34.4	24.90	2.68
Main Creek	OK620920-01-0180F	9.75	93.24	13.6	154.2	1842.1	3197.0	7.99	65.4	13.86	10.32
Long Creek	OK620920-02-0080D	10.48	100.01	15.3	163.0	1495.0	3240.0	8.04	20.7	3.71	3.71
Eagle Chief Creek: Lower	OK620920-04-0010C	10.65	104.01	15.9	252.3	565.5	1281.6	8.20	43.9	99.80	39.22
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	10.86	112.37	18.0	236.0	1039.8	2121.0	8.09	33.9	18.00	6.67
Buffalo Creek: Lower	OK620920-05-0010G	10.18	101.49	17.1	176.9	1479.3	2750.0	8.10	12.1	19.62	12.91
Buffalo Creek: Upper	OK620920-05-0010P	11.96	119.84	17.4	210.5	1277.1	2548.0	8.13	8.7	8.52	7.20
Sand Creek	OK620920-05-0050G	9.80	100.44	16.7	211.1	1950.1	3514.0	7.77	12.9	1.22	1.22
Cimarron River: Beaver Co.	OK620930-00-0010T	10.03	112.18	20.1	215.7	454.3	4443.0	8.61	19.9	29.21	29.21
Crooked Creek: Beaver Co.	OK620930-00-0100G	10.78	115.64	18.6	212.5	453.4	3907.0	8.35	40.5	8.27	6.66
Wild Horse Creek	OK621000-02-0040F	8.61	75.15	14.6	299.4	404.1	1858.0	8.17	42.8	4.09	4.09
Bois d'Arc	OK621000-03-0010C	8.46	81.77	14.3	162.7	486.3	1191.0	8.08	71.5	14.28	14.28
Deer Creek	OK621000-04-0010D	9.06	91.81	16.9	186.8	393.1	1347.0	8.25	76.0	4.94	4.94
Pond Creek	OK621000-05-0010D	8.27	77.56	15.2	243.3	298.0	1138.0	7.86	182.1	41.20	22.89
Crooked Creek: Grant Co.	OK621000-06-0010C	9.33	92.11	16.1	278.1	352.3	1397.0	8.20	93.8	14.63	14.63
Salt Fork of Arkansas River	OK621010-01-0010D	11.25	114.08	17.8	120.9	507.4	4633.0	8.51	164.9	351.00	190.00
Clay Creek	OK621010-01-0090R	11.91	113.69	18.2	268.1	1136.3	7775.0	8.14	78.7	4.72	2.87
Turkey Creek: Woods Co.	OK621010-01-0230G	8.07	74.16	14.2	225.1	1957.0	2926.0	7.87	57.1	2.63	2.63
Yellowstone Creek	OK621010-01-0270C	9.96	102.43	17.4	135.4	1855.7	2729.0	8.06	82.9	3.32	2.16
Sandy Creek	OK621010-02-0010D	8.81	92.18	16.5	206.0	287.9	922.5	8.19	44.6	33.25	28.40
Medicine Lodge Creek	OK621010-03-0010D	8.85	88.84	17.1	169.7	485.9	1020.9	8.28	75.0	117.70	78.90

Site Name	WBID	DO (mg/L)	DOPercSat	Temp (°C)	Alkalinity (CaCO3)	TotHardness (mg/L as CaCO3)	Cond (uS/cm)	pH (SU)	Turb (NTU)	Flow (cfs)	Base Flow (cfs)
Driftwood Creek	OK621010-03-0030C	9.21	88.42	16.4	242.9	969.2	1853.0	8.06	69.2	11.29	9.23
Chickaskia River: Lower	OK621100-00-0010B	8.51	85.91	16.3	155.0	325.6	964.3	8.28	144.7	149.60	74.50
Chickaskia Creek: Middle	OK621100-00-0010M	9.07	96.12	17.5	161.4	264.1	741.9	8.19	144.5	128.90	78.10
Bitter Creek	OK621100-00-0100G	8.21	85.81	16.5	167.8	1187.0	2956.0	7.79	108.6	27.30	9.01
Gray Horse Creek	OK621200-01-0400C	7.20	68.86	16.2	113.1	163.9	437.9	7.98	35.0	1.63	1.63
Doga Creek	OK621200-02-0020C	7.47	70.06	15.4	119.6	164.4	372.8	8.18	44.8	2.50	1.19
Black Bear Creek: Lower	OK621200-03-0010D	8.94	87.29	16.8	139.9	175.1	635.6	7.97	125.8	79.80	33.36
Black Bear Creek (downstream)	OK621200-03-0010M	8.28	80.06	17.4	175.3	232.8	959.0	7.99	121.3	28.70	19.40
Black Bear Creek (upstream)	OK621200-03-0010W	10.22	105.39	18.2	204.0	292.0	1293.0	8.13	58.1	47.80	14.24
Salt Creek: Lower	OK621200-04-0010F	8.37	84.84	16.6	135.4	191.9	465.9	8.12	37.6	10.20	8.09
Salt Creek: Upper	OK621200-04-0010P	6.78	68.92	16.7	143.9	182.8	385.2	8.01	48.4	5.99	3.52
Red Rock Creek	OK621200-05-0010K	7.59	71.18	16.2	193.2	227.9	840.0	7.77	203.2	22.18	16.91
Red Rock Creek: Upper	OK621200-05-0160G	7.89	77.27	16.6	233.0	272.0	1026.7	8.03	152.7	17.30	11.63
Beaver Creek: Osage Co.	OK621210-00-0050L	6.63	64.59	15.6	155.8	194.9	407.1	8.09	44.6	23.60	6.95
Chilocco Creek	OK621210-00-0270C	6.31	59.48	14.4	156.6	230.3	528.0	7.95	63.5	2.57	1.20
Bent Creek	OK720500-01-0070D	9.31	90.25	14.2	232.9	1354.4	1948.0	7.98	10.7	10.09	10.09
Persimmon Creek	OK720500-01-0150G	9.59	93.49	14.4	264.7	380.1	922.3	8.28	27.0	14.37	14.37
Indian Creek: Woodward Co.	OK720500-01-0200D	9.63	95.37	14.5	216.5	479.5	1556.6	8.36	7.0	7.67	7.67
Otter Creek: Harper Co.	OK720500-02-0050B	7.81	73.14	12.9	234.9	492.4	1703.0	7.94	92.2	2.52	1.43
Clear Creek: Harper Co.	OK720500-02-0070G	8.65	89.24	14.5	200.4	232.9	688.2	8.13	15.6	7.19	6.71
Spring Creek	OK720500-02-0100D	10.13	102.24	15.7	216.3	245.1	620.1	8.18	3.9	1.11	1.11
Kiowa Creek: Harper Co.	OK720500-02-0130C	10.16	109.04	18.2	204.9	278.6	877.8	8.39	24.3	11.57	10.79
Kiowa Creek: Beaver Co.	OK720500-02-0130K	9.04	88.25	14.4	215.9	291.3	894.8	8.13	61.9	6.53	6.53
Duck Pond Creek	OK720500-02-0250F	7.35	68.81	14.8	187.5	243.1	1109.9	8.00	5.9	0.31	0.31
Clear Creek: Beaver Co.	OK720500-02-0300F	8.18	80.74	15.6	247.5	476.4	1552.7	7.88	4.8	1.93	1.93
Palo Duro Creek	OK720500-02-0500G	8.94	88.94	14.5	234.2	484.1	2853.0	7.99	3.2	0.54	0.54
Wolf Creek: Lower	OK720500-03-0010C	9.31	92.55	15.3	188.1	347.1	1204.8	8.03	32.9	25.31	25.31
Wolf Creek: Upper	OK720500-03-0010G	9.48	99.01	16.5	211.5	300.2	959.3	8.20	25.9	45.69	45.69
Cold Springs Creek	OK720900-00-0100D	3.68	37.60	13.2	511.0	895.8	3040.0	7.74	42.6	0.00	0.00
Cimarron River: Cimarron Co.	OK720900-00-0180C	5.71	56.44	12.9	341.2	688.6	2003.0	7.93	16.6	0.13	0.13

Table 7. Low dissolved oxygen values (DO<5.00 mg/l).

% Samples under 5.0 mg/l	WBID	SiteName	Date	DO (mg/l)	% Samples under 5.0 mg/l	WBID	SiteName	Date	DO (mg/l)
19%	OK620900-01-0180J	Lagoon Creek	23-Jul-02	4.44	14%	OK621100-00-0100G	Bitter Creek	23-Jul-02	3.67
			03-Jun-03	4.83				28-Apr-03	4.57
			08-Jul-03	3.97				08-Jul-03	4.84
						12-Aug-03	4.27	14%	OK621200-01-0400C
10%	OK620900-01-0290D	Euchee Creek	22-Jul-02	4.76	07-Jul-03	1.36			
						26-Aug-02	4.69	11-Aug-03	4.13
18%	OK620900-02-0020D	Salt Creek: Payne Co.	23-Jul-02	4.00	15%	OK621200-02-0020C	Doga Creek	23-Jul-02	3.38
			30-Jul-02	3.91				02-Jun-03	4.91
			08-Jul-03	4.63				11-Aug-03	3.91
						11-Aug-03	4.88	9%	OK621200-03-0010M
10%	OK620900-02-0050H	Council Creek	30-Sep-02	4.46	03-Jun-03	4.80			
						11-Aug-03	1.95	29%	OK621200-04-0010P
29%	OK620900-03-0080C	Dugout Creek	22-Jul-02	4.80	27-Aug-02	4.49			
			30-Sep-02	4.60	25-Mar-03	4.15			
			07-Jul-03	2.02	07-Jul-03	4.40			
			11-Aug-03	3.10	11-Aug-03	4.82			
			20-Oct-03	4.90	14-Aug-03	4.53			
			07-Jun-04	4.66	33%	OK621200-05-0010K	Red Rock Creek	05-Aug-02	3.80
5%	OK620900-03-0230C	Beaver Creek: Logan Co.	03-Dec-02	4.28				03-Jun-03	4.93
10%	OK620900-04-0040C	Stillwater Creek: Lower	27-Aug-02	4.47				07-Jul-03	3.99
									28-Jul-03
38%	OK620900-04-0070T	Stillwater Creek: Upper	05-Aug-02	4.94				15-Sep-03	4.86
			03-Sep-02	2.92				20-Oct-03	4.76
			30-Sep-02	4.62	01-Jun-04	4.94			
			04-Nov-02	4.07	14%	OK621200-05-0160G	Red Rock Creek: Upper	05-Aug-02	3.93
			02-Dec-02	3.40				07-Jul-03	4.36
			28-Apr-03	4.99				11-Aug-03	4.21
			20-Oct-03	2.72				33%	OK621210-00-0050L
			01-Jun-04	4.40	27-Aug-02	4.12			
18%	OK620910-02-0040C	Cooper Creek	13-May-03	4.36	05-Nov-02	3.10			
			10-Jun-03	4.30	02-Dec-02	2.93			
			19-Aug-03	3.55	15-Jan-03	4.85			
			29-Aug-03	2.84	25-Mar-03	4.72			
5%	OK620910-02-0100D	Salt Creek: Kingfisher Co.	29-Aug-03	4.78	11-Aug-03	2.33			
14%	OK620910-02-0250C	Deep Creek	19-Jun-02	4.79	47%	OK621210-00-0270C	Chilocco Creek	23-Jul-02	3.31

% Samples under 5.0 mg/l	WBID	SiteName	Date	DO (mg/l)
		Deep Creek, cont.	27-Apr-04	3.44
5%	OK620910-03-0010S	Skeleton Creek: Upper	12-Aug-03	4.40
14%	OK620910-03-0040C	Otter Creek: Logan Co.	30-Jul-02	3.99
			02-Jun-03	4.63
			12-Aug-03	4.84
5%	OK620910-04-0010D	Cottonwood Creek	03-Dec-02	1.88
5%	OK620910-05-0030C	Uncle John's Creek	29-Aug-03	4.30
9%	OK620910-05-0080D	Dead Indian Creek	29-Aug-03	2.68
			09-Jun-04	4.91
9%	OK620910-06-0010B	Turkey Creek: Lower	10-Aug-03	3.40
			29-Aug-03	4.32
5%	OK620910-06-0010T	Turkey Creek: Upper	18-Aug-03	4.75
5%	OK620920-05-0010G	Buffalo Creek: Lower	29-Jul-02	4.43
10%	OK620920-05-0050G	Sand Creek	19-Jun-02	4.92
			02-Jun-03	4.95
14%	OK621000-02-0040F	Wildhorse Creek	14-Jul-03	4.57
			18-Aug-03	4.87
			28-Oct-03	4.33
24%	OK621000-05-0010D	Pond Creek	07-Aug-02	3.49
			07-Oct-02	4.70
			09-Jun-03	4.69
			14-Jul-03	4.92
			07-Jun-04	4.79
7%	OK621000-06-0010C	Crooked Creek: Grant Co.	08-Aug-02	4.35
29%	OK621010-01-0230G	Turkey Creek: Woods Co.	27-Jun-02	3.97
			04-Sep-02	3.96
			15-Jul-03	3.16
			19-Aug-03	3.45
			27-Oct-03	4.27
			08-Jun-04	3.55
10%	OK621010-02-0010D	Sandy Creek	12-Mar-03	4.80
			19-Aug-03	3.76
5%	OK621010-03-0010D	Medicine Lodge Creek	07-Jun-04	4.15
10%	OK621010-03-0030C	Driftwood Creek	15-Jul-03	4.39
			19-Aug-03	3.09
5%	OK621100-00-0010M	Chickaskia River: Middle	14-Jan-03	2.23
5%	OK621200-03-0010D	Black Bear Creek: Lower	23-Jul-02	3.76

% Samples under 5.0 mg/l	WBID	SiteName	Date	DO (mg/l)
		Chilocco Creek, cont.	01-Oct-02	3.05
			05-Nov-02	3.39
			02-Dec-02	3.45
			15-Jan-03	4.01
			25-Mar-03	3.13
			28-Apr-03	4.34
			11-Aug-03	3.63
13%	OK720500-02-0050B	Otter Creek: Harper Co.	01-Oct-02	3.86
			29-Apr-03	3.84
5%	OK720500-02-0070G	Clear Creek: Harper Co.	06-Jul-02	0.44
27%	OK720500-02-0250F	Duck Pond Creek	27-Aug-02	3.38
			29-Apr-03	3.37
			10-Jun-03	2.22
			15-Jul-03	4.72
			28-Aug-03	4.28
			16-Sep-03	4.77
14%	OK720500-02-0300F	Clear Creek: Beaver Co.	05-Jun-02	3.45
			23-Jul-02	1.70
			26-Aug-02	3.26
14%	OK720500-02-0500G	Palo Duro Creek	04-Jun-02	4.31
			23-Jul-02	0.12
			19-Apr-04	3.96
67%	OK720900-00-0100D	Cold Springs Creek	04-Jun-02	4.22
			26-Aug-02	0.94
			30-Sep-02	0.43
			02-Dec-02	1.18
			31-Mar-03	2.65
			28-Apr-03	1.06
41%	OK720900-00-0180C	Cimarron River: Cimarron Co.	04-Jun-02	3.33
			26-Aug-02	2.60
			09-Jun-03	4.57
			14-Jul-03	2.39
			18-Aug-03	1.82
			28-Aug-03	0.57
			15-Sep-03	3.45
			27-Oct-03	3.97
			08-Dec-03	3.53

Table 8. Mean Chemical Water Quality Values for Year 2 Monitoring Sites.

Site Name	WBID	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Total OrthoPhos (mg/L)	Total Phosphorus (mg/L)	Total DisSolids (mg/L)	Total SusSolids (mg/L)	CBOD5 (mg/L)
Lagoon Creek	OK620900-01-0180J	77.20	23.85	0.2015	0.0255	0.0463	0.5608	0.0152	0.0740	343.40	19.95	3.4
Euchee Creek	OK620900-01-0290D	27.08	35.89	0.9310	0.0380	0.2370	1.0700	0.3337	0.4393	283.40	29.85	5.1
Salt Creek: Payne Co.	OK620900-02-0020D	262.00	79.80	0.3020	0.0167	0.0245	0.3987	0.0187	0.0684	770.00	18.48	3.5
Council Creek	OK620900-02-0050H	56.79	14.88	0.1870	0.0180	0.0394	0.5961	0.0149	0.0690	316.40	12.05	3.5
Dugout Creek	OK620900-03-0080C	143.90	30.56	0.2415	0.0160	0.0667	0.6163	0.0260	0.0776	535.90	14.80	3.8
Beaver Creek: Logan Co.	OK620900-03-0230C	146.30	53.16	0.3225	0.0230	0.0367	0.6374	0.1081	0.1314	567.40	34.55	4.0
Stillwater Creek: Lower	OK620900-04-0040C	116.00	68.85	9.8300	0.0900	0.2770	1.1680	1.2500	1.4290	463.60	40.40	3.3
Stillwater Creek: Upper	OK620900-04-0070T	30.53	31.54	0.3325	0.0310	0.1248	0.6075	0.1261	0.1822	340.20	32.75	3.7
Cooper Creek	OK620910-02-0040C	322.40	430.90	0.9240	0.0465	0.0719	0.7725	0.0652	0.1447	1543.20	46.40	4.0
Salt Creek: Kingfisher Co.	OK620910-02-0100D	5433.00	1155.80	1.0860	0.0737	0.0280	0.5145	0.0209	0.0658	11289.00	17.47	3.1
Deep Creek	OK620910-02-0250C	120.69	714.10	1.1520	0.0270	0.0519	0.5341	0.0332	0.0934	1406.00	27.15	3.4
Indian Creek: Major Co.	OK620910-02-0310C	152.83	130.50	4.7050	0.0290	0.0212	0.4176	0.0461	0.0938	742.30	13.95	2.6
Skeleton Creek: Lower	OK620910-03-0010F	189.90	169.30	1.9980	0.0540	0.0520	1.0200	0.2164	0.3388	852.60	59.80	4.6
Skeleton Creek: Upper	OK620910-03-0010S	244.70	225.20	4.2770	0.5620	0.0825	1.0370	0.3981	0.5451	1058.00	98.40	4.0
Otter Creek: Logan Co.	OK620910-03-0040C	76.06	56.94	0.6190	0.0555	0.0468	0.6831	0.1048	0.1876	488.10	40.20	3.7
Cottonwood Creek	OK620910-04-0010D	120.75	174.62	5.4640	0.3060	0.0569	0.7890	1.1650	1.3821	685.80	52.00	3.5
Kingfisher Creek	OK620910-05-0010J	256.40	641.10	1.2450	0.0335	0.0531	0.5870	0.0423	0.1026	1694.20	41.90	3.0
Uncle John's Creek	OK620910-05-0030C	84.39	259.90	0.9780	0.0190	0.0422	0.4700	0.0974	0.1625	799.20	13.65	2.8
Dead Indian Creek	OK620910-05-0080D	158.00	431.80	1.4470	0.0430	0.0880	0.6349	0.1307	0.2151	1204.00	24.60	3.3
Turkey Creek: Lower	OK620910-06-0010B	167.70	96.70	1.2230	0.0180	0.0717	1.2500	0.1831	0.2951	1207.00	80.00	3.4
Turkey Creek: Upper	OK620910-06-0010T	235.60	109.31	1.0310	0.0163	0.0878	0.8574	0.2034	0.2884	926.50	43.20	3.4
Griever Creek	OK620920-01-0130G	182.20	1609.80	0.2470	0.0165	0.0554	0.6400	0.0487	0.1353	2858.00	84.10	3.3
Main Creek	OK620920-01-0180F	221.70	1580.70	0.5520	0.0165	0.0654	1.1770	0.0330	0.1728	2889.00	64.50	2.8
Long Creek	OK620920-02-0080D	186.40	1217.50	0.5750	0.0165	0.0437	0.5880	0.0151	0.0807	2346.00	23.50	2.8
Eagle Chief Creek: Lower	OK620920-04-0010C	67.70	346.10	2.6640	0.0478	0.1700	0.8700	0.0427	0.1042	927.80	50.00	3.2
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	104.19	913.20	1.7740	0.0177	0.0564	0.6970	0.0338	0.1358	1843.00	31.05	2.6
Buffalo Creek: Lower	OK620920-05-0010G	161.90	1287.80	0.4270	0.0270	0.0826	0.9830	0.0226	0.1138	2341.00	23.00	2.7
Buffalo Creek: Upper	OK620920-05-0010P	158.20	1099.00	0.5400	0.0265	0.0668	0.8940	0.0337	0.1131	2079.00	23.20	3.0
Sand Creek	OK620920-05-0050G	117.30	1783.20	0.2480	0.0190	0.0695	0.7394	0.0380	0.0837	3055.00	20.10	3.7

Site Name	WBID	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Total OrthoPhos (mg/L)	Total Phosphorus (mg/L)	Total DisSolids (mg/L)	Total SusSolids (mg/L)	CBOD5 (mg/L)
Cimarron River: Beaver Co.	OK620930-00-0010T	1191.40	197.70	1.6070	0.0160	0.0330	0.8260	0.3149	0.4354	2410.30	35.20	4.1
Crooked Creek: Beaver Co.	OK620930-00-0100G	993.50	194.96	0.4070	0.0252	0.0600	0.5850	0.0330	0.0828	2163.00	18.28	3.6
Wild Horse Creek	OK621000-02-0040F	245.50	221.60	2.0030	0.0305	0.1153	0.9760	0.1566	0.2411	1123.10	29.70	3.4
Bois d' Arc	OK621000-03-0010C	99.10	250.30	1.2510	0.0263	0.0834	0.6634	0.0992	0.1933	861.00	66.70	3.2
Deer Creek	OK621000-04-0010D	223.00	96.37	0.9400	0.0160	0.0607	0.7623	0.0699	0.1584	775.80	63.70	3.9
Pond Creek	OK621000-05-0010D	137.80	114.80	1.0350	0.0415	0.0934	1.0180	0.1671	0.2834	737.00	88.30	3.6
Crooked Creek: Grant Co.	OK621000-06-0010C	139.70	186.50	1.9400	0.0479	0.0774	0.7600	0.1053	0.1983	832.40	50.30	3.9
Salt Fork of Arkansas River	OK621010-01-0010D	1363.00	398.70	0.3630	0.0205	0.0863	1.2450	0.0548	0.2042	2961.00	92.80	5.0
Clay Creek	OK621010-01-0090R	2605.00	990.60	0.9170	0.0221	0.0807	0.8814	0.0605	0.1578	5863.00	36.80	4.1
Turkey Creek: Woods Co.	OK621010-01-0230G	78.44	1816.00	0.2570	0.0165	0.0614	0.5290	0.0341	0.1187	2960.00	34.00	2.6
Yellowstone Creek	OK621010-01-0270C	45.56	1650.80	0.1680	0.0165	0.0265	0.3119	0.0702	0.1044	2636.70	113.20	2.7
Sandy Creek	OK621010-02-0010D	93.17	91.89	1.3000	0.0190	0.0442	0.4372	0.0819	0.1437	523.00	39.30	2.5
Medicine Lodge Creek	OK621010-03-0010D	84.02	291.80	0.7650	0.0165	0.0374	0.3594	0.0743	0.1387	789.60	57.10	2.3
Driftwood Creek	OK621010-03-0030C	85.87	710.30	0.4345	0.0395	0.0859	0.5571	0.0754	0.1626	1520.00	61.70	3.2
Chickaskia River: Lower	OK621100-00-0010B	118.90	102.68	1.1070	0.0216	0.0586	0.7439	0.1065	0.2196	592.00	167.40	3.4
Chickaskia Creek: Middle	OK621100-00-0010M	66.84	66.71	1.1800	0.0340	0.0513	0.6590	0.0965	0.2050	443.10	119.00	3.3
Bitter Creek	OK621100-00-0100G	501.60	644.60	0.9750	0.0160	0.0933	0.9452	0.0818	0.1769	2049.00	91.10	3.6
Gray Horse Creek	OK621200-01-0400C	46.25	28.70	0.2165	0.0242	0.0453	0.5379	0.0235	0.0980	279.40	19.80	3.2
Doga Creek	OK621200-02-0020C	13.67	11.80	0.2263	0.0211	0.0564	0.5696	0.0336	0.0962	237.70	29.32	3.4
Black Bear Creek: Lower	OK621200-03-0010D	82.33	22.90	0.5770	0.0325	0.0670	0.8155	0.1187	0.2256	359.50	62.70	3.7
Black Bear Creek (downstream)	OK621200-03-0010M	158.90	30.47	0.7100	0.0355	0.0817	0.9423	0.1589	0.2661	518.80	68.20	3.5
Black Bear Creek (upstream)	OK621200-03-0010W	238.00	39.28	1.2680	0.0395	0.0782	0.8042	0.2733	0.3819	703.70	47.00	3.1
Salt Creek: Lower	OK621200-04-0010F	31.00	15.03	0.2475	0.0270	0.0441	0.4564	0.0248	0.0932	269.00	38.10	3.0
Salt Creek: Upper	OK621200-04-0010P	4.76	10.04	0.2200	0.0230	0.0324	0.4201	0.0245	0.0874	214.80	48.60	3.2
Red Rock Creek	OK621200-05-0010K	93.70	65.50	0.9040	0.0275	0.0937	0.9080	0.1812	0.2982	516.80	86.50	3.7
Red Rock Creek: Upper	OK621200-05-0160G	120.00	89.10	0.6790	0.0290	0.0738	0.9388	0.1608	0.2786	626.10	72.50	4.3
Beaver Creek: Osage Co.	OK621210-00-0050L	7.89	9.25	0.2500	0.0280	0.0395	0.4430	0.0233	0.0949	241.20	28.80	3.6
Chilocco Creek	OK621210-00-0270C	32.55	27.95	0.7300	0.0211	0.1066	0.5792	0.1222	0.1918	346.80	49.80	3.7
Bent Creek	OK720500-01-0070D	37.68	1084.10	0.6945	0.0285	0.0654	0.4328	0.0816	0.1490	1876.90	27.60	2.9
Persimmon Creek	OK720500-01-0150G	48.87	151.83	0.8275	0.0165	0.0299	0.4430	0.0537	0.1183	629.10	33.75	3.2

Site Name	WBID	Chloride (mg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Total OrthoPhos (mg/L)	Total Phosphorus (mg/L)	Total DisSolids (mg/L)	Total SusSolids (mg/L)	CBOD5 (mg/L)
Indian Creek: Woodward Co.	OK720500-01-0200D	171.80	267.82	0.4383	0.0161	0.0388	0.5140	0.0126	0.0506	976.70	13.83	2.7
Otter Creek: Harper Co.	OK720500-02-0050B	207.20	281.40	0.2790	0.0267	0.0973	0.6630	0.0217	0.0691	1042.30	34.80	2.9
Clear Creek: Harper Co.	OK720500-02-0070G	67.61	33.10	1.1235	0.0170	0.0346	0.2790	0.0126	0.0605	404.90	19.45	2.5
Spring Creek	OK720500-02-0100D	29.05	31.01	1.6690	0.0205	0.0375	0.2879	0.0086	0.0493	353.79	13.63	2.6
Kiowa Creek: Harper Co.	OK720500-02-0130C	119.00	64.87	0.5658	0.0268	0.0314	0.3678	0.0182	0.0709	523.90	28.00	2.4
Kiowa Creek: Beaver Co.	OK720500-02-0130K	112.84	64.68	0.8215	0.0175	0.0582	0.6370	0.0599	0.1454	542.00	118.30	3.3
Duck Pond Creek	OK720500-02-0250F	180.52	49.85	0.1260	0.0185	0.0266	0.4162	0.0097	0.0564	602.80	11.05	3.8
Clear Creek: Beaver Co.	OK720500-02-0300F	208.71	198.50	0.0795	0.0160	0.0200	0.3600	0.0177	0.0479	920.80	12.05	2.3
Palo Duro Creek	OK720500-02-0500G	553.20	259.50	0.0840	0.0160	0.0648	0.6510	0.0072	0.0459	1615.30	10.10	3.6
Wolf Creek: Lower	OK720500-03-0010C	147.65	162.50	0.1805	0.0190	0.0422	0.5838	0.0198	0.0810	728.40	33.58	2.9
Wolf Creek: Upper	OK720500-03-0010G	113.40	101.17	0.8138	0.0167	0.0307	0.4820	0.0152	0.0841	588.50	36.24	2.9
Cold Springs Creek	OK720900-00-0100D	187.60	933.80	0.2275	0.0288	0.0733	1.0880	0.0165	0.0808	2206.00	12.00	4.1
Cimarron River: Cimarron Co.	OK720900-00-0180C	71.87	719.80	0.1750	0.0250	0.0536	0.6004	0.0154	0.0777	1525.00	15.75	3.9

Table 9. Geometric Mean of Bacteria Values for Year 2 Monitoring Sites. Values in bold exceed PBCR levels.

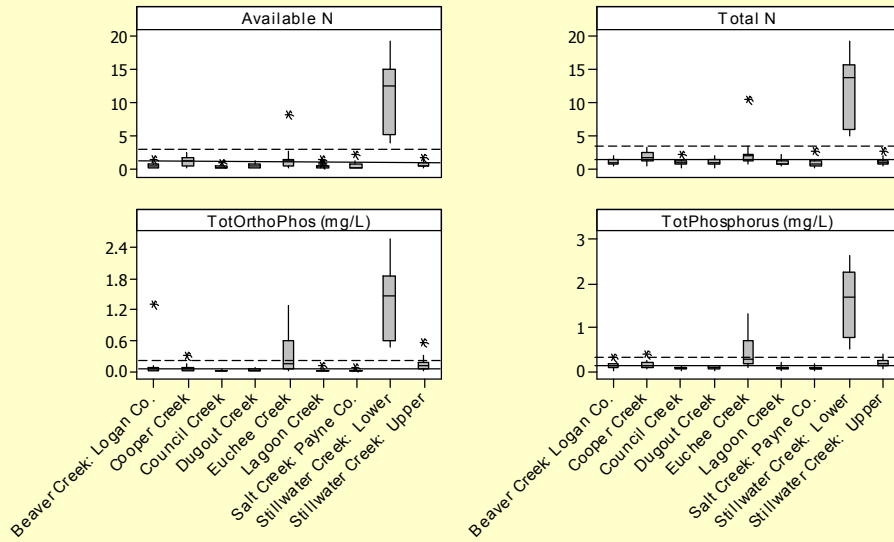
Site	WBID	<i>E. coli</i>	<i>Enterococcus</i>	Site	WBID	<i>E. coli</i>	<i>Enterococcus</i>
Lagoon Creek	OK620900-01-0180J	47.49	44.02	Salt Fork of Arkansas River	OK621010-01-0010D	84.11	98.79
Euchee Creek	OK620900-01-0290D	177.47	109.23	Clay Creek	OK621010-01-0090R	175.21	137.17
Salt Creek: Payne Co.	OK620900-02-0020D	184.77	249.57	Turkey Creek: Woods Co.	OK621010-01-0230G	54.49	77.11
Council Creek	OK620900-02-0050H	175.96	114.44	Yellowstone Creek	OK621010-01-0270C	189.96	128.39
Dugout Creek	OK620900-03-0080C	207.50	173.32	Sandy Creek	OK621010-02-0010D	161.54	212.56
Beaver Creek: Logan Co.	OK620900-03-0230C	65.73	59.42	Medicine Lodge Creek	OK621010-03-0010D	112.01	140.04
Stillwater Creek: Lower	OK620900-04-0040C	244.83	145.04	Driftwood Creek	OK621010-03-0030C	193.21	240.44
Stillwater Creek: Upper	OK620900-04-0070T	233.68	124.63	Chickaskia River: Lower	OK621100-00-0010B	254.48	189.87
Cooper Creek	OK620910-02-0040C	86.85	55.54	Chickaskia Creek: Middle	OK621100-00-0010M	48.54	91.17
Salt Creek: Kingfisher Co.	OK620910-02-0100D	173.57	73.15	Bitter Creek	OK621100-00-0100G	415.19	455.43
Deep Creek	OK620910-02-0250C	103.04	46.10	Gray Horse Creek	OK621200-01-0400C	95.41	88.82
Indian Creek: Major Co.	OK620910-02-0310C	133.42	63.92	Doga Creek	OK621200-02-0020C	252.27	258.45
Skeleton Creek: Lower	OK620910-03-0010F	41.65	43.82	Black Bear Creek: Pawnee Co.	OK621200-03-0010D	148.77	184.54
Skeleton Creek: Upper	OK620910-03-0010S	27.40	45.09	Black Bear Creek (downstream)	OK621200-03-0010M	176.09	138.93
Otter Creek: Logan Co.	OK620910-03-0040C	107.80	165.38	Black Bear Creek (upstream)	OK621200-03-0010W	138.92	166.20
Cottonwood Creek	OK620910-04-0010D	236.30	310.72	Salt Creek: Lower	OK621200-04-0010F	199.43	122.13
Kingfisher Creek	OK620910-05-0010J	38.31	83.87	Salt Creek: Upper	OK621200-04-0010P	32.06	65.52
Uncle John's Creek	OK620910-05-0030C	27.70	278.54	Red Rock Creek	OK621200-05-0010K	86.98	47.19
Dead Indian Creek	OK620910-05-0080D	60.84	99.02	Red Rock Creek: Upper	OK621200-05-0160G	56.68	54.23
Turkey Creek: Lower	OK620910-06-0010B	45.28	99.29	Beaver Creek: Osage Co.	OK621210-00-0050L	26.70	33.69
Turkey Creek: Upper	OK620910-06-0010T	76.82	169.37	Bent Creek	OK720500-01-0070D	181.18	224.85
Griever Creek	OK620920-01-0130G	76.06	73.53	Persimmon Creek	OK720500-01-0150G	194.83	190.66
Main Creek	OK620920-01-0180F	150.18	109.33	Indian Creek: Woodward Co.	OK720500-01-0200D	32.86	41.35
Long Creek	OK620920-02-0080D	173.18	143.58	Otter Creek: Harper Co.	OK720500-02-0050B	39.64	75.88
Eagle Chief Creek: Lower	OK620920-04-0010C	196.22	160.28	Clear Creek: Harper Co.	OK720500-02-0070G	244.92	366.81
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	148.85	77.26	Spring Creek	OK720500-02-0100D	277.94	176.80
Buffalo Creek: Lower	OK620920-05-0010G	183.98	117.08	Kiowa Creek: Harper Co.	OK720500-02-0130C	92.99	163.79
Buffalo Creek: Upper	OK620920-05-0010P	152.88	298.93	Kiowa Creek: Beaver Co.	OK720500-02-0130K	282.34	329.23
Sand Creek	OK620920-05-0050G	168.39	189.29	Duck Pond Creek	OK720500-02-0250F	68.26	70.15
Cimarron River: Beaver Co.	OK620930-00-0010T	248.71	255.86	Clear Creek: Beaver Co.	OK720500-02-0300F	165.21	148.11
Crooked Creek: Beaver Co.	OK620930-00-0100G	111.56	155.43	Palo Duro Creek	OK720500-02-0500G	45.55	133.27
Wild Horse Creek	OK621000-02-0040F	143.76	104.16	Wolf Creek: Lower	OK720500-03-0010C	281.65	220.51
Bois d' Arc	OK621000-03-0010C	117.59	80.71	Wolf Creek: Upper	OK720500-03-0010G	24.20	65.18
Deer Creek	OK621000-04-0010D	211.55	89.34	Cold Springs Creek	OK720900-00-0100D	126.61	68.79
Pond Creek	OK621000-05-0010D	153.18	190.32	Cimarron River: Cimarron Co.	OK720900-00-0180C	77.94	75.17
Crooked Creek: Grant Co.	OK621000-06-0010C	71.48	144.16				

Cold Springs Creek had the highest percentage (67%) of samples with dissolved oxygen below 5.0 mg/l; however, Chilocco Creek had the highest number (10) of samples with low DO (Table 7). All sites exceeded the limit set for Primary Body Contact Recreation (PBCR) for *Enterococcus* with the exception of Beaver Creek (Osage Co.), which had a value right at the limit (Table 9). Beaver Creek (Osage Co.) also had one of the lowest *E. coli* values, along with Wolf Creek (Upper), Skeleton Creek (Upper), and Uncle John's Creek. Bitter Creek had the highest bacteria values of the sites.

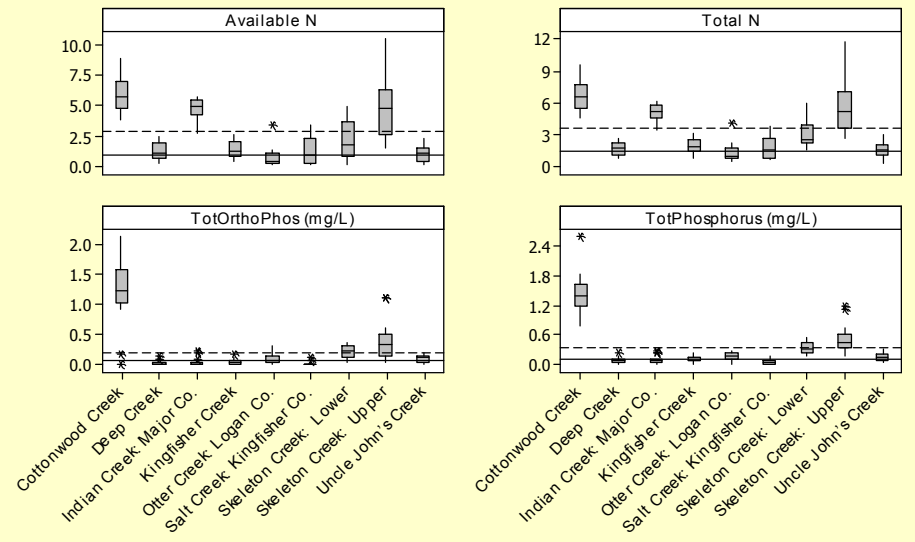
In order to account for natural regional differences in water quality, data from each monitoring site was compared within ecoregions. Additionally, rotating basin data was compared to data collected previously from streams determined to be "high quality" sites in each ecoregion (see Append. E for high quality streams details) to determine general stream condition. Figure 2 shows interquartile range plots for each site for four important indicators of pollution: available nitrogen (ammonia plus nitrate/nitrite), total nitrogen (TKN plus nitrate/nitrite), total orthophosphorous, and total phosphorous. All elevated flow data was omitted. The median of each site is shown by a line within the boxplot, and outliers are denoted by asterisks. The mean of the high quality stream sites in a particular ecoregion is represented by a solid horizontal line, while dashed lines indicate +/- two standard deviations, which encompasses 95% of the high quality site data for each parameter. Most streams did not show median levels of nitrogen or phosphorous outside of the 95% confidence interval relative to the high quality sites. However, Saltwater Creek (Lower), Cottonwood Creek, and Skeleton Creek (Upper) had median values which exceeded the high quality range for all four parameters. Indian Creek (Major Co.) and Eagle Chief Creek (Lower) had high nitrogen levels, while Black Bear Creek (upstream) and Cimarron River (Beaver Co.) had levels of phosphorous and orthophosphorous which exceeded the high quality range. In addition, Cimarron River (Beaver Co.) had high total nitrogen.

Figure 3 shows interquartile range plots for four physical parameters (all elevated flow data excluded): dissolved oxygen (percent saturation), pH, turbidity, and total suspended solids. Cold Springs Creek had a low median for percent DO saturation, but all other physical parameter medians fell within the high quality range.

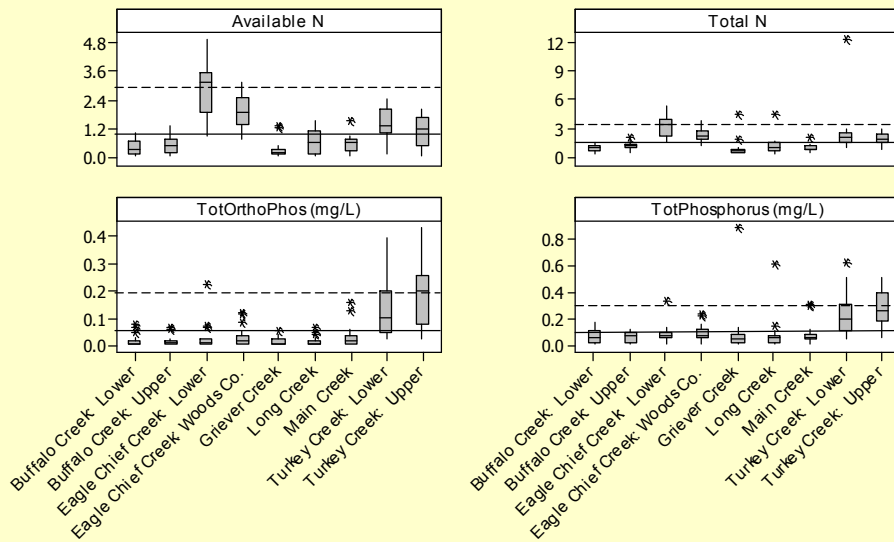
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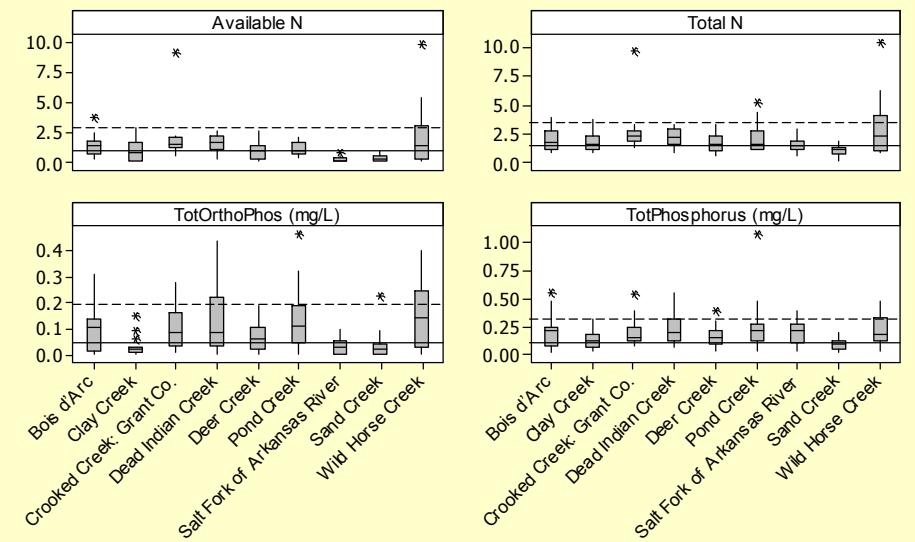
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CENTRAL GREAT PLAINS



CENTRAL GREAT PLAINS



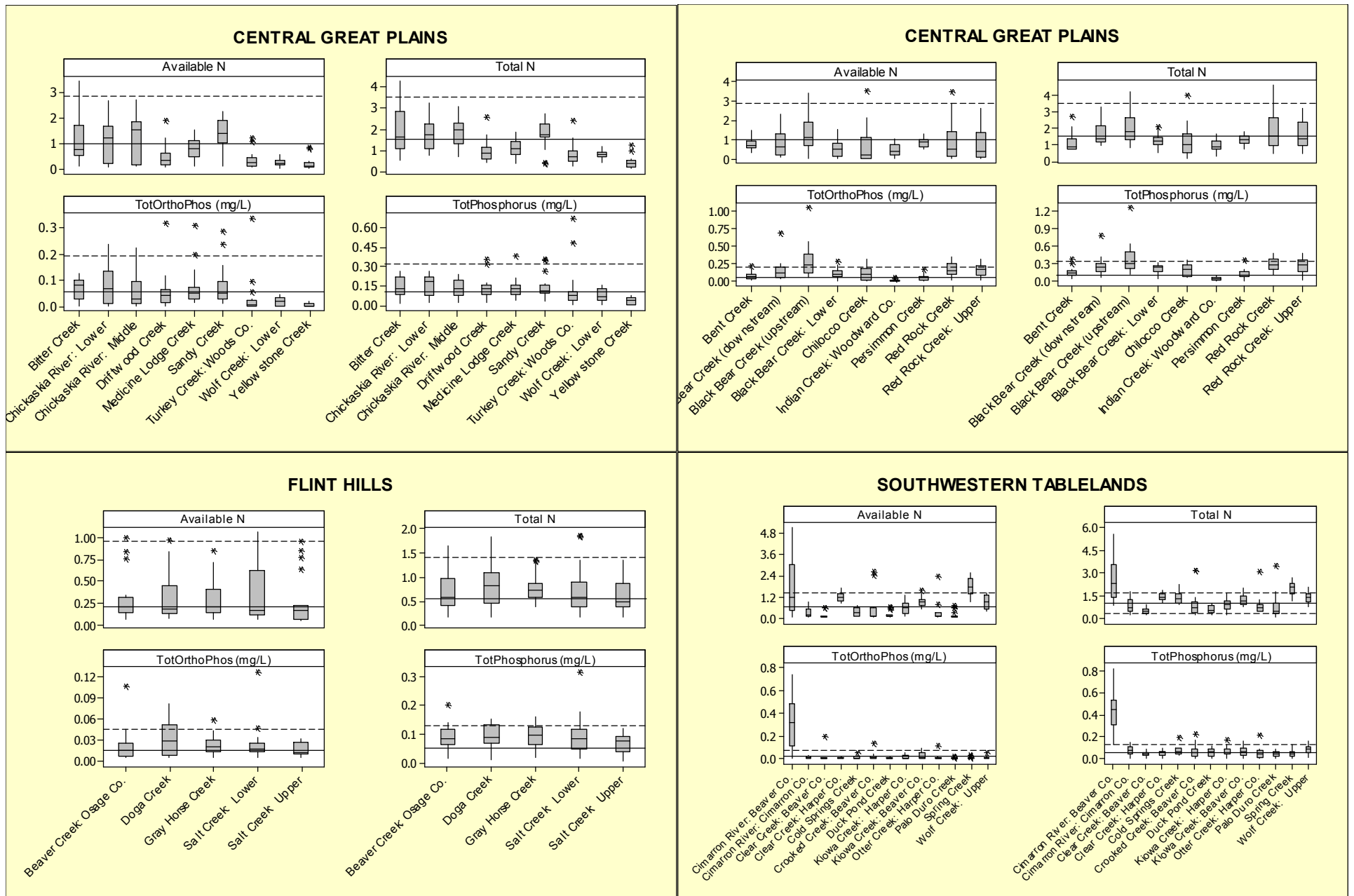
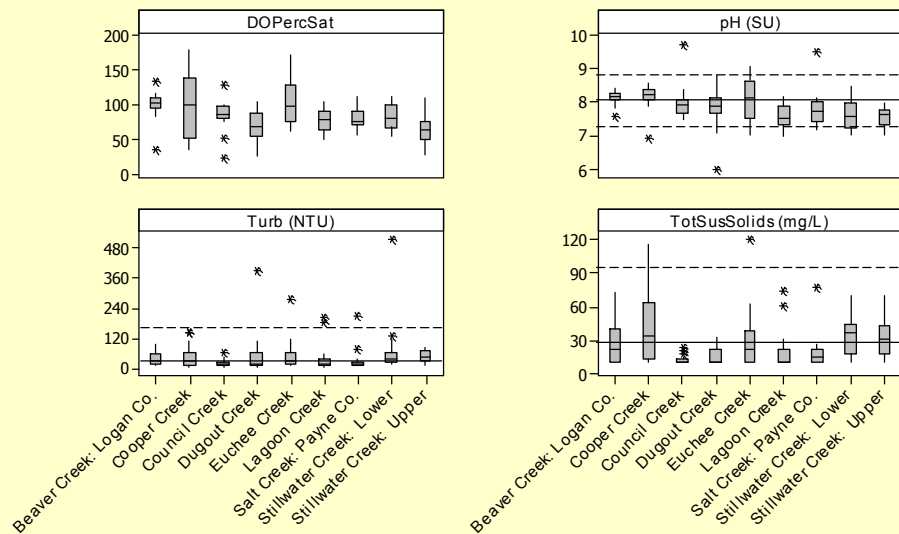
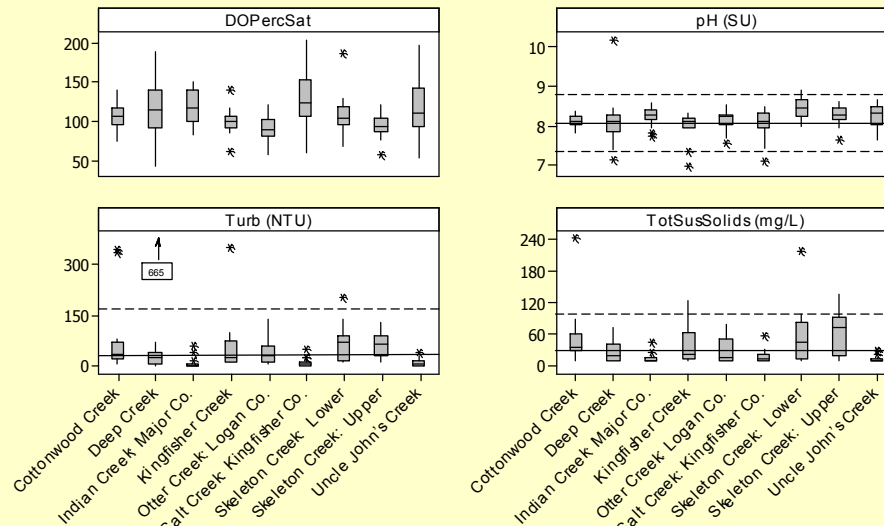


Figure 2. Selected chemical water quality parameters for each site by ecoregion. Solid lines indicate the mean value of high quality sites in each ecoregion; dashed lines represent +/- two standard deviations (if only one dashed line, the lower standard deviation was below zero).

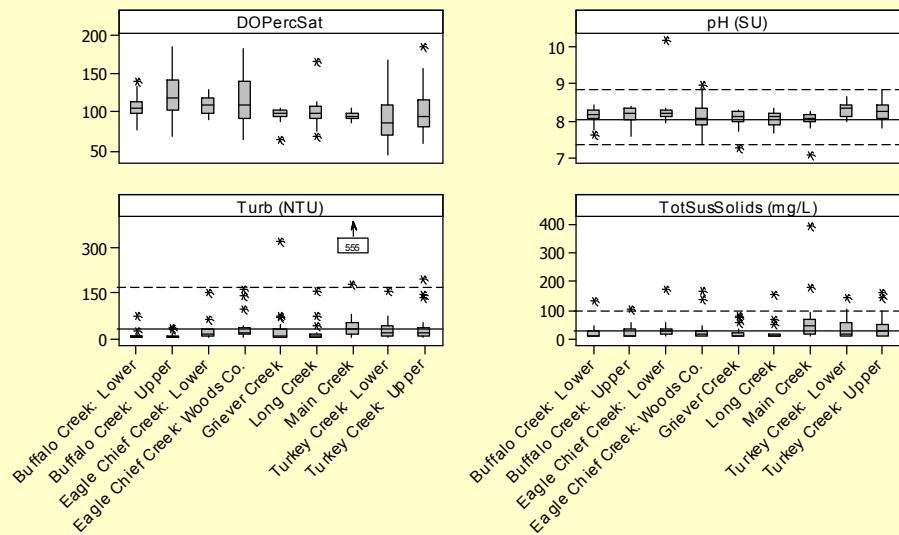
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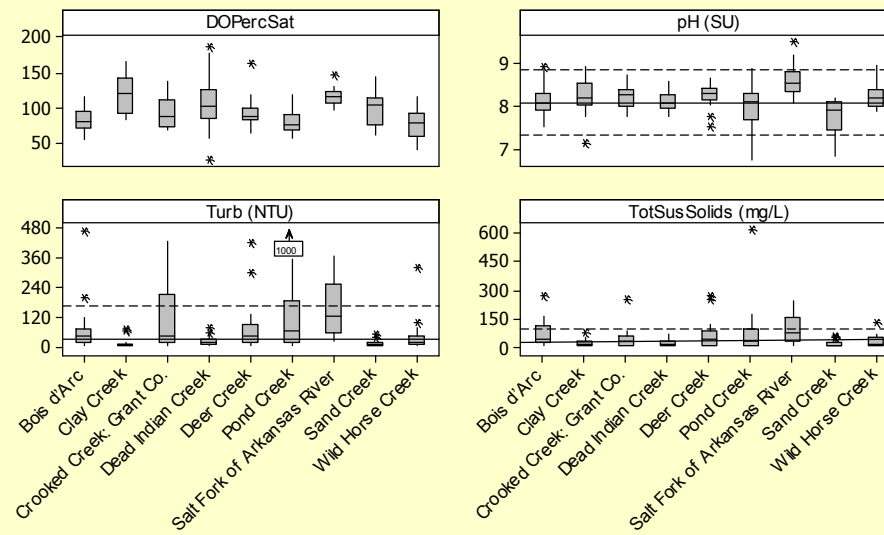
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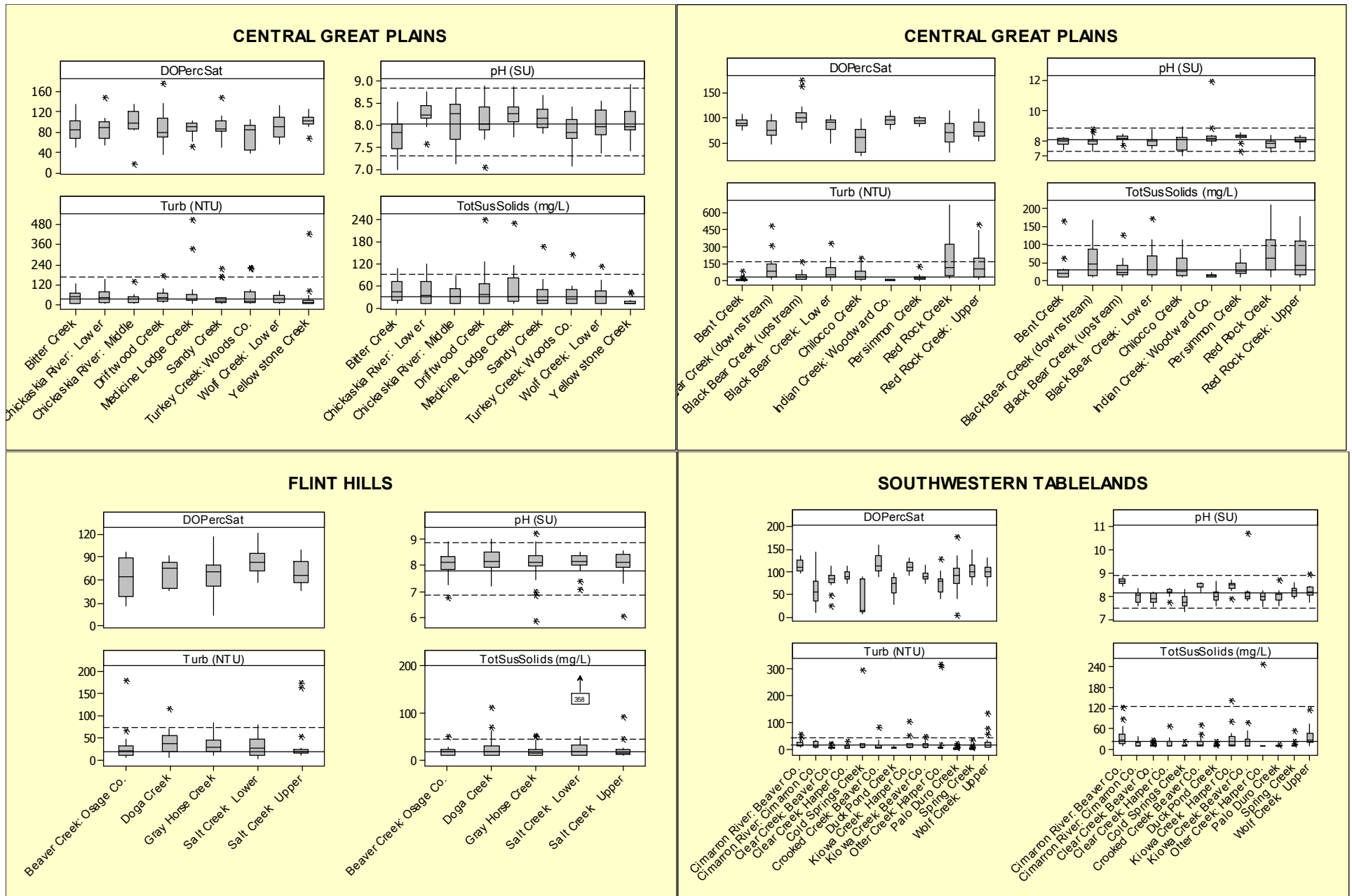


Figure 3. Selected physical water quality parameters for each site by ecoregion. Solid lines indicate the mean value of high quality sites in each ecoregion; dashed lines represent +/- two standard deviations (if only one dashed line, the lower standard deviation was below zero). Numbers within a box represent the values of extreme outliers.

Table 10 shows a comparison between water quality data collected in previous projects and the rotating basin project in order to examine whether water conditions have improved, worsened, or remained the same at a particular site. Many of the rotating basin sites had not been previously monitored; only 14 sites could be compared with past data. One-way ANOVAs were performed for each set of data after all high flow data had been excluded. Only statistically significant differences between the means of each parameter in past projects and the means collected during this project are shown in the table. Level of significance is indicated by p-values, with any $p < 0.05$ denoted by three asterisks (significant) and $p < 0.10$ marked with one asterisk (marginally significant). Only Palo Duro Creek had no significant changes in any parameter. Red Rock Creek only changed in temperature. Bitter Creek had significant increases in three parameters: phosphorous, orthophosphorous, and TKN. Griever Creek seems to have improved significantly since five parameters showed significant decreases. Available nitrogen was the parameter that exhibited the most differences, decreasing significantly over time at six sites.

Table 10. Comparison of water quality data from previous projects to the Rotating Basin Year 2 project (2002-2004).

Site Name	WBID	Parameter	Date of Collection	N	Mean	Standard Deviation	p value	Comments
Lagoon Creek	OK620900-01-0180J	Chloride	1998-2001	16	49.59	50.62	0.059*	increased
			2002-2004	18	84.75	64.50		
Council Creek	OK620900-02-0050H	Alkalinity	1998-2001	17	228.59	71.79	0.001***	decreased
			2002-2004	21	168.29	41.84		
		Hardness	1998-2001	16	339.60	178.10	0.003***	decreased
			2002-2004	20	207.10	52.00		
Sulfate	1998-2001	16	21.37	13.17	0.046***	decreased		
	2002-2004	20	14.88	6.44				
Turkey Creek (Lower)	OK620910-06-0010B	Nitrate/Nitrite	1998-2001	9	2.20	1.08	0.008***	decreased
			2002-2004	19	1.12	0.75		
		Available Nitrogen	1998-2001	9	2.27	1.03	0.016***	decreased
2002-2004	17		1.32	0.69				
Griever Creek	OK620920-01-0130G	Hardness	1998-2001	7	2120.00	534.50	0.027***	decreased
			2002-2004	18	1811.40	291.70		
		Nitrate/Nitrite	1998-2001	7	1.23	0.35	0.000***	decreased
			2002-2004	19	0.25	0.28		
		Available Nitrogen	1998-2001	7	1.26	0.34	0.000***	decreased
			2002-2004	18	0.31	0.36		
		Ortho-phosphorous	1998-2001	7	0.00	0.01	0.056*	decreased
			2002-2004	17	0.02	0.15		
Total Nitrogen	1998-2001	7	1.76	0.76	0.039***	decreased		
	2002-2004	18	0.88	0.94				
Sulfate	1998-2001	7	1945.60	411.60	0.004***	decreased		
	2002-2004	18	1612.20	267.80				
Temperature	1998-2001	10	27.87	7.63	0.000***	decreased		
	2002-2004	18	13.34	8.89				
Buffalo Creek (Lower)	OK620920-05-0010G	Ammonia	1998-2001	18	0.08	0.05	0.003***	decreased
			2002-2004	18	0.03	0.23		
		Hardness	1998-2001	18	2159.70	780.50	0.004***	decreased
			2002-2004	18	1533.00	370.30		
		Nitrate/Nitrite	1998-2001	18	0.74	0.37	0.001***	decreased
			2002-2004	19	0.33	0.56		
		Total Nitrogen	1998-2001	18	1.15	0.47	0.086*	decreased
			2002-2004	18	0.92	2.23		
Total Phosphorous	1998-2001	18	0.03	0.05	0.026***	increased		
	2002-2004	17	0.05	0.24				
Available Nitrogen	1998-2001	18	0.82	0.37	0.000***	decreased		
	2002-2004	18	0.38	0.77				
TKN	1998-2001	16	0.46	0.19	0.056*	increased		
	2002-2004	18	0.57	1.74				

Site Name	WBID	Parameter	Date of Collection	N	Mean	Standard Deviation	p value	Comments
Turkey Creek: Woods Co.	OK621010-01-0230G	Chloride	1998-2001	19	93.88	17.11	0.039***	decreased
			2002-2004	17	80.79	22.62		
		Nitrate/Nitrite	1998-2001	20	0.76	0.38	0.000***	decreased
			2002-2004	21	0.26	0.26		
		Total Nitrogen	1998-2001	19	1.20	0.50	0.009***	decreased
			2002-2004	17	0.74	0.49		
Available Nitrogen	1998-2001	19	0.87	0.38	0.000**	decreased		
	2002-2004	17	0.30	0.31				
Hardness	1998-2001	20	2350.10	487.50	0.015***	decreased		
	2002-2004	20	1956.90	493.40				
Bitter Creek	OK621100-00-0100G	Hardness	1998-2001	17	1687.40	596.00	0.005***	decreased
			2002-2004	18	1295.10	469.50		
		Total Nitrogen	1998-2001	17	1.20	1.09	0.013***	decreased
			2002-2004	18	1.88	0.99		
		Ortho-phosphorous	1998-2001	17	0.04	0.07	0.052*	increased
			2002-2004	18	0.07	0.05		
		Total Phosphorous	1998-2001	17	0.10	0.30	0.055*	increased
			2002-2004	18	0.14	0.13		
Sulfate	1998-2001	17	1083.40	367.90	0.000***	decreased		
	2002-2004	18	705.00	301.10				
TKN	1998-2001	14	0.47	0.91	0.000***	increased		
	2002-2004	18	0.86	0.44				
Red Rock Creek	OK621200-05-0010K	Alkalinity	1998-2001	8	319.25	103.00	0.011***	decreased
			2002-2004	17	216.65	99.10		
Temperature	1998-2001	8	27.51	4.60	0.005***	decreased		
	2002-2004	17	16.37	9.50				
Persimmon Creek	OK720500-01-0150G	Ammonia	1998-2001	18	0.08	0.12	0.010***	decreased
			2002-2004	20	0.03	0.03		
		Chloride	1998-2001	18	56.10	29.21	0.039***	increased
			2002-2004	20	93.72	68.71		
		Hardness	1998-2001	18	420.13	66.84	0.015***	decreased
			2002-2004	20	380.07	30.84		
		Nitrate/Nitrite	1998-2001	18	1.01	0.33	0.04***	decreased
			2002-2004	21	0.80	0.29		
Total Nitrogen	1998-2001	18	1.49	0.50	0.086*	decreased		
	2002-2004	20	1.29	0.29				
Available Nitrogen	1998-2001	18	1.10	0.37	0.03***	decreased		
	2002-2004	20	0.87	0.23				
TKN	1998-2001	15	0.57	0.45	0.08*	decreased		
	2002-2004	20	0.44	0.17				
Clear Creek: Harper Co.	OK720500-02-0070G	Ammonia	1998-2001	20	0.04	0.02	0.007***	decreased
			2002-2004	19	0.02	0.06		
Ortho-phosphorous	1998-2001	20	0.02	0.02	0.085*	increased		
	2002-2004	19	0.01	0.01				
Kiowa Creek: Harper Co.	OK720500-02-0130C	Ammonia	1998-2001	17	0.04	0.05	0.028***	decreased
			2002-2004	17	0.02	0.03		
		Hardness	1998-2001	17	307.57	47.47	0.011***	decreased
2002-2004	17		281.22	27.21				
pH	1998-2001	22	8.18	0.40	0.035***	increased		
	2002-2004	20	8.39	0.18				
Kiowa Creek: Beaver Co.	OK720500-02-0130K	Chloride	1998-2001	19	137.88	17.10	0.007***	decreased
			2002-2004	19	118.39	36.08		
Hardness	1998-2001	20	330.71	51.37	0.058*	decreased		
	2002-2004	19	303.83	63.72				
Wolf Creek (Upper)	OK720500-03-0010G	Ammonia	1998-2001	15	0.05	0.07	0.003***	decreased
			2002-2004	18	0.02	0.04		
		Available Nitrogen	1998-2001	17	1.11	0.40	0.094*	decreased
2002-2004	19		0.87	0.37				

3.2 BIOLOGICAL MONITORING

3.2.1 Habitat Assessment

Total habitat scores for each site and computed metric scores are listed below (Table 11). The highest habitat score possible is 180, which represents the best habitat. Lagoon Creek had the highest habitat score of all the sites, followed closely by Black Bear Creek (Lower). Cold Springs Creek had the lowest habitat score. Sites were compared relative to the mean habitat score of high quality sites in the respective ecoregions in Figure 4. Deep Creek, Crooked Creek (Grant Co.), and Driftwood Creek had scores which were below two standard deviations of the high quality sites' mean for the Great Central Plains ecoregion, indicating a significant difference from the mean high quality site value in that ecoregion. In the Southwestern Tablelands ecoregion, only Cold Springs Creek had a score which was lower than two standard deviations of the high quality sites. None of the sites in the Flint Hills ecoregion fell below two standard deviations of the high quality sites for total habitat score. Sites with scores that are within +/- two standard deviations of the mean of the high quality sites do not necessarily have "reference" conditions; rather, sites outside of these values have either extremely good or extremely poor conditions which merit further investigation. Low habitat scores could be the result of anthropogenic activities or could be naturally occurring. The potential impact of good or poor habitat on the biological community at each site is discussed in Section 3.2.4.

Table 11. Habitat assessment values for monitoring sites in the Rotating Basin Project Year 2.

Site Name	WBID	Instream Cover	Pool Bottom Substrate	Pool Variability	Canopy Cover Shading	Rocky Runs or Riffles	Flow	Channel Alteration	Channel Sinuosity	Bank Stability	Bank Vegetative Stability	Streamside Cover	Total Habitat Score
Lagoon Creek	OK620900-01-0180J	7.5	9.3	18.0	11.0	10.3	11.0	8.7	3.2	9.0	4.4	9.3	102.0
Euchee Creek	OK620900-01-0290D	1.8	2.3	14.0	14.4	0.0	15.0	11.1	2.1	7.0	3.7	9.3	80.6
Salt Creek: Payne Co.	OK620900-02-0020D	3.3	6.2	14.0	15.0	2.2	2.6	9.9	0.7	8.0	5.9	10.0	78.1
Council Creek	OK620900-02-0050H	1.4	3.4	0.0	17.7	0.0	8.8	0.4	0.8	7.0	4.0	9.9	53.3
Dugout Creek	OK620900-03-0080C	1.2	0.4	11.0	19.4	0.0	12.0	0.7	0.6	10.0	4.5	8.8	68.5
Beaver Creek: Logan Co.	OK620900-03-0230C	6.0	3.9	15.0	2.3	2.2	2.9	13.7	3.8	9.0	5.1	5.0	69.2
Stillwater Creek: Lower	OK620900-04-0040C	2.3	0.4	0.0	8.4	4.1	15.0	15.1	3.0	10.0	4.4	10.0	72.4
Stillwater Creek: Upper	OK620900-04-0070T	4.9	1.0	16.0	19.8	0.0	1.2	15.1	2.4	7.0	2.7	8.7	78.7
Cooper Creek	OK620910-02-0040C	1.8	2.3	19.0	5.2	0.0	9.5	12.3	3.2	10.0	4.9	10.0	78.5
Salt Creek: Kingfisher Co.	OK620910-02-0100D	1.7	3.8	0.0	4.2	0.0	17.0	0.4	0.1	9.0	4.4	9.9	50.2
Deep Creek	OK620910-02-0250C	0.9	0.7	0.0	3.0	0.0	11.0	5.8	0.2	5.0	3.9	9.9	40.7
Indian Creek: Major Co.	OK620910-02-0310C	1.2	2.7	0.0	8.7	0.0	15.0	0.4	0.8	10.0	5.6	9.9	54.3
Skeleton Creek: Lower	OK620910-03-0010F	17.7	5.2	15.0	0.5	15.2	14.0	12.3	2.0	9.0	6.0	5.0	101
Skeleton Creek: Upper	OK620910-03-0010S	2.1	3.2	19.0	1.6	4.1	16.0	11.1	1.6	8.0	4.9	5.0	75.7
Otter Creek: Logan Co.	OK620910-03-0040C	5.6	5.5	19.0	1.4	7.5	2.0	9.9	0.8	6.0	4.4	5.0	67.2
Cottonwood Creek	OK620910-04-0010D	1.6	0.6	15.0	4.6	0.0	20.0	6.7	6.5	10.0	4.1	4.6	72.8
Kingfisher Creek	OK620910-05-0010J	4.3	3.5	7.7	13.0	2.2	18.0	1.8	1.6	6.0	2.4	10.0	70.0
Uncle John's Creek	OK620910-05-0030C	3.1	1.4	0.0	7.3	7.5	14.0	0.4	3.2	10.0	4.1	10.0	61.0
Dead Indian Creek	OK620910-05-0080D	2.7	1.8	0.0	16.5	5.9	5.8	11.1	2.4	10.0	3.8	9.9	69.4
Turkey Creek: Lower	OK620910-06-0010B	4.6	1.9	15.0	3.4	0.0	19.0	0.5	1.6	10.0	2.4	5.0	63.1
Turkey Creek: Upper	OK620910-06-0010T	0.7	3.8	0.0	10.9	0.0	15.0	1.8	0.1	10.0	3.6	9.2	55.2
Griever Creek	OK620920-01-0130G	0.6	1.1	15.0	9.3	0.0	3.4	11.1	2.4	7.0	3.6	9.9	63.8
Main Creek	OK620920-01-0180F	2.2	0.4	0.0	11.1	0.0	16.0	3.5	0.8	10.0	2.7	3.2	49.2
Long Creek	OK620920-02-0080D	1.2	2.4	0.0	2.5	7.5	3.5	1.4	5.4	7.0	3.0	10.0	44.2
Eagle Chief Creek: Lower	OK620920-04-0010C	2.1	0.9	15.0	9.0	0.0	20.0	0.7	0.1	10.0	1.8	9.1	67.8

Site Name	WBID	Instream Cover	Pool Bottom Substrate	Pool Variability	Canopy Cover Shading	Rocky Runs or Riffles	Flow	Channel Alteration	Channel Sinuosity	Bank Stability	Bank Vegetative Stability	Streamside Cover	Total Habitat Score
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	1.4	5.5	0.0	6.6	5.9	15.0	1.0	0.1	9.0	3.3	9.5	57.3
Buffalo Creek: Lower	OK620920-05-0010G	0.9	4.6	0.0	0.9	0.0	13.0	5.8	4.7	10.0	2.5	10.0	52.4
Buffalo Creek: Upper	OK620920-05-0010P	5.4	0.8	0.0	3.1	0.0	12.0	0.5	1.6	10.0	2.4	8.7	44.1
Sand Creek	OK620920-05-0050G	8.8	4.5	15.0	13.6	0.0	1.0	16.5	2.4	10.0	4.6	5.0	81.4
Cimarron River: Beaver Co.	OK620930-00-0010T	1.7	0.4	0.0	0.5	0.0	20.0	0.5	0.1	10.0	4.6	4.2	41.8
Crooked Creek: Beaver Co.	OK620930-00-0100G	6.1	0.4	0.0	6.0	0.0	8.8	15.1	0.8	10.0	3.4	10.0	60.1
Wild Horse Creek	OK621000-02-0040F	0.7	0.6	18.0	9.8	2.2	11.0	6.7	2.7	5.0	1.1	6.8	64.9
Bois d' Arc	OK621000-03-0010C	3.5	2.0	20.0	10.7	4.1	14.0	5.8	1.4	6.0	5.0	8.8	81.5
Deer Creek	OK621000-04-0010D	1.7	0.7	13.0	1.2	4.1	2.2	5.0	1.8	7.0	1.9	4.4	43.5
Pond Creek	OK621000-05-0010D	4.5	1.4	15.0	4.6	0.0	9.8	15.1	0.3	8.0	3.4	3.4	65.3
Crooked Creek: Grant Co.	OK621000-06-0010C	1.2	0.8	20.0	2.3	0.0	4.5	0.5	1.0	4.0	2.1	4.8	40.8
Salt Fk of Arkansas R	OK621010-01-0010D	1.0	0.4	0.0	0.0	16.2	20.0	16.5	0.1	10.0	2.6	10.0	76.2
Clay Creek	OK621010-01-0090R	1.2	0.8	17.0	6.8	2.2	2.6	5.8	0.2	6.0	1.5	9.9	54.2
Turkey Creek: Woods Co.	OK621010-01-0230G	2.5	2.2	5.5	20.0	2.2	0.6	6.7	0.8	7.0	2.7	8.8	59.1
Yellowstone Creek	OK621010-01-0270C	2.4	6.2	0.0	3.7	11.4	4.6	1.4	0.5	10.0	3.3	9.5	52.9
Sandy Creek	OK621010-02-0010D	2.1	0.4	15.0	9.1	0.0	5.0	0.7	2.1	7.0	3.1	5.6	50.1
Medicine Lodge Creek	OK621010-03-0010D	1.4	2.2	0.0	8.9	0.0	20.0	5.0	0.7	7.0	2.2	7.8	55.0
Driftwood Creek	OK621010-03-0030C	1.0	0.7	3.0	4.3	0.0	1.2	6.7	1.1	8.0	1.7	3.6	31.3
Chickaskia River: Lower	OK621100-00-0010B	0.4	0.6	15.0	0.0	0.0	20.0	0.5	0.0	7.0	1.8	9.5	54.1
Chickaskia Creek: Middle	OK621100-00-0010M	3.8	1.8	13.0	5.7	0.0	20.0	0.7	0.1	9.0	3.8	9.7	68.0
Bitter Creek	OK621100-00-0100G	3.7	3.1	14.0	11.8	0.0	14.0	16.5	3.2	6.0	2.0	8.7	82.7
Gray Horse Creek	OK621200-01-0400C	8.4	12.0	19.0	19.1	9.0	0.8	9.9	0.2	6.0	3.1	8.5	96.5
Doga Creek	OK621200-02-0020C	3.0	3.4	17.0	16.1	0.0	0.6	16.5	1.8	5.0	2.7	8.8	75.4
Black Bear Creek: Lower	OK621200-03-0010D	13.6	10.8	16.0	11.8	7.5	10.0	11.1	0.8	10.0	4.5	5.0	101.0
Black Bear Creek (downstream)	OK621200-03-0010M	3.8	2.9	15.0	14.4	2.2	19.0	12.3	4.0	10.0	3.2	9.3	95.6
Black Bear Creek (upstream)	OK621200-03-0010W	2.4	0.4	0.0	9.7	5.9	18.0	2.3	0.8	10.0	3.8	8.9	61.8
Salt Creek: Lower	OK621200-04-0010F	8.7	14.9	15.0	8.9	5.9	3.3	11.1	1.1	5.0	3.6	9.1	87.3
Salt Creek: Upper	OK621200-04-0010P	9.6	10.3	15.0	7.0	0.0	0.0	6.7	0.1	10.0	6.0	4.0	68.0
Red Rock Creek	OK621200-05-0010K	8.3	6.1	9.9	0.7	0.0	0.0	9.9	0.8	8.0	6.5	3.2	53.3
Red Rock Creek: Upper	OK621200-05-0160G	6.4	4.5	17.0	9.3	5.9	16.0	5.8	3.2	9.0	4.9	8.9	90.1
Beaver Creek: Osage Co.	OK621210-00-0050L	3.0	7.9	15.0	9.6	0.0	11.0	16.5	0.9	5.0	2.0	10.0	80.4
Bent Creek	OK720500-01-0070D	2.7	2.0	0.0	20.0	0.0	5.7	0.4	0.1	6.0	1.9	4.6	43.6
Persimmon Creek	OK720500-01-0150G	3.0	1.4	0.0	12.3	0.0	19.0	2.8	2.4	10.0	3.1	8.7	62.4
Indian Creek: Woodward Co.	OK720500-01-0200D	2.6	0.4	0.0	4.6	0.0	15.0	0.4	3.2	9.0	2.3	9.5	47.0
Otter Creek: Harper Co.	OK720500-02-0050B	2.5	2.0	0.0	0.5	0.0	2.3	16.5	0.8	10.0	5.3	3.6	43.5
Clear Creek: Harper Co.	OK720500-02-0070G	15.5	0.4	0.0	16.3	0.0	15.0	16.5	0.8	10.0	5.0	10.0	89.5
Spring Creek	OK720500-02-0100D	5.6	0.4	0.0	12.2	0.0	3.2	16.5	0.8	10.0	5.2	8.7	62.6
Kiowa Creek: Harper Co.	OK720500-02-0130C	2.3	0.4	0.0	12.2	0.0	17.0	12.3	1.6	10.0	3.1	9.3	68.3
Kiowa Creek: Beaver Co.	OK720500-02-0130K	2.7	4.3	20.0	3.1	7.5	16.0	2.8	2.4	9.0	3.0	9.9	80.6
Duck Pond Creek	OK720500-02-0250F	1.9	2.4	14.0	0.1	0.0	0.6	15.1	1.6	10.0	5.3	5.0	55.5
Clear Creek: Beaver Co.	OK720500-02-0300F	4.1	5.3	14.0	6.0	0.0	7.6	16.5	0.8	10.0	3.0	8.9	75.7
Palo Duro Creek	OK720500-02-0500G	10.1	3.5	13.0	6.3	0.0	0.5	16.5	0.8	10.0	3.6	10.0	74.7
Wolf Creek: Lower	OK720500-03-0010C	2.1	3.4	15.0	3.6	2.2	10.0	1.4	1.6	10.0	2.9	9.3	61.5
Wolf Creek: Upper	OK720500-03-0010G	3.9	0.4	0.0	3.1	0.0	20.0	4.2	0.8	10.0	4.8	9.9	57.1
Cold Springs Creek	OK720900-00-0100D	0.1	0.4	0.0	0.0	0.0	0.0	16.5	0.1	0.0	2.6	3.8	23.3
Cimarron River: Cimarron Co.	OK720900-00-0180C	6.4	13.5	8.3	2.9	0.0	0.0	16.5	0.1	10.0	3.9	9.7	71.1

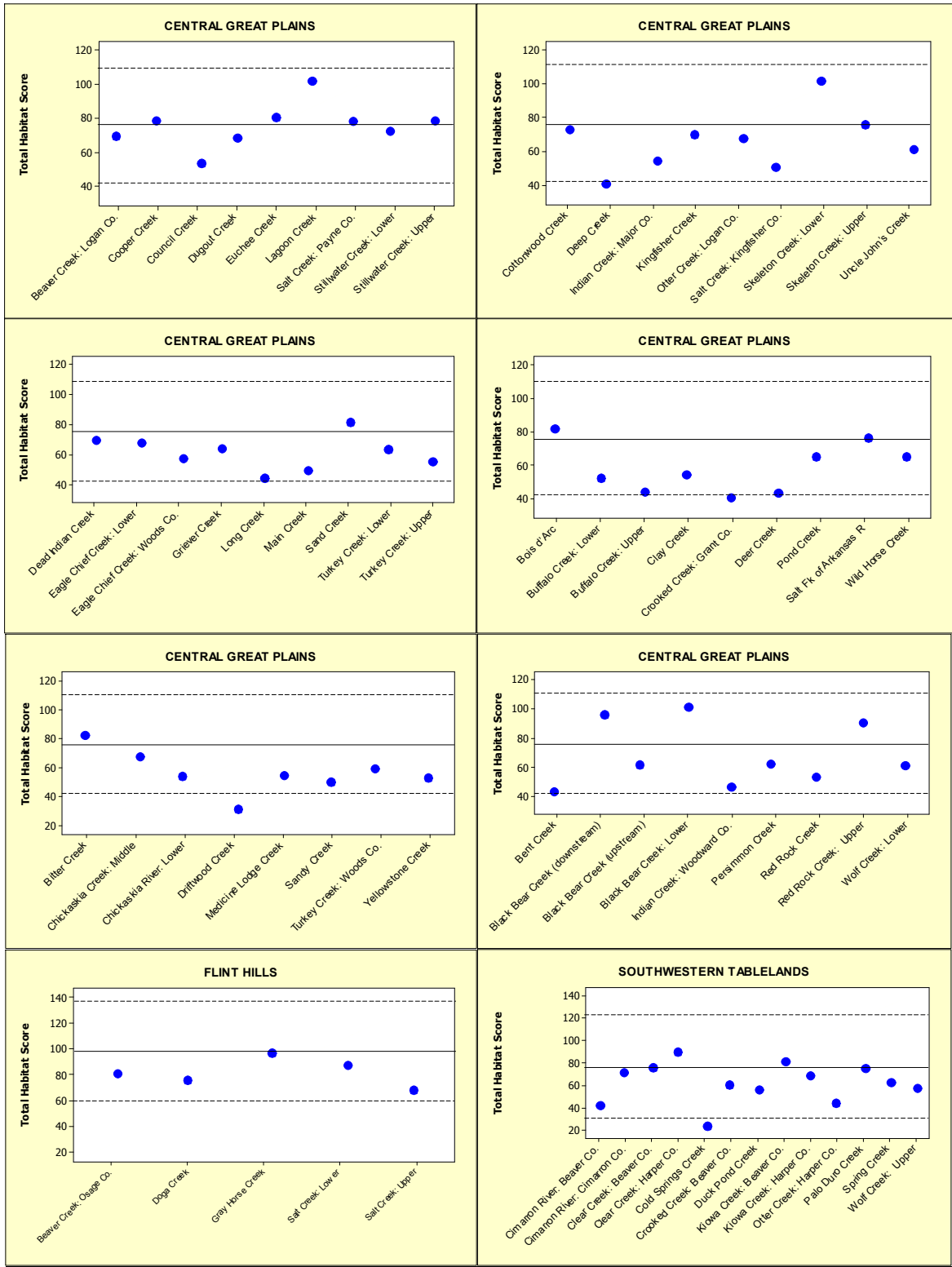


Figure 4. Habitat score for each site by ecoregion. Solid lines indicate the mean value of high quality sites in each ecoregion; dashed lines represent +/- two standard deviations so that any value outside of the dashed lines is significantly different than the mean of the high quality sites (p<0.05).

3.2.2 Fish Collections

Fish metrics used to compute IBI scores for the Year 2 Rotating Basin sites using the OCC method, as described in Section 2.2.2, are listed in Table 12. For a complete listing of fish data, including species and numbers caught, consult Appendix B. Table 13 presents the results of fish assessment based on the OCC's modified RBP method compared with the fish assessment based on Oklahoma state biocriteria (as described in Oklahoma Water Resource Board, *Implementation of Oklahoma's Water Quality Standards, Subchapter 15: Use Support Assessment Protocols (USAP)*, OAC 785:46-15).

Table 12. Fish metrics for calculation of IBI scores (EPA RBP method) for Rotating Basin Year 2 monitoring sites.

SiteName	WBID	Ecoregion	modified ecoregion	Total Individuals	Total Sp.	No. Darter Sp.	No. Sunfish Sp.	No. Round Bodied Suckers	No. intolerant Sp.	Proportion Tolerant Individuals	Proportion Omnivorous Individuals	Proportion Insect. Cyprinid Individuals	Proportion Top Carnivores
Lagoon Creek	OK620900-01-0180J	CT	CGP	210	13	1	5	0	1	81.43	35.24	5.24	0.95
Euchee Creek	OK620900-01-0290D	CGP	CGP	671	15	0	7	0	1	98.51	81.97	1.19	1.04
Salt Creek: Payne Co.	OK620900-02-0020D	CGP	CGP	1087	13	0	2	0	0	65.23	0.46	2.94	0.09
Council Creek	OK620900-02-0050H	CGP	CGP	235	14	0	5	0	1	84.26	50.21	12.77	1.70
Dugout Creek	OK620900-03-0080C	CGP	CGP	949	16	0	6	0	1	98.42	91.25	1.58	1.37
Beaver Creek: Logan Co.	OK620900-03-0230C	CGP	CGP	304	13	0	3	0	0	88.82	27.30	13.82	3.29
Stillwater Creek: Lower	OK620900-04-0040C	CGP	CGP	283	17	1	4	0	0	97.53	39.22	21.20	2.47
Stillwater Creek: Upper	OK620900-04-0070T	CGP	CGP	312	18	0	5	0	1	99.36	37.18	0.32	3.85
Cooper Creek	OK620910-02-0040C	CGP	CGP	1208	16	0	3	0	1	92.80	76.08	19.45	0.41
Salt Creek: Kingfisher Co.	OK620910-02-0100D	CGP	CGP	674	29	3	7	0	2	67.36	46.88	13.80	6.53
Deep Creek	OK620910-02-0250C	CGP	CGP	1555	17	0	5	0	1	97.04	67.65	22.25	3.54
Indian Creek: Major Co.	OK620910-02-0310C	CGP	CGP	501	10	0	1	0	0	75.25	13.77	71.46	0.40
Skeleton Creek: Lower	OK620910-03-0010F	CGP	CGP	490	15	0	3	0	0	97.55	63.47	23.88	4.29
Skeleton Creek: Upper	OK620910-03-0010S	CGP	CGP	597	16	0	3	0	0	93.30	63.82	23.12	3.18
Otter Creek: Logan Co.	OK620910-03-0040C	CGP	CGP	1043	21	1	5	0	1	93.48	67.79	7.48	3.93
Cottonwood Creek	OK620910-04-0010D	CGP	CGP	224	12	0	2	0	0	100.00	73.21	11.61	2.68
Kingfisher Creek	OK620910-05-0010J	CGP	CGP	665	12	1	2	0	1	96.84	90.23	4.81	1.20
Uncle John's Creek	OK620910-05-0030C	CGP	CGP	1134	11	0	2	0	1	86.86	79.89	13.14	2.03
Dead Indian Creek	OK620910-05-0080D	CGP	CGP	1635	13	0	3	0	1	70.03	62.87	29.97	0.37
Turkey Creek: Lower	OK620910-06-0010B	CGP	CGP	400	14	0	5	0	0	100.00	48.50	1.50	1.25
Turkey Creek: Upper	OK620910-06-0010T	CGP	CGP	1217	14	0	3	0	1	56.86	53.25	43.14	0.90
Griever Creek	OK620920-01-0130G	CGP	CGP	377	11	0	5	0	1	72.15	52.52	27.85	0.27
Main Creek	OK620920-01-0180F	CGP	CGP	204	10	0	1	0	1	63.73	18.14	41.67	0.00
Long Creek	OK620920-02-0080D	CGP	CGP	440	12	0	3	0	1	49.09	13.41	42.50	1.59
Eagle Chief Creek: Lower	OK620920-04-0010C	CGP	CGP	397	14	0	3	0	1	96.22	70.28	11.08	0.50
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	CGP	CGP	518	14	0	3	0	1	55.98	36.49	52.70	6.76
Buffalo Creek: Lower	OK620920-05-0010G	CGP	CGP	1212	26	0	4	0	2	57.10	25.83	43.32	2.72
Buffalo Creek: Upper	OK620920-05-0010P	CGP	CGP	624	10	0	0	0	1	64.10	25.96	35.42	0.00
Sand Creek	OK620920-05-0050G	CGP	CGP	202	7	0	5	0	0	100.00	7.43	0.00	2.97
Cimarron River: Beaver Co.	OK620930-00-0010T	SWT	SWT	1783	17	1	5	0	2	63.32	31.30	38.87	0.50
Crooked Creek: Beaver Co.	OK620930-00-0100G	SWT	SWT	616	8	1	0	0	2	86.85	4.06	12.01	0.00
Wild Horse Creek	OK621000-02-0040F	CGP	CGP	210	11	0	3	0	1	93.33	36.19	4.76	0.48
Bois d'Arc	OK621000-03-0010C	CGP	CGP	52	7	0	2	0	0	100.00	3.85	0.00	32.69
Deer Creek	OK621000-04-0010D	CGP	CGP	1364	18	2	5	1	1	89.74	68.84	9.31	1.83
Pond Creek	OK621000-05-0010D	CGP	CGP	233	12	0	2	0	0	31.33	5.58	68.67	3.00
Crooked Creek: Grant Co.	OK621000-06-0010C	CGP	CGP	255	18	1	2	0	1	84.31	50.98	14.51	2.75
Salt Fork of Arkansas River	OK621010-01-0010D	CGP	CGP	375	7	0	0	0	0	99.73	98.67	0.00	0.00
Clay Creek	OK621010-01-0090R	CGP	CGP	330	8	0	1	0	0	86.36	15.45	13.64	0.00
Turkey Creek: Woods Co.	OK621010-01-0230G	CGP	CGP	231	11	0	3	0	1	66.23	43.72	31.17	1.30

SiteName	WBID	Ecoregion	modified ecoregion	Total Individuals	Total Spp.	No. Darter Spp.	No. Sunfish Spp.	No. Round Bodied Suckers	No. intolerant Spp.	Proportion Tolerant Individuals	Proportion Omnivorous Individuals	Proportion Insect. Cyprinid Individuals	Proportion Top Carnivores
Yellowstone Creek	OK621010-01-0270C	CGP	CGP	1040	11	0	3	0	1	48.46	24.62	44.81	0.96
Sandy Creek	OK621010-02-0010D	CGP	CGP	733	8	0	2	0	0	82.13	49.52	17.87	0.14
Medicine Lodge Creek	OK621010-03-0010D	CGP	CGP	787	9	0	0	0	1	86.66	73.32	18.17	1.14
Driftwood Creek	OK621010-03-0030C	CGP	CGP	808	17	0	4	0	1	68.94	51.61	31.44	2.10
Chickaskia River: Lower	OK621100-00-0010B	CGP	CGP	366	18	0	3	1	0	96.17	59.84	20.49	14.75
Chickaskia Creek: Middle	OK621100-00-0010M	CGP	CGP	611	20	0	4	0	1	93.13	64.48	6.87	19.15
Bitter Creek	OK621100-00-0100G	CGP	FH	361	12	0	1	0	0	99.17	58.17	0.00	1.11
Gray Horse Creek	OK621200-01-0400C	CGP	FH	237	17	3	4	0	2	56.54	14.77	6.75	5.91
Doga Creek	OK621200-02-0020C	CGP	CGP	565	24	0	6	0	1	79.65	21.95	4.07	6.90
Black Bear Creek: Lower	OK621200-03-0010D	CGP	CGP	422	18	1	4	0	1	86.73	49.76	4.50	15.88
Black Bear Creek (downstream)	OK621200-03-0010M	CGP	CGP	168	13	1	2	0	0	88.69	67.86	10.71	10.71
Black Bear Creek (upstream)	OK621200-03-0010W	CGP	CGP	1032	12	1	4	0	1	98.84	96.71	0.97	0.48
Salt Creek: Lower	OK621200-04-0010F	FH	FH	244	24	3	7	0	1	61.48	12.70	8.61	8.61
Salt Creek: Upper	OK621200-04-0010P	FH	FH	143	16	0	6	0	1	62.94	23.08	0.70	4.90
Red Rock Creek	OK621200-05-0010K	CGP	CGP	226	14	1	5	0	1	83.19	15.93	13.72	16.37
Red Rock Creek: Upper	OK621200-05-0160G	CGP	CGP	384	9	1	4	0	1	97.40	66.93	1.30	1.82
Beaver Creek: Osage Co.	OK621210-00-0050L	FH	FH	144	18	2	5	0	1	88.89	55.56	2.78	4.86
Chilocco Creek	OK621210-00-0270C	CGP	CGP	234	18	2	6	0	0	96.58	34.62	4.27	3.42
Bent Creek	OK720500-01-0070D	CGP	CGP	182	6	0	0	0	1	52.20	14.29	47.80	0.55
Persimmon Creek	OK720500-01-0150G	CGP	CGP	375	14	0	3	0	1	79.47	49.60	20.53	5.33
Indian Creek: Woodward Co.	OK720500-01-0200D	CGP	CGP	124	8	0	2	0	1	83.87	74.19	16.13	4.03
Otter Creek: Harper Co.	OK720500-02-0050B	CGP	SWT	300	6	0	1	0	1	81.33	40.33	18.67	0.00
Clear Creek: Harper Co.	OK720500-02-0070G	SWT	SWT	317	10	0	3	0	1	89.59	29.34	10.41	6.62
Spring Creek	OK720500-02-0100D	SWT	SWT	314	5	0	1	0	0	100.00	26.75	0.00	0.00
Kiowa Creek: Harper Co.	OK720500-02-0130C	SWT	SWT	575	9	0	1	0	1	89.22	49.57	10.78	0.52
Kiowa Creek: Beaver Co.	OK720500-02-0130K	SWT	SWT	710	14	0	4	0	1	60.99	41.13	39.01	1.97
Duck Pond Creek	OK720500-02-0250F	SWT	SWT	1016	7	0	4	0	0	100.00	0.00	0.00	0.59
Clear Creek: Beaver Co.	OK720500-02-0300F	SWT	SWT	98	9	0	4	0	0	98.98	3.06	0.00	16.33
Palo Duro Creek	OK720500-02-0500G	SWT	SWT	139	3	0	0	0	0	100.00	6.47	0.00	0.00
Wolf Creek: Lower	OK720500-03-0010C	CGP	CGP	427	16	0	4	0	1	70.02	74.71	1.17	11.01
Wolf Creek: Upper	OK720500-03-0010G	CGP	SWT	266	15	1	5	0	1	98.12	31.20	0.38	13.16
Cold Springs Creek	OK720900-00-0100D	SWT	SWT	6	2	0	1	0	0	100.00	0.00	0.00	0.00
Cimarron River	OK720900-00-0180C	SWT	SWT	362	6	0	3	0	1	98.07	3.59	0.00	2.49

Using the USAP, several sites had assessments of “undetermined” or were in ecoregions with no established biocriteria (Table 13). The OCC methodology allowed assessment of streams which were lacking definite support assignment under the state biocriteria. There was strong consensus between the IBI scores that resulted from the two different assessment methods. Sites which were “excellent,” “good,” or “fair” in the OCC scoring were “supporting” or “undetermined” under the state biocriteria scoring method with one exception: Sandy Creek was ranked “poor” with the OCC method yet was “supporting” under the state biocriteria. Of the three sites which were “nonsupporting” under the state biocriteria, two were “poor” and one was “fair” with the OCC scoring method.

Table 13. IBI scores based on Use Support Assessment Protocol biocriteria (ODEQ 2002) and OCC’s modified RBP method. WWAC=warm water aquatic community, HLAC=habitat limited aquatic community, S=supporting, NS=not supporting, U=undetermined, *=no biocriteria for that ecoregion.

SiteName	WBID	Modified Ecoregion	FWPROP	IBI Total Score (USAP)	FWProp Support (USAP)	IBI Total Score (OCC)	Percent of Reference	Score Interpretation (OCC)
Lagoon Creek	OK620900-01-0180J	CGP	WWAC	31	S	34	0.94	excellent
Euchee Creek	OK620900-01-0290D	CGP	WWAC	23	S	32	0.89	good
Salt Creek: Payne Co.	OK620900-02-0020D	CGP	WWAC	27	S	28	0.78	good
Council Creek	OK620900-02-0050H	CGP	WWAC	29	S	30	0.83	good
Dugout Creek	OK620900-03-0080C	CGP	WWAC	23	S	32	0.89	good
Beaver Creek: Logan Co.	OK620900-03-0230C	CGP	WWAC	29	S	28	0.78	good
Stillwater Creek: Lower	OK620900-04-0040C	CGP	WWAC	29	S	34	0.94	excellent
Stillwater Creek: Upper	OK620900-04-0070T	CGP	HLAC	27	S	32	0.89	good
Cooper Creek	OK620910-02-0040C	CGP	WWAC	25	S	30	0.83	good
Salt Creek: Kingfisher Co.	OK620910-02-0100D	CGP	WWAC	23	S	38	1.06	excellent
Deep Creek	OK620910-02-0250C	CGP	WWAC	29	S	34	0.94	excellent
Indian Creek: Major Co.	OK620910-02-0310C	CGP	WWAC	23	S	30	0.83	good
Skeleton Creek: Lower	OK620910-03-0010F	CGP	WWAC	27	S	30	0.83	good
Skeleton Creek: Upper	OK620910-03-0010S	CGP	WWAC	27	S	30	0.83	good
Otter Creek: Logan Co.	OK620910-03-0040C	CGP	WWAC	29	S	36	1.00	excellent
Cottonwood Creek	OK620910-04-0010D	CGP	WWAC	25	S	24	0.67	fair
Kingfisher Creek	OK620910-05-0010J	CGP	WWAC	21	U	34	0.94	excellent
Uncle John’s Creek	OK620910-05-0030C	CGP	WWAC	21	U	30	0.83	good
Dead Indian Creek	OK620910-05-0080D	CGP	WWAC	23	S	32	0.89	good
Turkey Creek: Lower	OK620910-06-0010B	CGP	WWAC	25	S	26	0.72	fair
Turkey Creek: Upper	OK620910-06-0010T	CGP	WWAC	25	S	32	0.89	good
Griever Creek	OK620920-01-0130G	CGP	WWAC	25	S	30	0.83	good
Main Creek	OK620920-01-0180F	CGP	WWAC	25	S	30	0.83	good
Long Creek	OK620920-02-0080D	CGP	WWAC	29	S	38	1.06	excellent
Eagle Chief Creek: Lower	OK620920-04-0010C	CGP	WWAC	23	S	28	0.78	good
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	CGP	WWAC	29	S	40	1.11	excellent
Buffalo Creek: Lower	OK620920-05-0010G	CGP	WWAC	29	S	40	1.11	excellent
Buffalo Creek: Upper	OK620920-05-0010P	CGP	WWAC	21	U	30	0.83	good
Sand Creek	OK620920-05-0050G	CGP	WWAC	21	U	28	0.78	good
Cimarron River: Beaver Co.	OK620930-00-0010T	SWT	WWAC	27	*	38	0.95	excellent
Crooked Creek: Beaver Co.	OK620930-00-0100G	SWT	WWAC	17	*	34	0.85	good
Wild Horse Creek	OK621000-02-0040F	CGP	WWAC	29	S	30	0.83	good

SiteName	WBID	Modified Ecoregion	FWPROP	IBI Total Score (USAP)	FW Prop Support (USAP)	IBI Total Score (OCC)	Percent of Reference	Score Interpretation (OCC)
Bois d'Arc	OK621000-03-0010C	CGP	WWAC	21	U	26	0.72	fair
Deer Creek	OK621000-04-0010D	CGP	WWAC	29	S	36	1.00	excellent
Pond Creek	OK621000-05-0010D	CGP	WWAC	27	S	32	0.89	good
Crooked Creek: Grant Co.	OK621000-06-0010C	CGP	WWAC	27	S	32	0.89	good
Salt Fork of Arkansas River	OK621010-01-0010D	CGP	WWAC	17	NS	18	0.50	poor
Clay Creek	OK621010-01-0090R	CGP	WWAC	17	NS	22	0.61	poor
Turkey Creek: Woods Co.	OK621010-01-0230G	CGP	WWAC	23	S	34	0.94	excellent
Yellowstone Creek	OK621010-01-0270C	CGP	WWAC	29	S	34	0.94	excellent
Sandy Creek	OK621010-02-0010D	CGP	WWAC	23	S	22	0.61	poor
Medicine Lodge Creek	OK621010-03-0010D	CGP	WWAC	19	U	28	0.78	good
Driftwood Creek	OK621010-03-0030C	CGP	WWAC	27	S	34	0.94	excellent
Chickaskia Creek: Lower	OK621100-00-0010B	CGP	WWAC	27	S	30	0.83	good
Chickaskia Creek: Middle	OK621100-00-0010M	CGP	WWAC	27	S	34	0.94	excellent
Bitter Creek	OK621100-00-0100G	FH	WWAC	19	U	16	0.42	poor
Gray Horse Creek	OK621200-01-0400C	FH	WWAC	35	S	34	0.89	good
Doga Creek	OK621200-02-0020C	CGP	WWAC	37	S	36	1.00	excellent
Black Bear Creek: Lower	OK621200-03-0010D	CGP	WWAC	29	S	38	1.06	excellent
Black Bear Creek (downstream)	OK621200-03-0010M	CGP	WWAC	25	S	28	0.78	good
Black Bear Creek (upstream)	OK621200-03-0010W	CGP	WWAC	25	S	34	0.94	excellent
Salt Creek: Lower	OK621200-04-0010F	FH	WWAC	39	*	34	0.89	good
Salt Creek: Upper	OK621200-04-0010P	FH	WWAC	39	*	24	0.63	fair
Red Rock Creek	OK621200-05-0010K	CGP	WWAC	25	S	40	1.11	excellent
Red Rock Creek: Upper	OK621200-05-0160G	CGP	WWAC	25	S	34	0.94	excellent
Beaver Creek: Osage Co.	OK621210-00-0050L	FH	WWAC	27	*	24	0.63	fair
Chilocco Creek	OK621210-00-0270C	CGP	WWAC	29	S	36	1.00	excellent
Bent Creek	OK720500-01-0070D	CGP	WWAC	21	U	28	0.78	good
Persimmon Creek	OK720500-01-0150G	CGP	WWAC	27	S	34	0.94	excellent
Indian Creek: Woodward Co.	OK720500-01-0200D	CGP	WWAC	17	NS	24	0.67	fair
Otter Creek: Harper Co.	OK720500-02-0050B	SWT	WWAC	23	S	30	0.75	fair
Clear Creek: Harper Co.	OK720500-02-0070G	SWT	WWAC	27	*	40	1.00	excellent
Spring Creek	OK720500-02-0100D	SWT	WWAC	19	*	26	0.65	fair
Kiowa Creek: Harper Co.	OK720500-02-0130C	SWT	WWAC	17	*	30	0.75	fair
Kiowa Creek: Beaver Co.	OK720500-02-0130K	SWT	WWAC	29	*	40	1.00	excellent
Duck Pond Creek	OK720500-02-0250F	SWT	WWAC	21	*	34	0.85	good
Clear Creek: Beaver Co.	OK720500-02-0300F	SWT	WWAC	23	*	34	0.85	good
Palo Duro Creek	OK720500-02-0500G	SWT	WWAC	15	*	26	0.65	fair
Wolf Creek: Lower	OK720500-03-0010C	CGP	WWAC	27	S	34	0.94	excellent
Wolf Creek: Upper	OK720500-03-0010G	SWT	WWAC	29	S	40	1.00	excellent
Cold Springs Creek	OK720900-00-0100D	SWT	WWAC	13	*	24	0.60	poor
Cimarron River	OK720900-00-0180C	SWT	WWAC	19	*	38	0.95	excellent

Figure 5 shows the IBI score for each site (indicated by a blue dot) relative to the mean value for the high quality sites in that ecoregion (indicated by a solid line). The dashed lines in each graph represent +/- two standard deviations of the high quality site data for each parameter, so that any value falling outside of the dashed lines is significantly different than the mean of the high quality sites in that ecoregion ($p < 0.05$). In the CGP ecoregion, Cottonwood Creek, Clay Creek, Salt Fork of the Arkansas River, Sandy Creek, and Indian Creek (Woodward Co.) had IBI values below two standard deviations of the high quality mean. In the FH ecoregion, Beaver Creek (Osage Co.), Bitter Creek, and Salt Creek (Upper) were significantly below the high quality mean. Cold Springs Creek, Kiowa Creek (Harper Co.), Otter Creek (Harper Co.), Palo Duro Creek, and Spring Creek had IBI values significantly lower than the high quality mean in the SWT ecoregion. These sites all ranked either “fair” or “poor” in Table 14.

No sites had IBI values above the high quality range; however, Eagle Chief Creek (Woods Co.) and Red Rock Creek had values which were approximately two standard deviations above the high quality mean, indicating excellent fish communities. Sites with scores that are within +/- two standard deviations of the mean of the high quality sites do not necessarily have “reference” conditions; rather, sites outside of these values have either extremely good or extremely poor conditions which merit further investigation. Any streams with IBI scores equal to or better than the mean of the high quality streams will be examined for possible inclusion into the high quality sites list.

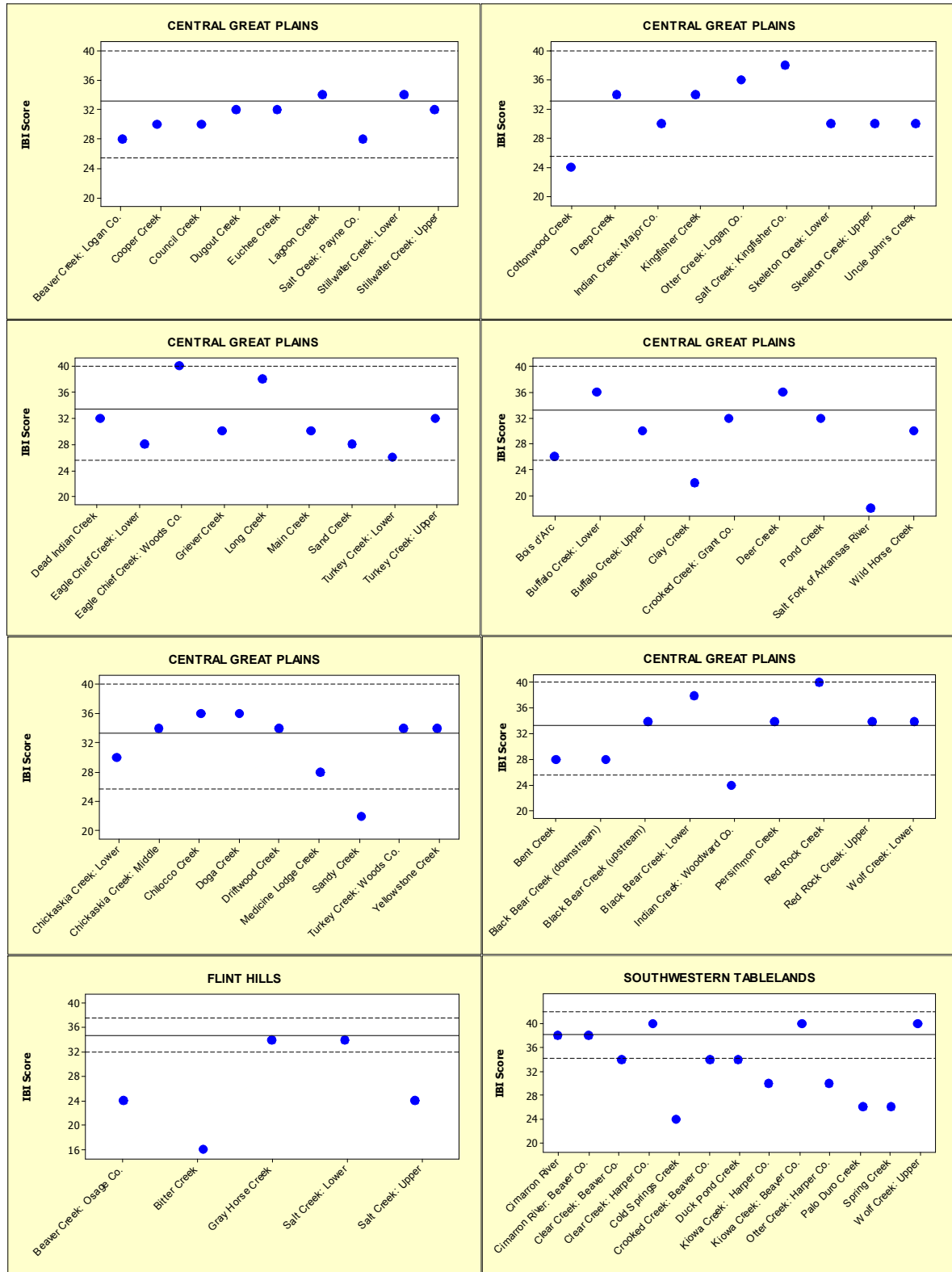


Figure 5. IBI score (fish) for each site by ecoregion. Solid lines indicate the mean value of high quality sites in each ecoregion; dashed lines represent +/- two standard deviations so that any value outside of the dashed lines is significantly different than the mean of the high quality sites (p<0.05).

Table 14 shows a comparison between fish data collected in previous projects and the rotating basin project in order to examine whether biological conditions have improved, worsened, or remained the same at a particular site. Many of the rotating basin sites had not been previously monitored; only 14 sites could be compared with past data. In future reports, all sites will be compared with the data collected during the first years of the rotating basin project in order to track changes. All data was compared relative to the same mean of the high quality sites for the respective ecoregion in order to obtain the IBI (OCC method). Although, ideally, one would use collections from the same years for comparison, multiyear collections at sites deemed “high quality” were not available. The fish community in most of the creeks remained in approximately the same condition.

Table 14. Comparison of fish data from previous projects to the Rotating Basin Year 2 project (2002-2003).

SiteName	WBID	Year	Total Pts.	% REF	Score Interpretation	Total # Individuals	Total # Spp.	# Darter Spp.	# Sunfish Spp.	# Round Bodied Sucker Spp.	# Intolerant Spp.	Proportion Tolerant Individuals	Proportion Omnivorous Individuals	Proportion Insectivorous Cyprinid Individuals	Proportion Top Carnivore Individuals
Bitter Creek	OK621100-00-0100G	2001	18	0.47	poor	296	10	1	3	0	1	98.31	91.55	1.35	0.68
		2002	16	0.42	poor	361	12	0	1	0	0	99.17	58.17	0.00	1.11
Buffalo Creek: Lower	OK620920-05-0010G	2000	34	0.94	excellent	252	13	0	2	0	1	69.84	42.06	43.65	11.90
		2002	40	1.11	excellent	588	16	0	4	0	1	49.66	25.68	51.70	5.61
Clear Creek: Harper Co.	OK720500-02-0070G	2001	38	0.95	excellent	89	8	0	4	0	0	100.00	3.37	0.00	24.72
		2002	40	1.00	excellent	317	10	0	3	0	1	89.59	29.34	10.41	6.62
Council Creek	OK620900-02-0050H	1998	34	0.94	excellent	866	18	0	4	0	1	89.49	60.05	20.90	3.70
		2002	30	0.83	good	235	14	0	5	0	1	84.26	50.21	12.77	1.70
Griever Creek	OK620920-01-0130G	1993	32	0.89	good	815	14	0	5	0	1	71.90	58.28	28.10	0.49
		1998	32	0.89	good	550	12	0	4	0	1	80.91	53.09	34.91	0.18
		2002	30	0.83	good	377	11	0	5	0	1	72.15	52.52	27.85	0.27
Kiowa Creek: Harper Co.	OK720500-02-0130C	2001	30	0.75	fair	328	8	0	1	0	1	86.59	72.56	10.67	0.00
		2002	30	0.75	fair	575	9	0	1	0	1	89.22	49.57	10.78	0.52
Kiowa Creek: Beaver Co.	OK720500-02-0130K	2001	34	0.85	good	797	7	0	2	0	1	87.20	82.31	9.79	1.63
		2002	40	1.00	excellent	710	14	0	4	0	1	60.99	41.13	39.01	1.97
Lagoon Creek	OK620900-01-0180J	1998	40	1.11	excellent	561	24	1	7	1	1	86.27	36.54	3.74	6.77
		2002	34	0.94	excellent	210	13	1	5	0	1	81.43	35.24	5.24	0.95
Palo Duro Creek	OK720500-02-0500G	2001	30	0.75	fair	139	4	0	0	0	0	100.00	9.35	0.00	0.00
		2002	26	0.65	fair	139	3	0	0	0	0	100.00	6.47	0.00	0.00
Persimmon Creek	OK720500-01-0150G	2000	32	0.89	good	52	9	0	2	0	1	88.46	3.85	11.54	28.85
		2002	34	0.94	excellent	375	14	0	3	0	1	79.47	49.60	20.53	5.33
Red Rock Creek	OK621200-05-0010K	1998	32	0.89	good	98	16	1	4	0	1	94.90	24.49	4.08	6.12
		2002	40	1.11	excellent	226	14	1	5	0	1	83.19	15.93	13.72	16.37
Turkey Creek: Lower	OK620910-06-0010B	1998	32	0.89	good	1179	17	0	3	0	1	99.83	80.24	4.75	4.83
		2002	26	0.72	fair	400	14	0	5	0	0	100.00	48.50	1.50	1.25
Turkey Creek: Woods Co.	OK621010-01-0230G	2001	34	0.94	excellent	280	8	0	3	0	1	48.93	42.86	50.71	1.43
		2002	34	0.94	excellent	231	11	0	3	0	1	66.23	43.72	31.17	1.30
Wolf Creek: Upper	OK720500-03-0010G	2000	28	0.78	good	170	14	0	3	0	1	98.82	40.00	0.59	11.18
		2002	40	1.00	excellent	266	15	1	5	0	1	98.12	31.20	0.38	13.16

3.2.3 Macroinvertebrate Collections

The complete macroinvertebrate data, including species and numbers captured per site, can be found in Appendix C. Macroinvertebrates were not collected for Beaver Creek (Osage Co.), Bitter Creek, Chickaskia Creek (Lower), Chilocco Creek, Cold Springs Creek, Doga Creek, or Salt Creek (Upper) due to lack of flow during the collection period each year. Table 15 presents the mean values, by season and sample type, for each metric at each site for the two-year monitoring period as well as the total IBI score as determined by methods described in section 2.2.3 of this report. Table 16 shows the overall bioassessment scores assigned to each monitoring site, calculated as described in the Methods section 2.2.3. Riffle samples were collected at most sites and generally reflect the macroinvertebrate community adequately (Plafkin et al., 1989). Summer samples, as opposed to winter samples, represent the harshest time for macroinvertebrates, thus constituting a more conservative approach in assessing the communities.

Table 15. Macroinvertebrate data from each monitoring site, averaged per season and habitat.

Sitename	WBID	Sample type	Winter or summer	Total Species	EPT taxa	Percent EPT	% Dominant Taxon	Shannon Diversity	HBI	Total Points	% of Reference
Lagoon Creek	OK620900-01-0180J	rifle	S	16.00	7.00	0.51	0.24	2.16	7.07	26	0.93
		woody	S	14.00	6.00	0.21	0.41	1.72	6.56	22	0.79
		rifle	W	15.00	6.50	0.23	0.38	1.90	5.99	26	1.08
Euchee Creek	OK620900-01-0290D	woody	S	12.00	2.00	0.01	0.87	0.65	7.77	8	0.29
		veg	W	11.00	0.00	0.00	0.55	1.35	6.80	10	0.45
		woody	W	7.50	0.50	0.00	0.68	1.01	7.57	6	0.27
Salt Creek: Payne Co.	OK620900-02-0020D	rifle	S	15.00	8.00	0.89	0.52	1.71	4.69	26	0.93
		rifle	W	19.00	5.00	0.16	0.31	2.15	7.30	22	0.92
Council Creek	OK620900-02-0050H	rifle	W	14.00	5.00	0.21	0.38	1.94	5.69	26	1.08
		woody	W	11.00	2.00	0.08	0.47	1.53	6.22	14	0.64
Dugout Creek	OK620900-03-0080C	rifle	S	8.00	3.00	0.27	0.73	0.89	5.71	10	0.36
		woody	S	13.00	5.00	0.36	0.23	2.10	6.57	24	0.86
		rifle	W	8.00	1.00	0.01	0.77	0.85	6.49	6	0.25
		veg	W	7.00	1.00	0.03	0.88	0.59	6.03	8	0.36
		woody	W	10.00	3.00	0.05	0.54	1.30	6.03	10	0.45
Beaver Creek: Logan Co.	OK620900-03-0230C	rifle	S	16.50	5.50	0.34	0.38	2.12	5.61	26	0.93
		rifle	W	14.00	2.50	0.06	0.44	1.74	5.62	14	0.58
		veg	W	13.00	1.00	0.02	0.54	1.52	6.57	12	0.55
		woody	W	5.00	0.00	0.00	0.61	0.79	6.03	6	0.27
Stillwater Creek: Lower	OK620900-04-0040C	rifle	S	10.33	3.33	0.40	0.34	1.77	6.10	18	0.64
		woody	S	8.33	3.33	0.31	0.48	1.53	6.22	16	0.57
		rifle	W	13.00	1.00	0.20	0.20	2.12	6.67	20	0.83
		woody	W	7.00	1.00	0.50	0.50	1.22	5.65	14	0.64
Stillwater Creek: Upper	OK620900-04-0070T	veg	S	15.00	3.00	0.28	0.23	2.27	6.10	22	0.79
		woody	S	12.00	4.00	0.39	0.45	1.67	6.29	18	0.64
		veg	W	21.00	0.00	0.00	0.26	2.55	7.22	18	0.82
		woody	W	19.00	2.00	0.05	0.22	2.34	7.38	16	0.73
Cooper Creek	OK620910-02-0040C	woody	S	7.50	2.00	0.04	0.85	0.69	7.64	6	0.21
		rifle	W	9.00	2.00	0.54	0.53	1.54	7.14	16	0.67
		woody	W	7.00	1.00	0.05	0.67	1.19	6.57	8	0.36

Sitename	WBID	Sample type	Winter or summer	Total Species	EPT taxa	Percent EPT	% Dominant Taxon	Shannon Diversity	HBI	Total Points	% of Reference
Salt Creek: Kingfisher	OK620910-02-0100D	veg	S	6.50	0.00	0.00	0.41	1.59	7.52	6	0.21
		rifle	W	3.00	0.00	0.00	0.65	0.70	6.97	4	0.17
		veg	W	3.50	0.00	0.00	0.90	0.39	6.07	6	0.27
Deep Creek	OK620910-02-0250C	veg	S	11.00	2.00	0.10	0.54	1.57	7.59	12	0.43
		rifle	W	7.00	0.00	0.00	0.94	0.31	4.14	8	0.33
		veg	W	8.50	0.50	0.03	0.72	0.87	6.41	10	0.45
		woody	W	4.00	1.00	0.01	0.88	0.45	6.18	6	0.27
Indian Creek: Major Co.	OK620910-02-0310C	veg	S	18.50	6.00	0.25	0.19	2.49	6.12	30	1.07
		veg	W	8.00	1.50	0.02	0.75	0.89	6.33	10	0.45
		woody	W	7.00	1.00	0.01	0.76	0.93	6.04	8	0.36
Skeleton Creek: Lower	OK620910-03-0010F	rifle	S	14.00	5.50	0.39	0.50	1.75	7.24	22	0.79
		rifle	W	14.00	4.00	0.10	0.29	1.98	6.43	24	1.00
		veg	W	8.00	1.00	0.02	0.78	0.91	6.07	10	0.45
		woody	W	2.00	1.00	0.14	0.86	0.41	6.14	8	0.36
Skeleton Creek: Upper	OK620910-03-0010S	veg	S	12.00	7.00	0.36	0.49	1.67	6.37	24	0.86
		woody	S	10.00	6.00	0.47	0.53	1.43	5.90	22	0.79
		woody	W	4.50	1.00	0.02	0.58	0.91	5.96	6	0.27
Otter Creek: Logan Co.	OK620910-03-0040C	rifle	S	15.00	6.00	0.77	0.66	1.39	5.02	24	0.86
		woody	S	11.00	5.00	0.35	0.41	1.68	5.99	20	0.71
		rifle	W	7.50	1.50	0.06	0.83	0.69	6.54	6	0.25
		woody	W	8.00	1.00	0.02	0.66	1.10	6.08	10	0.45
Cottonwood Creek	OK620910-04-0010D	woody	S	13.00	5.50	0.75	0.34	1.95	4.70	26	0.93
		veg	W	14.00	3.00	0.09	0.54	1.74	6.14	16	0.73
		woody	W	14.50	5.00	0.20	0.56	1.56	5.72	22	1.00
Kingfisher Creek	OK620910-05-0010J	rifle	S	15.00	6.00	0.61	0.35	2.05	4.65	28	1.00
		woody	S	12.00	5.00	0.45	0.34	1.88	5.67	22	0.79
		rifle	W	8.50	3.00	0.10	0.54	1.14	5.57	12	0.50
		woody	W	5.00	1.50	0.01	0.81	0.60	6.01	6	0.27
Uncle John's Creek	OK620910-05-0030C	veg	S	13.00	6.00	0.25	0.33	2.07	6.61	22	0.79
		woody	S	13.00	5.50	0.13	0.51	1.57	6.75	18	0.64
		rifle	W	14.00	2.00	0.01	0.43	1.63	8.00	10	0.42
		veg	W	10.00	2.00	0.09	0.50	1.40	6.01	12	0.55
		woody	W	12.00	5.00	0.10	0.57	1.29	5.99	18	0.82
Dead Indian Creek	OK620910-05-0080D	rifle	S	14.50	4.50	0.55	0.37	1.95	2.88	24	0.86
		veg	S	10.00	6.00	0.73	0.28	1.88	5.38	28	1.00
		woody	S	16.50	5.50	0.49	0.41	1.99	5.89	24	0.86
		rifle	W	11.00	1.00	0.03	0.62	1.16	5.05	10	0.42
		veg	W	5.00	2.00	0.05	0.68	0.91	6.12	8	0.36
		woody	W	10.00	3.00	0.04	0.59	1.23	6.28	10	0.45
Turkey Creek: Lower	OK620910-06-0010B	woody	S	12.00	5.00	0.31	0.47	1.60	6.47	18	0.64
		veg	W	9.00	1.00	0.01	0.88	0.60	6.09	10	0.45
		woody	W	7.50	2.50	0.06	0.65	1.06	6.36	8	0.36
Turkey Creek: Upper	OK620910-06-0010T	rifle	S	14.00	3.00	0.18	0.24	1.95	8.00	16	0.57
		woody	S	7.00	1.00	0.15	0.38	1.73	6.08	14	0.50
		rifle	W	10.00	1.50	0.05	0.45	1.61	8.00	8	0.33
		woody	W	8.00	1.50	0.06	0.70	1.06	6.08	10	0.45
Griever Creek	OK620920-01-0130G	rifle								16	0.57

Sitename	WBID	Sample type	Winter or summer	Total Species	EPT taxa	Percent EPT	% Dominant Taxon	Shannon Diversity	HBI	Total Points	% of Reference
Griever Creek, cont.			S	12.00	3.00	0.29	0.34	1.95	6.09		
		veg	S	8.00	2.00	0.06	0.80	0.86	7.91	6	0.21
		rifle	W	8.00	1.50	0.06	0.57	1.17	6.43	6	0.25
		veg	W	10.00	2.00	0.05	0.44	1.51	6.47	12	0.55
Main Creek	OK620920-01-0180F	veg	S	15.00	3.50	0.24	0.25	2.25	5.56	22	0.79
		veg	W	13.50	2.50	0.05	0.67	1.28	5.95	12	0.55
Long Creek	OK620920-02-0080D	rifle	S	13.00	4.00	0.30	0.53	1.55	5.31	18	0.64
		veg	S	10.00	3.00	0.20	0.26	1.94	7.32	18	0.64
		rifle	W	14.50	6.00	0.50	0.50	1.68	5.83	26	1.08
		veg	W	16.50	5.00	0.30	0.32	2.14	5.61	26	1.18
Eagle Chief Creek: Lower	OK620920-04-0010C	woody	S	12.50	7.00	0.59	0.32	2.02	5.68	28	1.00
		veg	W	16.00	3.00	0.02	0.66	1.31	6.44	14	0.64
		woody	W	10.00	3.00	0.08	0.59	1.27	6.00	10	0.45
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	woody	S	14.50	5.50	0.39	0.36	1.95	5.82	26	0.93
		rifle	W	3.00	0.00	0.00	0.97	0.17	1.01	6	0.25
		veg	W	3.00	1.00	0.03	0.89	0.41	6.03	6	0.27
Buffalo Creek: Lower	OK620920-05-0010G	veg	S	17.00	3.00	0.34	0.28	2.24	6.13	24	0.86
		woody	S	11.00	2.50	0.31	0.39	1.86	5.75	20	0.71
		rifle	W	10.50	1.50	0.03	0.55	1.41	5.55	10	0.42
		veg	W	7.67	1.67	0.13	0.62	1.17	5.96	12	0.55
		woody	W	9.00	3.00	0.08	0.69	1.04	5.95	10	0.45
Buffalo Creek: Upper	OK620920-05-0010P	rifle	S	11.50	2.50	0.13	0.49	1.53	5.59	12	0.43
		veg	S	12.50	3.00	0.09	0.49	1.59	6.97	10	0.36
		rifle	W	11.00	1.00	0.01	0.59	1.29	4.73	10	0.42
		veg	W	9.50	1.00	0.03	0.66	1.11	6.08	10	0.45
		woody	W	12.50	2.50	0.05	0.55	1.43	6.02	12	0.55
Sand Creek	OK620920-05-0050G	veg	S	5.00	2.00	0.09	0.88	0.49	7.60	4	0.14
		veg	W	7.00	1.00	0.01	0.91	0.44	5.98	8	0.36
		woody	W	7.00	1.00	0.03	0.38	1.40	6.70	8	0.36
Cimarron River: Beaver Co.	OK620930-00-0010T	veg	S	12.50	2.50	0.06	0.78	1.00	7.65	10	0.36
		veg	W	10.00	1.00	0.01	0.58	1.20	6.48	10	0.42
Crooked Creek	OK620930-00-0100G	rifle	S	14.00	3.00	0.43	0.31	2.02	5.54	22	0.79
		veg	S	12.50	4.00	0.15	0.47	1.69	6.88	18	0.64
		rifle	W	4.00	0.00	0.00	0.55	0.80	4.81	6	0.30
		veg	W	9.00	2.00	0.03	0.79	0.86	6.14	10	0.42
Wild Horse Creek	OK621000-02-0040F	woody	S	14.00	3.00	0.15	0.53	1.59	7.42	14	0.50
Bois d'Arc Creek	OK621000-03-0010C	rifle	S	16.00	8.00	0.36	0.22	2.29	5.55	28	1.00
		rifle	W	12.00	1.00	0.03	0.49	1.67	7.30	12	0.50
Deer Creek	OK621000-04-0010D	rifle	S	14.00	7.00	0.46	0.29	2.08	5.88	28	1.00
		veg	W	9.00	1.00	0.06	0.47	1.77	5.65	12	0.55
		woody	W	12.00	1.00	0.02	0.40	1.61	6.45	14	0.64
Pond Creek	OK621000-05-0010D	woody	S	10.50	3.50	0.29	0.51	1.46	6.16	14	0.50
		woody	W	11.00	0.00	0.00	0.52	1.27	6.97	10	0.45
Crooked Creek: Grant Co.	OK621000-06-0010C	woody	S	10.00	4.00	0.07	0.64	1.21	7.15	8	0.29
		rifle	W	11.00	1.00	0.01	0.56	1.39	3.94	10	0.42
Salt Fork of Arkansas River	OK621010-01-0010D	rifle	S	10.00	3.00	0.24	0.51	1.46	5.77	12	0.43

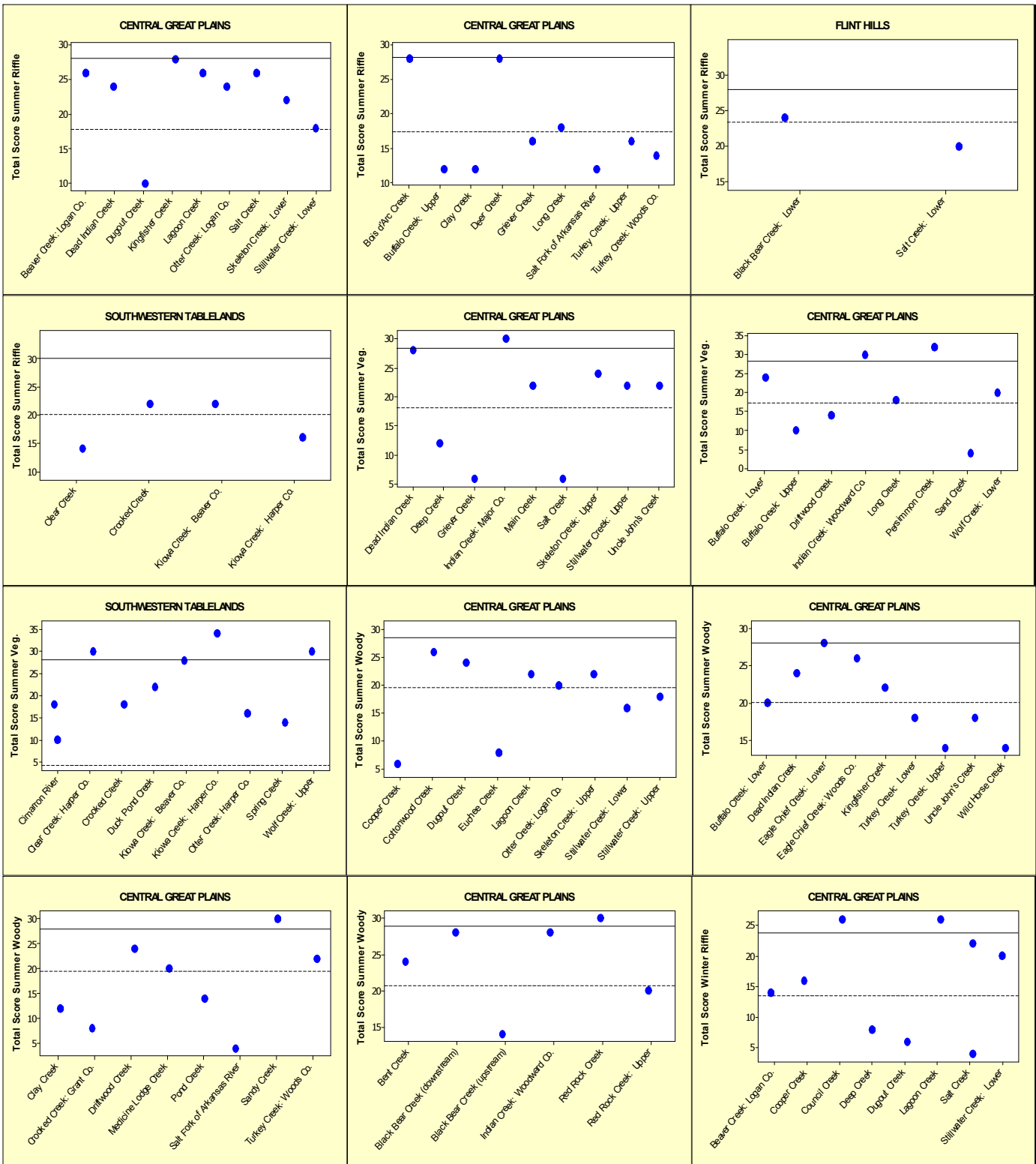
Sitename	WBID	Sample type	Winter or summer	Total Species	EPT taxa	Percent EPT	% Dominant Taxon	Shannon Diversity	HBI	Total Points	% of Reference
		woody	S	6.00	1.00	0.02	0.74	0.86	7.78	4	0.14
Clay Creek	OK621010-01-0090R	riffle	S	14.00	2.00	0.02	0.39	1.83	8.00	12	0.43
		woody	S	11.00	1.00	0.09	0.34	1.89	6.78	12	0.43
		woody	W	6.00	0.00	0.00	0.48	1.07	6.28	8	0.36
Turkey Creek: Woods Co.	OK621010-01-0230G	riffle	S	7.00	2.00	0.26	0.29	1.79	6.77	14	0.50
		woody	S	13.00	3.00	0.22	0.17	2.45	6.91	22	0.79
		riffle	W	4.00	1.00	0.01	0.83	0.52	8.00	2	0.08
		veg	W	5.00	1.00	0.02	0.94	0.29	6.04	8	0.36
Yellowstone Creek	OK621010-01-0270C	riffle	S	9.50	3.00	0.55	0.38	1.73	8.00	16	0.57
		riffle	W	7.50	3.00	0.77	0.52	1.17	8.00	12	0.50
Sandy Creek	OK621010-02-0010D	woody	S	16.00	6.50	0.55	0.26	2.25	5.44	30	1.07
Medicine Lodge Creek	OK621010-03-0010D	woody	S	12.00	4.50	0.76	0.40	1.78	5.02	20	0.71
		riffle	W	3.00	1.00	0.05	0.94	0.28	6.00	6	0.25
		woody	W	13.00	7.00	0.65	0.27	2.01	4.13	30	1.36
Driftwood Creek	OK621010-03-0030C	veg	S	14.00	2.00	0.15	0.51	1.77	6.99	14	0.50
		woody	S	11.00	5.00	0.52	0.22	2.07	5.04	24	0.86
		riffle	W	6.00	0.00	0.00	0.70	0.92	5.28	8	0.33
		veg	W	7.00	0.00	0.00	0.88	0.56	6.07	8	0.36
		woody	W	9.00	0.00	0.00	0.70	1.15	6.11	10	0.45
Chickaskia River: Middle	OK621100-00-0010M	veg	W	10.00	1.00	0.02	0.33	1.69	7.10	14	0.64
		woody	W	13.00	5.00	0.09	0.42	1.48	5.99	18	0.82
Gray Horse Creek	OK621200-01-0400C	riffle	S	15.00	3.00	0.45	0.38	1.93	3.88	22	0.79
		riffle	W	20.00	5.00	0.22	0.35	2.09	7.00	20	0.71
Black Bear Creek: Lower	OK621200-03-0010D	riffle	S	16.50	7.50	0.70	0.57	1.64	3.89	24	0.80
		woody	S	9.50	5.00	0.65	0.38	1.61	5.26	22	0.79
		riffle	W	14.00	4.00	0.45	0.42	1.83	6.29	24	1.00
Black Bear Creek (downstream)	OK621200-03-0010M	riffle	S	13.00	6.00	0.69	0.54	1.54	6.86	22	0.79
		woody	S	13.00	7.00	0.66	0.38	1.95	4.75	28	1.00
		riffle	W	11.67	3.00	0.14	0.37	1.70	6.79	18	0.75
		woody	W	6.00	2.00	0.08	0.52	1.19	6.00	8	0.36
Black Bear Creek (upstream)	OK621200-03-0010W	riffle	S	13.00	6.00	0.77	0.38	1.86	6.84	24	0.86
		woody	S	9.00	4.00	0.56	0.54	1.43	5.37	14	0.50
		riffle	W	7.00	3.00	0.20	0.44	1.49	4.38	14	0.58
		woody	W	10.00	5.00	0.12	0.45	1.42	5.80	18	0.82
Salt Creek: Lower	OK621200-04-0010F	riffle	S	13.50	7.50	0.72	0.41	1.80	7.35	20	0.67
		riffle	W	13.00	1.00	0.01	0.59	1.44	5.23	12	0.43
Red Rock Creek	OK621200-05-0010K	riffle	S	12.00	5.50	0.61	0.48	1.58	7.46	20	0.71
		woody	S	16.00	7.00	0.53	0.24	2.23	5.27	30	1.07
		riffle	W	10.00	4.00	0.17	0.38	1.73	4.47	22	0.92
		woody	W	5.00	2.00	0.06	0.59	0.93	5.87	6	0.27
Red Rock Creek: Upper	OK621200-05-0160G	riffle	S	12.00	3.00	0.61	0.47	1.59	7.07	14	0.50
		woody	S	10.50	4.50	0.47	0.38	1.69	5.82	20	0.71
		riffle	W	11.33	3.33	0.11	0.55	1.37	5.89	18	0.75
		veg	W	7.00	2.00	0.04	0.51	1.07	5.93	8	0.36
		woody	W	4.50	1.50	0.12	0.55	1.07	5.82	8	0.36
Bent Creek	OK720500-01-0070D	woody	S	18.00	5.00	0.34	0.34	2.12	5.72	24	0.86
		riffle	W	9.00	2.00	0.01	0.69	1.04	1.29	10	0.42

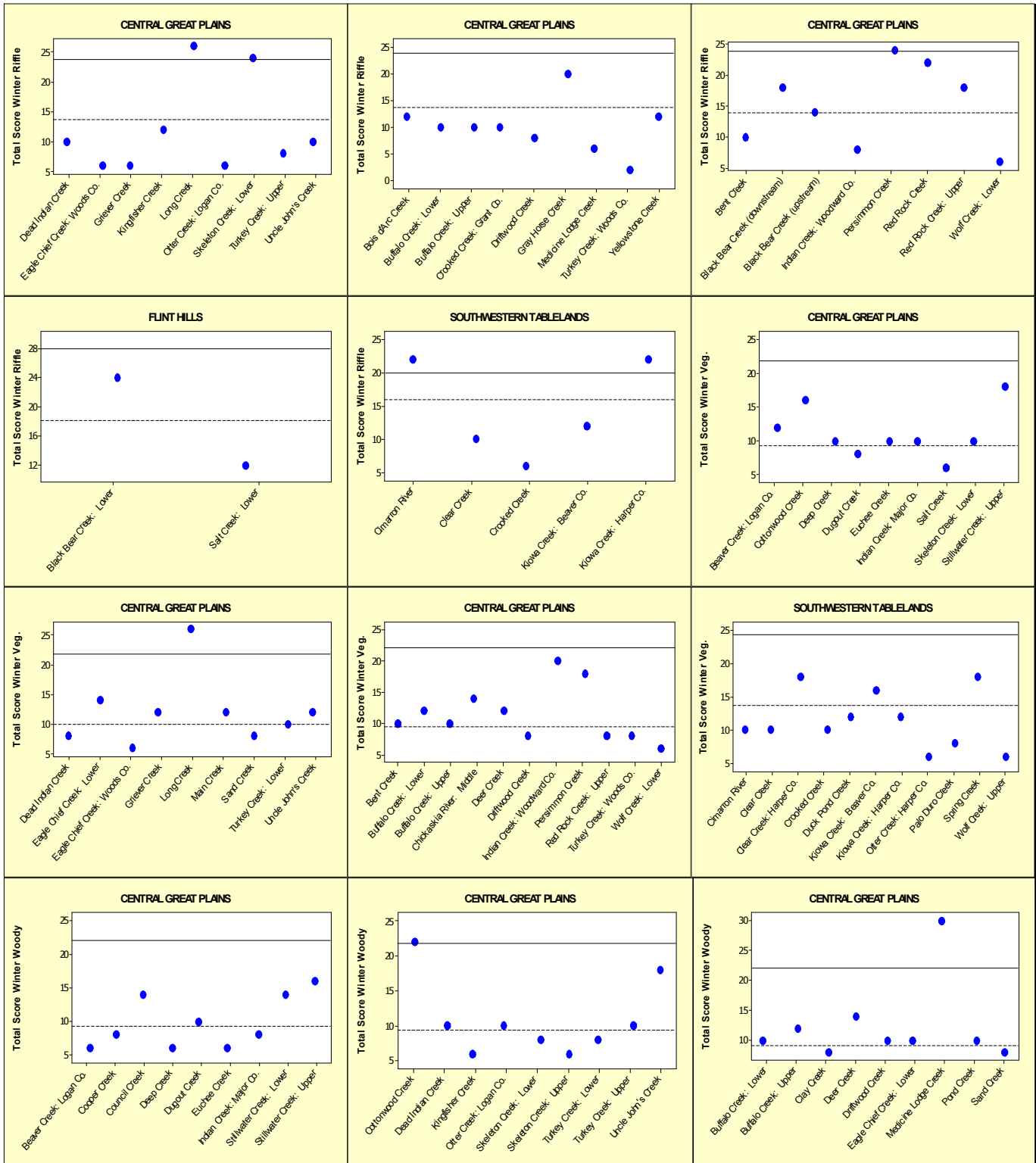
Sitename	WBID	Sample type	Winter or summer	Total Species	EPT taxa	Percent EPT	% Dominant Taxon	Shannon Diversity	HBI	Total Points	% of Reference
Bent Creek, cont.		veg	W	6.00	3.00	0.04	0.89	0.48	6.02	10	0.45
		woody	W	9.00	3.00	0.08	0.74	0.94	5.83	10	0.45
Persimmon Creek	OK720500-01-0150G	rifle	S	20.00	6.50	0.57	0.35	2.32	6.16	26	0.93
		veg	S	21.00	6.50	0.42	0.25	2.56	5.36	32	1.14
		rifle	W	16.50	6.50	0.27	0.43	1.97	5.47	24	1.00
		veg	W	12.00	4.00	0.07	0.74	1.11	5.88	18	0.82
		woody	W	10.50	5.00	0.18	0.75	1.08	5.51	18	0.82
Indian Creek: Woodward Co.	OK720500-01-0200D	rifle	S	10.00	2.00	0.02	0.73	1.00	7.43	6	0.21
		veg	S	21.00	8.00	0.61	0.30	2.36	4.79	30	1.07
		woody	S	10.00	6.00	0.45	0.28	1.91	5.34	28	1.00
		rifle	W	9.00	3.00	0.04	0.66	1.12	7.72	8	0.33
		veg	W	10.50	4.50	0.11	0.67	1.19	5.90	20	0.91
Otter Creek: Harper Co.	OK720500-02-0050B	veg	S	17.00	3.00	0.18	0.58	1.74	6.95	16	0.57
		veg	W	6.00	1.00	0.01	0.77	0.82	6.93	6	0.25
		woody	W	10.00	1.00	0.01	0.68	1.10	7.43	8	0.33
Clear Creek: Harper Co.	OK720500-02-0070G	veg	S	18.00	6.50	0.48	0.30	2.35	5.06	30	1.07
		veg	W	14.00	5.00	0.18	0.44	1.85	5.79	18	0.75
Spring Creek	OK720500-02-0100D	veg	S	15.50	2.00	0.04	0.50	1.77	5.94	14	0.50
		veg	W	10.00	3.00	0.25	0.35	1.69	5.29	18	0.75
		woody	W	12.00	5.00	0.24	0.43	1.87	5.29	24	1.00
Kiowa Creek: Harper Co.	OK720500-02-0130C	rifle	S	15.50	3.50	0.16	0.53	1.70	5.89	16	0.57
		veg	S	22.00	7.00	0.43	0.15	2.70	4.95	34	1.21
		rifle	W	14.00	4.00	0.18	0.55	1.53	6.27	22	1.10
		veg	W	11.00	4.50	0.19	0.72	1.10	5.35	12	0.50
		woody	W	13.00	4.00	0.17	0.67	1.33	5.30	16	0.67
Kiowa Creek: Beaver Co.	OK720500-02-0130K	rifle	S	11.00	2.50	0.42	0.32	1.69	5.30	22	0.79
		veg	S	18.00	6.00	0.26	0.24	2.38	5.87	28	1.00
		rifle	W	12.00	1.50	0.08	0.46	1.60	6.65	12	0.60
		veg	W	14.50	4.50	0.19	0.50	1.70	5.79	16	0.67
Duck Pond Creek	OK720500-02-0250F	veg	S	13.50	2.00	0.42	0.36	1.99	6.63	22	0.79
		veg	W	11.50	1.50	0.08	0.32	1.91	7.10	12	0.50
Clear Creek: Beaver Co.	OK720500-02-0300F	rifle	S	8.00	2.00	0.30	0.53	1.30	5.07	14	0.50
		rifle	W	9.50	1.00	0.03	0.53	1.50	7.22	10	0.50
		veg	W	10.00	1.00	0.06	0.55	1.45	6.47	10	0.42
Palo Duro Creek	OK720500-02-0500G	veg	W	6.00	0.50	0.00	0.82	0.65	6.03	8	0.33
Wolf Creek: Lower	OK720500-03-0010C	rifle	S	12.00	4.50	0.69	0.55	1.45	8.00	14	0.50
		veg	S	12.00	4.00	0.37	0.37	1.86	6.91	20	0.71
		rifle	W	9.50	1.00	0.08	0.44	1.47	8.00	6	0.25
		veg	W	3.00	0.00	0.00	0.97	0.16	6.05	6	0.27
		woody	W	6.00	0.00	0.00	0.70	0.86	6.07	8	0.36
Wolf Creek: Upper	OK720500-03-0010G	veg	S	18.00	6.00	0.62	0.30	2.32	5.31	30	1.07
		woody	S	15.00	6.00	0.75	0.43	1.89	4.72	26	0.93
		veg	W	4.00	0.00	0.00	0.75	0.66	6.04	6	0.25
		woody	W	5.00	2.00	0.10	0.65	0.99	5.90	6	0.25
Cimarron River: Cimarron Co.	OK720900-00-0180C	veg	S	11.00	2.00	0.32	0.31	1.98	7.79	18	0.64
		rifle	W	11.00	2.00	0.33	0.32	1.72	5.26	22	1.10

Table 16. Bioassessment of sites based on all macroinvertebrate collections at a site. NI=non-impaired, SI=slightly impaired, MI=moderately impaired, SVI=severely impaired.

Sitename	WBID	Overall Biological Condition	Sitename	WBID	Overall Biological Condition
Lagoon Creek	OK620900-01-0180J	NI	Deer Creek	OK621000-04-0010D	NI
Euchee Creek	OK620900-01-0290D	MI	Pond Creek	OK621000-05-0010D	MI
Salt Creek: Payne Co.	OK620900-02-0020D	NI	Crooked Creek: Grant Co.	OK621000-06-0010C	MI
Council Creek	OK620900-02-0050H	NI	Salt Fork of Arkansas River	OK621010-01-0010D	MI
Dugout Creek	OK620900-03-0080C	MI	Clay Creek	OK621010-01-0090R	MI
Beaver Creek: Logan Co.	OK620900-03-0230C	SI	Turkey Creek: Woods Co.	OK621010-01-0230G	MI
Stillwater Creek: Lower	OK620900-04-0040C	SI	Yellowstone Creek	OK621010-01-0270C	SI
Stillwater Creek: Upper	OK620900-04-0070T	SI	Sandy Creek	OK621010-02-0010D	NI
Cooper Creek	OK620910-02-0040C	SI	Medicine Lodge Creek	OK621010-03-0010D	SI
Salt Creek: Kingfisher Co.	OK620910-02-0100D	SVI	Driftwood Creek	OK621010-03-0030C	MI
Deep Creek	OK620910-02-0250C	MI	Chickaskia River: Middle	OK621100-00-0010M	SI
Indian Creek: Major Co.	OK620910-02-0310C	SI	Gray Horse Creek	OK621200-01-0400C	SI
Skeleton Creek: Lower	OK620910-03-0010F	SI	Black Bear Creek: Lower	OK621200-03-0010D	SI
Skeleton Creek: Upper	OK620910-03-0010S	SI	Black Bear Creek (downstream)	OK621200-03-0010M	SI
Otter Creek: Logan Co.	OK620910-03-0040C	SI	Black Bear Creek (upstream)	OK621200-03-0010W	NI
Cottonwood Creek	OK620910-04-0010D	NI	Salt Creek: Lower	OK621200-04-0010F	SI
Kingfisher Creek	OK620910-05-0010J	SI	Red Rock Creek	OK621200-05-0010K	SI
Uncle John's Creek	OK620910-05-0030C	SI	Red Rock Creek: Upper	OK621200-05-0160G	MI
Dead Indian Creek	OK620910-05-0080D	NI	Bent Creek	OK720500-01-0070D	SI
Turkey Creek: Lower	OK620910-06-0010B	MI	Persimmon Creek	OK720500-01-0150G	NI
Turkey Creek: Upper	OK620910-06-0010T	MI	Indian Creek: Woodward Co.	OK720500-01-0200D	MI
Griever Creek	OK620920-01-0130G	SI	Otter Creek: Harper Co.	OK720500-02-0050B	SI
Main Creek	OK620920-01-0180F	SI	Clear Creek: Harper Co.	OK720500-02-0070G	NI
Long Creek	OK620920-02-0080D	SI	Spring Creek	OK720500-02-0100D	SI
Eagle Chief Creek: Lower	OK620920-04-0010C	SI	Kiowa Creek: Harper Co.	OK720500-02-0130C	SI
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	SI	Kiowa Creek: Beaver Co.	OK720500-02-0130K	SI
Buffalo Creek: Lower	OK620920-05-0010G	SI	Duck Pond Creek	OK720500-02-0250F	SI
Buffalo Creek: Upper	OK620920-05-0010P	MI	Clear Creek	OK720500-02-0300F	MI
Sand Creek	OK620920-05-0050G	MI	Palo Duro Creek	OK720500-02-0500G	MI
Cimarron River: Beaver Co.	OK620930-00-0010T	MI	Wolf Creek: Lower	OK720500-03-0010C	MI
Crooked Creek	OK620930-00-0100G	SI	Wolf Creek: Upper	OK720500-03-0010G	SI
Wild Horse Creek	OK621000-02-0040F	MI	Cimarron River: Cimarron Co.	OK720900-00-0180C	SI
Bois d'Arc Creek	OK621000-03-0010C	NI			

Figure 6 shows the IBI score (“total score”) for the macroinvertebrate data collected at each site as assessed per season (summer vs. winter) and per habitat type (riffle, vegetation, or woody). The mean IBI score of the high quality sites in each ecoregion is represented in each graph by a solid line, while the dashed line in each graph indicates the high quality mean minus two standard deviations. No site had a score greater than two standard deviations above the mean high quality score, so that line is not shown on the graphs.





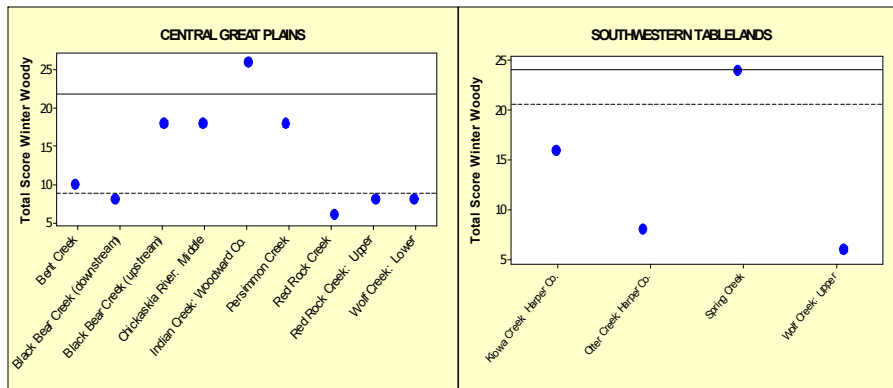
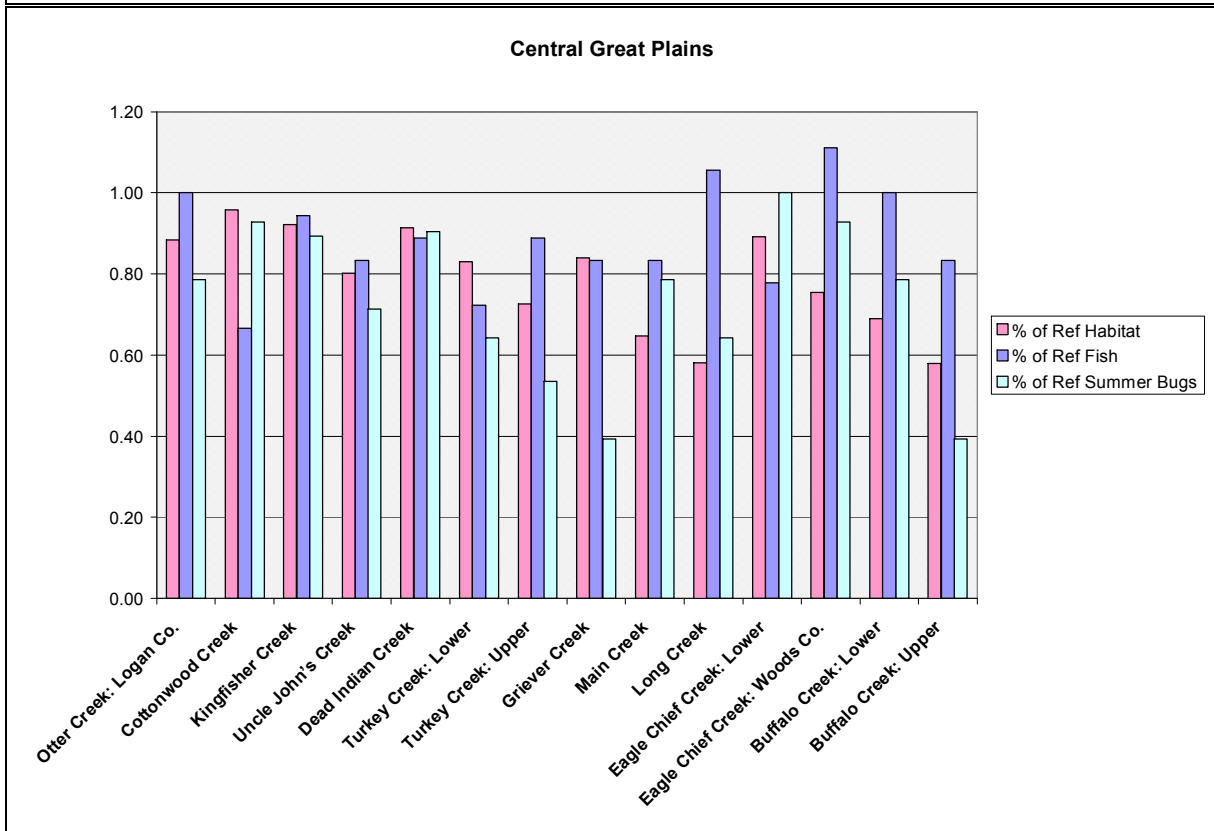
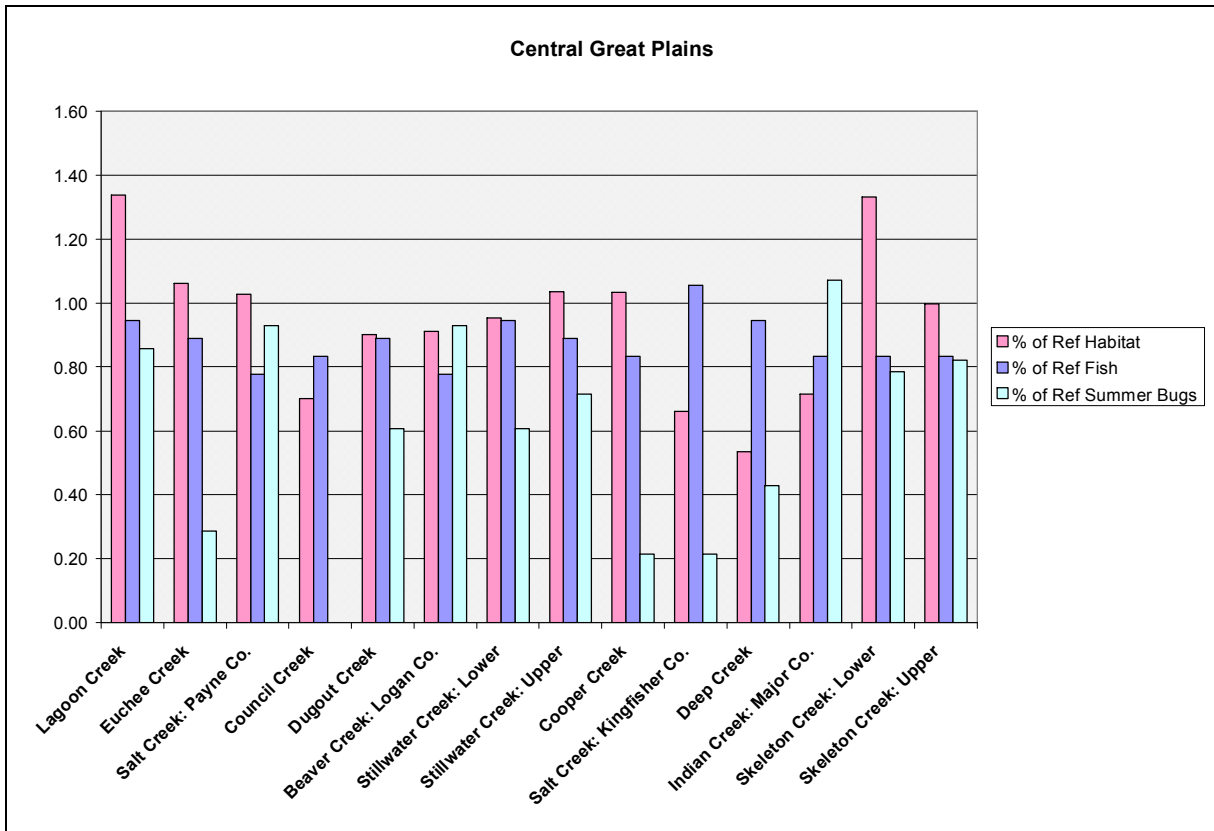


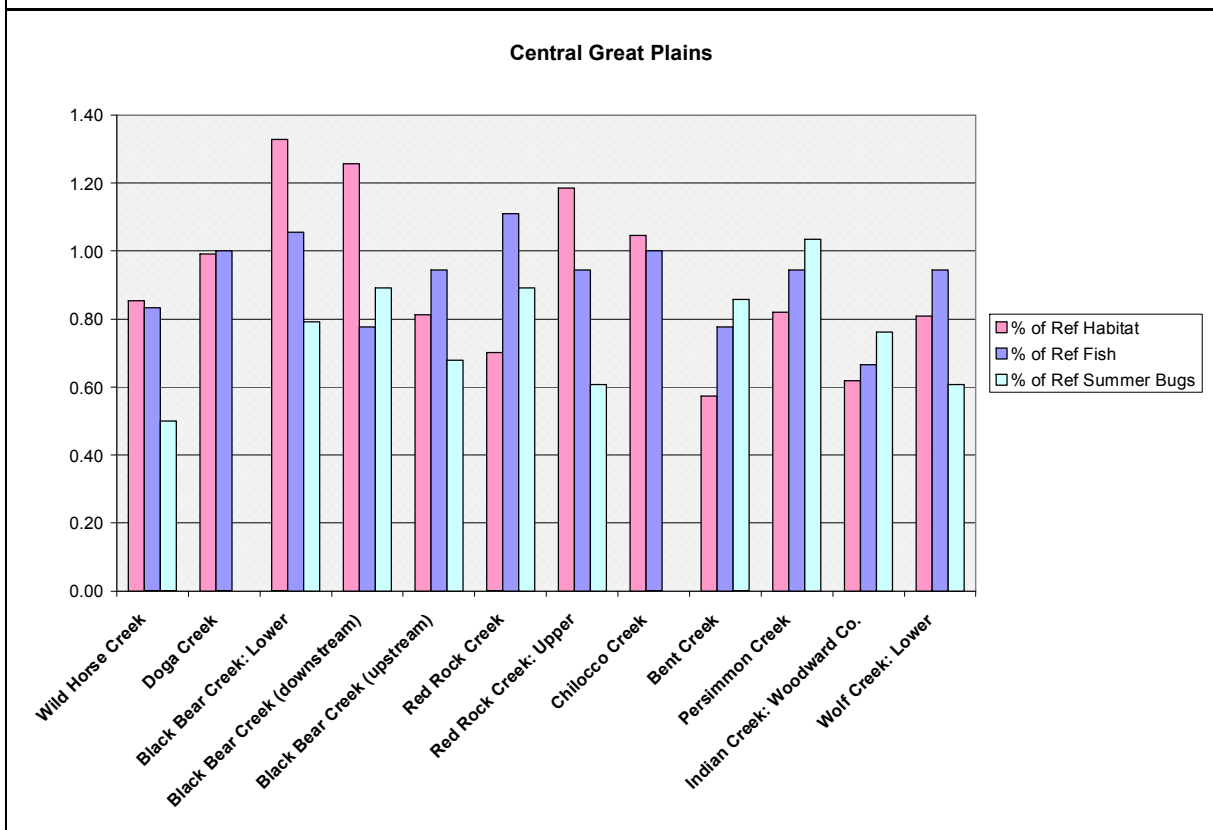
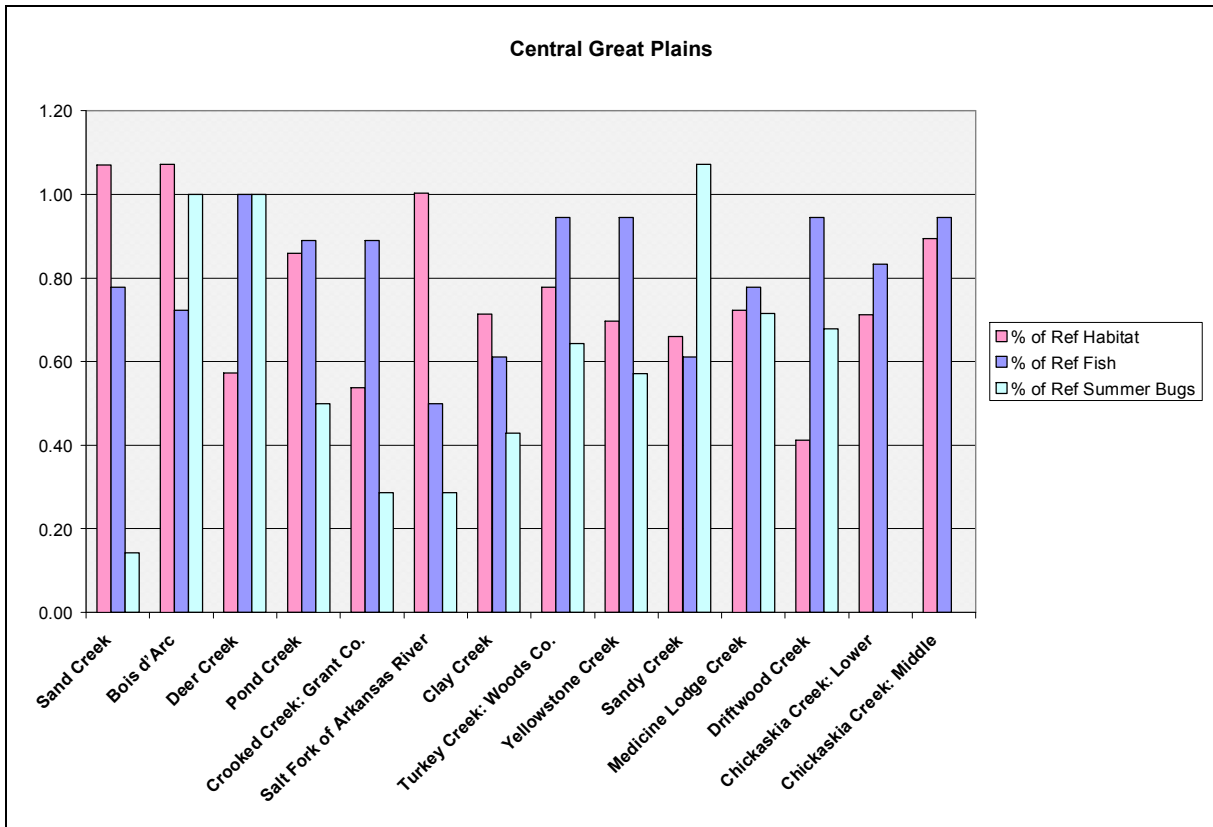
Figure 6. Total macroinvertebrate metric scores for each site by ecoregion. Solid lines indicate the mean value of high quality sites in each ecoregion; dashed lines represent the high quality mean minus two standard deviations.

Sites with scores that are within two standard deviations of the mean of the high quality sites do not necessarily have “reference” conditions; rather, sites with bug scores lower than two standard deviations are significantly different than the mean of the high quality sites in that ecoregion. These extremely poor macroinvertebrate scores could indicate water quality problems; however, it is possible that the macroinvertebrate collection was not taken at a time or from a location which would best represent the community there. Hence, the macroinvertebrate scores should be examined in conjunction with habitat and fish scores to better represent the general health of the stream.

3.2.4 Overall Biological Assessment

In order to synthesize the biological findings into a meaningful representation of the quality of each site, habitat, fish, and macroinvertebrate scores (relative to the mean of high quality sites in the respective ecoregions) were examined in concert with one another (Figure 7). Healthy sites are those with a relatively high score for all three parameters. It is generally recognized that fish communities are especially sensitive to habitat degradation and that macroinvertebrates often suffer when water quality declines. Thus, sites with a high habitat and/or fish score yet low macroinvertebrate score could indicate water quality impairments. The Salt Fork of the Arkansas River had a high habitat score yet low fish and bug scores, which seems to indicate some sort of water quality issue. Euchee Creek has a low macroinvertebrate score, yet high fish and habitat score. Referring back to Figure 2, this creek exhibits high levels of phosphorous and orthophosphorous, supporting the expected trend. Cooper Creek, on the other hand, similarly shows a low bug score and high habitat and fish scores, yet this creek does not appear to have a significant nutrient problem. It is possible that, in this case, the macroinvertebrate community was not sampled at a time or from a location which would best represent the community in that stream. Low habitat scores correlated with low fish scores yet high bug scores could indicate habitat impairments despite good water quality. Hence, it is useful to consider all of these factors at once in order to attempt to determine the overall stream quality.





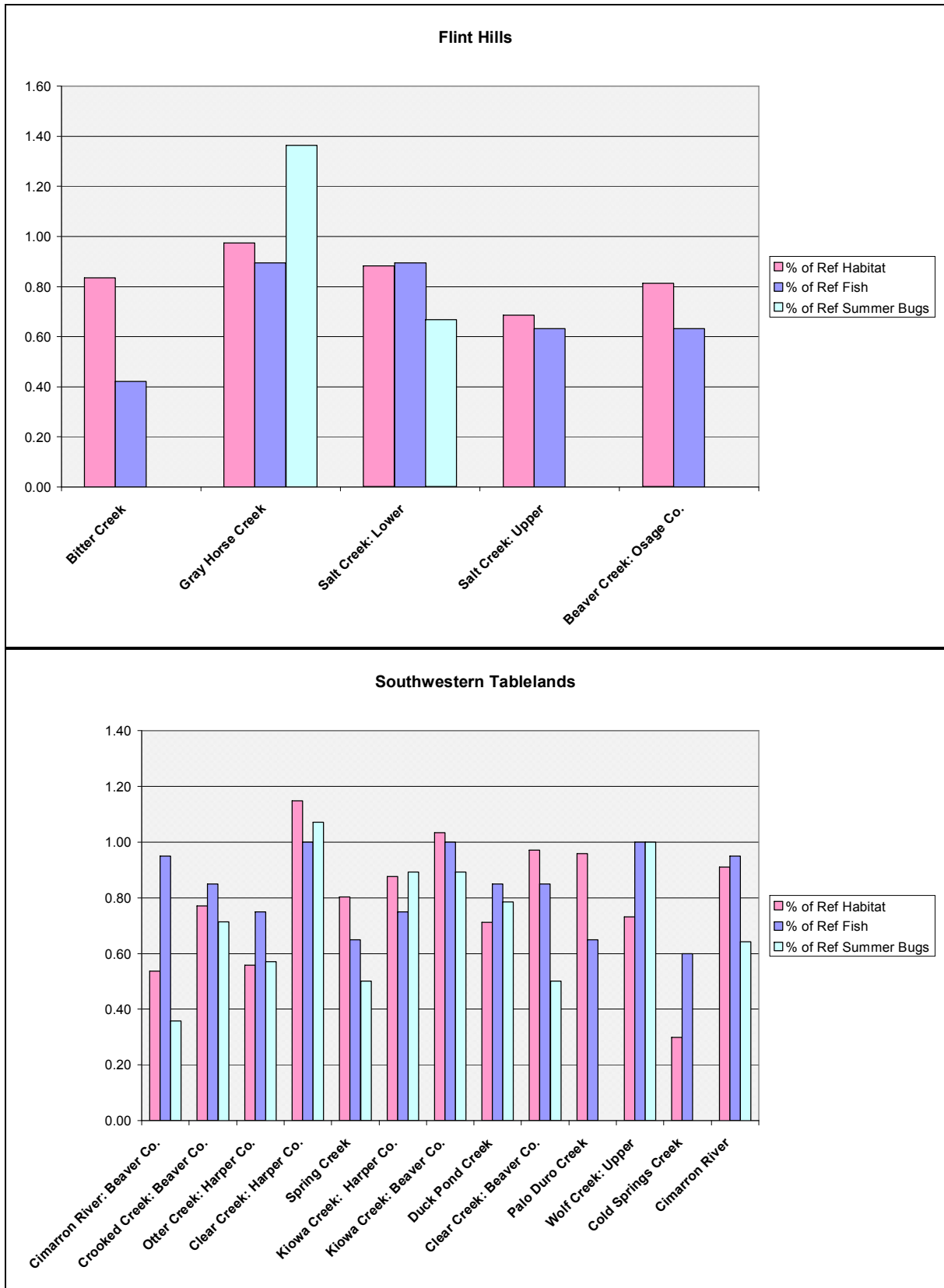


Figure 7. Comparison of habitat, fish, and bug scores relative to the average high quality site in each ecoregion.

3.3 WATERSHED ASSESSMENT

Table 17 shows the landuse upstream of each monitoring site as obtained through GIS using the 1992 NRCS National Land Cover Dataset. There is little landuse data for Yellowstone Creek (<15%) and for the Cimarron River in Beaver Co. (<40%). Table 18 presents the types and number of permitted activities that occur upstream of each site.

Twenty-one sites had national pollution discharge elimination systems (NPDES) in the watershed. NPDES are classified as either major or minor based upon their size and/or their potential to impact the receiving stream, with majors having larger effects than minors. Skeleton (Upper), Stillwater (Lower), Cottonwood, and Euchee Creeks had at least one major NPDES, while the other sites only had minor NPDES (Table 18). To examine the effects of point source versus non-point source pollution on nutrient levels at the monitoring sites, one-way ANOVAs were performed comparing: 1) sites with a major NPDES to sites with minor NPDES and 2) sites with minor NPDES to sites with no NPDES (Table 19). Sites with a major NPDES had significantly higher values for all parameters examined, as compared to sites with minor NPDES (at 95% significance level; $p < 0.05$). Sites with only minor NPDES had significantly higher levels than sites with no NPDES for all parameters examined except ammonia ($p < 0.05$). The significant effect of a major NPDES on water quality is also evident in Figure 2, since those sites had mean values which exceeded the high quality range.

Biological data (fish, bugs, *Enterococcus* and *E. coli* bacteria) were compared as well. For all parameters, there were no significant differences between 1) sites with a major NPDES and sites with minor NPDES, 2) sites with minor NPDES and sites with no NPDES, or 3) sites with either major or minor NPDES (pooled) and sites with no NPDES.

Table 17. Watershed landuse for each Year 2 monitoring site.

Site Name	Bare Rock/Sand/Clay	Commercial/Industrial/Transportation	Deciduous Forest	Emergent Herbaceous Wetlands	Evergreen Forest	Fallow	Grasslands/Herbaceous	High Intensity Residential	Low Intensity Residential	Mixed Forest	Open Water	Pasture/Hay	Quarries/Strip Mines/Gravel Pits	Row Crops	Shrubland	Small Grains	Transitional	Urban/Recreational Grasses	Woody Wetlands	No Data	Total # Acres
Beaver Creek: Logan Co.		0.12%	5.17%	0.08%	3.04%		50.81%	0.01%	0.37%	0.90%	1.21%	11.55%		0.89%	1.56%	24.26%		0.01%			53424
Beaver Creek: Osage Co.		0.01%	0.79%	0.36%	0.07%		65.85%			0.09%	0.31%	8.25%		3.66%	0.88%	0.96%		<0.01%	<0.01%	18.77%	36781
Bent Creek	0.02%	0.07%	0.32%		3.79%		50.86%		<0.01%	0.92%	0.03%	2.83%		7.27%	5.15%	28.73%					82659
Bitter Creek	0.03%	0.09%	0.05%	0.25%	<0.01%		27.39%		<0.01%	<0.01%	0.12%	11.81%	0.03%	11.25%	0.15%	41.56%		0.07%	<0.01%	7.18%	41309
Black Bear Creek (downstream)	<0.01%	0.31%	4.44%	0.30%	0.69%		33.40%	0.06%	0.65%	0.36%	1.52%	12.47%		1.15%	0.77%	43.85%	0.02%	<0.01%			267305
Black Bear Creek (upstream)	<0.01%	0.32%	3.36%	0.36%	0.71%		24.91%	0.09%	0.85%	0.35%	1.63%	13.63%		0.97%	0.99%	51.82%		0.01%			181394
Black Bear Creek: Lower	<0.01%	0.30%	8.30%	0.23%	0.74%		39.40%	0.07%	0.62%	0.45%	1.56%	11.20%	0.02%	0.99%	0.63%	35.47%	0.01%	0.01%			403285
Bois d'Arc	0.01%	1.77%	0.55%	0.16%	0.02%		27.88%	0.64%	2.44%	0.01%	0.16%	13.47%	<0.01%	10.07%	0.14%	40.94%	<0.01%	1.73%	<0.01%		63182
Buffalo Creek: Lower	0.12%	0.11%	0.08%	0.13%	0.61%	0.01%	65.66%	0.05%	0.05%	0.15%	0.06%	1.42%	0.01%	2.90%	6.61%	21.95%	<0.01%	0.06%	<0.01%		259436
Buffalo Creek: Upper	0.15%	0.17%	0.04%	0.21%	0.20%	0.02%	68.07%	0.09%	0.08%	0.07%	0.05%	1.17%	0.02%	1.96%	3.75%	23.85%		0.10%	<0.01%		151961
Chickaskia Creek: Lower	<0.01%	0.80%	0.19%	0.29%	0.07%		21.73%	0.33%	1.05%	0.03%	0.82%	11.03%	0.01%	6.05%	0.14%	56.84%		0.61%	<0.01%		100399
Chickaskia Creek: Middle	0.02%	0.29%	0.08%	0.31%	0.04%		22.86%	0.02%	0.03%	0.01%	0.48%	11.06%	0.01%	7.22%	0.23%	48.39%		0.14%	<0.01%	8.78%	137876
Chilocco Creek	<0.01%	0.21%	0.68%	0.14%	0.01%		43.65%	0.03%	0.06%	0.03%	0.27%	14.90%		5.89%	0.44%	18.34%		0.24%	<0.01%	15.11%	25619
Cimarron River: Beaver Co.	0.17%	<0.01%	<0.01%	0.03%		0.03%	22.96%	<0.01%	0.01%	<0.01%	0.05%	0.17%		1.50%	0.02%	11.11%	<0.01%	<0.01%		63.64%	406819
Cimarron River: Cimarron Co.		0.02%	0.11%		3.52%		77.93%			<0.01%	0.09%	0.14%			0.40%	0.03%	0.02%		<0.01%	17.76%	136524
Clay Creek		0.30%	0.01%	0.73%			17.27%	0.33%	0.20%		0.02%	2.60%	0.03%	0.98%	0.04%	77.40%	<0.01%	0.07%			8064
Clear Creek: Beaver Co.	0.09%	0.10%	<0.01%	0.08%		0.19%	44.35%	<0.01%	<0.01%		0.01%	0.41%		9.54%	0.36%	44.87%		<0.01%			122691
Clear Creek: Harper Co.	0.14%	0.06%	0.05%	0.01%		0.16%	54.64%			0.02%	0.02%	2.37%		8.88%	11.90%	21.76%			<0.01%		63065
Cold Springs Creek			0.02%		0.01%	0.01%	92.95%					0.03%		2.02%	0.28%	4.69%					56507
Cooper Creek	0.04%	<0.01%	0.43%	0.17%	0.77%		14.52%	<0.01%	0.04%	0.19%	0.66%	16.56%		7.04%	5.30%	54.28%					74716
Cottonwood Creek	0.01%	1.32%	8.10%	0.02%	1.22%		33.13%	2.18%	4.49%	0.35%	3.10%	14.39%		3.12%	1.12%	27.28%	0.03%	0.17%			223501
Council Creek		0.11%	15.03%	0.01%	4.32%		51.13%	<0.01%	0.08%	1.40%	0.99%	12.96%		0.95%	0.47%	12.55%					26387
Crooked Creek: Beaver Co.							89.65%													10.07%	42531
Crooked Creek: Grant Co.	0.60%	0.03%	0.11%	0.38%	0.01%		30.96%	0.02%	0.04%	0.02%	0.94%	6.13%		3.90%	4.94%	46.62%	<0.01%	0.07%	0.26%	4.97%	132711
Dead Indian Creek	0.01%	0.06%	0.74%		0.24%		24.14%			0.21%	0.70%	12.43%		4.60%	8.49%	48.37%					27413
Deep Creek	0.06%	0.02%	0.57%	0.10%	2.35%		14.95%		0.06%	0.52%	0.44%	15.55%		11.52%	9.12%	44.75%		<0.01%			70168
Deer Creek	<0.01%	0.04%	0.04%	0.30%	<0.01%		20.58%	0.01%	0.05%	<0.01%	0.11%	7.93%	<0.01%	3.43%	0.16%	67.28%		0.06%			98694

Site Name	Bare Rock/Sand/Clay	Commercial/ Industrial/ Transportation	Deciduous Forest	Emergent Herbaceous Wetlands	Evergreen Forest	Fallow	Grasslands/Herbaceous	High Intensity Residential	Low Intensity Residential	Mixed Forest	Open Water	Pasture/Hay	Quarries/Strip Mines/Gravel Pits	Row Crops	Shrubland	Small Grains	Transitional	Urban/Recreational Grasses	Woody Wetlands	No Data	Total # Acres
Doga Creek		0.03%	5.13%	0.22%	0.04%		84.58%		<0.01%	0.07%	0.44%	4.75%		0.82%	0.72%	2.97%	0.23%				18335
Driftwood Creek	0.04%	0.11%	0.02%	0.82%			16.25%	0.01%	0.02%	<0.01%	0.04%	2.38%		2.64%	0.35%	69.80%	<0.01%	0.02%	<0.01%	7.49%	84324
Duck Pond Creek	0.07%	0.12%	0.01%	0.08%		0.25%	48.23%				0.01%	0.34%		3.71%	0.94%	46.24%					38229
Dugout Creek		0.06%	16.67%		11.43%		43.98%			1.28%	0.91%	12.08%		0.11%	0.14%	13.34%					730
Eagle Chief Creek: Lower	0.18%	0.08%	0.34%	0.25%	0.19%		28.53%	0.02%	0.13%	0.13%	0.32%	5.43%		2.92%	5.11%	56.35%	<0.01%	0.02%	<0.01%		303112
Eagle Chief Creek: Woods Co.	0.44%	0.10%	0.01%	0.15%	0.01%		41.24%	0.01%	0.02%	0.01%	0.25%	0.94%		1.70%	7.12%	47.97%	<0.01%	0.02%			115624
Euchee Creek	<0.01%	0.81%	20.32%	0.04%	1.34%		50.22%	0.31%	1.71%	0.88%	0.95%	17.40%	<0.01%	0.61%	0.27%	4.92%	0.06%	0.13%			56912
Gray Horse Creek	<0.01%	0.01%	8.92%	0.14%	<0.01%		87.14%		<0.01%	0.03%	0.50%	1.96%		0.03%	0.72%	0.53%		<0.01%			27032
Griever Creek	0.11%	0.05%	1.05%		21.29%		38.39%		<0.01%	2.48%	0.09%	1.31%		3.10%	26.99%	5.13%					44082
Indian Creek: Major Co.	0.01%	0.25%	5.05%	0.07%	1.84%		13.31%	0.02%	0.25%	0.72%	0.41%	9.76%		6.21%	1.55%	60.53%		<0.01%			43873
Indian Creek: Woodward Co.	0.21%	0.04%	0.20%		1.05%		59.63%		<0.01%	0.31%	0.05%	1.56%		11.76%	8.67%	16.51%					48272
Kingfisher Creek	0.08%	0.01%	1.24%	0.34%	2.11%		19.07%		<0.01%	0.36%	0.91%	12.21%		8.52%	10.15%	44.99%					120478
Kiowa Creek: Harper Co.	0.26%	0.01%	0.04%	0.09%	<0.01%	0.05%	75.14%			0.02%	<0.01%	0.39%		0.83%	3.59%	19.43%	<0.01%	0.01%	0.14%		93974
Kiowa Creek: Beaver Co.	0.15%	<0.01%	0.01%		<0.01%	0.13%	59.64%			<0.01%	<0.01%	0.20%		5.80%	3.47%	30.59%					75041
Lagoon Creek	<0.01%	0.17%	24.42%	0.05%	1.45%		59.36%	0.01%	0.20%	0.57%	0.60%	6.60%		0.68%	0.49%	5.39%		<0.01%			33767
Long Creek	0.13%	0.01%	0.14%		8.35%		49.19%		<0.01%	1.10%	0.07%	3.01%		6.04%	11.72%	20.21%		0.01%			33777
Main Creek	0.38%	0.01%	0.51%		16.08%		39.97%			1.99%	0.02%	3.63%		4.29%	23.02%	10.08%					58779
Medicine Lodge Creek	0.04%	0.07%	0.37%	0.65%	0.07%		12.90%	0.02%	0.05%	0.06%	0.59%	2.81%		2.43%	0.68%	68.57%		0.08%	0.10%	10.50%	55973
Otter Creek: Harper Co.	0.06%	0.02%	0.25%		0.03%	0.21%	55.20%			0.05%	0.04%	2.83%		3.29%	9.90%	28.10%					25750
Otter Creek: Logan Co.		0.01%	4.13%	0.03%	3.23%		21.89%	0.01%	0.28%	0.52%	0.60%	13.75%		0.63%	1.54%	53.35%		0.02%			75066
Palo Duro Creek	0.14%					0.29%	66.17%				0.08%	0.33%		0.80%	10.70%	21.49%					11602
Persimmon Creek	0.36%	0.06%	0.25%	<0.01%	1.37%		57.73%	0.04%	0.11%	0.46%	0.10%	1.38%		13.67%	10.35%	14.11%					106800
Pond Creek	0.07%	0.08%	0.28%	0.17%	0.14%		25.11%	0.03%	0.11%	0.01%	0.35%	5.54%	<0.01%	2.77%	1.80%	61.73%		0.14%	<0.01%	1.64%	203427
Red Rock Creek	<0.01%	0.24%	2.32%	0.16%	0.88%		17.88%	<0.01%	0.16%	0.36%	0.87%	13.08%		1.47%	0.96%	61.61%		<0.01%			294129
Red Rock Creek: Upper		0.99%	1.27%	0.02%	0.79%		13.21%			0.35%	1.11%	19.64%		2.42%	0.78%	59.41%					15099
Salt Creek: Kingfisher Co.	0.30%	0.11%	0.90%	0.20%	5.31%		20.58%	0.06%	0.23%	0.84%	0.45%	18.26%		13.44%	12.75%	26.56%		0.01%			119647
Salt Creek: Lower	0.01%	0.18%	1.88%	0.54%	0.02%		81.43%	0.03%	0.21%	0.05%	0.64%	6.56%	0.09%	1.35%	4.51%	1.67%	<0.01%	0.11%	0.71%		156583
Salt Creek: Payne Co.	0.01%	0.25%	23.39%	0.03%	1.55%		60.46%		0.02%	0.60%	0.69%	7.16%		1.10%	0.49%	4.26%					27500
Salt Creek: Upper	0.01%	0.06%	0.06%	0.23%	<0.01%		73.09%	0.01%	0.09%	0.01%	0.89%	16.67%		6.57%	1.09%	1.00%		0.11%	0.13%		24507

Site Name	Bare Rock/Sand/Clay	Commercial/ Industrial/ Transportation	Deciduous Forest	Emergent Herbaceous Wetlands	Evergreen Forest	Fallow	Grasslands/Herbaceous	High Intensity Residential	Low Intensity Residential	Mixed Forest	Open Water	Pasture/Hay	Quarries/Strip Mines/Gravel Pits	Row Crops	Shrubland	Small Grains	Transitional	Urban/Recreational Grasses	Woody Wetlands	No Data	Total # Acres
Salt Fork of Arkansas River	0.37%	0.16%	0.19%	3.47%	0.03%		35.70%	0.16%	0.08%	0.04%	2.34%	3.07%	0.01%	2.57%	4.19%	43.30%	<0.01%	0.04%	0.33%	3.96%	641455
Sand Creek	0.05%	0.02%	0.12%		1.11%		62.37%		<0.01%	0.39%	0.08%	1.61%		5.55%	14.75%	13.95%					41234
Sandy Creek	0.04%	<0.01%	0.12%	1.02%	<0.01%		49.66%		<0.01%	0.02%	0.32%	3.80%		5.61%	1.30%	26.07%	0.02%	0.02%	0.02%	11.97%	60780
Skeleton Creek: Lower	<0.01%	<0.01%	4.15%	0.24%	4.36%		28.27%	<0.01%	0.22%	0.70%	1.56%	15.40%		1.48%	1.20%	42.41%		<0.01%			78209
Skeleton Creek: Upper	0.01%	0.39%	19.51%	0.06%	0.63%		56.46%	<0.01%	0.02%	0.23%	5.66%	5.81%		0.70%	0.49%	9.92%	0.06%		0.03%		229175
Spring Creek			0.01%			0.25%	64.21%			<0.01%	0.04%	1.08%	0.02%	2.63%	5.49%	26.27%					18632
Stillwater Creek: Lower	0.01%	0.90%	18.44%	0.06%	1.70%		49.07%	0.95%	2.52%	0.78%	3.40%	10.27%	<0.01%	0.76%	0.47%	10.57%	0.04%	0.03%	0.01%		170253
Stillwater Creek: Upper	0.01%	0.39%	19.51%	0.06%	0.63%		56.46%	<0.01%	0.02%	0.23%	5.66%	5.81%		0.70%	0.49%	9.92%	0.06%		0.03%		80770
Turkey Creek: Lower	0.02%	0.22%	1.54%	0.17%	0.55%		9.21%	0.06%	0.69%	0.28%	0.76%	11.45%		4.86%	0.51%	69.64%		0.03%			128705
Turkey Creek: Upper	<0.01%	0.16%	0.56%	0.17%	0.29%		8.85%	0.04%	0.41%	0.19%	0.48%	10.62%		2.52%	0.59%	75.10%		0.01%			138336
Turkey Creek: Woods Co.	0.58%	0.01%	0.01%	0.01%	0.01%		56.86%	<0.01%	<0.01%	0.02%	0.78%	0.90%		1.88%	15.09%	23.85%		<0.01%			24374
Uncle John's Creek	0.01%	0.31%	2.04%	<0.01%	0.35%		22.97%	0.05%	0.20%	0.20%	1.75%	17.04%		2.07%	0.77%	52.02%	0.17%				93045
Wild Horse Creek		0.08%	0.50%	0.39%	0.92%		9.52%	0.01%	0.18%	0.33%	0.86%	14.44%		4.62%	1.94%	66.21%		<0.01%			74481
Wolf Creek: Lower	0.12%	0.20%	0.10%	1.06%	0.10%		50.73%		<0.01%	0.32%	5.23%	4.15%		11.85%	13.63%	11.88%		<0.01%	0.65%		36451
Wolf Creek: Upper	0.14%	0.11%	0.15%	0.04%	0.09%		51.51%	0.03%	0.27%	0.08%	0.05%	5.08%		17.75%	9.63%	15.07%		<0.01%			355244
Yellowstone Creek	0.25%		0.01%		0.01%		71.21%			0.04%	0.20%	0.21%		0.38%	12.59%	7.88%			<0.01%	7.22%	39029

Table 18. Permitted landuse data for each site. For the NPDES category, the total number of NPDES in the watershed is given, followed by the number of major NPDES in parentheses, if applicable.

Site Name	WBID	# Oil and Gas	# CAFO	# NPDES	# Tot. Retention	# Active Municipal Landfills	# Land Apps.	Treatment Storage and Disposal	Site Name	WBID	# Oil and Gas	# CAFO	# NPDES	# Tot. Retention	# Active Municipal Landfills	# Land Apps.	Treatment Storage and Disposal
Beaver Creek: Logan Co.	OK620900-03-0230C	742			2				Indian Creek: Major Co.	OK620910-02-0310C	515		2				
Beaver Creek: Osage Co.	OK621210-00-0050L	48							Indian Creek: Woodward Co.	OK720500-01-0200D	175					1	
Bent Creek	OK720500-01-0070D	254			4				Kingfisher Creek	OK620910-05-0010J	721						
Bitter Creek	OK621100-00-0100G	1049							Kiowa Creek: Harper Co.	OK720500-02-0130C	493						
Black Bear Creek (downstream)	OK621200-03-0010M	3982							Kiowa Creek: Beaver Co.	OK720500-02-0130K	518	1					
Black Bear Creek (upstream)	OK621200-03-0010W	3506		3	3		3		Lagoon Creek	OK620900-01-0180J	422						
Black Bear Creek: Lower	OK621200-03-0010D	4943		9	8		3		Long Creek	OK620920-02-0080D	235						
Bois d'Arc	OK621000-03-0010C	676		1	3				Main Creek	OK620920-01-0180F	345	1					
Buffalo Creek: Lower	OK620920-05-0010G	1063	2	1	7				Medicine Lodge Creek	OK621010-03-0010D	109						
Buffalo Creek: Upper	OK620920-05-0010P	622	1	1	7				Otter Creek: Harper Co.	OK720500-02-0050B	103						
Chickaskia Creek: Lower	OK621100-00-0010B	1505			4				Otter Creek: Logan Co.	OK620910-03-0040C	677			6		1	
Chickaskia Creek: Middle	OK621100-00-0010M	1590			3				Palo Duro Creek	OK720500-02-0500G	32						
Chilocco Creek	OK621210-00-0270C	184			3				Persimmon Creek	OK720500-01-0150G	326			2			
Cimarron River: Beaver Co.	OK620930-00-0010T	659	22						Pond Creek	OK621000-05-0010D	950			3			
Cimarron River: Cimarron Co.	OK720900-00-0180C	10							Red Rock Creek	OK621200-05-0010K	2862		2	10		1	
Clay Creek	OK621010-01-0090R	39							Red Rock Creek: Upper	OK621200-05-0160G	362			1			
Clear Creek: Beaver Co.	OK720500-02-0300F	829	4		2				Salt Creek: Kingfisher Co.	OK620910-02-0100D	690	1	3	1			
Clear Creek: Harper Co.	OK720500-02-0070G	326	3						Salt Creek: Lower	OK621200-04-0010F	457		2				
Cold Springs Creek	OK720900-00-0100D	9							Salt Creek: Payne Co.	OK620900-02-0020D	276						
Cooper Creek	OK620910-02-0040C	629	1						Salt Creek: Upper	OK621200-04-0010P	26						
Cottonwood Creek	OK620910-04-0010D	2811	1	7 (3M)	17		9		Salt Fork of Arkansas River	OK621010-01-0010D	1783	6	1	6			
Council Creek	OK620900-02-0050H	286							Sand Creek	OK620920-05-0050G	111						
Crooked Creek: Beaver Co.	OK620930-00-0100G	12							Sandy Creek	OK621010-02-0010D	174						
Crooked Creek: Grant Co.	OK621000-06-0010C	608	1		5				Skeleton Creek: Lower	OK620910-03-0010F	1151		1				
Dead Indian Creek	OK620910-05-0080D	144	2	2					Skeleton Creek: Upper	OK620910-03-0010S	2254		10 (3M)	5	1		2
Deep Creek	OK620910-02-0250C	497							Spring Creek	OK720500-02-0100D	87						
Deer Creek	OK621000-04-0010D	675							Stillwater Creek: Lower	OK620900-04-0040C	1863	4	5 (1M)	12	1		
Doga Creek	OK621200-02-0020C	94							Stillwater Creek: Upper	OK620900-04-0070T	1000	1					
Driftwood Creek	OK621010-03-0030C	188	1		4				Turkey Creek: Lower	OK620910-06-0010T	1484		1	1			
Duck Pond Creek	OK720500-02-0250F	249							Turkey Creek: Upper	OK621010-01-0230G	773	2	2	4	1		
Dugout Creek	OK620900-03-0080C	8							Turkey Creek: Woods Co.	OK620910-06-0010B	54	2					
Eagle Chief Creek: Lower	OK620920-04-0010C	1545	1	1	9		1		Uncle John's Creek	OK620910-05-0030C	610			4			
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	443	1						Wild Horse Creek	OK621000-02-0040F	515			6			
Euchee Creek	OK620900-01-0290D	386		1 (M)			1		Wolf Creek: Lower	OK720500-03-0010C	147						
Gray Horse Creek	OK621200-01-0400C	163							Wolf Creek: Upper	OK720500-03-0010G	1200	3		11			
Griever Creek	OK620920-01-0130G	292							Yellowstone Creek	OK621010-01-0270C	125						

Table 19. Comparison of NPDES types on nutrient levels.

Parameter	NPDES type	N	Mean	Standard Deviation	p value
Total Nitrogen (soluble)	Major	75	6.554	4.771	0.000***
	Minor	304	2.093	1.488	
	Minor	304	2.093	1.488	0.000***
	None	953	1.231	0.886	
Total Phosphorous	Major	73	0.957	0.690	0.000***
	Minor	296	0.192	0.156	
	Minor	296	0.192	0.156	0.000***
	None	940	0.115	0.109	
Ammonia	Major	74	0.169	0.406	0.000***
	Minor	304	0.058	0.074	
	Minor	304	0.058	0.074	0.112
	None	951	0.050	0.078	
Available Nitrogen	Major	75	5.716	4.751	0.000***
	Minor	304	1.400	1.423	
	Minor	304	1.400	1.424	0.000***
	None	953	0.721	0.796	
TKN	Major	74	1.018	0.676	0.005***
	Minor	304	0.751	0.742	
	Minor	304	0.751	0.742	0.000***
	None	951	0.562	0.404	
Nitrite	Major	75	0.264	1.342	0.003***
	Minor	303	0.033	0.086	
	Minor	303	0.033	0.086	0.003***
	None	952	0.022	0.038	
Nitrate	Major	75	5.285	4.730	0.000***
	Minor	304	1.309	1.418	
	Minor	304	1.309	1.418	0.000***
	None	953	0.648	0.784	
Total OrthoPhosphate	Major	73	0.796	0.667	0.000***
	Minor	296	0.106	0.126	
	Minor	296	0.106	0.126	0.000***
	None	940	0.052	0.091	

3.4 BENEFICIAL USE SUPPORT ASSESSMENT

The beneficial uses assigned to the Rotating Basin Year 2 monitoring sites include fish and wildlife propagation (warm water aquatic community), agricultural, primary body contact recreation, secondary body contact recreation, aesthetics, and public and private water supply. The beneficial uses assessed for the monitoring sites are presented below, along with the current (2004) attainment status of each use, as determined using methods outlined in the *Continuing Planning Process: Integrated Water Quality Report Listing Methodology* (ODEQ 2002). The causes and potential source(s) (if known) of any impairments are presented in Appendix D.1, and the key for the cause and source codes is given in Appendix D.2.

Table 20. Beneficial use support assessment. S=supporting, N=not supporting, I=insufficient information. *=attaining for all parameters assessed.

WBID	SITE NAME	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.
OK620900010180	Lagoon Creek	S	N	S			I*	
OK620900010290	Euchee Creek	N	N			S	I*	
OK620900020020	Salt Creek: Payne Co.	I	N		I	I	I	
OK620900020050	Council Creek	S	N		S	S	I*	
OK620900030080	Dugout Creek	I	N		I	I	I	
OK620900030230	Beaver Creek: Logan Co.	I	I		I	I	I	
OK620900040040	Stillwater Creek (Lower)	I	N		N	I	I	
OK620900040070	Stillwater Creek (Upper)	N	N		I	I	I	
OK620910020040	Cooper Creek	I	I		I	I	I	
OK620910020100	Salt Creek: Kingfisher Co.	I	I		I	I	I	
OK620910020250	Deep Creek	I	N		I	I	I	
OK620910020310	Indian Creek: Major Co.	I	N		I	I	I	
OK620910030010	Skeleton Creek	I*	I		S	S	S	
OK620910030040	Otter Creek: Logan Co.	N	N		S	S	I*	
OK620910040010	Cottonwood Creek	S	N		S	S	I*	
OK620910050010	Kingfisher Creek	N	N			S	I*	
OK620910050030	Uncle John's Creek	I	I			I	I	
OK620910050080	Dead Indian Creek	I	N		I	I	I	
OK620910060010	Turkey Creek	S	N		N	S	S	
OK620920010130	Griever Creek	S	N		I*	S	I*	
OK620920010180	Main Creek	I	N		I	I	I	
OK620920020080	Long Creek	I	N		I	I	I	
OK620920040010	Eagle Chief Creek	I*	N		S	S	S	
OK620920050010	Buffalo Creek	S	N		S	S	S	
OK620920050050	Sand Creek	I	N		I	I	I	
OK620930000010	Cimarron River: Beaver Co.	S	N		S	S	I*	
OK620930000100	Crooked Creek	I*	N		I	I	I	
OK621000020040	Wildhorse Creek	I	N			I	I	

WBID	SITE NAME	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.
OK621000030010	Bois d'Arc Creek	S	N		S	S	I*	
OK621000040010	Deer Creek	I	N		I	I	I	
OK621000050010	Pond Creek	I	N		I	I	I	
OK621000060010	Crooked Creek: Grant Co.	I	I		I	I	I	
OK621010010010	Salt Fork of Arkansas River	I	I		I	I	N	
OK621010010090	Clay Creek	I	N			I	I	
OK621010010230	Turkey Creek: Woods Co.	N	N		S	S	N	
OK621010010270	Yellowstone Creek	N	N		S	S	N	
OK621010020010	Sandy Creek	S	N		N	S	I*	
OK621010030010	Medicine Lodge River	I	N		I	I	I	
OK621010030030	Driftwood Creek	I	N		I	I	I	
OK621100000010	Chickaskia River	I*	N		S	S	S	
OK621100000100	Bitter Creek	S	N		S	S	N	
OK621200010400	Gray Horse Creek	N	N			S	I*	
OK621200020020	Doga Creek	N	N		S	S	I*	
OK621200030010	Black Bear Creek	S	N		I*	S	S	
OK621200040010	Salt Creek	S	N		S	S	S	
OK621200050010	Red Rock Creek	N	N			S	S	
OK621210000050	Beaver Creek: Osage Co.	N	N		I	I	I	
OK621210000270	Chilocco Creek	N	N			I	I	
OK720500010070	Bent Creek	I	N		I	I	N	
OK720500010150	Persimmon Creek	S	N		S	S	I*	
OK720500010200	Indian Creek: Woodward Co.	I	I		I	I	I	
OK720500020050	Otter Creek: Harper Co.	I	N		I	I	I	
OK720500020070	Clear Creek: Harper Co.	S	N		S	S	I*	
OK720500020100	Spring Creek	I	N			I	I	
OK720500020130	Kiowa Creek	S	N		S	S	S	
OK720500020250	Duck Pond Creek	I	N		I	I	I	
OK720500020300	Clear Creek: Beaver Co.	N	N		S	S	I*	
OK720500020500	Palo Duro Creek	N	N		S	S	N	
OK720500030010	Wolf Creek	S	N		S	S	S	S
OK720900000100	Cold Springs Creek	N	I		I	I	I	
OK720900000180	Cimarron River: Cimarron Co.	N	N		S	S	I*	

No sites were fully supporting for all assigned uses, but Kiowa Creek, Buffalo Creek, and Salt Creek were supporting for 4 out of 5 assigned uses, and Wolf Creek was supporting for 5 out of 6 assigned uses. No site was supporting for primary body contact recreation. *Enterococcus* and *E. coli* were the two most abundant impairments, listed as exceeding acceptable levels in all of the stream sites except Salt Creek (Kingfisher Co.), which was not assessed for PBCR (Appendix D.1).

4.0 LITERATURE CITED

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Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CT	25467	11-Jun-02	5.52		19.5	112	26.5	359.5	6.96													2.61		
CT	25406	23-Jul-02	4.44	54	9.72	152	25.8	655		0.214	2	78.3	0.01	0.01	29.12	0.699	369	216.1	0.029	0.096	10	0	0.719	0.234
CT	25736	27-Aug-02	5.27	65	182	60	25.2	164.3	7.96	0.257	5	10.07	0.75	0.2	5.35	1.229	172	64.08	0.005	0.114	61	9.25	2.179	1.207
CT	25894	01-Oct-02	5.58	64	16.1	110	21.3	374.5	7.49	0.032	4	48.44	0.66	0.01	13.65	0.416	167	169.2	0.011	0.033	10	0.01	1.086	0.702
CT	26048	05-Nov-02	8.93	78	12.2	130	8.6	638	7.47	0.018	4	91.36	0.57	0.01	21.16	0.7	355	214.5	0.008	0.033	10	0.06	1.28	0.598
CT	26192	03-Dec-02	11.07	89	3.49	222	5.8	1552	7.32	0.005	2	285.3	0.21	0.01	48.31	0.308	797	435.2	0.005	0.018	10		0.528	0.225
CT	26582	14-Jan-03	10.71	82	26.8	104	3.7	738	7.04	0.015	5	118.5	0.11	0.01	28.8	0.351	420	210.2	0.005	0.018	10	0.2	0.471	0.135
CT	26819	19-Feb-03	12	104	10.1	142	8.7	522	8.15	0.015	3.6	114	0.09	0.01	36.5	0.271	427	239	0.005	0.014	10	0.54	0.371	0.115
CT	27322	25-Mar-03	7.6	97.5	45.3	102		333.6	7.36	0.015	3.2	22.2	0.45	0.02	16	0.11	262	119.3	0.022	0.032	16	5.75	0.58	0.485
CT	27465	29-Apr-03	6.19	68	5.2	192	19.5	754	7.93	0.013	2.8	83.7	0.1	0.02	34.4	0.368	434	278	0.005	0.051	10	0.79	0.488	0.133
CT	27653	03-Jun-03	4.83	55	24	129	22.2	424.5	7.23	0.03	2.2	42.7	0.19	0.02	15.4	1.163	220	158.9	0.012	0.096	17	0.48	1.373	0.24
CT	27800	08-Jul-03	3.97	49	30.1	148	26	535	7.57	0.017	3.3	59.5	0.07	0.01	16.1	0.285	261	162.7	0.011	0.099	31	0.02	0.365	0.097
CT	28090	12-Aug-03	4.27	51	34.2	114	23.6	906	7.42	0.053	4.7	187.9	0.16	0.02	43.2	1.08	595	274.3	0.017	0.093	26		1.26	0.233
CT	28237	15-Sep-03	7.14	78	205	82	19.4	178.4	7.47	0.032	2.8	8.8	0.22	0.02	6.4	0.919	150	66.8	0.093	0.187	74	12.54	1.159	0.272
CT	28369	21-Oct-03	7.2	72	22.4	91	15.6	346	7.24	0.034	2.8	26.6	0.02	0.02	13.4	0.573	209	132.1	0.011	0.091	13	0.61	0.613	0.074
CT	28551	02-Dec-03	10.59	85	6.12	149	6	509	7.74	0.015	3.2	49.7	0.02	0.02	19.9	0.528	273	178.3	0.005	0.06	10	0.06	0.568	0.055
CT	29380	06-Jan-04	12.17	92	9.42	172	3.7	677	8.06	0.015	3	87.9	0.02	0.02	27.1	0.277	402	225.9	0.011	0.068	10	0.72	0.317	0.055
CT	29581	10-Feb-04	14.93	107.8	46	149	2	512	8.04	0.054	3.4	44.9	0.13	0.02	25.1	0.592	316	172.8	0.012	0.102	20	48.27	0.742	0.204
CT	29771	16-Mar-04	10.42	93.4	15.6	187	10.4	598	7.85	0.018	5.6	46.5	0.02	0.02	28.2	0.564	348	225.5	0.017	0.09	19	5.52	0.604	0.058
CT	30089	20-Apr-04	7.32	79	8.53	209	19.2	686	7.55	0.024	2.2	62.6	0.02	0.02	35.1	0.673	408	253.9	0.005	0.059	10	2.9	0.713	0.064
CT	30389	08-Jun-04	6.5	75.7	57.1	101	23.6	501	7.52	0.049	2.7	75.4	0.21	0.02	13.9	0.11	282	157.6	0.015	0.125	22	3.94	0.34	0.279
CGP	25468	12-Jun-02	7.49		63.6	120	27.4	272.2	6.99													4.72		
CGP	25405	22-Jul-02	4.76	64	21.4	219	29.6	458		0.187	2	23.37	0.01	0.01	21.94	0.945	294	203.3	0.166	0.263	17	1.01	0.965	0.207
CGP	25738	26-Aug-02	4.69	61	57.8	149	27.2	440	8.77	0.395	5	28.84	0.53	0.2	30.66	1.365	246	136.2	0.531	0.619	48	3.19	2.095	1.125
CGP	25893	30-Sep-02	12.27	150	28.2	139	24	497	9.06	0.124	9	42.73	1.19	0.01	50.81	0.874	213	142.5	0.909	1.066	21	1.04	2.074	1.324
CGP	26047	04-Nov-02	6.98	65	114	90	11.5	255.4	7.21	0.185	3	9.77	1.17	0.01	16.53	0.638	201	94.67	0.275	0.277	38		1.818	1.365
CGP	26191	02-Dec-02	11.34	94	11.2	216	6.5	550	8.16	0.032	4	35.23	1.47	0.01	48.7	1.386	304	176.2	0.607	0.674	10	1.44	2.866	1.512
CGP	26585	14-Jan-03	11.74	92	32.4	123	4.3	484.8	7.78	0.015	6	29.2	0.96	0.01	35.4	0.168	290	176.6	0.132	0.26	10	2.64	1.138	0.985
CGP	26818	19-Feb-03	15.31	130	16.4	176	7.4	437.1	8.86	2.617	8.8	46.8	5.45	0.01	60.3	5.09	348	199.6	1.282	1.32	10	2.69	10.55	8.077
CGP	27321	24-Mar-03	8.2	97.5	46.2	128	18.6	370.7	7.46	0.121	3.8	17.1	1.03	0.02	26.5	0.734	296	144.1	0.111	0.183	19		1.784	1.171
CGP	27464	28-Apr-03	15.23	170	18.6	209	23.6	483.5	8.79	0.029	7.8	36.2	0.65	0.02	50.8	0.884	379	275.1	0.056	0.231	22		1.554	0.699
CGP	27652	02-Jun-03	11.78	145	34.8	154	26	430.6	8.48	0.022	6.5	17.2	0.44	0.02	24.7	1.504	254	177	0.033	0.196	38	5.11	1.964	0.482
CGP	27799	07-Jul-03	8.25	107	33.9	140	29.9	374.2	8.22	0.019	4.6	15.9	0.04	0.01	21.1	0.467	219	124	0.052	0.154	30		0.517	0.069
CGP	28089	11-Aug-03	5.65	71	69.4	166	27.3	687	8.08	0.038	5.3	55.7	0.05	0.02	62.1	0.921	425	158.1	0.547	0.704	63	3.49	0.991	0.108
CGP	28238	15-Sep-03	5.93	66	279	78	20.6	200.4	7.05	0.23	2.7	8.7	0.61	0.09	12.2	0.939	166	70.5	0.412	0.487	121	4.52	1.639	0.93
CGP	28368	20-Oct-03	13.75	151	21	131	20.6	357.1	8.26	0.029	8.6	12.6	0.02	0.02	20.5	0.818	198	149.4	0.027	0.176	14		0.858	0.069
CGP	28550	01-Dec-03	14.4	120	9.67	180	7.5	646	8.12	0.016	3.3	38.3	1.06	0.02	61.2	0.938	352	187.3	0.715	0.736	11		2.018	1.096
CGP	29376	05-Jan-04	14.1	113.3	15.7	179	6	644	8.68	0.015	5.7	40.6	2.48	0.04	56.7	0.95	302	209.8	0.59	0.768	10		3.47	2.535
CGP	29580	09-Feb-04	13.1	98.5	76.7	125	3.4	418.6	7.65	0.487	2.1	18.6	0.53	0.05	31.2	1.254	286	151.9	0.063	0.178	23	9.46	1.834	1.067

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	29770	15-Mar-04	9.6	90	31.3	166	12.4	506	7.14	0.021	5	19	0.38	0.05	34.9	0.557	307	212.4	0.027	0.12	29		0.987	0.451
CGP	30088	19-Apr-04	9.81	108.4	14.4	214	20.3	572	7.8	0.026	3.9	25.9	0.04	0.02	31.5	0.557	359	243.7	0.024	0.07	10		0.617	0.086
CGP	30387	07-Jun-04	7.77	92	57.4	11.8	23.9	388	7.82	0.127	5.5	19.9	0.51	0.12	20.1	0.42	228	150.4	0.115	0.304	53	6.92	1.05	0.757
CGP	25411	23-Jul-02	4	57	6.06	231	32.2	683		0.089	5	50.46	0.01	0.01	18.51	0.497	371	258.6	0.017	0.05	10	0.02	0.517	0.109
CGP	25557	30-Jul-02	3.91		11.5	221	26	682	7.8													0.52		
CGP	25743	27-Aug-02	8.32	112	78	50	29	360.6	9.48	0.084	4	47.01	0.56	0.01	10.95	0.734	215	120.7	0.005	0.022	20	2.12	1.304	0.654
CGP	25892	30-Sep-02	5.95	72	18.8	170	23.4	491.3	7.54	0.02	4	37.46	0.76	0.01	15.42	0.416	166	206.3	0.029	0.06	23	0.02	1.186	0.79
CGP	26049	05-Nov-02	8.74	78	14.9	156	9.2	500	7.61	0.015	3	43.55	0.62	0.01	14.17	0.28	267	190.3	0.016	0.041	14	0.3	0.91	0.645
CGP	26190	02-Dec-02	6.78	59	7.74	217	8.2	735	7.25	0.015	2	66.45	0.13	0.01	23.32	0.354	387	280.2	0.034	0.05	10	0.02	0.494	0.155
CGP	26232	10-Dec-02	9.22		9.11	9.11	5.1	15050	8.09	0.026	2	4502.97	1.98	0.01	1141.72	0.553	9357	1435.2	0.005	0.019	15	29.77	2.543	2.016
CGP	26583	14-Jan-03	10.06	79	23	129	4.5	493.3	7.36	0.015	6	34.4	0.11	0.01	25.2	0.128	280	187.2	0.005	0.013	10	0	0.248	0.135
CGP	26816	19-Feb-03	11.42	95	11.3	178	6.6	456	7.45	0.015	2	71.9	0.11	0.01	29.7	0.276	386	246.9	0.005	0.008	10	0	0.396	0.135
CGP	27320	24-Mar-03	9.61	97.5	26.5	152	16.5	497.5	7.87	0.015	3.4	35.9	0.4	0.02	28.5	0.151	302	191.2	0.008	0.03	23	10.72	0.571	0.435
CGP	27463	28-Apr-03	7.54		11.5	214	22.1	740	8.09	0.012	3.2	55.6	0.14	0.02	42.6	0.33	406	310.3	0.006	0.058	10	1.91	0.49	0.172
CGP	27651	02-Jun-03	6.3	76	22.8	206	25.3	682	7.82	0.016	3.9	59.8	0.02	0.02	29.1	0.871	383	243.6	0.01	0.091	13	0.31	0.911	0.056
CGP	27804	08-Jul-03	4.63	59	21.5	214	28	565	7.5	0.015	4.3	34.8	0.05	0.01	15.7	0.471	282	197.5	0.025	0.119	25	0.16	0.531	0.075
CGP	28088	11-Aug-03	4.88	61.5	37.9	232	27.2	580	7.6	0.017	3.8	25.6	0.06	0.02	16.1	0.28	365	250.8	0.022	0.097	26	0.01	0.36	0.097
CGP	28236	15-Sep-03	7.03	75	212	79	18	234.2	7.25	0.033	2.6	14	0.22	0.04	11.1	0.816	157	84.9	0.078	0.161	77	6.41	1.076	0.293
CGP	28373	21-Oct-03	6.62	71	16.3	141	18.7	616	7.18	0.028	3.8	74.8	0.96	0.02	27.7	0.41	317	201.4	0.045	0.1	10	0.18	1.39	1.008
CGP	28555	02-Dec-03	9.93	82	10.3	181	6.9	614	7.36	0.015	3.5	51.5	0.02	0.02	30.5	0.177	329	226	0.005	0.087	17	0.51	0.217	0.055
CGP	29375	05-Jan-04	10.48	84.4	8.23	216	6.1	1092	8.09	0.015	2.8	36.3	0.02	0.02	47.6	0.174	515	321.8	0.013	0.08	10	1.15	0.214	0.055
CGP	29579	09-Feb-04	13.65	99.5	24.7	184	2.1	582	8.12	0.015	2.9	33.4	0.1	0.02	31.7	0.414	331	227.2	0.008	0.085	22	21.16	0.534	0.135
CGP	29769	15-Mar-04	9.84	90.3	10.1	253	11.5	905	7.86	0.015	4.5	79.2	0.02	0.02	48.1	0.35	507	328.3	0.021	0.062	13	7.52	0.39	0.055
CGP	30087	19-Apr-04	6.78	73.7	10.2	219	19.8	709	7.69	0.024	2.9	58.6	0.02	0.02	34.5	0.58	437	266.6	0.018	0.075	10	3.89	0.62	0.064
CGP	30388	07-Jun-04	6.21	73.7	31.2	195	24.1	763	7.92	0.015	4	90.8	0.04	0.02	34.6	0.11	410	261.6	0.017	0.128	20	4.89	0.17	0.075
CGP	25466	10-Jun-02	6.86		12.9	193	25.1	547	8.28													1.75		
CGP	25410	23-Jul-02	9.2	128	5.86	190	31.5	633		0.215	2	66.95	0.01	0.01	19.67	0.891	351	218.5	0.026	0.041	10	0	0.911	0.235
CGP	25742	27-Aug-02	7.24	99	43.9	105	30.3	355.5	9.69	0.142	5	33.93	0.55	0.01	7.18	0.739	202	128.5	0.005	0.026	17	1.24	1.299	0.702
CGP	25891	30-Sep-02	4.46	52	5.14	152	21.8	473.2	7.64	0.097	3	44.17	0.77	0.01	8.7	1.432	247	194.3	0.013	0.047	10	0	2.212	0.877
CGP	26046	04-Nov-02	9.41	86	12.4	143	10.1	578	7.77	0.015	4	75.15	0.63	0.01	10.58	0.48	307	182.3	0.015	0.035	10	0	1.12	0.655
CGP	26189	02-Dec-02	10.6	86	4.48	265	5.8	959	7.48	0.024	4	88.5	0.06	0.01	17.05	0.358	458	315.5	0.02	0.045	10		0.428	0.094
CGP	26584	14-Jan-03	10.83	83	37.1	115	3.4	413	7.71	0.015	4	28.6	0.17	0.01	13.3	0.29	267	162.6	0.005	0.022	10	0	0.47	0.195
CGP	26817	19-Feb-03	10.25	85	16.8	156	6.3	392.8	7.95	0.015	2.2	71.5	0.19	0.01	18.9	0.425	351	211.2	0.005	0.005	10	0	0.625	0.215
CGP	27319	24-Mar-03	9.6	98.1	35.6	127	17.3	446.6	7.88	0.015	4.1	42.3	0.53	0.02	17.3	0.449	280	159.5	0.016	0.092	24	8.5	0.999	0.565
CGP	27462	29-Apr-03	7.25		6.23	195	21.4	653	8.04	0.017	3.2	57.9	0.12	0.02	19.4	0.423	361	272.5	0.005	0.055	10		0.563	0.157
CGP	27650	02-Jun-03	6.66	78	14.6	158	23.1	450	7.73	0.022	3.4	40.5	0.07	0.06	10.3	0.949	260	178.8	0.012	0.086	10	1.09	1.079	0.152
CGP	27798	07-Jul-03	7.3	93	9.97	159	29.7	431.9	8.37	0.02	2.6	33	0.05	0.01	10.1	0.852	254	149.1	0.013	0.08	13	0	0.912	0.08
CGP	28087	11-Aug-03	1.95	23	12.2	207	24.2	526	7.48	0.04	4.4	36.9	0.05	0.02	1.8	0.771	321	226.4	0.012	0.103	10		0.841	0.11
CGP	28235	15-Sep-03	7.96	83.2	30.3	113	17.5	407.7	7.89	0.02	3.4	40.9	0.02	0.02	7.4	0.844	195	164	0.009	0.118	14	2.65	0.884	0.06

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	28367	20-Oct-03	7.23	76	17.2	139	17.5	387.6	7.57	0.027	3.3	25	0.02	0.02	12.1	0.317	234	162.5	0.019	0.087	10		0.357	0.067	
CGP	28549	01-Dec-03	11.03	88	6.71	174	5.8	753	7.52	0.015	5.8	103.6	0.06	0.02	17.6	0.596	384	232.6	0.012	0.077	10		0.676	0.095	
CGP	29374	05-Jan-04	12.75	91	12.3	197	2.5	765	7.95	0.015	2.3	89	0.02	0.02	22.9	0.134	358	248.1	0.008	0.068	10		0.174	0.055	
CGP	29578	09-Feb-04	13.17	97.9	63.7	125	2.9	446.3	7.9	0.015	3.1	35.5	0.34	0.02	16.6	0.662	287	157.8	0.031	0.126	12	8.08	1.022	0.375	
CGP	29768	15-Mar-04	10.51	97.2	16.4	210	12.1	736	8.01	0.016	4.9	65.6	0.04	0.02	29.7	0.491	420	266.2	0.035	0.082	21	5.72	0.551	0.076	
CGP	30086	19-Apr-04	8.68	94.5	16.6	179	19.6	486.2	7.68	0.026	2.3	47.6	0.02	0.02	18.7	0.71	355	220.2	0.031	0.087	10	3.24	0.75	0.066	
CGP	30386	07-Jun-04	7.02	80	6.14	232	23	848	8.07	0.017	2.9	109.1	0.02	0.02	18.3	0.11	435	291.8	0.005	0.097	10	1.38	0.15	0.057	
CGP	25469	18-Jun-02	6.43		107	147	22.6	390.9	5.98														3.04		
CGP	25404	22-Jul-02	4.8	63	12	263	28.5	1052		0.14	2	149.1	0.01	0.01	48.58	0.541	568	266.1	0.012	0.042	10	0	0.561	0.16	
CGP	25737	26-Aug-02	5.62	69	67.6	208	25.8	1753	8.82	0.242	6	373	0.5	0.01	32.59	1.005	978	401.8	0.005	0.049	27	0.09	1.515	0.752	
CGP	25890	30-Sep-02	4.6	54	22.8	266	22.5	935	7.61	0.033	5	217.8	0.92	0.01	163.3	0.918	891	342.4	0.017	0.049	12	0	1.848	0.963	
CGP	26045	04-Nov-02	8.15	71	81.5	165	8.5	601	7.45	0.04	4	75.56	0.72	0.01	14.71	0.631	349	210.7	0.045	0.064	25	0.77	1.361	0.77	
CGP	26188	02-Dec-02	9.67	76	392	283	4.1	917	8	0.018	3	98.5	0.06	0.01	31.56	0.421	487	353.4	0.018	0.03	10	0.28	0.491	0.088	
CGP	26591	14-Jan-03	11.36	92	5.34	257	5.7	898	8.33	0.015	4	96.4	0.08	0.01	23.9	0.11	448	305	0.005	0.009	10	0.37	0.2	0.105	
CGP	26815	19-Feb-03	10.6	92	11.7	282	8.8	868	8.4	0.015	3.2	88.2	0.21	0.01	21.8	0.11	387	286.7	0.005	0.028	10	0.47	0.33	0.235	
CGP	27318	24-Mar-03	8.18	97.5	82.8	183	14.3	612	7.9	0.084	4.1	68.9	0.75	0.02	16.7	0.56	384	205.4	0.04	0.094	32	1.65	1.33	0.854	
CGP	27461	28-Apr-03	5.25		9.18	242	20.9	854	8.03	0.041	2.5	96.8	0.21	0.02	19.2	0.397	453	320.3	0.026	0.072	10	0.74	0.627	0.271	
CGP	27649	02-Jun-03	5.39	63	18	228	23	1070	7.87	0.078	3.5	192.6	0.19	0.02	20.9	0.897	599	301.7	0.02	0.09	14	0.78	1.107	0.288	
CGP	27797	07-Jul-03	2.02	26	6.69	224	27.8	984	7.45	0.058	4.5	151.2	0.12	0.01	28.4	0.794	486	198.5	0.04	0.129	10	0.4	0.924	0.188	
CGP	28086	11-Aug-03	3.1	37	9.18	157	25.1	1313	8.43	0.041	4.9	307.9	0.2	0.02	18.1	1.483	751	208.3	0.015	0.109	10		1.703	0.261	
CGP	28234	15-Sep-03	5.07	53.3	26.5	158	17.6	916	7.75	0.026	2.9	156.6	0.02	0.02	16.3	0.689	454	253.2	0.059	0.118	13	0.28	0.729	0.066	
CGP	28366	20-Oct-03	4.9	49	8.61	258	16.5	912	7.73	0.029	4.4	116.1	0.02	0.02	23.3	0.565	485	295	0.021	0.096	10	0.46	0.605	0.069	
CGP	28548	01-Dec-03	10.19	79.6	8.69	251	5	914	7.07	0.018	3.1	98.9	0.06	0.02	24.6	0.509	444	291	0.005	0.068	10	0.23	0.589	0.098	
CGP	29373	05-Jan-04	11.97	88	5.19	261	2.8	870	7.96	0.015	2.8	91.5	0.02	0.02	22.7	0.137	423	299.6	0.052	0.119	10	0.47	0.177	0.055	
CGP	29577	09-Feb-04	14.67	105.4	63.5	185	1.8	779	8.15	0.083	3.6	98.4	0.38	0.02	18.8	0.59	440	242.5	0.017	0.114	24	1.29	0.99	0.483	
CGP	29767	15-Mar-04	9.5	86	9.4	309	11.1	1038	7.89	0.033	4.6	106.4	0.19	0.02	26.3	0.271	568	360.3	0.062	0.083	11	3.82	0.481	0.243	
CGP	30085	19-Apr-04	5.59	59.5	26.2	308	18.4	1053	7.72	0.076	2.8	132.6	0.04	0.02	21.9	0.888	623	353.7	0.033	0.092	11	1.94	0.948	0.136	
CGP	30385	07-Jun-04	4.66	55.1	39.6	234	23.8	958	7.79	0.248	5.2	160.9	0.13	0.02	17.6	0.81	499	300.9	0.022	0.097	27	0.54	0.96	0.398	
CGP	25545	29-Jul-02	7.67		45.7	136	31.9	783	8.04														0.58		
CGP	25644	06-Aug-02	7.93	113	59.1	199	32.1	834	7.84	0.172	6	101	0.01	0.01	42.18	1.306	434	208.2	0.077	0.148	10	0	1.326	0.192	
CGP	25786	04-Sep-02	7.06	98	15	132	31	1197	8.06	0.113	3	244.3	0.01	0.01	44.79	0.653	641	259.1			10	0.12	0.673	0.133	
CGP	25905	01-Oct-02	8.24	101	44.6	168	25.7	652	8.06	0.032	4	78.32	0.65	0.01	35.43	0.284	359	202.8	0.052	0.075	34	2.51	0.944	0.692	
CGP	26060	05-Nov-02	10.63	95	84.8	171	9.4	614	7.58	0.025	5	75.02	1.36	0.01	27.35	0.475	352	197.6	0.099	0.125	54	5.08	1.845	1.395	
CGP	26214	03-Dec-02	4.28	35	8.66	270	5.4	1195	8.09	0.018	2	173.45	0.08	0.01	53.62	0.255	631	363.7	0.022	0.081	10	3.81	0.345	0.108	
CGP	26599	15-Jan-03	13.76	106	11	246	3.6	1275	8.21	0.015	8	195.7	0.12	0.01	48.3	0.309	725	330	0.005	0.008	10	6.71	0.439	0.145	
CGP	26810	19-Feb-03	12.68	108	14.3	290	7.7	1927	8.24	0.015	2.8	394.7	0.17	0.01	57	0.11	946	395.2	0.005	0.083	10	7.27	0.29	0.195	
CGP	27333	25-Mar-03	7.92		64.1	242	16.2	960	8.08	0.025	3.9	126	0.68	0.02	36.5	0.314	523	281.1	0.029	0.105	60	15.67	1.014	0.725	
CGP	27436	29-Apr-03	8.03	93.9	81.3	280	23.2	1058	8.21	0.053	2.5	131.8	0.46	0.02	43.7	0.784	555	348.1	0.045	0.128	52	6.06	1.264	0.533	
CGP	27643	02-Jun-03	8.05	101.8	37.3	222	27.5	937	8.26	0.017	3.1	117.6	0.19	0.02	46.2	0.697	539	273.5	0.02	0.123	38	3.9	0.907	0.227	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	27762	08-Jul-03	7.92	103.7	21.3	230	29.5	1176	8.26	0.015	3.9	179.9	0.13	0.01	58	0.777	636	229.8	0.03	0.137	16	0.51	0.917	0.155	
CGP	28073	12-Aug-03	9.95	132.9	17.8	196	30.3	1322	8.4	0.015	5.3	231	0.16	0.02	66.8	1.029	679	252.9	0.018	0.148	22		1.209	0.195	
CGP	28232	16-Sep-03	8.24	100.5	95.1	115	25.2	540	8.15	0.022	6.6	58	0.05	0.16	36.3	1.068	258	144.7	1.311	0.331	73	2.05	1.278	0.232	
CGP	28381	21-Oct-03	9.37	103.6	29.9	176	20.7	770	8.24	0.028	4.7	79.7	0.34	0.02	58.7	0.585	432	227.5	0.038	0.145	28	1.07	0.945	0.388	
CGP	28546	02-Dec-03	10.35	84	43.8	197	6.4	738	7.81	0.015	3.1	64.3	0.29	0.02	51.6	0.684	436	228.1	0.089	0.175	40	1.84	0.994	0.325	
CGP	29384	06-Jan-04	13.36	97	11.9	309	2.1	1223	8.1	0.015	3	112.1	0.1	0.02	87.9	0.399	618	343.3	0.005	0.09	10	2.33	0.519	0.135	
CGP	29592	10-Feb-04	12.88	98.4	295	157	4	831	8.12	0.092	3.8	108	0.57	0.02	32.3	1.101	494	225.5	0.127	0.29	156	41.95	1.691	0.682	
CGP	29743	16-Mar-04	9.67	88.9	25.2	288	11.7	1336	8.15	0.016	3.7	142.2	0.9	0.02	74.2	0.41	727	407.2	0.052	0.129	27	16.96	1.33	0.936	
CGP	30061	20-Apr-04	10.18	117.3	14.8	315	22.3	1162	8.13	0.015	3.1	118.9	0.16	0.02	65.4	0.788	616	357.7	0.015	0.081	14	12.1	0.968	0.195	
CGP	30325	02-Jun-04	9.24	115.6	18.2	297	26.7	1428	8.16	0.015	2.4	194.3	0.02	0.02	96.9	0.72	746	380.4	0.015	0.095	17	0.66	0.76	0.055	
CGP	25409	23-Jul-02	6.18	85	21.4	84	30.9	1006		0.636	3	148.8	11.9	0.96	90.5	2.024	603	205.4	1.55	1.685	18	8.39	14.884	13.496	
CGP	25741	27-Aug-02	4.47	58	132	64	27.3	441.3	8.11	0.39	5	52.14	3.27	0.29	38.39	1.361	284	108.54	0.559	0.669	10	12.79	4.921	3.95	
CGP	25897	01-Oct-02	5.6	69	47	70	25.6	1058	7.4	0.173	5	181	12.19	0.01	98.08	1.351	459	186.5	2.481	2.592	52	7.49	13.551	12.373	
CGP	26050	05-Nov-02	6.02	55	51.9	95	10.1	905	7.11	2.206	5	114.2	10.3	0.01	72.89	3.401	473	182.4	1.624	1.643	40		13.711	12.516	
CGP	26195	03-Dec-02	9.14	74	21.3	120	5.9	1125	7.37		2	180.67	12.33	0.01	85.14		541	210.7			23	8.81	12.34	12.34	
CGP	26590	14-Jan-03	12.56	102	15.5	107	5.3	1376	8.46	0.015	2	192	14.8	0.01	114.3	0.646	702	223	1.881	1.906	17	12.46	15.456	14.825	
CGP	26814	19-Feb-03	12.71	111	20.6	132	8.5	1346	8.26	0.069	4.8	185.3	19.24	0.01	104.3	0.11	656	264	1.857	1.82	16	10.65	19.36	19.319	
CGP	27325	25-Mar-03	7.84	97.5	64.2	124	16.5	787	7.54	0.046	4.3	88.5	4.07	0.02	63.4	1.507	448	196.5	0.476	0.513	40		5.597	4.136	
CGP	27468	29-Apr-03	6.3		77.1	157	22.9	976	7.62	0.136	4.1	124.4	10.05	0.02	78.1	1.177	544	264.6	1.11	1.148	70		11.247	10.206	
CGP	27656	03-Jun-03	6.31	75	50.4	132	23.4	675	7.79	0.068	2	79	5.43	0.02	44.4	0.68	379	186	0.627	0.773	38	15.24	6.13	5.518	
CGP	27803	08-Jul-03	8.38	109	34.8	94	29	805	7.91	0.02	3.1	117	13.25	0.07	66.2	1.128	460	162.4	1.477	1.821	37	9.15	14.448	13.34	
CGP	28041	28-Jul-03	4.97	63.9	38.2	47	28.2	1180	7.19													5.07			
CGP	28093	12-Aug-03			46.7	37	28.1	1111	7.31	0.093	2.8	194.6	18.19	0.02	91.9	1.064	648	152.3	1.635	2.625	41	8.83	19.274	18.303	
CGP	28241	16-Sep-03	7.24	81	115	72	21	449	7.23	0.075	2	58.7	4.28	0.05	35.8	1.062	268	93	0.757	0.89	64	10.99	5.392	4.405	
CGP	28372	21-Oct-03	6.83	74	34.2	65	19	1028	6.99	0.097	3.6	163.9	17.12	0.09	86.4	0.907	602	181.5	2.138	2.629	40	9.17	18.117	17.307	
CGP	28554	02-Dec-03	10.55	87.5	18.2	96	7.1	985	7.64	0.845	4	132.4	14.7	0.02	66.4	1.646	522	182.3	2.565	2.607	19	7.91	16.366	15.565	
CGP	29379	06-Jan-04	12.53	90	23.7	111	1.8	887	8.06	0.058	2.4	111.6	13.31	0.02	64.3	0.84	505	187.7	1.434	1.69	17	5.38	14.17	13.388	
CGP	29584	10-Feb-04	13.67	104.5	223	113	4.1	469.1	7.89	0.077	3.7	38.6	1.61	0.02	31.2	1.013	261	141.9	0.236	0.387	140	90.67	2.643	1.707	
CGP	29774	16-Mar-04	10.87	97	64.1	141	10.4	491.3	7.91	0.063	3.1	35.1	0.98	0.02	56.5	0.725	255	167	0.184	0.299	53	140.96	1.725	1.063	
CGP	30092	20-Apr-04	9.51	108	15.4	172	20.9	742	7.91	0.046	2.1	76.8	5.15	0.05	53.9	0.942	409	220.7	0.574	0.649	10	27.77	6.142	5.246	
CGP	30392	08-Jun-04	5.17	65.6	517	75	25	434.8	7	0.149	2.8	45.9	4.42	0.08	34.8	0.61	252	118.2	0.587	0.798	63	13.17	5.11	4.649	
CGP	25559	30-Jul-02	6.8		31.6	213	27.6	786	7.24														0.25		
CGP	25640	05-Aug-02	4.94	67	9.35	262	29.6	786	7.77	0.439	3	48.36	0.56	0.01	25.03	1.37	438	269.4	0.279	0.34	10	0.03	1.94	1.009	
CGP	25782	03-Sep-02	2.92	39	53.9	135	28.7	357.4	7.42	0.635	2	14.92	0.76	0.24	12.56	1.541	235	127.2	0.175	0.3	26	0.01	2.541	1.635	
CGP	25901	30-Sep-02	4.62	56	69.6	135	23	374.5	7.15	0.336	2	17.71	0.94	0.01	17.76	0.755	195	147.9	0.201	0.202	43	0.15	1.705	1.286	
CGP	26056	04-Nov-02	4.07	35	60	174	7.3	460.2	7.03	0.015	5	19.89	0.73	0.01	29.1	0.451	241	176.6	0.105	0.119	41	0.14	1.191	0.755	
CGP	26210	02-Dec-02	3.4	29	31.9	348	7.6	864	7.21	0.018	8	42.65	0.24	0.01	43.26	0.541	472	349.5	0.29	0.382	32	0.24	0.791	0.268	
CGP	26595	14-Jan-03	10.18	83	45.8	278	5.2	792	7.62	0.015	2	29.1	0.3	0.01	81.5	0.165	539	308.2	0.061	0.128	14	0.78	0.475	0.325	
CGP	26806	18-Feb-03	9.21	75	20	375	5.4	981	7.97	0.015	5.2	45.2	0.23	0.01	72.7	0.11	515	352.5	0.043	0.064	11	0.84	0.35	0.255	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	27329	24-Mar-03	7.26		84.1	204	19.1	606	7.15	0.093	2	29.4	0.61	0.02	38.7	0.283	342	219.5	0.111	0.215	60	0.86	0.913	0.723	
CGP	27432	28-Apr-03	4.99	56.9	76.5	194	21.7	531	7.65	0.238	2.4	25.9	0.57	0.02	27.5	0.463	310	223	0.084	0.203	63	1.75	1.053	0.828	
CGP	27648	03-Jun-03	5.36	62.6	59.4	157	22.9	450.9	7.77	0.104	2.1	26.2	0.37	0.02	18.6	0.446	299	171.3	0.045	0.153	50	2.97	0.836	0.494	
CGP	27758	07-Jul-03	5.12	64.9	49.4	178	27.7	537	7.66	0.107	2.6	31	0.23	0.08	18.4	0.59	285	145.8	0.078	0.207	43	0.56	0.9	0.417	
CGP	28069	11-Aug-03	6.49	85.2	43.7	241	27.9	662	7.63	0.073	5.4	42.8	0.06	0.02	14.7	0.96	379	237.1	0.077	0.229	32		1.04	0.153	
CGP	28228	15-Sep-03	7.02	80.5	82.8	176	17.7	489.9	7.41	0.061	8.7	28.6	0.06	0.02	23	1.351	283	196.5	0.571	0.239	70	0	1.431	0.141	
CGP	28377	20-Oct-03	2.72	29	77.2	132	17.3	339.3	7.43	0.057	4.2	12.6	0.12	0.02	16	0.336	234	225.6	0.09	0.151	18		0.476	0.197	
CGP	28542	01-Dec-03	8	66.1	16.9	225	7.1	686	7.63	0.015	3.2	39.5	0.02	0.02	41.5	0.46	380	235.7	0.056	0.145	10	0.26	0.5	0.055	
CGP	29363	05-Jan-04	8.81	64.9	23.6	277	2.7	716	7.77	0.015	4.1	39	0.05	0.02	59.5	0.25	462	341.4	0.019	0.112	28	0.23	0.32	0.085	
CGP	29588	10-Feb-04	15.04	108.5	44.3	131	1.9		7.45	0.016	2.9	32.1	0.16	0.02	17.6	0.471	282	153.4	0.09	0.105	31	39.34	0.651	0.196	
CGP	29739	15-Mar-04	10.69	96.3	38.7	130	10.8	429	8.15	0.051	4.1	23.9	0.11	0.02	17.8	0.57	223	148.8	0.025	0.096	28	195.66	0.7	0.181	
CGP	30057	19-Apr-04	6.89	73.5	31.4	160	18.6	480	7.8	0.055	2	26	0.19	0.02	24.3	0.447	268	164.7	0.019	0.088	24	17.27	0.657	0.265	
CGP	30321	01-Jun-04	4.4	51.6	26.9	252	23.3	704	7.62	0.138	2.1	35.7	0.34	0.02	31.3	0.59	421	257.5	0.103	0.166	21	0.62	0.95	0.498	
CGP	25649	12-Jun-02	8.28		41	258	31.1	2430	8.09														1.9		
CGP	25395	22-Jul-02	12.17	171	108	268	31.4	1985	8.58	0.266	8	381.5	0.01	0.01	285	1.645	1255	343.6	0.069	0.097	34	0.41	1.665	0.286	
CGP	25789	03-Sep-02	5.6	69	146	148	25.1	1560	8.35	0.273	2	222.3	0.71	0.62	201.3	1.655	930	359.1			79	0	2.985	1.603	
CGP	25943	07-Oct-02	6.63	71	48.4	319	17.4	2324	7.73	0.113	4	335.8	1.32	0.01	333.6	0.644	1473	555.3	0.169	0.197	119		1.974	1.443	
CGP	26099	12-Nov-02	11.48	113	21	343	13.2	2200	8.07	0.033	5	298.5	2.07	0.01	483.3	0.496	1634	657.1	0.135	0.146	24	9.97	2.576	2.113	
CGP	26234	10-Dec-02	5.3	43	44.2	152	5.3	1884	8.13	0.117	4	193.71	1.79	0.01	454.72	0.661	1257	567.6	0.132	0.208	64	21.92	2.461	1.917	
CGP	26624	22-Jan-03	14.74	105	8.4	389	0.6	1837	8.5	0.015	2	361	2.23	0.01	667.4	0.426	1911	801.7	0.016	0.052	10	8.61	2.666	2.255	
CGP	27192	04-Mar-03	11.44	98	11.4	330	7.5	2788	6.93		4.9	334.4	2.3	0.01	633.7		1791	823.2	0.013	0.031	12	13.41	2.31	2.31	
CGP	27353	01-Apr-03	12.54		14.8	277	13.9	3029	8.22	0.015	5.7	405.6	0.34	0.01	676.9	0.517	2065	692.7	0.005	0.04	22	2.38	0.867	0.365	
CGP	27567	13-May-03	4.36	47.2	68	311	20.8	2908	7.88	0.22	4.7	428.4	0.85	0.02	497.4	1.179	1912	571.7	0.061	0.199	53	1.58	2.049	1.09	
CGP	27688	10-Jun-03	4.3	51	145	173	24.6	1171	7.85	0.106	2.9	111.1	0.96	0.02	216.8	1.176	755	321.2	0.31	0.395	95	3.56	2.156	1.086	
CGP	27813	15-Jul-03	9.23	123.6	87.8	281	31.1	2589	8.35	0.015	5.9	460.4	0.15	0.02	397	1.05	1570	471.9	0.039	0.219	88	1.03	1.22	0.185	
CGP	28116	19-Aug-03	3.55	48.5	54.2	474	28.2	2896	8.21	0.015	5	530.9	0.16	0.02	379.6	0.117	1605	419	0.037	0.187	59	0.66	0.297	0.195	
CGP	28192	29-Aug-03	2.84	34.3			25.8		8.08																
CGP	28273	22-Sep-03	8.58	95.3	29.1	273	20.4	1983	8.31	0.015	2.3	51	0.4	0.02	264.6	0.997	1155	407.5	0.013	0.113	35	0.85	1.417	0.435	
CGP	28427	27-Oct-03	15.31	149.9	4.9	315	14.5	1826	7.85	0.021		74.6	0.57	0.02	317	0.403	1424	500.1	0.031	0.104	10	2.25	0.993	0.611	
CGP	28565	08-Dec-03	11.79	96.2	7.92	365	6.5	2799	8.29	0.015	2.8	392.1	0.94	0.02	377.4	0.425	1677	555.1	0.007	0.092	21	2.22	1.385	0.975	
CGP	29439	12-Jan-04	17.7	138	13.6	361	4.7	2737	8.23	0.031	2.6	413.7	1.23	0.02	385.5	0.481	1620	637	0.016	0.115	13	2.56	1.731	1.281	
CGP	29610	17-Feb-04	14.57	118.6	41.6	275	6.3	2173	8.55	0.029	3.9	240.2	0.9	0.02	373.1	0.651	1328	548.8	0.062	0.17	27	7.81	1.571	0.949	
CGP	29783	22-Mar-04	16.08	156.7	7.61	308	14.2	2340	8.3	0.015	3.4	363.2	0.74	0.02	553.6	0.44	1887	752.4	0.019	0.088	10	16.39	1.2	0.775	
CGP	30098	26-Apr-04	9.15	100	32	299	19.9	3032	8.18	0.036	2.2	362.4	0.76	0.02	702.5	0.864	1851	857.2	0.098	0.159	117		1.644	0.816	
CGP	30355	07-Jun-04	14.13	177.6	29.7	292	27.1	2960	8.46	0.017	4.5	487.2	0.05	0.02	418.2	0.85	1764	529.8	0.007	0.138	36		0.92	0.087	
CGP	25399	23-Jul-02	12.58	162	9.75	165	26.2	18120	8.11	0.155	2	5518	0.01	0.01	1111.5	0.577	11224	1319.5	0.024	0.052	14	12.9	0.597	0.175	
CGP	25660	16-Aug-02	7.37		24.7	114	24.5	16240	7.91														9.5		
CGP	25793	03-Sep-02	14.06	204	10.7	25	34.8	13800	8.49	0.028	2	4324	0.01	0.01	1150	0.516	9122	1282.2	0.018	0.025	19	6.04	0.536	0.048	
CGP	25947	07-Oct-02	12	138	21.9	118	20.4	16300	8.26	0.018	2	5311.2	2.37	0.01	917.6	0.509	10507	1482.6	0.024	0.039	32	9.19	2.889	2.398	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	26101	12-Nov-02	10.27	106	5.76	223	15	13130	8.02	0.022	3	3967.1	2.24	1.1	1100.2	0.325	8327	1265	0.03	0.044	10	16.49	3.665	3.362	
CGP	26622	21-Jan-03	14.59	122	3.82	192	6.6	12200		0.015	2	4777.6	2.3	0.01	1225.7	0.23	2502	1525.4	0.005	0.005	13	19.07	2.54	2.325	
CGP	27190	03-Mar-03	14.99	148	4.05	197	13.1	12680	8.26	0.015	4.4	5940.8	0.53	0.01	1218.1	0.11	11489	1593.6	0.005	0.005	10	17.45	0.65	0.555	
CGP	27351	31-Mar-03	18.75		1.95	112	23.4	16100	7.07	0.015	3.6	4884.3	1.34	0.01	1188.7	0.386	10143	1301.5	0.005	0.012	10	12.57	1.736	1.365	
CGP	27544	05-May-03	10.74	144.7	5.41	112	30.6	18800	8.29	0.027	2.1	6189.7	0.4	0.02	1225.2	0.589	12266	1225.2	0.006	0.005	10	12.41	1.009	0.447	
CGP	27686	09-Jun-03	8.15	105	26.3	146	28.6	12.23	8.01	0.039	2.8	3618.5	0.81	0.02	924	0.584	7308	1266.7	0.073	0.161	29	19.34	1.414	0.869	
CGP	27811	14-Jul-03	10.7	156.1	9.89	120	35.5	10370	8.17	0.057	4.8	5587.8	0.02	0.02	1236	1.134	10569	1268.5	0.012	0.112	24	4.93	1.174	0.097	
CGP	28114	18-Aug-03	15.07		9.3	84	34.8	23.26	8.48	0.015	9.4	708.4	0.02	0.02	1203.3	1.111	15168	1445.7	0.008	0.135	23	3.44	1.151	0.055	
CGP	28190	29-Aug-03	4.78	59.2			26.2		7.4																
CGP	28281	23-Sep-03	13.71	170	5.05	105	26.3	27130	8.29	0.015	2	9969.9	0.02	0.02	1289.4	0.612	18266	1683.9	0.005	0.07	10	4.05	0.652	0.055	
CGP	28425	27-Oct-03	11.21	103	1.59	168	11.3	17340	7.98	0.015		1168.4	0.24	0.02	1168.4	0.399	12517	1378.2	0.005	0.049	10	9.4	0.659	0.275	
CGP	28563	08-Dec-03	14.96	116.8	1.28	196	4.9	21170	7.95	0.015	2.2	8770.7	2.32	0.02	1237.9	0.292	16593	1620	0.011	0.051	11	9.65	2.632	2.355	
CGP	29437	12-Jan-04	15.72	119.3	2.09	195	3.8	18650	7.87	0.015	2.4	8899.8	3.05	0.02	1543.3	0.399	16569	1723.2	0.029	0.084	14	10.29	3.469	3.085	
CGP	29608	17-Feb-04	15.44	113.4	2.35	174	2.5	18370	8.29	0.015	2.6	7234.3	1.85	0.02	1229.2	0.376	14274	1687.1	0.005	0.067	11	15.07	2.246	1.885	
CGP	29781	22-Mar-04	14.62	133.5	2.77	196	11.3	14530	8.09	0.015	2.3	4030.8	1.73	0.02	1060.4	0.298	8835	1443.5	0.012	0.085	10	34.07	2.048	1.765	
CGP	30096	26-Apr-04	9.41	95.7	48.4	190	16.1	7280	7.83	0.016	2	2043.1	1.26	0.02	792.6	0.608	5390	1090.7	0.115	0.173	57	42	1.888	1.296	
CGP	30353	07-Jun-04	19		4.68	122	28.7	21470	8.48	0.019	4.5	10276.8	0.12	0.02	1138.5	0.72	13420	1317.4	0.005	0.076	15	10.31	0.86	0.159	
CGP	25470	19-Jun-02	4.79			207	23.5	1382	7.79														2.58		
CGP	25400	23-Jul-02	11.51	154	27.8	254	28.9	1208	7.86	0.308	3	87.4	0.76	0.01	253.1	0.953	791	405.5	0.047	0.047	10	0.5	1.723	1.078	
CGP	25795	04-Sep-02	7.65	95	665	137	24.5	1038	7.84	0.073	4	57.85	0.68	0.23	230	0.874	685	402.4			73	1.15	1.784	0.983	
CGP	25949	08-Oct-02	5.98	63	140	210	16.8	1545	7.48	0.188	2	120.2	1.85	0.01	372.4	0.728	968	590.5	0.136	0.172	10		2.588	2.048	
CGP	26103	13-Nov-02	9.66	89	24.6	280	10.4	2393	10.18	0.026	5	154.8	2.11	0.01	1086.1	0.51	2215	1221.4	0.061	0.079	24	5.69	2.63	2.146	
CGP	26231	09-Dec-02	12.08	99	16.6	252	5.5	3264	8.02	0.018	3	194.56	1.63	0.01	1456.42	0.536	2725	1579	0.009	0.041	10	18.78	2.176	1.658	
CGP	26621	21-Jan-03	15.26	128	6.7	240	6.2	2475		0.015	2	167.2	2.15	0.01	1287.2	0.297	10	1457	0.005	0.009	12	6.66	2.457	2.175	
CGP	27189	03-Mar-03	14.7	136	7.68	246	10.1	3193	8.16	0.015	4.9	181.1	2.25	0.01	1314.8	0.11	2057	1480.1	0.005	0.005	13	7.49	2.37	2.275	
CGP	27350	31-Mar-03	12.44		25.9	211	20.2	2730	8.11	0.015	6.1	164	1.11	0.01	1175.4	0.799	2370	1296.6	0.005	0.065	62	4.51	1.919	1.135	
CGP	27543	05-May-03	14.84	189.3	42.6	192	27.9	2461	8.06	0.079	3.1	122.6	0.91	0.02	1046	0.754	2004	1046	0.02	0.075	50	3.6	1.684	1.009	
CGP	27685	09-Jun-03	8.01	99.5	70.2	174	26.2	1471	7.92	0.054	3	58.3	0.87	0.02	760.1	0.78	1451	905.6	0.147	0.245	63	11.61	1.67	0.944	
CGP	27810	14-Jul-03	10.98	148.6	33.3	221	31.5	1392	8.26	0.024	6.3	97.1	0.25	0.02	481.5	0.714	1029	593.26	0.015	0.14	33	0.92	0.984	0.294	
CGP	28113	18-Aug-03	5.03	57.4	38.2	221	30.6	1089	8.41	0.03	4.2	75.7	0.2	0.02	220.8	0.711	685	377.5	0.015	0.133	33	0.39	0.931	0.25	
CGP	28189	28-Aug-03	4.23	50.8			24.5		7.8																
CGP	28280	23-Sep-03	9.92	117.8	21.7	233	22.1	1145	8.4	0.015	2	70.4	0.32	0.02	0.32	0.4	659	411.3	0.005	0.07	26	0.36	0.74	0.355	
CGP	28434	28-Oct-03	14.75	145	2.87	244	15.3	1395	8.29	0.022		94.1	0.91	0.02	321	0.228	835	484.6	0.015	0.063	10		1.158	0.952	
CGP	28572	09-Dec-03	12.22	94.9	7.52	293	4.7	1883	8.27	0.015	2.2	130.1	2.33	0.02	470.7	0.254	1562	666.5	0.023	0.125	10	1.97	2.604	2.365	
CGP	29446	13-Jan-04	13.89	124.5	10.5	288	10.7	2091	8.11	0.031	2.6	126.7	1.86	0.02	600.8	0.292	1324	739.4	0.005	0.089	17	1.23	2.172	1.911	
CGP	29617	18-Feb-04	15.48	139.9	7.4	216	10.9	2722	8.27	0.027	3.3	188.5	1	0.02	790.7	0.48	1822	891.5	0.005	0.075	10	2.4	1.5	1.047	
CGP	29789	23-Mar-04	11.09	113.9	8.28	194	16.5	2842	7.38	0.015	2	142.1	0.57	0.02	1117	0.344	2134	1268.2	0.005	0.101	15		0.934	0.605	
CGP	30105	27-Apr-04	3.44	40.7	47.1	196	23.8	2066	7.11	0.026	2	81.3	0.85	0.02	808.9	0.588	1615	960.9	0.1	0.165	43		1.458	0.896	
CGP	30352	07-Jun-04	7.2	90.3	28.3	233	26.8	1582	8.06	0.041	3.3	99.7	0.43	0.02	489.7	0.33	1172	629.4	0.008	0.076	19	1.3	0.78	0.491	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	25653	27-Jun-02	10.25		2.27	219	31.9	1145	8.37													5.18		
CGP	25401	23-Jul-02	10.39	149	2.91	218	32.3	1057	8.18	0.064	2	133.6	4.6	0.01	89.7	0.522	622	290.9	0.018	0.031	10	3.46	5.132	4.674
CGP	25796	04-Sep-02	11.22	140	1.9	159	25.9	1085	8.54	0.015	2	149.6	3.95	0.01	110.2	0.463	671	353.7			10	4.26	4.423	3.975
CGP	25950	08-Oct-02	8.94	93	57.9	200	15.7	773	7.9	0.035	2	93.69	3.65	0.01	81.01	0.766	529	318.7	0.214	0.241	10	11.53	4.426	3.695
CGP	26104	13-Nov-02	9.89	98	3.71	272	13.8	1380	7.8	0.018	4	155.7	5.38	0.01	167.4	0.352	801	427	0.083	0.095	10	11.34	5.742	5.408
CGP	26230	09-Dec-02	12.39	107	2.63	269	7.9	1003	7.97	0.017	2	176.49	5.15	0.01	209.24	0.359	920	512.9	0.015	0.046	10	12.5	5.519	5.177
CGP	26620	21-Jan-03	14.23	117	1.8	264	5.6	1397		0.015	2	174.8	5.48	0.01	184.9	0.316	819	407.9	0.005	0.017	10	9.43	5.806	5.505
CGP	27188	03-Mar-03	12.72	110	3.26	277	7.6	1361	8.25	0.015	2.6	184.3	5.13	0.01	209	0.11	927	505.7	0.017	0.027	10	13.35	5.25	5.155
CGP	27349	31-Mar-03	9.3		3.11	256	18.3	1089	8.35	0.015	4.1	176.8	4.6	0.01	180.5	0.499	849	416.7	0.03	0.049	17	11.17	5.109	4.625
CGP	27542	05-May-03	8.33	100.2	4.76	259	24.5	1392	8.26	0.02	2	164.9	4.57	0.02	145.6	0.45	836	419.3	0.045	0.038	17	8.25	5.04	4.61
CGP	27684	09-Jun-03	8.13	98.1	16.8	262	24.5	1013	8.17	0.019	3.3	148.5	3.67	0.06	116.8	0.618	748	388.5	0.102	0.234	27	11.53	4.348	3.749
CGP	27809	14-Jul-03	9.24	130.4	2.59	199	33.8	1144	8.25	0.024	2.4	150.1	5.4	0.08	107.3	0.347	596	323.3	0.016	0.068	20	4.05	5.827	5.504
CGP	28112	18-Aug-03	6.1	82.8	2.36	177	31.4	1112	8.38	0.02	4.1	147.8	4.6	0.06	100.4	0.47	632	293.8	0.01	0.078	10	1.9	5.13	4.68
CGP	28279	23-Sep-03	11.83	134.1	2.31	233	21.6	1224	8.35	0.015	2	154.9	5.25	0.14	5.25	0.488	645	367.5	0.005	0.069	10	4.33	5.878	5.405
CGP	28433	28-Oct-03	13.71	136.2	1.12	249	15.1	1308	8.29	0.015		156.9	5.3	0.02	122.6	0.282	709	362.1	0.015	0.061	10	5.03	5.602	5.335
CGP	28571	09-Dec-03	11.39	91.3	2.2	233	5.9	1193	8.24	0.015	2.2	129.5	5.38	0.02	146.5	0.297	748	381.7	0.014	0.067	10	7.53	5.697	5.415
CGP	29445	13-Jan-04	16.69	141.2	2.02	251	8.1	1467	8.51	0.015	2.9	159.6	5.73	0.02	138.6	0.31	776	415.5	0.011	0.111	10	6.9	6.06	5.765
CGP	29616	18-Feb-04	16.28	139.7	2.33	251	8.7	1483	8.42	0.019	3	159.3	5.13	0.02	133	0.411	773	405.9	0.008	0.072	10	8.33	5.561	5.169
CGP	29788	23-Mar-04	13.8	145.2	2	214	17.8	1440	7.7	0.015	2.4	165.6	4.12	0.02	98.5	0.312	796	419.3	0.005	0.109	14	11.33	4.452	4.155
CGP	30104	27-Apr-04	8.4	99	39	228	23.5	655	8.13	0.025	2.3	112.3	2.59	0.02	132	0.78	661	367	0.244	0.293	44	23.25	3.39	2.635
CGP	30351	07-Jun-04	10.96	134	2.61	219	25.5	1162	8.34	0.028	2.8	162.3	4.42	0.02	131.4	0.2	788	373.5	0.019	0.076	10	5.74	4.64	4.468
CGP	25643	06-Aug-02	6.8	92	72.5	200	29.9	1572	8.65	0.257	5	232.3	1.96	0.01	171.9	1.924	438	303.7	0.32	0.446	30	12.29	3.894	2.227
CGP	25785	04-Sep-02	7.69	104	107	208	29.4	1048	8.7	0.16	2	127	0.46	0.01	96.2	1.083	595	241.7	0.268	0.262	78	8.97	1.553	0.63
CGP	25904	01-Oct-02	9.77	120	71.7	187	24.4	840	8.14	0.085	6	91.5	1.86	0.01	80	0.6	484	241.9	0.231	0.259	42	20.57	2.47	1.955
CGP	26059	05-Nov-02	10.23	89	83	230	8.6	1108	7.75	0.029	5	137.4	3.26	0.01	121	0.665	646	301.6	0.344	0.355	73	90.82	3.935	3.299
CGP	26213	03-Dec-02	14.09	114	9.84	323	5.5	1762	7.95	0.024	3	235.45	3.39	0.01	205.63	0.535	1024	438.5	0.295	0.36	10	42.46	3.935	3.424
CGP	26598	15-Jan-03	12.83	101	12.2	314	4	1667	8.22	0.042	6	201.5	3.85	0.01	187.7	0.406	1032	433.1	0.105	0.187	10	73.74	4.266	3.902
CGP	26809	19-Feb-03	15.03	128	13.4	320	7.8	1753	8.63	0.015	3.3	225.7	3.7	0.01	196.9	0.11	972	445.9	0.342	0.51	10	62.49	3.82	3.725
CGP	27332	25-Mar-03	7.81		83.8	256	16.5	1180	8.2	0.073	2.9	129.7	1.91	0.02	121.3	0.955	682	313.2	0.231	0.324	69	135.65	2.885	2.003
CGP	27435	29-Apr-03	7.47	87	63.3	284	22.9	1350	8.31	0.089	3.1	146.2	1.48	0.02	131.5	0.854	731	387.1	0.201	0.294	62	65.79	2.354	1.589
CGP	27642	02-Jun-03	8.2	102.9	95	241	26.6	1309	8.48	0.024	7.5	178	0.8	0.02	147.1	1.539	782	303.6	0.033	0.26	86	34.33	2.359	0.844
CGP	27761	08-Jul-03	8.58	110.4	140	244	28.8	1570	8.67	0.015	6	226.5	0.04	0.01	169.9	1.487	897	238.4	0.163	0.393	89	13.27	1.537	0.065
CGP	27977	29-Jul-03	6.01	77.3	87	211	28.3	2091	8.43													4.15		
CGP	28072	12-Aug-03	5.21	66.8	68	254	28	2579	8.38	0.015	4.6	400.6	0.17	0.02	335.9	1.515	1421	390.7	0.13	0.312	64	6.62	1.705	0.205
CGP	28231	16-Sep-03	10.1	119.4	85.4	185	23.7	1282	8.89	0.015	8	172.4	0.02	0.78	160	1.46	698	283.8	0.243	0.439	99	23.81	2.26	0.815
CGP	28380	21-Oct-03	9.5	103.2	45.3	203	19.4	1095	8.15	0.028	3.5	130.7	1.73	0.02	107.9	0.715	620	275.8	0.218	0.32	43	18.71	2.465	1.778
CGP	28545	02-Dec-03	11.53	94.3	11.6	316	6.5	1896	8.49	0.015	2.4	50.1	4.32	0.02	195.5	0.87	1028	436.1	0.377	0.437	10	19.3	5.21	4.355
CGP	29383	05-Jan-04	15.09	117.5	16.9	298	4.9	1810	8.79	0.018	4	210.7	4.85	0.02	217	1.07	1016	421.1	0.306	0.547	16	25.12	5.94	4.888
CGP	29591	10-Feb-04	13.07	98.7	204	235	3.6	1480	8.23	0.083	4.3	168.1	2.4	0.02	126.1	1.354	789	342.5	0.239	0.409	216		3.774	2.503

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	29742	16-Mar-04	8.98	83	82.1	339	11.8	1869	8.19	0.022	4.7	194.1	2.29	0.02	188	0.57	1036	469.2	0.125	0.229	84	147.77	2.88	2.332
CGP	30060	20-Apr-04	8.56	96.3	37.9	346	21.1	1809	8.26	0.015	2.2	214.6	1.45	0.02	182.3	0.854	1004	453.5	0.124	0.197	45	84.79	2.324	1.485
CGP	30324	02-Jun-04	14.99	186.3	68	273	26.7	2122	8.39	0.015	9.4	326.4	0.02	0.02	243.9	1.84	1156	388.8	0.033	0.236	59	18.29	1.88	0.055
CGP	25641	06-Aug-02	5.61	76	129	200	29	1397	8.27	0.224	2	187.4	1.26	0.01	119	1.365	266	296.6	0.62	0.767	45	11.63	2.635	1.494
CGP	25783	04-Sep-02	5.98	78	91.8	200	27.1	1222	8.44	0.212	7	149.3	1.11	0.41	111.6	1.381	669	255.1	0.588	0.564	85	6.05	2.901	1.732
CGP	25662	12-Sep-02	5.96		81.8	180	25.6	2111	8.32													7.44		
CGP	25902	01-Oct-02	8.06	98	57.4	295	23.5	1667	8	0.048	3	248.1	5.06	0.01	280.8	0.676	1039	414.6	0.345	0.363	97	11.76	5.746	5.118
CGP	26057	05-Nov-02	10.7	94	81	278	8.2	1457	7.92	0.07	5	195.1	4.68	0.01	195.2	0.725	288	366.4	0.406	0.411	59	59.14	5.415	4.76
CGP	26211	03-Dec-02	13.05	106	13	322	5.8	2100	8.13	0.195	4	292.42	6.02	0.01	255.02	0.661	1235	492.8	0.04	0.45	17	30.19	6.691	6.225
CGP	26596	15-Jan-03	13.18	104	10.8	326	4	1922	8.2	0.17	3	248.3	5.84	0.01	227.1	0.511	1213	459.5	0.117	0.198	10	50.56	6.361	6.02
CGP	26807	19-Feb-03	14.53	121	9.68	331	6.3	2111	8.4	0.015	3.7	305	5.08	0.01	247.1	0.11	1187	474.6	0.416	0.437	10	37.64	5.2	5.105
CGP	27330	25-Mar-03	8.62		93.3	304	16.2	1524	8.12	0.091	2.7	37.2	2.42	0.02	164.7	1.176	892	373.5	0.263	0.347	103	2.05	3.616	2.531
CGP	27433	29-Apr-03	7.03	82.5	83.8	328	22.7	1836	8.27	0.028	3.1	235.9	3.77	0.02	213.6	0.902	1079	483.5	0.278	0.402	38	41.56	4.692	3.818
CGP	27640	02-Jun-03	7.38	90.8	112	277	25.7	1696	8.47	0.026	5.7	239.2	3.06	0.02	174.4	0.915	982	363.2	0.295	0.504	109	25.24	3.995	3.106
CGP	27759	08-Jul-03	7.13	90.5	122	286	27.6	1885	8.51	0.067	4	271.7	5.53	0.13	222.5	1.279	1130	321.1	0.388	0.693	135	25.16	6.939	5.727
CGP	28070	12-Aug-03	4.4	55.9	66.5	235	27.6	2499	7.62	0.191	4	408.3	1.49	0.02	395.7	1.696	1549	400.5	0.255	0.446	92	5.29	3.206	1.701
CGP	28229	16-Sep-03	8.12	93.1	61.8	243	22.2	2037	8.48	0.033	4.9	358.2	0.09	10.33	306.5	1.381	1377	440.3	0.15	0.627	73	13.8	11.801	10.453
CGP	28378	21-Oct-03	8.15	86.2	32.3	261	18.1	1659	8.09	0.046	2.7	77.8	10.32	0.02	232.8	0.617	1181	431.4	0.516	0.617	31	9.64	10.957	10.386
CGP	28543	02-Dec-03	12.98	104.6	9.77	302	6.1	2083	8.2	0.016	3.1	278.6	8.53	0.02	205.8	0.897	1144	424.1	1.115	1.125	10	12.37	9.447	8.566
CGP	29381	05-Jan-04	14.51	113.8	31.5	310	5.1	2311	8.59	0.026	3.4	303.6	9.76	0.11	263	1.203	1272	454.4	1.116	1.183	21	14.71	11.073	9.896
CGP	29589	10-Feb-04	14.87	109.9	900		2.8	1251	8.29	0.115	5.3	141.9	2.79	0.02	130	2.241	765	255.8	0.487	0.793	783		5.051	2.925
CGP	29740	16-Mar-04	9.64	88.6	64.8	361	11.7	2283	8.16	0.027	4.2	266	3.04	0.02	243.8	0.712	1263	511.8	0.159	0.32	91		3.772	3.087
CGP	30058	20-Apr-04	9.03	99.6	53.1	329	20.1	2209	8.25	0.034	4.5	296.4	2.3	0.02	244.1	1.084	1249	473.5	0.064	0.196	80	54.01	3.404	2.354
CGP	30322	02-Jun-04	8.43	102.1	66.8	334	25	2459	8.37	0.015	4	354	3.38	0.02	272.1	1.21	1380	449.5	0.344	0.458	79	10.29	4.61	3.415
CGP	25558	30-Jul-02	3.99		28.6	178	26.5	647	7.95													0.4		
CGP	25642	06-Aug-02	8.72	120	12.8	229	30.6	669	8.18	0.153	2	47.13	0.55	0.01	17.25	0.95	542	227.8	0.143	0.21	10	0	1.51	0.713
CGP	25784	04-Sep-02	6.46	84	74.8	117	27.8	441	8.25	0.16	5	39.05	0.7	0.31	18.11	1.183	260	155.6			57	0.24	2.193	1.17
CGP	25903	01-Oct-02	7.24	88	109	139	23	388.1	7.68	0.044	6	22.59	1.22	0.01	21.79	0.297	259	151.4	0.181	0.215	72	1.56	1.527	1.274
CGP	26058	05-Nov-02	10.11	88	139	170	8.3	443.3	7.56	0.032	3	31.44	3.28	0.01	25.14	0.773	276	154.9	0.255	0.266	78	7.36	4.063	3.322
CGP	26212	03-Dec-02	12.62	102	5.7	261	5.5	880	8.2	0.021	2	82.91	0.25	0.01	60.56	0.21	476	309.8	0.035	0.093	10	3.93	0.47	0.281
CGP	26597	15-Jan-03	12.86	96	15.2	250	2.9	892	8.25	0.015	2	83.4	0.48	0.01	61.9	0.144	584	307.8	0.03	0.07	10	8.23	0.634	0.505
CGP	26808	19-Feb-03	12.73	106	7.33	318	6.9	1222	8.43	0.015	3.6	134.2	0.24	0.01	95.7	0.11	646	329.1	0.005	0.008	10	7.69	0.36	0.265
CGP	27331	25-Mar-03	7.96		111	204	15.3	708	8.07	0.105	2.8	59.7	1.15	0.02	46.4	0.793	438	229.3	0.177	0.319	49	23.99	1.963	1.275
CGP	27434	29-Apr-03	7.88	88.4	47.5	252	20.9	912	8.28	0.054	4.4	83.2	0.65	0.02	64.5	0.843	503	319.9	0.101	0.202	39	10.72	1.513	0.724
CGP	27641	02-Jun-03	4.63	56.6	39.8	228	25.4	761	8.34	0.019	2.7	62.4	0.24	0.02	40.7	0.603	429	247	0.078	0.215	17	5.62	0.863	0.279
CGP	27760	08-Jul-03	5.92	74.2	34.6	174	27.4	511	8.03	0.015	3.7	49.5	0.09	0.01	27.7	0.573	319	158.4	0.129	0.281	15	0.48	0.673	0.115
CGP	28071	12-Aug-03	4.84	62.2	10.9	256	27.4	779	8.02	0.015	3.6	52.6	0.06	0.02	26.1	0.627	408	256.7	0.048	0.141	10		0.707	0.095
CGP	28230	16-Sep-03	8.16	92.8	93.3	114	21.8	500	8.22	0.027	6.7	65.9	0.06	0.46	33.1	1.619	320	155	0.302	0.298	63	3.23	2.139	0.547
CGP	28379	21-Oct-03	6.49	67.1	61.9	140	17.1	441.8	8.02	0.031	5.9	26.9	1.04	0.07	29.8	1.014	279	190.2	0.156	0.298	39	4.14	2.124	1.141

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	28544	02-Dec-03	11.75	95	6.02	302	6.2	960	8.2	0.015	4.9	57.8	0.12	0.02	63.8	0.471	524	326.6	0.076	0.161	17	1.78	0.611	0.155
CGP	29382	05-Jan-04	14	102.9	5.34	325	2.5	1185	8.5	0.015	2.4	99.9	0.11	0.02	93.3	0.284	617	380.9	0.005	0.088	10	2.74	0.414	0.145
CGP	29590	10-Feb-04	14.6	108.9	205	233	3.1	1338	8.4	0.152	4.1	141.9	1.1	0.02	109.9	1.306	760	348.2	0.165	0.315	205	122.45	2.426	1.272
CGP	29741	16-Mar-04	9.8	88.8	40.3	312	11	1268	8.26	0.018	4.3	102.2	0.89	0.02	98.8	0.478	694	398.6	0.066	0.169	51	25.55	1.388	0.928
CGP	30059	20-Apr-04	9	100.8	17.5	350	20.8	1276	8.26	0.015	2.2	116.2	0.08	0.02	99.4	0.743	689	410.3	0.015	0.111	31	13.84	0.843	0.115
CGP	30323	02-Jun-04	6.59	80.3	10.1	339	25.3	1393	8.08	0.015	2.2	162.3	0.06	0.02	104.8	0.64	738	390.8	0.024	0.105	10	1.62	0.72	0.095
CGP	25544	29-Jul-02	6.52		81.1	120	26.6	1064	8.11													36.02		
CGP	25645	06-Aug-02	9.05	124	42.1	170	30.9	1101	8.18	0.085	2	117.1	5.44	0.01	145.8	1.031	659	293.1	1.21	1.395	35	24.72	6.481	5.535
CGP	25787	04-Sep-02	8.63	117	23.6	121	29.2	1093	8.21	0.05	2	119.4	6.45	0.01	144.5	0.847	636	271.2	1.091	1.519	26	28.43	7.307	6.51
CGP	25906	01-Oct-02	7.72	95	38.6	162	24.6	1043	7.96	0.034	3	112.5	6.55	0.01	147.5	0.565	607	290.7	1.567	1.594	45	32.28	7.125	6.594
CGP	26061	05-Nov-02	10.49	96	72.7	179	10.1	776	7.58	0.015	5	65.2	2.51	0.01	122.5	0.504	482	259.6	0.48	0.528	69		3.024	2.535
CGP	26215	03-Dec-02	1.88	16	7.39	227	6.3	1196	7.79	0.019	4	112.55	5.73	0.01	179.42	0.329	705	374.5	1.065	1.238	10	153.31	6.069	5.759
CGP	26600	15-Jan-03	13.35	108	8.45	224	5.6	1224	8.06	0.015	7	108.3	4.74	0.01	183.1	0.755	777	376	1.16	1.21	32	57.72	5.505	4.765
CGP	26811	19-Feb-03	13.4	117	6.69	220	8.4	1236	8.33	0.015	3.8	116.7	5.22	0.01	184.1	0.11	675	369.6			10	59.79	5.34	5.245
CGP	27334	25-Mar-03	10.12		28.8	219	16.6	1202	8.16	0.031	4.1	115.4	4.45	0.02	178	0.349	735	354.6	0.906	0.994	45	57.66	4.819	4.501
CGP	27437	29-Apr-03	7.97	93	63	207	23.1	1188	8	0.087	2.3	113.4	5.46	0.02	174.5	0.796	696	380.5	1.247	1.248	84	43.35	6.276	5.567
CGP	27644	02-Jun-03	11.13	140.2	36.5	187	27.2	1223	8.32	0.018	4.5	131.6	6.21	0.02	183.7	0.887	773	331.8	1.038	1.213	43	27.42	7.117	6.248
CGP	27763	08-Jul-03	8.99	115.9	343	160	28.5	1222	8.24	0.015	3	135.2	5.73	0.01	196.6	0.794	744	260.2	1.682	1.559	30	30.34	6.534	5.755
CGP	28074	12-Aug-03	8.16	106	67.1	110	29	1278	8.09	0.02	3.3	188.6	8.4	0.02	221.6	0.896	748	263.1	1.455	2.585	74	25.66	9.316	8.44
CGP	28233	16-Sep-03	9.72	114.4	71.1	125	23.5	989	8.22	0.015	5.6	114.4	0.02	5.52	135	1.1	509	230.9	0.009	1.387	90	38.69	6.64	5.555
CGP	28382	21-Oct-03	8.71	94.1	28.5	135	19.1	1152	7.94	0.045	2.9	130.1	8.76	0.09	182.6	0.711	671	302.8	1.58	1.55	35	29.15	9.561	8.895
CGP	28547	02-Dec-03	11.35	94.8	22.4	142	7.5	1371	8.01	0.043	2.3	147.7	8.21	0.02	205.5	0.776	760	304.8	2.116	1.825	37	32.31	9.006	8.273
CGP	29385	06-Jan-04	13.56	98.2	16.2	153	2	1412	8.08	0.029	2.7	139.9	7.78	0.02	213.3	0.931	748	319.8	1.71	1.698	12	52.96	8.731	7.829
CGP	29593	10-Feb-04	13.55	108	30.9	142	5.8	1318	8.12	0.053	2.9	121.2	6.4	0.06	180.2	0.906	711	322.1	1.067	1.152	30	53.05	7.366	6.513
CGP	29744	16-Mar-04	10.06	95.1	45.9	203	12.8	1255	8.08	0.067	4.3	99	3.7	0.06	176.4	0.729	724	356.4	0.181	0.787	58	70.01	4.489	3.827
CGP	30062	21-Apr-04	7.1	76.7	20	186	19.3	1302	8.03	0.033	2.5	118.9	3.83	0.07	187.4	1.013	774	359.1	1.029	1.103	34	58.1	4.913	3.933
CGP	30326	03-Jun-04	6.5	73.6	337	153	21.5	1060	7.8	0.448	2.6	107.8	3.68	0.11	150.7	1.75	581	263.3	1.551	1.674	241	35.82	5.54	4.238
CGP	25648	12-Jun-02	6.63		34.3	236	25.9	2356	7.31													12.96		
CGP	25396	22-Jul-02	10.13	140	23	232	30.2	1953	8.27	0.169	4	213.4	0.77	0.01	495.2	0.843	1293	501.7	0.038	0.053	10	3.17	1.623	0.949
CGP	25790	03-Sep-02	7.89	103	98	175	27.2	1601	8.32	0.189	2	136.3	1.61	0.36	378.1	1.128	1142	513.6			94	3.28	3.098	2.159
CGP	25944	07-Oct-02	9.28	100	8.6	280	17	2554	7.91	0.022	2	300.8	1.51	0.01	595.5	0.664	1717	882.1	0.065	0.082	22	17.3	2.184	1.542
CGP	26098	12-Nov-02	10.24	97	19.6	327	11.7	2968	8.07	0.023	4	336.3	1.95	0.01	706.4	0.468	2176	974.3	0.076	0.093	22	27.91	2.428	1.983
CGP	26235	10-Dec-02	7.2	60	11.7	276	6	3255	7.93	0.038	4	452.4	1.8	0.01	815.52	0.465	2288	1018.8	0.026	0.042	14	38.22	2.275	1.848
CGP	26625	22-Jan-03	13.74	98	11.4	344	0.6	1948	8.3	0.015	2	359.2	2.28	0.01	872.8	0.417	2230	1088.9	0.005	0.031	10	22.19	2.707	2.305
CGP	27193	04-Mar-03	12.68	109	12.3	277	7.7	3106	6.93	0.015	3.2	329.4	2.34	0.01	861.4	0.11	1963	970.5	0.005	0.013	24	24.22	2.46	2.365
CGP	27354	01-Apr-03	10.84		33.7	215	13.9	3052	8.13	0.015	5.2	345.5	0.75	0.01	871.4	0.745	2201	896.1	0.005	0.069	123	15.75	1.505	0.775
CGP	27568	13-May-03	8.03	89.3	72.6	225	20.6	2839	7.92	0.092	4.4	283.4	0.66	0.02	779.5	0.841	1920	264.1	0.049	0.09	80	7.68	1.521	0.772
CGP	27689	10-Jun-03	7.85	93.9	76.5	222	24.3	1779	8.07	0.016	2.6	160	1.02	0.02	444.3	0.805	1199	593.5	0.163	0.252	67	16.88	1.845	1.056
CGP	27814	15-Jul-03	7.01	93.4	348	256	30.4	2038	8.08	0.026	4.3	209.6	0.36	0.02	491.1	0.579	1295	540.9	0.037	0.119	27	4.31	0.959	0.406

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	28117	10-Aug-03	6.99	91.1	44.9	259	29.1	2049	8.22	0.107	2.7	212.5	0.59	0.02	478.8	0.695	1329	503.4	0.06	0.176	50	1.41	1.305	0.717	
CGP	28274	22-Sep-03	8.18	91	33.8	253	20.6	2041	7.94	0.136	2	195.2	1.02	0.02	491.7	0.761	1218	545.6	0.044	0.144	36	2.24	1.801	1.176	
CGP	28428	27-Oct-03	10.33	99.8	8.35	250	13.8	2080	8.04	0.022		199.1	0.61	0.02	465.7	0.305	1340	622.6	0.024	0.084	10	5.11	0.935	0.652	
CGP	28566	08-Dec-03	12.78	104.8	9.31	276	6.7	2287	8.12	0.015	2.3	205.2	1.98	0.02	603	0.34	1623	707.5	0.007	0.065	23	5.31	2.34	2.015	
CGP	29440	12-Jan-04	12.91	102.1	11.7	283	5.3	2444	8.07	0.035	2	203.7	2.45	0.02	721.1	0.35	1660	817.9	0.025	0.083	12	6.11	2.82	2.505	
CGP	29611	17-Feb-04	14.08	110.5	10.6	228	5.1	2787	8.13	0.022	2.9	260.4	1.43	0.02	833.8	0.447	2015	996.2	0.02	0.095	23	10.76	1.897	1.472	
CGP	29784	22-Mar-04	12.03	116.3	13.4	261	13.9	2892	8.18	0.015	2.6	265.8	0.73	0.02	730.9	0.383	1839	957.3	0.017	0.113	10	36.14	1.133	0.765	
CGP	30099	26-Apr-04	9.09	100.5	99.2	232	20.1	2643	7.99	0.052	2.4	248.7	0.74	0.02	713	0.933	1983	923.7	0.111	0.201	124	30.53	1.693	0.812	
CGP	30356	09-Jun-04	7.11	83.5	82	228	23.3	2190	7.94	0.037	2	210.1	0.29	0.02	473.2	0.46	1452	619.1	0.026	0.145	57	5.39	0.77	0.347	
CGP	25647	11-Jun-02	7.8		1.79	235	33.3	1070	7.63															4.43	
CGP	25398	22-Jul-02	8.75	127	2.17	240	33.7	1266	8.45	0.093	2	96.8	0.55	0.01	341.8	0.499	911	389	0.193	0.205	10	0.53	1.059	0.653	
CGP	25792	03-Sep-02	13.58	197	1.88	197	33.5	1275	8.59	0.037	2	90.9	0.01	0.01	314.3	0.829	826	383.5			10	0.39	0.849	0.057	
CGP	25946	07-Oct-02	8.75	96	13.5	241	18.7	996	8.09	0.022	2	62.17	1.37	0.01	183.5	0.405	635	381.9	0.135	0.156	13	6.13	1.785	1.402	
CGP	26096	12-Nov-02	10.05	91	39.4	214	9.4	930	8.04	0.035	3	54.2	2.24	0.01	153.2	0.665	599	325.6	0.183	0.322	29	18.97	2.915	2.285	
CGP	26237	10-Dec-02	6.81	57	13	267	6.7	1096	7.69	0.018	4	70.06	1.93	0.01	197.92	0.176	694	382.6	0.043	0.075	13	16.9	2.116	1.958	
CGP	26627	22-Jan-03	12.89	92	29.4	305	0.1	565	8.29	0.015	2	69.5	2.23	0.01	177.6	0.409	721	404.7	0.032	0.09	12	19.76	2.649	2.255	
CGP	27195	04-Mar-03	12.21	118	15.1	267	12.2	1260	8.41	0.015	3.2	77.2	1.8	0.01	244.6	0.11	719	434.5	0.019	0.037	24	16.95	1.92	1.825	
CGP	27356	01-Apr-03	10.69		24.2	253	20.2	1246	8.32	0.015	4.8	82.86	0.9	0.07	248.8	0.299	782	399.9	0.016	0.086	30	14.28	1.269	0.985	
CGP	27570	13-May-03	9.71	108.6	4.84	301	20.8	1340	8.25	0.057	4.1	85.9	0.97	0.02	265.4	0.39	863	457.4	0.111	0.117	11	4.92	1.38	1.047	
CGP	27691	10-Jun-03	7.92	98.6	14	251	26.3	1125	8.2	0.036	2.7	79.1	0.71	0.02	200.7	0.579	693	348.3	0.178	0.234	16	6.71	1.309	0.766	
CGP	27816	15-Jul-03	8.96	134.4	3.53	271	36.6	1298	8.43	0.045	2.1	115.3	0.17	0.02	366.5	0.662	962	460.6	0.157	0.209	10	0.96	0.852	0.235	
CGP	28119	19-Aug-03	14.5		4.4	224	33.5	1622	8.46	0.032	2.3	130.9	0.08	0.02	429.1	0.554	1070	446.3	0.159	0.287	10	0.24	0.654	0.132	
CGP	28194	29-Aug-03	4.3	52.7			26		7.79																
CGP	28276	22-Sep-03	12.63	154.6	0.79	250	24.9	1578	7.94	0.022	2	112.3	0.13	0.02	421.3	1.011	1007	485.9	0.113	0.199	10	0.55	1.161	0.172	
CGP	28430	27-Oct-03	10.2	101.2	6.51	278	15	1315	8.16	0.028		83.2	1.2	0.02	259.8	0.232	872	431.4	0.134	0.188	10	2.47	1.452	1.248	
CGP	28568	08-Dec-03	16.21	142.4	2.11	270	9.5	1303	8.65	0.015	2.9	82.2	1.23	0.02	266.6	0.295	835	445.1	0.013	0.078	10	3.58	1.545	1.265	
CGP	29442	12-Jan-04	18.61	154.1	3.75	276	7.3	1410	8.62	0.017	2.6	82.4	1.31	0.02	263.9	0.334	804	425.4	0.008	0.086	10	3.61	1.664	1.347	
CGP	29613	17-Feb-04	18.32	160.6	6.41	230	9.5	1286	8.59	0.234	5	78.8	1.05	0.02	221.1	0.859	760	385	0.048	0.157	12	5.63	1.929	1.304	
CGP	29786	22-Mar-04	10.83	108.3	23.6	227	15.3	1069	8.45	0.039	2.3	60.8	0.99	0.02	168.3	0.438	599	333.7	0.065	0.181	10	9.69	1.448	1.049	
CGP	30101	26-Apr-04	10.88	135.5	4.89	254	26.5	1257	8.34	0.046	2.4	80.6	0.56	0.02	226.6	0.543	754	400.2	0.106	0.164	13	4.67	1.123	0.626	
CGP	30358	09-Jun-04	7.19	83.6	2.45	267	22.8	1263	7.89	0.022	2	92.7	0.12	0.02	247.4	0.11	877	421.8	0.138	0.217	10	1.87	0.25	0.162	
CGP	25646	11-Jun-02	6.57		28.5	234	25.1	2402	7.85															1.16	
CGP	25397	22-Jul-02	9.13	128	17.9	288	31.6	1239	8.2	0.235	2	95.7	0.73	0.01	216.2	0.772	755	359.2	0.22	0.237	10	0.13	1.512	0.975	
CGP	25791	03-Sep-02	7.54	102	74.4	159	29.8	893	8.05	0.237	5	55.9	1.23	0.33	162.8	1.742	592	313.2			71	0.19	3.302	1.797	
CGP	25945	07-Oct-02	17.25	186	5.51	263	17.4	1549	8.24	0.268	5	239.7	1.49	0.01	544.2	0.757	1558	822.3	0.032	0.105	10	2.09	2.257	1.768	
CGP	26097	12-Nov-02	8.48	78	16.8	341	10.6	2724	8	0.048	4	281.6	2.14	0.01	735.5	0.723	2037	930.1	0.18	0.202	18	4.89	2.873	2.198	
CGP	26236	10-Dec-02	7.35	62	7.32	135	6.4	2172	7.9	0.179	3	180.29	2.34	0.01	689.67	0.745	1601	858.5	0.084	0.163	14	4.25	3.095	2.529	
CGP	26626	22-Jan-03	13.08	93	16	347	0.6	1859	8.31	0.082	2	328.1	2.5	0.01	873.4	0.483	2179	1091.2	0.056	0.121	26	5.03	2.993	2.592	
CGP	27194	04-Mar-03	12.53	110	13.7	301	8.7	3165	8.23	0.023	4.6	322.7	2.45	0.01	928.7	0.11	2077	1096.3	0.036	0.051	24	3.73	2.57	2.483	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	27355	01-Apr-03	16.05		12.9	230	15.8	2788	8.14	0.015	4.3	309.3	0.67	0.01	740.2	0.633	1909	800.9	0.005	0.048	11	2.05	1.313	0.695	
CGP	27569	13-May-03	7.77	84.5	15.3	329	19.4	2036	8.04	0.049	5.2	173	1.45	0.02	443.1	0.626	1312	666.6	0.22	0.304	14	1.19	2.096	1.519	
CGP	27690	10-Jun-03	8.51	102.2	56.1	204	24.6	1268	7.98	0.08	3.2	98.6	1.48	0.02	312.5	0.826	841	444.8	0.438	0.456	40	1.35	2.326	1.58	
CGP	27815	15-Jul-03	12.87	177	22.2	281	32.4	1216	8.25	0.089	2.9	87.3	0.52	0.06	208.4	0.319	734	370.8	0.24	0.325	37	0.17	0.899	0.669	
CGP	28118	19-Aug-03	11.23	152.5	53.1	253	31.6	920	8.55	0.042	3.3	55.4	0.2	0.02	121.2	0.674	534	271.8	0.154	0.297	47	0.07	0.894	0.262	
CGP	28193	29-Aug-03	2.68	26.2			25.5		7.76																
CGP	28275	22-Sep-03	7.68	88.6	18.4	271	22.4	967	8.05	0.077	2	58.7	0.92	0.14	133.8	0.629	510	329.1	0.085	0.187	22	0.05	1.689	1.137	
CGP	28429	27-Oct-03	9	90.5	17.5	274	15.3	1095	7.96	0.015		56	1.97	0.02	191.7	0.393	652	408.8	0.123	0.194	10		2.383	2.005	
CGP	28567	08-Dec-03	13.28	110.4	14.5	302	7.2	1037	8.11	0.015	2.6	59.9	1.78	0.02	198.5	0.323	788	426.3	0.009	0.089	30	0.64	2.123	1.815	
CGP	29441	12-Jan-04	12.99	101.4	19.6	314	4.9	1386	7.97	0.074	2.9	73.4	2.37	0.02	212.1	0.493	771	416.1	0.064	0.115	18	0.82	2.883	2.464	
CGP	29612	17-Feb-04	14.19	112.3	6.36	241	5.4	2576	8.04	0.024	3.6	228.3	1.33	0.02	623.7	0.659	1644	795.7	0.059	0.145	11	1.11	2.009	1.374	
CGP	29785	22-Mar-04	17.09	167.4	4.19	246	14.5	2491	8.39	0.015	2.8	222.3	0.6	0.02	605.1	0.352	1617	801.1	0.018	0.108	10	6.38	0.972	0.635	
CGP	30100	26-Apr-04	8.04	90.7	60.7	74	22	1718	7.84	0.13	2.1	136.2	1.53	0.08	476.2	1.148	1136	592.1	0.312	0.383	59	4.83	2.758	1.74	
CGP	30357	09-Jun-04	4.91	56.7	33.5	263	22.3	1340	7.87	0.063	2.7	97	1.23	0.02	218.3	0.29	830	416.6	0.148	0.556	10	0.76	1.54	1.313	
CGP	25650	26-Jun-02	5.51		45.6	246	25.3	1093	8.43															17.64	
CGP	25394	22-Jul-02	6.22	81	27.3	264	27.7	1164	8.2	0.348	2	168.9	0.69	0.01	84.91	0.974	716	263	0.236	0.261	10	7.07	1.674	1.048	
CGP	25788	03-Sep-02	6.41	79	74.3	193	25.9	980	8.56	0.177	2	119.5	1.33	0.01	73.84	1.333	540	250			100	14.79	2.673	1.517	
CGP	25942	07-Oct-02	7.55	80	1000	112	16.9	331.1	7.24	0.115	2	27.8	1.51	0.01	25.3	0.557	471	115.7	0.603	0.65	129	125.98	2.077	1.635	
CGP	26100	12-Nov-02	10.2	101	12.2	363	13.3	1466	8.08	0.029	3	186.3	2.2	0.01	112.6	0.545	867	381	0.229	0.229	17	53.3	2.755	2.239	
CGP	26233	10-Dec-02	5.56	45	10.6	342	5.7	1481	8.3	0.038	2	203.66	2.22	0.01	122.27	0.354	847	388.2	0.057	0.093	14	60.87	2.584	2.268	
CGP	26623	22-Jan-03	14.72	105	5.87	397	0.2		8.61	0.015	2	223.1	2.14	0.01	130.1	0.386	9908	345.8	0.024	0.064	16	18.17	2.536	2.165	
CGP	27191	04-Mar-03	12.09	101	10.8	358	6.9	1648	8.42	0.015	4.7	213.8	1.94	0.01	124.5	0.11	858	372.6	0.022	0.041	10	55.61	2.06	1.965	
CGP	27352	01-Apr-03	10.26		18.7	359	12.5	1529	8.33	0.015	4.8	190.3	1.44	0.01	110	0.506	878	369.8	0.104	0.185	27	45.24	1.956	1.465	
CGP	27566	13-May-03	6.31	69.8	52	321	20.5	1571	7.98	0.029	5.6	226.4	0.92	0.02	114	11.26	937	355.4	0.076	0.619	101	29.64	12.2	0.969	
CGP	27687	10-Jun-03	7.38	88.4	158	234	24.3	917	7.99	0.054	3	111.6	1.38	0.02	66.2	0.988	548	249.1	0.393	0.505	146	33.52	2.388	1.454	
CGP	27812	15-Jul-03	5.85	70	33.4	248	28.2	1422	8.03	0.059	3.4	227.2	0.15	0.02	97.4	0.749	773	273.3	0.119	0.261	58	7.1	0.919	0.229	
CGP	28115	10-Aug-03	3.4	43.3	18.7	212	27.3	1305	8.25	0.087	5.8	206.9	0.14	0.02	86	1.207	667	252.7	0.1	0.312	26	26.17	1.367	0.247	
CGP	28191	29-Aug-03	4.32	53.1			26.8		8.28																
CGP	28272	22-Sep-03	6.81	73.5	18.4	161	19.3	1325	8	0.051	2.1	188.3	0.97	0.02	97	1.087	626	313.7	0.166	0.304	32	7.33	2.077	1.041	
CGP	28426	27-Oct-03	12.17	115.4	6.43	268	12.8	1127	8.33	0.036		195.5	1.1	0.02	102.6	0.547	701	403.6	0.128	0.196	10	12.32	1.667	1.156	
CGP	28564	08-Dec-03	13.35	107.4	3.12	318	6.1	1580	8.4	0.015	2.9	39.6	1.06	0.02	117.7	0.344	905	417.7	0.031	0.098	19	14.02	1.424	1.095	
CGP	29438	12-Jan-04	16.59	129.7	3.85	344	4.9	1632	8.37	0.028	2.3	199.4	1.46	0.02	115.8	0.473	841	348.1	0.053	0.124	10	21.02	1.953	1.508	
CGP	29609	17-Feb-04	10.01	77.3	42.2	288	4.4	1317	8.29	0.226	3.3	147	2.19	0.02	90.3	0.66	717	319.5	0.305	0.327	56	37.68	2.87	2.436	
CGP	29782	22-Mar-04	12.45	118.1	12.4	325	12.9	1497	8.47	0.015	3.4	198.5	0.98	0.02	126.9	0.514	933	413.4	0.075	0.203	10	59.06	1.514	1.015	
CGP	30097	26-Apr-04	7.19	72.6	704		15.8	226.3	7.75	0.068	5.2	18.3	0.52	0.06	16.9	1.586	453	87.2	0.719	0.949	789	915.67	2.166	0.648	
CGP	30354	07-Jun-04	13.5	167.9	14.5	297	25.3	1610	8.63	0.015	4.9	261.9	0.11	0.02	119.6	0.82	959	354.4	0.038	0.186	19	17.65	0.95	0.145	
CGP	25651	26-Jun-02	15.91		3.55	294	32.5	1378	8.83															6.15	
CGP	25403	23-Jul-02	10.73	157	10	230	33.6	1410	8.27	0.275	2	244	0.65	0.01	91.4	1.115	791	225	0.408	0.448	19	1.06	1.775	0.935	
CGP	25797	04-Sep-02	13.85	185	26.6	308	28.7	1673	8.75	0.196	2	261.6	1.2	0.01	104.7	1.15	964	368			34	6.15	2.36	1.406	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	25951	08-Oct-02	8.38	89	196	219	16.9	941	7.8	0.185	2	122.6	1.77	0.01	70.36	0.862	595	255.3	0.373	0.392	145	29.58	2.642	1.965	
CGP	26105	13-Nov-02	11.19	109	8.34	409	12.6	1720	8.16	0.101	5	242.4	1.87	0.01	122.4	0.641	1026	329.6	0.218	0.247	10	23.61	2.521	1.981	
CGP	26228	09-Dec-02	11.62	93	7.08	385	4.2	1647	8.11	0.068	2	235	1.6	0.01	110.6	0.41	923	382	0.053	0.096	10	26.55	2.02	1.678	
CGP	26618	21-Jan-03	15.43	117	7.16	398	2.3	1798		0.015	2	268.4	1.58	0.01	125	0.597	919	343.3	0.025	0.063	11	19.6	2.187	1.605	
CGP	27186	03-Mar-03	14.69	114	11.8	370	3.4	1777	8.45	0.043	5.8	57.8	1.8		104.9	0.75	912	407.7	0.077	0.127	10	31.77	2.55	1.843	
CGP	27347	31-Mar-03	12.33		32.1	398	10.4	1681	8.24	0.077	4.8	221.5	1.45	0.01	103.9	0.779	945	408.7	0.152	0.251	32	21.85	2.239	1.537	
CGP	27540	05-May-03	8.05	86.5	35.5	400	18.8	1723	8.07	0.075	2	227.3	1.62	0.02	99.9	0.112	965	386.1	0.236	0.262	53	20.91	1.752	1.715	
CGP	27682	09-Jun-03	7.43	82.9	136	201	20.7	884	7.95	0.076	4.4	103.1	1.13	0.02	50.9	0.631	521	201.6	0.351	0.48	98	15.63	1.781	1.226	
CGP	27807	14-Jul-03	7.4	96.1	24.3	341	28.8	2283	8.27	0.049	6.4	408	0.1	0.02	150.4	0.648	1207	354.5	0.254	0.428	41	2.29	0.768	0.169	
CGP	28110	18-Aug-03	4.75	58.5	12.3	311	26.1	2639	8.16	0.149	2.8	593	0.15	0.02	178.6	0.981	1448	331.4	0.202	0.368	36	0.12	1.151	0.319	
CGP	28277	23-Sep-03	6.45	70.4	8.1	233	19.5	1070	8.28	0.033	2	309	0.32	0.02	135	1.296	927	281.1	0.248	0.372	20	1.26	1.636	0.373	
CGP	28431	28-Oct-03	9.17	87.3	5.79	300	13.1	1703	7.97	0.045		62.7	0.73	0.02	116.9	0.764	978	326.5	0.253	0.323	10	2.82	1.514	0.795	
CGP	28569	09-Dec-03	9.84	77.1	19.6	367	5	1680	8.15	0.03	2.8	205.5	0.88	0.02	99.5	0.702	934	377.9	0.079	0.161	14	6.58	1.602	0.93	
CGP	29443	13-Jan-04	14.62	110.9	23	356	3.8	1730	8.27	0.034	3.4	211.9	1.04	0.02	100.4	1.846	883	329.6	0.07	0.187	28	8.04	2.906	1.094	
CGP	29614	18-Feb-04	13.29	101.6	28.2	318	4.1	1451	8.46	0.149	3.8	174.6	1.39	0.02	87.4	0.837	873	328.8	0.186	0.253	29	16.58	2.247	1.559	
CGP	29780	22-Mar-04	13.61	121.7	12.4	358	10.4	1802	8.52	0.015	3.9	229.7	0.34	0.02	110.6	0.533	944	384.4	0.087	0.192	22	23.84	0.893	0.375	
CGP	30102	27-Apr-04	7.63	79.4	148	203	17.1	901	7.89	0.12	2.9	100	0.98	0.02	59.4	1.454	464	224.3	0.43	0.506	163	53.57	2.454	1.12	
CGP	30349	07-Jun-04	5.66	66.7	54.2	371	23.3	614	8.25	0.02	4.4	433.5	0.02	0.02	164	1.04	1310	525.2	0.162	0.324	79	6.05	1.08	0.06	
CGP	25581	21-Jun-02	8.02			184	25.3	3175	7.24														0.68		
CGP	25546	29-Jul-02	7.32	64		84		2523	7.69	0.429	5	103.6	0.89	0.01	1262.5	3.577	2210	1346.8	0.041	0.884	10	8.62	4.477	1.329	
CGP	25769	03-Sep-02	7.88	97	3.99	154	23.7	3479	8.06	0.099	2	187.6	0.01	0.01	1631.5	0.519	3016	1763.1			10	0.38	0.539	0.119	
CGP	25963	07-Oct-02	8.84	92	70.1	184	15.8	3143	8	0.159	2	156.1	1.08	0.01	1473.8	0.827	2674	1848.7	0.054	0.13	81	3.37	1.917	1.249	
CGP	26085	12-Nov-02	11.5	105	10.9	244	9.2	3493	8.12	0.023	4	182.6	0.41	0.01	1606.8	0.527	2974	2337.8	0.025	0.052	12	3.28	0.947	0.443	
CGP	26239	09-Dec-02	12.42	100	6.98	248	4.3	3233	8.23	0.015	2	158.61	0.35	0.01	1427.15	0.482	2687	1617.9	0.005	0.005	10	5.37	0.842	0.375	
CGP	26707	21-Jan-03	13.83	103	8.01	238	1.9		8.22	0.015	5	158.5	0.21	0.01	1495.8	0.359	2698	1778.4	0.005	0.005	25	3.36	0.579	0.235	
CGP	27243	10-Mar-03	12.71	99	13.3	213	3.4	3182	8.17	0.015	5.3	157	0.2	0.02	1432.7	0.198	2663	1455.4	0.007	0.027	17	6.4	0.418	0.235	
CGP	27308	24-Mar-03	10.55		10.5	224	16.4	3131	8.26	0.015	3.5	139.3	0.28	0.02	1419.1	0.11	2603	1645	0.005	0.024	19	4.23	0.41	0.315	
CGP	27545	05-May-03	8.56	87.5	9.3	218	16.5	3340	8	0.015	4.5	173.1	0.06	0.02	1592.8	0.746	2920	1817.3	0.005	0.005	10	1.68	0.826	0.095	
CGP	27630	02-Jun-03	7.84	89.4		162	21.7	2707	7.7	0.086	6.3	138.2	0.46	0.02	1229.9	1.299	2248	1384.6	0.647	0.78	1240	469.94	1.779	0.566	
CGP	27770	07-Jul-03	7.67	94.1	3.03	145	25.7	3870	7.98	0.015	2.3	208.4	0.06	0.01	1933.7	0.455	3318	2281.8	0.019	0.051	10	0.95	0.525	0.085	
CGP	28076	11-Aug-03	7.67	95.2	3.68	101	26.4	3391	7.88	0.015	3.3	187.2	0.05	0.02	1571.4	0.514	2815	1797.4	0.005	0.064	10	0.41	0.584	0.085	
CGP	28215	15-Sep-03	9.71	100.3	2.67	124	17	4446	8.04	0.015	2.5	280.2	0.08	0.02	1801.5	0.472	3514	2155.2	0.011	0.05	10	0.12	0.572	0.115	
CGP	28384	20-Oct-03	9.44	95.5	319	166	15.9	3636	8.03	0.061	2.1	261.9	0.1	0.02	1946.9	0.293	3358	1964.4	0.005	0.05	10	0.61	0.413	0.181	
CGP	28518	01-Dec-03	12.59	95.8	2.11	191	3.9	3849	8.16	0.015	2.3	252.7	0.1	0.02	2107.5	0.303	3185	1991	0.005	0.047	10	1.2	0.423	0.135	
CGP	29398	05-Jan-04	14.46	98.9	11	185	0	3954	8.27	0.015	3.2	240.6	0.13	0.02	1842.6	0.28	3202	1778.3	0.005	0.062	16	1.12	0.43	0.165	
CGP	29567	09-Feb-04	14.26	101.3	45	167	1.3		8.17	0.045	2	165.8	0.15	0.02	1469.8	0.332	2559	1638.6	0.023	0.089	56	4.21	0.502	0.215	
CGP	29746	15-Mar-04	11.03	102.2	24.5	172	11.9	3406	8.27	0.015	3.7	152.2	0.11	0.02	1513.2	0.515	2771	1778.6	0.01	0.077	32	4.01	0.645	0.145	
CGP	30107	26-Apr-04	8.98	90.6	72.2	156	15.8	2605	8.23	0.026	2.2	99.2	0.13	0.02	1298.3	0.596	2285	1387	0.043	0.11	73	3.08	0.746	0.176	
CGP	30327	01-Jun-04	8.93	101.5	3.57	133	21.7	3921	7.92	0.015	2	241	0.08	0.02	2138.6	0.4	3459	2187.2	0.005	0.059	20	0.54	0.5	0.115	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	29747	15-Mar-04	11.42	105.5	10.1	173	11.8	28.6	8.24	0.015	3.5	177.7	0.55	0.02	1018.2	0.361	2150	1288.5	0.005	0.067	17	8.93	0.931	0.585
CGP	30108	26-Apr-04	9.45	86.7	8.77	171	16.1	2411	8.21	0.015	2	173.3	0.23	0.02	955.2	0.543	2128	1209.4	0.014	0.06	12	3.79	0.793	0.265
CGP	30329	01-Jun-04	9.26	108.9	4.2	137	23.4	3970	7.84	0.015	2	296.7	0.06	0.02	1874.3	0.39	3416	2146.3	0.009	0.084	15	0.38	0.47	0.095
CGP	25652	27-Jun-02	7.67		62.4	232	24.2	1090	8.12													32.95		
CGP	25402	23-Jul-02	5.16	63			23	212.7	7.1	2.5	5	6.4	1.19	0.12	29.15	9.233	271	103.2	0.106	0.143	63	1125.56	10.543	3.81
CGP	26102	13-Nov-02	9.71	90	31.2	320	10	1537	10.19	0.021	3	97.1	3.46	0.01	406.1	0.558	1118	592.9	0.07	0.086	34	105.54	4.028	3.491
CGP	26229	09-Dec-02	12.84	108	16.2	283	6	1326	8.08	0.015	2	79.62	3.27	0.01	466.7	0.267	1119	689.1	0.007	0.046	26	71.55	3.547	3.295
CGP	26619	21-Jan-03	14.43	118	6.45	293	5	1619		0.015	2	78.2	3.5	0.01	463.6	0.331	1094	718	0.005	0.005	10	45.63	3.841	3.525
CGP	27187	03-Mar-03	13.49	108	27.8	307	4.6	1797	8.25	0.025	4.9	92.7	3.02	0.01	536.6	0.11	1245	814	0.015	0.027	22	77.43	3.14	3.055
CGP	27348	31-Mar-03	11.61		29.9	292	13.6	1927	8.25	0.015	5.7	101.1	3.14	0.05	589.8	0.34	1383	762.2	0.009	0.068	32	48.14	3.53	3.205
CGP	27541	05-May-03	10.6	118.2	23	248	21	1610	8.21	0.033	2.9	77	2.48	0.02	463.6	0.826	1127	634.4	0.024	0.052	35	41.25	3.326	2.533
CGP	27683	09-Jun-03	8.91	89	324	140	22.5	1082	7.94	0.028	3.1	31.2	0.62	0.02	347.2	0.437	792	465.5	0.153	0.315	286	103.06	1.077	0.668
CGP	27808	14-Jul-03	10.3		19.2	231	30.9	1345	8.11	0.016	3.6	74.1	1.57	0.06	409.6	0.357	900	587	0.016	0.087	58	22.19	1.987	1.646
CGP	28111	18-Aug-03	7.36	93.9	13.2	229	27.8	1151	8.21	0.023	4.4	69.3	1.68	0.06	261.2	0.338	719	461.7	0.01	0.094	16	13.4	2.078	1.763
CGP	28278	23-Sep-03	10.27	115.1	14.8	237	21	1018	7.98	0.015	2	63.2	2.71	0.15	2.71	0.259	700	463.2	0.005	0.08	29	15.03	3.119	2.875
CGP	28432	28-Oct-03	11.39	111.5	5.58	256	14.3	1109	7.93	0.024		66.6	3.02	0.08	260.7	0.325	823	498.8	0.005	0.072	10	14.08	3.425	3.124
CGP	28570	09-Dec-03	11.39	89.3	4.55	281	5	1048	8.22	0.02	2.8	67.9	4.42	0.12	283.7	0.161	855	508.8	0.008	0.064	10	16.48	4.701	4.56
CGP	29444	13-Jan-04	15.34	128.1	8.15	308	7.5	1306	8.35	0.026	2.4	71.4	4.85	0.02	318.8	0.242	881	587.1	0.011	0.099	25	15.37	5.112	4.896
CGP	29615	18-Feb-04	12.13	101.6	26.7	285	7.7	1613	8.28	0.179	2.8	65.2	4.67	0.02	318.9	0.558	1010	620.1	0.068	0.131	26	21.04	5.248	4.869
CGP	29787	23-Mar-04	12.65	120.1	11.4	227	13	1489	8.28	0.015	2.7	72	2.17	0.02	486.7	0.44	1147	718.9	0.016	0.101	18	33.58	2.63	2.205
CGP	30103	27-Apr-04	8.31		151	155	19.8	875	7.97	0.045	2.2	35.1	0.8	0.02	267	0.769	675	435.2	0.221	0.334	171	77.61	1.589	0.865
CGP	30350	07-Jun-04	8.86	106.4	14.9	218	24.7	1196	8.12	0.045	2.1	70.4	1.39	0.06	318.3	0.11	842	518.5	0.02	0.071	29	15.47	1.56	1.495
CGP	25542	30-Jul-02	5.7	71			25.5	576	7.45	0.418	3	11.08	0.89	0.01	211	4.244	445	276.8	0.105	0.963	10	267	5.144	1.318
CGP	25659	08-Aug-02	11.05		17.7	242	27.5	1235	8.09													4.86		
CGP	25794	04-Sep-02	7.3	88	10.6	214	22.6	1613	7.79	0.031	2	71.6	1.54	0.01	540	0.712	1192	756.8			10	3.64	2.262	1.581
CGP	25807	04-Sep-02	9.11	108	21.7	195	21.5	1637	8.57	0.064	2	69.5	1.44	0.01	535.8	1.137	1156	751.9			10	1.34	2.587	1.514
CGP	25961	08-Oct-02	8.43	90	140	195	16	1723	7.78	0.059	2	59.37	1.82	0.01	581.6	0.429	1258	876.9	0.113	0.223	20	16.56	2.259	1.889
CGP	25948	08-Oct-02	8.81	92	94.6	223	15.8	1608	7.35	0.063	2	61.13	1.76	0.01	564.5	0.432	1326	939	0.121	0.135	164	22.58	2.202	1.833
CGP	26115	13-Nov-02	10.13	94	14.9	193	10.4	2842	8.86	0.046	2	136.9	2.51	0.01	1189.7	0.778	3708	1414.1	0.053	0.069	18	9.21	3.298	2.566
CGP	26258	10-Dec-02	12.8	103	18.9	189	4.6	1891	8.98	0.015	5	150.99	1.98	0.01	1468.62	0.274	2757	199.7	0.005	0.005	19	10.47	2.264	2.005
CGP	26637	22-Jan-03	15.25		6.72	280	2.2	3101	8.3	0.015	2	144.9	1.58	0.01	1292.3	0.341	2488	1563.8	0.005	0.005	10	4.79	1.931	1.605
CGP	27290	12-Mar-03	9.98		33.5	226	14.2	2913	8.44	0.023	2	146.6	2.35	0.02	1235.6	0.11	2402	1415.8	0.016	0.049	25	8.62	2.48	2.393
CGP	27362	31-Mar-03	12.96		14.5	296	18.8	3474	8.13	0.015	4.3	163.9	1.42	0.01	1450.4	0.582	2756	1672.6	0.005	0.038	32	12.88	2.012	1.445
CGP	27534	06-May-03	11.63	138	8.17	239	24.2	2659	7.84	0.021	2.5	139.5	1.26	0.02	1310.9	0.815	2463	1433.9	0.009	0.069	15	8.85	2.095	1.301
CGP	27676	09-Jun-03	8.02	94.8	163	192	23.9	1768	7.93	0.056	3.2	59.4	0.65	0.02	793.9	0.539	1474	940.5	0.086	0.23	138	15.1	1.209	0.726
CGP	27839	14-Jul-03	12.39	169.4	19.6	210	33.2	2551	8.01	0.024	3.6	97.5	1.2	0.02	1164.9	0.531	2132	1364.4	0.014	0.09	10	1.75	1.751	1.244
CGP	28137	18-Aug-03	13.53	183.1	20.4	235	31.3	1814	8.16	0.029	2.9	88.7	1.81	0.06	632.3	0.576	1382	866.7	0.011	0.112	22	1.28	2.446	1.899
CGP	28187	28-Aug-03	5.37	62.6			23		7.75															
CGP	28287	22-Sep-03	12.77	147.3	14.6	238	22.4	1715	8.07	0.015	2	106.5	1.81	0.02	564	0.37	1247	754.4	0.005	0.077	18	2.82	2.2	1.845

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	28440	27-Oct-03	15.58	157.2	5.7	276	15.8	1794	8.41	0.019		115.1	2.56	0.02	580.1	0.379	1269	815.4	0.006	0.067	10	2.25	2.959	2.599	
CGP	28590	08-Dec-03	14.06	119.2	37.2	313	8.2	2186	8.12	0.016	2.4	100.7	3.06	0.02	703.7	0.599	1549	941	0.019	0.16	46	2.86	3.679	3.096	
CGP	29419	12-Jan-04	12.45	101.4	12.7	304	6.5	2304	7.92	0.029	2	110.9	3.07	0.02	915.2	0.471	1687	1033.5	0.021	0.055	13	1.95	3.561	3.119	
CGP	29635	17-Feb-04	13.08	110	24.3	268	7.8	2231	7.87	0.059	2.5	97.9	2.95	0.02	844.8	0.53	1616	1091.6	0.034	0.117	15	3.66	3.5	3.029	
CGP	29811	23-Mar-04	12.03	115.3	9	233	13.4	2326	8.31	0.15	3.3	126.6	1.01	0.02	1413	0.327	2290	1413	0.006	0.071	10	3.95	1.357	1.18	
CGP	30084	20-Apr-04	10.18	111.3	17.2	194	19.6	2670	8.03	0.044	2.1	128.4	0.87	0.02	1280.9	0.953	2222	1349	0.023	0.069	22	4.78	1.843	0.934	
CGP	30383	08-Jun-04	7.91	91.7	40.3		22.6	2157	8.02	0.029	2.7	105.1	1.48	0.02	816.1	0.2	1726	1005.2	0.018	0.111	46	2.53	1.7	1.529	
CGP	25577	19-Jun-02	8.14		10.5	104	32.8	3529	7.75														3.87		
CGP	25549	29-Jul-02	4.43	55			23.4	1282	7.52	1.034	6	36.47	2.29	0.22	527.1	8.329	918	587.4	0.113	1.08	10	140.3	10.839	3.544	
CGP	25771	03-Sep-02	5.53	75	10.5	150	28.3	2217	7.98	0.015	2	105.3	0.01	0.01	952	0.635	1821	1124.6			10	4.24	0.655	0.035	
CGP	25966	07-Oct-02	8.59	97	17.5	117	18.3	1514	7.93	0.023	2	70.48	0.67	0.01	544.1	0.488	1060	753.6	0.078	0.112	15	22.28	1.168	0.703	
CGP	26088	12-Nov-02	11.74	113	2.8	174	11.4	3176	8.27	0.02	2	189.6	0.12	0.01	1448.8	0.542	2638	2037	0.005	0.035	10	13.05	0.672	0.15	
CGP	26241	09-Dec-02	12.35	100	6.45	204	4.9	3271	8.26	0.015	2	192.04	0.62	0.01	1419.02	0.349	2696	1691.6	0.005	0.005	10	15.21	0.979	0.645	
CGP	26710	21-Jan-03	12.32	97	5.73	215	3.6	3309	8.28	0.015	2	190.7	0.88	0.01	1426.9	0.674	2659	1737	0.005	0.005	10	11.65	1.564	0.905	
CGP	27246	10-Mar-03	12.06	108	11.1	210	8.1	3244	8.29	0.015	2	197	0.34	0.02	1499.4	0.662	2756	1737.7	0.005	0.013	12	17.37	1.022	0.375	
CGP	27310	24-Mar-03	12.62		10.1	207	18.8	2870	8.2	0.015	3.6	196.4	0.31	0.02	1465.4	0.444	2741	1640.4	0.005	0.033	24	20.66	0.774	0.345	
CGP	27548	05-May-03	9.93	112.6	2.13	180	21.5	3288	8.06	0.015	2	198.8	0.02	0.02	1555.7	0.829	2871	1750.2	0.005	0.005	10	7.34	0.869	0.055	
CGP	27632	02-Jun-03	10.67	133.1	9.98	177	26.6	2919	8.14	0.017	3.2	197.5	0.02	0.02	1484.9	0.824	2857	1802.1	0.012	0.109	16	6.48	0.864	0.057	
CGP	27772	07-Jul-03	8.68	107.3	4.06	136	26.1	2826	8.06	0.015	2.3	167.2	0.08	0.01	1388.7	0.64	2395	1394.3	0.016	0.079	10	8.04	0.73	0.105	
CGP	28078	11-Aug-03	6.33	82.2	23.4	130	28.9	1780	7.61	0.187	2.8	101.1	0.1	0.02	840.6	0.878	1659	977.7	0.049	0.124	30	12.19	0.998	0.307	
CGP	28217	15-Sep-03	9.64	106.1	3.22	174	20	2533	8.17	0.017	2.7	165.2	0.05	0.02	1112.4	0.597	2109	1386.6	0.007	0.053	10	8.66	0.667	0.087	
CGP	28386	20-Oct-03	10.52	112.6	6.82	180	18.7	2971	8.14	0.037	2	173.3	0.2	0.02	1323.3	0.11	2335	1391.2	0.01	0.025	20	7.9	0.33	0.257	
CGP	28520	01-Dec-03	12.91	105.4	2.46	184	6.5	1219	8.27	0.015	2.3	186.7	0.59	0.02	1575.4	0.41	2519	1536.8	0.005	0.054	10		1.02	0.625	
CGP	29400	05-Jan-04	14.22	99	6.51	188	0.7	3367	8.4	0.03	3.2	188.7	0.61	0.02	1513.9	0.467	2667	1557.7	0.005	0.055	10		1.097	0.66	
CGP	29569	09-Feb-04	13.33	102.3	10.2	225	4.2	3304	8.25	0.061	2	170.1	0.96	0.02	1458.2	0.494	2568	1606.5	0.005	0.056	28	16.31	1.474	1.041	
CGP	29748	15-Mar-04	10.55	101.9	22.1	219	13.8	3284	8.3	0.028	5.1	178.5	0.29	0.02	1493.7	0.658	2627	1616.7	0.028	0.105	44	28.62	0.968	0.338	
CGP	30109	26-Apr-04	7.64	81.5	73.4	216	18	2547	8.15	0.063	2	136.3	0.23	0.02	1001.9	1.083	2049	1405.2	0.063	0.167	132	23.68	1.333	0.313	
CGP	30330	01-Jun-04	11.67	139.3	2.72	148	24.3	3310	8.05	0.015	2	197.1	0.14	0.02	1723.8	0.54	2879	1851.7	0.008	0.047	39	4.87	0.7	0.175	
CGP	25576	19-Jun-02	8.11		1.52	155	29.9	2680	7.76														3.11		
CGP	25550	29-Jul-02	5.55	69			23.3	551	7.69	0.761	3	21.97	1.65	0.21	155.8	5.316	380	220.2	0.356	0.984	10	34.92	7.176	2.621	
CGP	25772	03-Sep-02	7.65	102	6.66	189	27.6	1993	7.89	0.015	2	95.3	0.01	0.01	800.3	0.702	1573	997			10	1.96	0.722	0.035	
CGP	25967	07-Oct-02	9.81	108	13.4	140	17	1274	8.02	0.017	2	67.36	0.61	0.01	373.8	0.601	855	583.7	0.068	0.082	12	9.21	1.221	0.637	
CGP	26089	12-Nov-02	13.86	131	1.3	226	10.8	2905	8.27	0.021	2	193.8	0.1	0.01	1168	0.438	2296	1571.3	0.005	0.021	10	6.29	0.548	0.131	
CGP	26242	09-Dec-02	16.42	137	1.43	238	5.4	2848	8.37	0.015	2	192.32	0.36	0.01	1803	0.419	2187	1360	0.005	0.005	10	7.36	0.789	0.385	
CGP	26711	21-Jan-03	14.94	118	3.13	251	3.5	3017	8.32	0.015	3	188.2	0.95	0.01	1177.9	0.61	2350	1463.2	0.005	0.005	51	6.69	1.57	0.975	
CGP	27247	10-Mar-03	15.73	141	3.84	231	8.1	3007	8.38	0.015	4	195.1	0.45	0.02	1201	0.588	2409	1458.7	0.005	0.024	10	8.9	1.058	0.485	
CGP	27311	24-Mar-03	20		3.89	209	19.3	2580	8.37	0.015	2.7	197	0.3	0.02	1255.1	0.27	2395	1458.7	0.005	0.023	15	7.49	0.59	0.335	
CGP	27549	05-May-03	16.43	183.8	1.47	206	20.8	2889	8.29	0.028	2	192.8	0.15	0.02	1232.4	0.892	2396	1447.1	0.005	0.005	10	4.04	1.062	0.198	
CGP	27633	02-Jun-03	14.71	176.8	4.29	173	25.4	3098	8.01	0.022	5	187.6	0.02	0.02	1306.5	0.914	2552	1545.5	0.008	0.108	10	3.41	0.954	0.062	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	27773	07-Jul-03	11.3	137.6	7.21	191	25.7	2716	8.15	0.016	4.7	156.1	0.15	0.01	1200.3	0.98	2248	1214.8	0.009	0.115	10	3.9	1.14	0.176	
CGP	28079	11-Aug-03	11.44	152	9.8	168	30.5	2342	8.1	0.015	6.8	129.4	0.17	0.02	965.4	0.896	1973	1121.2	0.021	0.087	10	2.97	1.086	0.205	
CGP	28186	28-Aug-03	5.61	66.3			23.9		7.58																
CGP	28218	15-Sep-03	10.64	119.2	3.08	208	20.9	2663	8.2	0.046	3.4	158.3	0.38	0.02	1018.5	0.702	2023	1330.5	0.008	0.058	17	8.93	1.102	0.446	
CGP	28387	20-Oct-03	10.3	111.3	6.27	232	19.1	2835	8.17	0.034	3	168.7	0.62	0.02	1148.6	0.508	2265	1267.1	0.008	0.062	16	4.25	1.148	0.674	
CGP	28521	01-Dec-03	13.92	115.3	5.57	253	7.2	2871	8.37	0.015	2.1	171.5	0.73	0.02	1131.8	0.597	2113	1335.2	0.014	0.065	13	5.59	1.347	0.765	
CGP	29401	05-Jan-04	14.06	98.1	31.9	237	0.8	2948	8.3	0.033	2.9	174.1	1.22	0.02	1216.8	0.679	2188	1318.9	0.024	0.12	46	5.73	1.919	1.273	
CGP	29570	09-Feb-04	13.14	103.2	20.5	261	5	2949	8.26	0.134	2	165.7	0.94	0.02	1191.2	0.505	2304	1518.7	0.014	0.101	55	10.64	1.465	1.094	
CGP	29749	15-Mar-04	10.08	101.5	11.5	235	15	2080	8.35	0.015	2.9	180.1	0.42	0.02	1273.2	0.655	2430	1468.5	0.015	0.094	32	16.4	1.095	0.455	
CGP	30110	26-Apr-04	7.56	82.2	33.7	224	19.1	2258	8.17	0.083	2	145.5	0.38	0.02	958.3	0.863	2044	1243	0.059	0.122	101	24.15	1.263	0.483	
CGP	30331	01-Jun-04	11.83	143.5	4.18	182	25.1	3005	7.82	0.021	2	182.7	1.18	0.02	1402.2	0.75	2605	1617.8	0.006	0.068	16	3.02	1.95	1.221	
CGP	25575	19-Jun-02	4.92		12.2	229	21.2	3651	7.47														0.19		
CGP	25551	29-Jul-02	10.63	143	9.22	143	27.4	3557	7.97	0.156	2	115	0.6	0.01	2045	0.654	3388	2155.1	0.069	0.126	11	0.02	1.264	0.766	
CGP	25773	03-Sep-02	7.67	101	3.28	188	26.2	36.19	7.69	0.135	4	141.3	0.01	0.01	1948	1.318	3291	2006.3	0.09	0.078	10		1.338	0.155	
CGP	25968	07-Oct-02	6.45	71	52.6	120	17.6	1670	7.58	0.094	2	44.75	0.8	0.01	640.8	0.452	1235	915.9	0.088	0.117	54	0.86	1.262	0.904	
CGP	26090	12-Nov-02	11.48	111	16.9	252	11.8	3415	8.14	0.148	5	130.2	0.53	0.01	1808.7	0.612	3103	2360.4	0.028	0.063	10		1.152	0.688	
CGP	26243	09-Dec-02	12.88	108	11.7	254	5.2	3452	8.18	0.166	3	117.82	0.72	0.01	1708.2	0.65	3009	1872.9	0.005	0.042	10	1.3	1.38	0.896	
CGP	26712	21-Jan-03	14.05	114	7.55	261	4.7	3453	8.13	0.015	4	117.5	0.34	0.01	1665.3	0.49	3044	1964.7	0.005	0.005	10	1.23	0.84	0.365	
CGP	27248	10-Mar-03	13.7	123	13.4	241	8.4	3568	8.16	0.015	4.4	134.1	0.25	0.02	1838.4	0.671	3204	2029.2	0.005	0.005	10	1	0.941	0.285	
CGP	27312	24-Mar-03	9.92		13.1	252	17.8	3706	8.01	0.015	3.3	153.7	0.43	0.02	2106.4	0.11	3294	2293.4	0.005	0.045	20	1.56	0.56	0.465	
CGP	27550	05-May-03	9.11	104.2	6.76	230	21.6	3518	7.85	0.054	2.3	117.3	0.24	0.02	1824.5	0.979	3274	2061.8	0.005	0.005	15	0.64	1.239	0.314	
CGP	27634	02-Jun-03	4.95	60.1	38.3	232	25.7	3240	7.25	0.111	12.5	99.2	0.06	0.07	1677.5	1.68	2988	1780.7	0.026	0.154	56	0	1.81	0.241	
CGP	27774	07-Jul-03	6.06	74.7	9.9	178	26.1	2814	7.12	0.036	4.9	93.6	0.07	0.01	1334.7	0.975	2354	1207.3	0.04	0.147	48	0	1.055	0.116	
CGP	28080	11-Aug-03	8.14	104	8.35	165	27.8	2573	6.85	0.04	4.6	96.2	0.06	0.02	1729.7	1.108	2966	1838.6	0.013	0.11	10		1.188	0.12	
CGP	28219	15-Sep-03	9.56	101.9	10.8	192	21	3872	7.91	0.046	3.4	111.8	0.02	0.02	1925	0.696	3191	2347.8	0.009	0.082	13	0	0.736	0.086	
CGP	28388	20-Oct-03	6.78	73.1	8.07	183	19.1	3588	7.44	0.059	2.5	144.5	0.02	0.02	2095.7	0.6	3379	1967.9	0.013	0.083	16	1.73	0.64	0.099	
CGP	28522	01-Dec-03	12.36	96.9	6.14	218	5	9806	7.91	0.03	2.4	143.5	0.34	0.02	2390.6	0.599	3408	2200.3	0.005	0.055	10	1.24	0.959	0.39	
CGP	29402	05-Jan-04	12.22	88.6	3.77	194	2.1	3480	8.11	0.02	2.8	111.7	0.16	0.02	1782.8	0.441	2983	1755	0.226	0.188	10	2.93	0.621	0.2	
CGP	29571	09-Feb-04	14.37	112.8	2.77	256	5.1	3133	7.97	0.02	2	87.1	0.18	0.02	1559.7	0.478	2555	1691.8	0.037	0.101	10	4.34	0.678	0.22	
CGP	29750	15-Mar-04	14.4	141.2	6.8	230	16	3670	8.07	0.015	3.4	114.7	0.02	0.02	1868.3	0.118	3149	2023	0.01	0.051	10	3.71	0.158	0.055	
CGP	30111	26-Apr-04	10.19	111.5	15	220	19.7	3453	7.93	0.031	2	120.2	0.06	0.02	1493	1.027	3156	1989.6	0.039	0.106	26		1.107	0.111	
CGP	30332	01-Jun-04	6.04	68.4	15	196	21.5	4130	7.4	0.184	3	151.8	0.05	0.02	2221.3	1.13	4120	2541.1	0.042	0.111	43	0.02	1.2	0.254	
SWT	25567	05-Jun-02	8.01		24.3	237	21.2	4007	8.42														29.42		
SWT	25512	22-Jul-02	9.03	134	14.6	172	32.1	5150	8.8	0.232	6	1450	0.01	0.01	201.2	1.388	2714	414.2	0.112	0.134	36	13.72	1.408	0.252	
SWT	25717	26-Aug-02	8.68	129	21.5	190	32.2	2170	8.61	0.069	3	1374	0.67	0.01	197	0.708	2787	449.5	0.005	0.156	34	20.64	1.388	0.749	
SWT	25882	30-Sep-02	8.98	122	13.7	210	27.8	4780	8.72	0.034	2	1345.9	1.45	0.01	192.9	0.47	2520	432.9	0.153	0.192	27	21.48	1.93	1.494	
SWT	26076	04-Nov-02	11.46	97	12	224	5.4	4926	8.6	0.015	3	1259.7	3.28	0.01	196.2	0.536	2621	487.4	0.75	0.75	25	31.5	3.826	3.305	
SWT	26220	02-Dec-02	11.58	111	10.8	223	10.7	4530	8.7	0.026	3	1208.8	2.63	0.01	198.22	0.544	2487	458.2	0.504	0.591	14	32.05	3.184	2.666	
SWT	26699	14-Jan-03	11.77	103	11.7	216	6.1	4732	8.66	0.015	3	1209.8	3.01	0.01	206.8	0.427	2509	454.3	0.507	0.527	15	36.15	3.447	3.035	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	25655	07-Aug-02	11.47		23.2	253	29.1	1885	7.87													2.38		
CGP	25799	03-Sep-02	6.28	78	59.7	233	24.5	2150	8.04	0.015	2	280.8	0.53	0.01	264.4	0.868	1210	455.7	0.143	0.173	33	0.68	1.408	0.555
CGP	25953	07-Oct-02	7.63	79	320	168	15.9	970	7.86	0.092	2	114.8	1.46	0.01	94.19	0.628	471	245.5	0.395	0.471	130	4.4	2.098	1.562
CGP	26107	12-Nov-02	9.13	82	12.2	324	9.7	2484	8.92	0.036	3	343.5	9.81	0.01	320.1	0.629	1442	430.6	0.091	0.111	13	14.94	10.449	9.856
CGP	26250	09-Dec-02	11.61	92	13	132	4.1	1857	8.48	0.138	4	565.13	5.24	0.01	380.25	0.989	1812	619.8	0.013	0.04	10	8.74	6.239	5.388
CGP	26629	21-Jan-03	10.49		13	277	3.6	2345	8.43	0.015	3	303.9	4.56	0.01	298.9	0.572	1344	459.6	0.005	0.025	10	6.97	5.142	4.585
CGP	27292	12-Mar-03	13.06		15.9	359	6.8	2407	8.4	0.02	4	321.4	3.46	0.02	310.6	0.11	1344	500.2	0.039	0.079	12	10.44	3.59	3.5
CGP	27358	31-Mar-03	11.48		15.2	372	9.9	2418	8.32	0.023	6.1	311.1	2.9	0.08	307.6	0.626	1359	481.9	0.014	0.081	17	10.7	3.606	3.003
CGP	27530	06-May-03	8.22	93.3	31.1	337	21.7	1862	7.96	0.162	2.6	257.7	1.17	0.02	269.2	1.301	1178	382.4	0.119	0.151	28	2.36	2.491	1.352
CGP	27672	09-Jun-03	6.12	67.4	99.1	244	20.8	1380	8.24	0.153	4.7	169.1	0.96	0.02	153	1.161	773	279.7	0.244	0.44	64	2.29	2.141	1.133
CGP	27835	14-Jul-03	4.57	56	18.5	426	25.5	1911	8.05	0.058	3.1	260.6	0.05	0.02	127.6	0.699	1037	415	0.273	0.389	50	0.11	0.769	0.128
CGP	28133	18-Aug-03	4.87	58.4	18.6	431	24.6	1920	8	0.065	4	298.6	0.1	0.02	101.4	1.131	1080	427.6	0.311	0.46	13	0	1.251	0.185
CGP	28283	22-Sep-03	5.51	58.6	29.9	350	18.4	1440	8.02	0.019	2	22.1	0.15	0.02	99.1	0.656	758	312	0.176	0.298	33	2.16	0.826	0.189
CGP	28436	28-Oct-03	4.33	40	7.57	342	12.1	1748	8.17	0.015		65.8	0.02	0.02	155.8	0.855	946	381.6	0.232	0.312	10	0.18	0.895	0.055
CGP	28586	08-Dec-03	8.1	63.3	4.12	512	4.9	2829	7.86	0.015	2.5	307.4	0.15	0.02	265.5	0.676	1507	544.6	0.163	0.259	11	0.23	0.846	0.185
CGP	29415	12-Jan-04	12.16	87.4	14.5	364	1.7		7.96	0.221	4.9	235.9	2	0.02	266.5	2.028	1153	413	0.029	0.178	12	0.68	4.048	2.241
CGP	29631	17-Feb-04	15.7	114.7	47.1	279	2.3	1933	8.15	0.128	3.4	224.7	2.77	0.02	222.9	1.149	1088	433.5	0.179	0.287	56	5.39	3.939	2.918
CGP	29803	22-Mar-04	11.46	100.2	14.1	312	9.4	1633	8.58	0.026	2.3	302.8	1.87	0.02	290.9	0.659	1336	492	0.013	0.112	14	3.68	2.549	1.916
CGP	30076	19-Apr-04	7.51	78.4	19	282	17.8	2056	8.21	0.062	3.1	278.7	1.05	0.02	268.2	1.187	1211	449.4	0.047	0.12	10	3.55	2.257	1.132
CGP	30375	07-Jun-04	5.48	63.8	80.3	240	22.8	1761	8.2	0.071	3.4	227.4	0.18	0.02	224.9	0.83	1054	307.6	0.248	0.322	55	1.86	1.03	0.271
CGP	25412	22-Jul-02	6.28	83	73.7	137	28.3	1376	7.59	0.225	6	139.5	0.01	0.01	292.5	1.079	864	503.4	0.005	0.29	25	3.86	1.099	0.245
CGP	25725	26-Aug-02	5.2	64	201	79	24.7	346.7	7.58	0.365	3	23.65	1.13	0.2	43.18	1.666	189	116.8	0.289	0.469	166	14.89	2.996	1.695
CGP	25907	30-Sep-02	7.8	93	23.3	170	22.6	1304	7.91	0.053	4	122.8	1.96	0.01	224	0.726	774	481	0.106	0.147	33	6.47	2.696	2.023
CGP	26062	04-Nov-02	6.4	56	53.1	57	8.3	1055	8.86	0.029	3	86.97	3.69	0.01	203.77	0.187	656	383.5	0.014	0.112	68	20.42	3.887	3.729
CGP	26206	03-Dec-02	13.78	109	8.23	101	4.8	1103	8.89	0.016	3	155.64	0.59	0.01	390.41	0.386	1124	693.3	0.026	0.06	10	5.39	0.986	0.616
CGP	26601	14-Jan-03	7.19	55	6.47	257	3.5	1703	8.18	0.015	2	146	0.84	0.01	286.3	0.298	1158	661	0.005	0.013	32	4.94	1.148	0.865
CGP	26798	19-Feb-03	9.77	79	34.5	213	5.9	1802	8.38	0.015	4.6	154.3	0.95	0.01	396.8	0.546	1145	667.8	0.009	0.059	35	9.05	1.506	0.975
CGP	27296	24-Mar-03	7.4		115	176	14	1058	7.88	0.284	2	75.8	2.14	0.02	191.2	0.872	699	403.5	0.125	0.209	117	12.3	3.032	2.444
CGP	27450	28-Apr-03	5.66		64.8	186	19.1	995	8.08	0.106	2	71.2	1.33	0.02	188.6	0.706	649	455.6	0.124	0.218	112	29.89	2.056	1.456
CGP	27662	03-Jun-03	6.48	72.8	467	81	20.9	366.9	7.96	0.058	4.3	25.2	1.23	0.02	50.9	1.262	228	143.6	0.307	0.554	266	43.64	2.512	1.308
CGP	28100	12-Aug-03	6.57	79.7	68.9	43	25.2	887	8.38	0.041	3.9	77.4	1.25	0.02	138.6	0.681	549	312.2	0.135	0.279	61	3.29	1.951	1.311
CGP	28267	25-Sep-03	6.47	73.8	24.5	149	20.3	853	7.53	0.016	2.3	62	1.55	0.02	144.5	0.185	456	324.3	0.148	0.066	141	29.88	1.755	1.586
CGP	28400	21-Oct-03	7.18	74	45	197	16.6	1241	8.1	0.017	2.4	91.1	1.07	0.02	225.2	0.483	770	478.5	0.109	0.208	44	34.29	1.573	1.107
CGP	28534	02-Dec-03	14.41	114.1	11.5	181	5.5	1878	8.18	0.015	3.1	131.8	0.39	0.02	472.6	0.399	1215	746.8	0.007	0.068	10	6.36	0.809	0.425
CGP	29386	05-Jan-04	13.22	96.7	2.23	234	2.4	1870	8.07	0.015	3.9	145.7	0.63	0.02	476.3	0.279	1167	714.7	0.015	0.061	10	5.2	0.929	0.665
CGP	29555	09-Feb-04	13.04	91.4	17.6	193	0.8		8.19	0.126	3.1	106.1	2.21	0.02	363.2	0.676	1052	663.7	0.153	0.211	20	19.83	2.906	2.356
CGP	29756	15-Mar-04	8.72	79.6	50	251	10.8	1159	8.02	0.062	2	105.8	1.5	0.02	299.7	0.49	2284	660.1	0.105	0.196	38	12.23	2.01	1.582
CGP	30117	26-Apr-04	5.51	55	107	135	15.1	660	7.93	0.102	3.1	41	0.81	0.02	102.6	0.623	404	256.1	0.136	0.231	29		1.453	0.932
CGP	30342	02-Jun-04	9.06	104.9	38	233	22.4	1404	8.31	0.024	2.8	121	0.49	0.02	264.5	1.06	980	574.2	0.067	0.221	50	5.04	1.57	0.534

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	31204	21-Oct-04	9.11	90.8	18.1	180	15	1573	7.51													4.28		
CGP	25393	22-Jul-02	8.18		26	189	33.8	1609	8.15													0.43		
CGP	25414	22-Jul-02	8.18	118	26.1	189	33.8	1609	8.15	0.162	2	277.5	0.01	0.01	125	0.705	910	472.3	0.088	0.152	10	0.43	0.725	0.182
CGP	25727	26-Aug-02	6.87	90	84.1	147	27.3	976	7.54	0.173	5	147.8	0.58	0.01	55.52	0.754	536	298.9			10	5.31	1.344	0.763
CGP	25909	30-Sep-02	13.21	163	24.5	213	24.7	1194	8.41	0.075	7	188	1.32	0.01	75.85	0.625	681	398.8	0.06	0.12	29	1.06	1.955	1.405
CGP	26064	04-Nov-02	7.49	64	93.7	153	7.5	1113	8.62	0.015	3	152.4	2.6	0.01	61.76	0.628	594	343.8	0.128	0.145	45	2.28	3.238	2.625
CGP	26204	03-Dec-02	12.8	104	6.42	132	5.4	1219	8.61	0.019	3	309.3	0.47	0.01	136.12	0.358	1025	428.4	0.021	0.036	10	1.35	0.838	0.499
CGP	26603	14-Jan-03	8.18	63	6.37	273	3.7	1727	8.38	0.015	5	270.4	1.36	0.01	113.2	0.346	966	510.7	0.005	0.023	32	3.56	1.716	1.385
CGP	26800	19-Feb-03	10.44	87	12.7	168	6.9	1865	8.58	0.015	4.1	301.8	0.94	0.01	128.6	0.561	981	484.4	0.005	0.043	14	5	1.511	0.965
CGP	27298	24-Mar-03	9.59		129	229	15.2	1030	8.36	0.162	4.9	151.6	2.24	0.02	68.5	0.87	629	337.3	0.103	0.122	120	8.98	3.13	2.422
CGP	27452	28-Apr-03	5.19		108	155	20.8	799	8.38	0.114	2.8	125.6	1.19	0.02	50.1	0.701	509	296.3	0.1	0.207	103	6.47	1.911	1.324
CGP	27664	03-Jun-03	7.15	84.5	36.1	217	23.3	1141	8.59	0.015	5.5	188.3	0.38	0.02	87.5	1.493	618	354.9	0.02	0.151	48	4.8	1.893	0.415
CGP	27787	08-Jul-03	6.58	81.7	41	254	26	1719	8.29	0.015	3.2	297.2	0.24	0.01	118.9	0.78	972	403.8	0.035	0.173	52	1.82	1.03	0.265
CGP	28102	12-Aug-03	6.79	87.1	48.2	231	28.1	1914	8.19	0.031	5.2	345.1	0.26	0.02	163.3	1.193	1103	490	0.063	0.184	62	0.78	1.473	0.311
CGP	28269	23-Sep-03	7.51	82.1	420	85	20.9	678	7.76	0.041	3.2	95.1	1.18	0.02	56.5	1.491	375	172.8	0.126	0.387	252	8.15	2.691	1.241
CGP	28402	21-Oct-03	7.58	79.4	66.1	153	17.7	653	8.1	0.015	2.6	85.8	1	0.02	58.5	0.512	455	250.4	0.121	0.226	43	1.84	1.532	1.035
CGP	28536	02-Dec-03	12.82	101.9	6.43	184	5.5	1960	8.16	0.015	3.8	299	0.18	0.02	129.1	0.502	1019	491.9	0.024	0.089	10	0.99	0.702	0.215
CGP	29388	05-Jan-04	13.52	98.7	2.9	199	2.4	1996	8.24	0.015	4.1	323.3	0.11	0.02	136.9	0.33	1037	501.4	0.005	0.082	10	1.64	0.46	0.145
CGP	29557	09-Feb-04	12.81	89.4	41.7	214	0.7		8.3	0.154	3.5	203.3	2.33	0.02	90.4	0.983	738	401.1	0.107	0.205	35	10.78	3.333	2.504
CGP	29758	15-Mar-04	9.76	88.3	34.1	207	10.9	1214	8.31	0.088	2	234.6	1.79	0.02	99.5	0.574	853	490.4	0.1	0.183	32	5.15	2.384	1.898
CGP	30118	26-Apr-04	8.42	84.5	302	96	15.5	445.6	8.01	0.06	3.8	45.3	0.6	0.02	26.2	0.91	271	148.7	0.184	0.294	267	31.54	1.53	0.68
CGP	30344	02-Jun-04	7.17	85.9	81.3	235	24.2	2088	8.14	0.015	4.7	418.6	0.02	0.02	145.9	0.93	1244	585.7	0.033	0.187	90	1.44	0.97	0.055
CGP	25533	29-Jul-02	5.77	69		47	22.1	137.2	6.77	0.602	7	13.91	1.07	0.18	10.06	3.047	293	33.03	0.323	0.474	14	161.64	4.297	1.852
CGP	25654	07-Aug-02	3.49		350	152	28	537	7.09													1.96		
CGP	25798	03-Sep-02	6.41	79	183	191	25.3	760	8.08	0.323	3	51.4	1.21	0.2	52.25	1.387	421	248.7	0.24	0.267	10	1.3	2.797	1.733
CGP	25952	07-Oct-02	4.7	51	783	63	17.8	177.8	6.89	0.096	2	7.83	1.28	0.01	8.69	0.45	326	65.66	0.52	0.62	112	218.26	1.74	1.386
CGP	26106	12-Nov-02	8.7	80	50.6	266	10.3	1497	7.94	0.141	3	165.9	1.92	0.01	218.6	3.195	828	357.3	0.163	0.178	35	17.26	5.125	2.071
CGP	26249	09-Dec-02	11.45	88	8.92	181	3.8	1097	8.85	0.024	3	230.84	0.77	0.01	175.66	0.554	1032	430.8	0.024	0.062	10	9.42	1.334	0.804
CGP	26628	21-Jan-03	10.9		13.7	339	2.9	1829	8.34	0.015	3	244.2	0.71	0.01	192.3	0.541	1000	368.8	0.005	0.024	11	10.89	1.261	0.735
CGP	27291	12-Mar-03	11.4		34.8	230	6.5	1361	8.31	0.02	3.2	172	1.88	0.02	132.7	0.11	757	318.9	0.083	0.152	26	33.8	2.01	1.92
CGP	27357	31-Mar-03	10.13		71.3	362	10.5	1538	8.16	0.015	4.4	196.5	1.51	0.06	164.3	0.906	920	406.1	0.086	0.198	93	37.13	2.476	1.585
CGP	27529	06-May-03	6.23	69	190	202	20.8	948	7.74	0.106	2.5	107.5	1.01	0.02	90.2	0.111	634	235.7	0.209	0.305	110	43.33	1.141	1.136
CGP	27671	09-Jun-03	4.69	53.2	196	61	20.8	281	7.63	0.047	4.6	22.8	0.29	0.02	19	0.847	260	84	0.295	0.528	140	110.26	1.157	0.357
CGP	27834	14-Jul-03	4.92	62.6	72.8	409	27.6	1633	8.27	0.072	4.6	196.5	0.61	0.02	128.4	0.781	947	370.3	0.125	0.213	59	3.75	1.411	0.702
CGP	28132	18-Aug-03	7.15	88.7	62.3	378	26.3	1463	7.95	0.046	5	179.8	0.87	0.02	108.4	1.117	826	340.1	0.048	0.202	64	0.87	2.007	0.936
CGP	28282	22-Sep-03	5.9	63.2	1000	120	18.8	399.9	7.12	0.036	6.2	35.5	1.52	0.06	26.8	2.613	243	91.7	0.463	1.081	613	19.91	4.193	1.616
CGP	28435	27-Oct-03	8.65	80.3	22.1	383	12	1513	7.44	0.015		41.2	1.19	0.02	116.5	0.65	807	362.1	0.126	0.198	10	10.01	1.86	1.225
CGP	28585	08-Dec-03	15.07	118	4.82	443	5	1840	8.19	0.015	2	182.5	0.64	0.02	131.4	0.399	963	433.1	0.036	0.113	11	6.69	1.059	0.675
CGP	29414	12-Jan-04	13.99	107.5	5.41	409	4.2	1746	7.77	0.015	2.7	233.2	0.63	0.02	161.2	0.5	1045	413.4	0.045	0.069	10	4.65	1.15	0.665

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	29630	17-Feb-04	15.36	113	244	128	2.6	1003	7.66	0.128	3.8	108.7	1.98	0.07	98.2	1.048	641	227.1	0.251	0.418	112	124.05	3.098	2.178
CGP	29802	22-Mar-04	7.54	70.2	90.8	326	11.8	1379	8.47	0.017	2.8	203.2	0.74	0.02	182.7	0.718	1073	458.3	0.068	0.173	88	24.05	1.478	0.777
CGP	30075	19-Apr-04	6.44	69.5	59.2	186	18.5	1579	8.12	0.039	2.8	223.1	0.25	0.02	185.1	0.828	1033	440	0.108	0.13	69	9.34	1.098	0.309
CGP	30374	07-Jun-04	4.79	56.3	200	233	23.7	1173	8.16	0.095	2.3	138.5	0.61	0.02	92.6	0.56	691	274	0.123	0.262	169	16.01	1.19	0.725
CGP	25656	08-Aug-02	4.35		220	2.23	26.5	804	8.37													0.9		
CGP	25800	03-Sep-02	10.06	136	214	197	29.1	775	8.01	0.302	5	59.25	1.02	0.22	63.13	1.411	455	218.4	0.148	0.196	10	0.61	2.651	1.542
CGP	25954	07-Oct-02	6.42	68	223	160	16.9	645	7.76	0.099	2	86.99	1.93	0.01	111.7	0.497	511	264.6	0.247	0.324	76	18.8	2.437	2.039
CGP	26108	12-Nov-02	8.69	80	15	266	10.9	1936	7.94	0.032	5	227.4	9.01	0.01	253.5	0.603	1093	395.6	0.117	0.138	45	9.16	9.623	9.052
CGP	27293	12-Mar-03	11.92		19.2	330	6.8	1954	8.38	0.015	5.5	216.7	1.74	0.02	282	0.11	1131	452.3	0.035	0.081	23	17.27	1.87	1.775
CGP	27359	31-Mar-03	11.33		40.8	366	10.7	1964	8.33	0.015	5.2	213	2.12	0.09	285.6	0.642	1146	504.7	0.053	0.154	51	24.27	2.852	2.225
CGP	27531	06-May-03	10.09	112.4	69.4	393	20.5	1702	7.97	0.03	4.2	199.9	1.89	0.02	526.1	1.434	1185	456.9	0.124	0.125	53	22.98	3.344	1.94
CGP	27673	09-Jun-03	6.57	73.2	78.8	243	20.4	974	8.26	0.074	4.5	89.9	1.06	0.02	101	1.115	530	259.9	0.196	0.386	81	28.42	2.195	1.154
CGP	27836	14-Jul-03	5.78	71.7	14.9	329	27.8	1366	8.44	0.126	3.8	143.5	0.87	0.07	118.5	0.639	751	325.1	0.084	0.196	21	7.06	1.579	1.066
CGP	28134	18-Aug-03	6.27	79.3	17.2	342	27.9	928	8.26	0.096	4.8	109.4	0.37	0.04	73.9	0.791	591	256.6	0.046	0.149	15	2.59	1.201	0.506
CGP	28284	22-Sep-03	6.31	71.2	51.7	288	20.1	1161	8.22	0.078	2	113	1.14	0.05	94.9	0.653	624	281.5	0.082	0.21	50	6.46	1.843	1.268
CGP	28437	27-Oct-03	9.92	92.1	6.35	376	12	1754	8.71	0.015		42.9	1.23	0.02	192	0.557	930	432.9	0.032	0.134	10	11.34	1.807	1.265
CGP	28587	08-Dec-03	12.95	103.1	3.12	376	5.6	1849	8.36	0.015	2.5	190.6	1.47	0.02	189.3	0.304	1039	428	0.011	0.074	10	9.06	1.794	1.505
CGP	29416	12-Jan-04	13.37	103.1	4.91	357	4.4	1744	8.17	0.039	2.4	182.8	1.99	0.02	194.6	0.579	983	425.1	0.024	0.077	10	8.31	2.589	2.049
CGP	29632	17-Feb-04	15.91	115.2	429	147	2		7.86	0.147	3.3	81	1.32	0.06	124.6	1.309	685	229.9	0.275	0.532	249	52.28	2.689	1.527
CGP	25471	25-Jun-02	9.68		148	105	29.1	5780	8.4													242.43		
CGP	25536	29-Jul-02	9.14	118	343	99	26.5	8240	8.22	0.186	7	2583	0.01	0.01	335.2	1.422	4817	443.3	0.055	0.071	10	342.57	1.442	0.206
CGP	25801	03-Sep-02	10.42	146	142	83	31.5	7070	8.07	0.253	3	2146.5	0.01	0.01	249.6	1.748	3845	367.1	0.02	0.125	53	63.4	1.768	0.273
CGP	25955	07-Oct-02	8.16	90	591	68	18.5	1716	7.71	0.21	2	435.6	1.21	0.01	77.7	0.707	1029	158.3	0.385	0.446	77		1.927	1.43
CGP	26109	12-Nov-02	9.44	91	176	112	12.9	3153	7.82	0.174	2	683.4	1	0.01	333.3	0.595	1776	452.3	0.08	0.125	108	4.13	1.605	1.184
CGP	26252	09-Dec-02	14.71	114	26.4	103	3.7	2122	8.7	0.024	3	807.05	0.35	0.01	582.55	0.512	2020	509.2	0.005	0.034	26	81.1	0.872	0.384
CGP	26631	21-Jan-03	12.88		31.9	163	5.2	6080	8.72	0.015	4	1510	0.3	0.01	512.68	0.344	3425	671.5	0.005	0.03	33	75.72	0.654	0.325
CGP	27294	12-Mar-03	13.95		33.7	63	10.3	6.43	8.43	0.015	4.5	1626.7	0.42	0.02	515.6	0.11	3550	639.5	0.005	0.099	28		0.55	0.455
CGP	27360	31-Mar-03	13.26		112	168	13.4	4397	8.57	0.015	5.6	958.4	2.13	0.09	417.2	0.875	2423	578.5	0.012	0.177	88	924.4	3.095	2.235
CGP	27532	06-May-03	9.95	115.1	364	148	22.6	3102	8.25	0.144	4.5	666	0.63	0.02	370.1	1.98	2000	537.3	0.099	0.219	241	633.33	2.63	0.794
CGP	27674	09-Jun-03	9.18	106.4	125	138	22.5	2395	8.43	0.441	4.2	764.2	0.84	0.02	224.7	1.58	1808	392	0.081	0.245	97	1439.66	2.44	1.301
CGP	27837	14-Jul-03	9.25	128.8	65.7	100	32.7	8190	9.16	0.058	8.4	1304.1	0.02	0.02	459.2	1.236	2868	522.1	0.043	0.254	80	57.88	1.276	0.098
CGP	28135	18-Aug-03	8.5	110.1	95	103	30.2	10490	8.45	0.015	8.2	3063.3	0.12	0.02	667.3	2.458	5978	743.2	0.052	0.293	80	15.55	2.598	0.155
CGP	28285	22-Sep-03	8.53	96.4	276	98	21.4	7460	8.81	0.015	6.6	2194.2	0.04	0.02	490.8	2.742	4250	561.6	0.059	0.35	210	166.92	2.802	0.075
CGP	28438	27-Oct-03	10.92	108.6	103	122	15.6	4580	9.48	0.016		1093.7	0.05	0.02	342.6	1.047	2413	449.4	0.036	0.196	84	203.68	1.117	0.086
CGP	28588	08-Dec-03	12.81	104.4	73.5	154	6.6	5230	8.43	0.015	4.6	1369.9	0.02	0.02	381.8	1.389	3014	493.6	0.005	0.198	68	202.56	1.429	0.055
CGP	29417	12-Jan-04	14.23	116	58.5	176	7.3	6.55	8.57	0.015	4.5	1767.6	0.02	0.02	414.8	1.046	3557	558.3	0.014	0.147	58	253.32	1.086	0.055
CGP	29633	17-Feb-04	19.09	146.9	34.7	132	4.3	5710	8.64	0.015	4.9	1381.5	0.02	0.02	337.3	0.91	3049	507.3	0.014	0.163	20	1446.13	0.95	0.055
CGP	29805	22-Mar-04	12.63	122	177	107	13.8	3173	8.93	0.02	5.1	960.8	0.02	0.02	298.5	1.074	2400	422.2	0.028	0.271	152	300.77	1.114	0.06
CGP	30078	19-Apr-04	9.71	103.2	261	188	18.4	4256	8.32	0.026	5.1	964.5	0.02	0.02	493.2	1.789	2430	612.1	0.068	0.39	201	95.31	1.829	0.066

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CGP	30377	07-Jun-04	9.71	122.4	225	109	27	4138	8.64	0.054	8.2	975.6	0.02	0.02	469.6	1.34	2560	529.2	0.03	0.251	141	115.9	1.38	0.094	
CGP	25472	25-Jun-02	13.98		7.38	223	30.3	7020	8.08													0.52			
CGP	25543	30-Jul-02	6.1	82	836	96	28.3	446.5	7.41	0.35	4	25.96	0.75	0.01	80.5	1.821	308	152.8	0.278	0.494	10	14.76	2.581	1.11	
CGP	25808	04-Sep-02	7.13	92	8.53	218	26.6	10480	8.69	0.151	6	2758	0.98	0.01	772.8	1.058	6600	1067			10	0.9	2.048	1.141	
CGP	25962	08-Oct-02	8.23	89	473	116	17.2	1104	7.67	0.085	2	155.9	0.99	0.01	163.5	0.445	657	274.2	0.277	0.367	308	26.03	1.445	1.085	
CGP	26116	13-Nov-02	10.31	98	6.47	124	11.7	545	8.83	0.035	6	1013.1	1.46	0.12	1069.6	0.422	3694	1194.4	0.031	0.043	22	2.06	2.002	1.615	
CGP	26259	10-Dec-02	10.43	83	6.88	119	4.3	1016	8.88	0.025	3	215.88	2.13	0.01	908.84	0.491	2173	1105.3	0.014	0.027	23	4.48	2.631	2.165	
CGP	26638	22-Jan-03	14.89		5.35	293	2.2	3125	8.5	0.015	2	239.6	2.78	0.01	945.7	0.565	2156	1228.8	0.005	0.036	48	2.4	3.355	2.805	
CGP	27295	12-Mar-03	14.53		15.1	377	12.2	4501	8.18	0.057	2	592.6	1.15	0.02	1196.7	0.11	3161	1544	0.025	0.057	17	5.06	1.28	1.227	
CGP	27361	31-Mar-03	16.06		12.2	350	16	4153	8.23	0.017	3.3	470.3	0.51	0.01	1154.4	0.636	2869	1435.6	0.005	0.056	34	7.81	1.156	0.537	
CGP	27533	06-May-03	13.79	164	11.2	331	24	4100	8.27	0.053	2.5	600.2	0.58	0.02	1031.7	1.119	2947	1244.7	0.03	0.077	20	5.19	1.719	0.653	
CGP	27675	09-Jun-03	7.87	90.3	68.7	171	22	1916	7.76	0.113	5	278.4	0.67	0.02	351.9	1.121	1186	495.5	0.151	0.304	74	16.16	1.811	0.803	
CGP	27838	14-Jul-03	18.55		8.35	315	30.5	16560	8.12	0.027	10	5119.9	0.13	0.02	1209.7	1.406	10263	1349	0.027	0.19	10	0.45	1.556	0.177	
CGP	28136	18-Aug-03	11.72	155.2	5.05	332	30.1	24460	7.81	0.015	4.2	8228.5	0.02	0.02	1615.8	0.768	15297	1689.7	0.027	0.114	10	0	0.808	0.055	
CGP	28188	28-Aug-03	7.3	85.9			23.1		7.16																
CGP	28286	22-Sep-03	11.82	137.4	6.23	334	22.7	17260	7.87	0.015	2.5	5848.8	0.09	0.02	1157.2	0.948	11273	1295.3	0.012	0.14	10	0.17	1.058	0.125	
CGP	28439	27-Oct-03	12.71	144	3	323	22.3	18440	8.74	0.017		5969	0.02	0.02	1537.7	0.923	12779	1555.6	0.023	0.159	10		0.963	0.057	
CGP	28589	08-Dec-03	14.87	123.7	2.62	414	7.5	13200	8.13	0.018	2.7	3287.3	0.95	0.02	1237.8	0.615	8824	1404.3	0.016	0.115	10	0.27	1.585	0.988	
CGP	29418	12-Jan-04			6.15	448	7.8	11.02	8.16	0.022	3.1	3428.3	1.63	0.02	1354.5	0.833	6857	1261.2	0.011	0.084	21	0.4	2.483	1.672	
CGP	29634	17-Feb-04	15.74	124	16.9	264	5.2	7540	8.02	0.472	3.4	1712.2	2.22	0.02	623.1	1.422	4258	867.6	0.063	0.189	15	2.06	3.662	2.712	
CGP	29812	23-Mar-04	12.13	116.4	10.02	241	14.2	2024	8.33	0.022	8.6	1503.2	0.34	0.02	1076.9	1.193	4439	1076.9	0.005	0.14	13	0.8	1.553	0.382	
CGP	30384	08-Jun-04	10.11	120.5	65.7	273	24	17590	8.08	0.024	4.1	8056.1	0.02	0.02	1333.8	0.85	11659	1347	0.089	0.249	35	0.12	0.89	0.064	
CGP	25476	27-Jun-02	3.97		18.3	255	22.6	3193	7.76													0.13			
CGP	25541	30-Jul-02	7.41	91			23.9	1342	7.57	0.379	3	22.6	0.84	0.01	656	1.558	1190	743.2	0.056	0.675	10	17.96	2.408	1.229	
CGP	25805	04-Sep-02	3.96	49	29.6	180	23.2	3075	8.23	0.041		80.7	0.52	0.01	1655.5	0.525	2747	1836.9	0.028	0.051	45	0.33	1.055	0.571	
CGP	25959	08-Oct-02	8.01	84	221	162	15.2	2418	7.85	0.089	2	51.81	0.96	0.01	1070.4	0.254	1931	1384.2	0.094	0.195	60	2.55	1.224	1.059	
CGP	26113	13-Nov-02	9.95	86	36.1	126	7.9	3450	7.08	0.027	4	100.7	0.24	0.01	1821.8	0.468	3128	2053.9	0.011	0.036	37	2.4	0.718	0.277	
CGP	26256	10-Dec-02	11.1	87	8.25	161	3.3	2004	7.95	0.023	2	90.83	0.35	0.01	1839.07	0.268	3200	2094	0.005	0.005	10	0.84	0.628	0.383	
CGP	26635	22-Jan-03	12.41		6.06	259	0.4		8.18	0.015	2	97.5	0.34	0.01	1990	0.412	3394	2290.7	0.005	0.005	10	1.09	0.762	0.365	
CGP	27288	12-Mar-03	11.09		14.8	201	7.6	3676	8.43	0.015	2	99	0.3	0.02	1895.3	0.11	3287	1054.2	0.005	0.005	10	2.48	0.43	0.335	
CGP	27364	01-Apr-03	8.97		9.19	268	11.5	4161	7.79	0.015	4.3	100.1	0.17	0.01	2036	0.241	3463	2296.3	0.005	0.018	25	2.86	0.421	0.195	
CGP	27538	06-May-03	8.8	94.4	58.6	217	19.6	3370	8.38	0.03	2	97.9	0.16	0.02	1973.4	0.833	3285	2527.3	0.022	0.079	48	1.81	1.013	0.21	
CGP	27678	10-Jun-03	6.4	72.5	77.4	232	21.5	1648	8.06	0.066	2.7	64.3	0.26	0.02	1694.8	0.505	2881	1946.2	0.025	0.11	59	3.49	0.785	0.346	
CGP	27841	15-Jul-03	3.16	37.5	14.1	239	23.7	3767	7.69	0.072	2.6	93.4	0.05	0.02	2085.1	0.698	3382	2472.4	0.009	0.071	21	1.78	0.768	0.142	
CGP	28139	19-Aug-03	3.45	40.6	66.4	226	23.5	2101	7.35	0.106	3	93.1	0.05	0.02	2037.5	0.626	3319	2544.6	0.018	0.117	60	0	0.696	0.176	
CGP	28289	22-Sep-03	7.5	80.6	15.6	224	18.8	2714	7.73	0.015	2.1	48.7	0.02	0.02	1400.7	0.585	2436	1615.2	0.005	0.08	33		0.625	0.055	
CGP	28442	27-Oct-03	4.27	41	9.94	291	13.5	2434	7.72	0.015		47.3	0.02	0.02	1455.6	0.454	2356	1689.7	0.005	0.073	49		0.494	0.055	
CGP	28592	08-Dec-03	12.1	97.7	5.09	296	6.3	3504	8.05	0.015	2	61.4	0.02	0.02	2106.2	0.436	3199	2194.2	0.007	0.07	10		0.476	0.055	
CGP	29421	12-Jan-04	13.53	104.9	220	332	4.7	3827	7.29	0.041	2	76	0.06	0.02	2439.7	0.573	3193	2243.9	0.009	0.073	10		0.653	0.121	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO ₃)	Temp (°C)	Cond (µS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO ₃)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	29637	17-Feb-04	13.73	103.8	4.56	238	3.6		7.84	0.019	2	83.7	0.38	0.02	1970.7	0.294	3117	2122.6	0.007	0.072	10	0.69	0.694	0.419	
CGP	29809	23-Mar-04	9.61	84.6	20.6	223	9.7	2430	8.26	0.015	2	91.2	0.05	0.02	2237.6	0.314	3444	2127.6	0.005	0.067	10	1.33	0.384	0.085	
CGP	30082	20-Apr-04	6.42	65.9	219	181	16.7	2783	8.08	0.18	5.4	67.5	0.22	0.02	1406.2	1.315	2537	1492	0.337	0.486	147	4.55	1.555	0.42	
CGP	30381	08-Jun-04	3.55	40.3	88.2	190	21.9	3691	7.92	0.049	2	101	0.13	0.02	2549.6	0.11	3712	2409.2	0.023	0.086	16	0.46	0.26	0.199	
CGP	25473	26-Jun-02	7.62		25.5	110	23	3081	7.7														0.92		
CGP	25540	30-Jul-02	7.6	96	79.7	95	24.5	2212	7.41	0.098	5	27.84	0.67	0.01	1270.5	0.538	2133	1397.1	0.019	0.03	10	9.47	1.218	0.778	
CGP	25806	04-Sep-02	5.64	68	52.1	33	22.9	2815	8.37	0.015	2	42.21	0.01	0.01	1857.5	0.502	2904	2004.4	0.012	0.028	21	0.36	0.522	0.035	
CGP	25960	08-Oct-02	8.71	91	8.45	142	15.9	2944	7.81	0.015	2	37.6	0.8	0.01	1580.9	0.165	2515	1879.7	0.013	0.028	10	2.24	0.975	0.825	
CGP	26114	13-Nov-02	11.41	99	2.91	88	7.5	2910	8.94	0.022	3	46.6	0.24	0.01	1620.7	0.11	2730	1856.5	0.005	0.016	10	2.09	0.36	0.272	
CGP	26257	10-Dec-02	14.36	110	3.61	133	2.7	1490	8.45	0.015	2	51.8	0.28	0.01	1502.66	0.11	2544	1865.2	0.005	0.005	10	0.89	0.4	0.305	
CGP	26636	22-Jan-03	13.5		5.06	188	0.4		8.11	0.015	2	52.1	0.21	0.01	1594	0.11	2670	1836.6	0.005	0.005	10	1.63	0.33	0.235	
CGP	27289	12-Mar-03	10.48		430	186	12.6	2776	8.37	0.015	2	52.4	0.16	0.02	1496.7	0.11	2475	1856.5	0.005	0.005	16	1.05	0.29	0.195	
CGP	27363	31-Mar-03	10.13		2.43	151	20.2	3038	7.96	0.015	3.1	56.9	0.07	0.01	1557.8	0.11	2648	1762.9	0.005	0.005	10	7.29	0.19	0.095	
CGP	27539	06-May-03	10.34	121.8	7.46	114	23.6	2914	8.46	0.015	2	49.5	0.02	0.02	1699.7	0.529	2752	2263.8	0.005	0.005	10	0.94	0.569	0.055	
CGP	27677	09-Jun-03	7.99	102.2	13.8	125	28.1	3113	7.97	0.024	3	44.7	0.02	0.02	1678.2	0.112	2776	1911.7	0.008	0.062	17	1.35	0.152	0.064	
CGP	27840	14-Jul-03	8.73	125.7	28.6	128	35.1	3075	7.99	0.015	2	47.5	0.02	0.02	1890.1	0.225	3054	2003.8	0.016	0.059	44	0.42	0.265	0.055	
CGP	28138	18-Aug-03	9.01	124.6	36.2	141	35.7	2991	7.91	0.015	2.6	38.4	0.04	0.02	1870.2	0.25	2906	2165.6	0.016	0.079	39	0.05	0.31	0.075	
CGP	28288	22-Sep-03	8.66	107.1	7.59	129	26.2	2274	8.04	0.015	2	43	0.02	0.02	1702.2	0.227	2807	1752	0.005	0.049	21	0.61	0.267	0.055	
CGP	28441	27-Oct-03	9.98	104.9	2.93	150	17.8	3106	7.85	0.015		46	0.02	0.02	1842.9	0.142	2788	2010.6	0.005	0.048	10	2.31	0.182	0.055	
CGP	28591	08-Dec-03	11.95	101.5	10.5	160	8.3	3046	8.04	0.015	2	49.8	0.13	0.02	1710.2	0.271	2725	1960.3	0.007	0.078	10	4.51	0.421	0.165	
CGP	29420	12-Jan-04	12.32	101.7	5.61	177	7.1	2945	7.88	0.015	2	52.6	0.16	0.02	1994.1	0.193	2568	1806.4	0.005	0.04	15	1.39	0.373	0.195	
CGP	29636	17-Feb-04	11.8	106.3	2.72	157	10.7	2915	7.97	0.015	2	51.4	0.17	0.02	1543.3	0.313	2501	1795	0.005	0.048	10	1.91	0.503	0.205	
CGP	29810	23-Mar-04	11.09	98.2	5.34	167	10	2117	8.2	0.015	2	47.9	0.04	0.02	1567.3	0.11	2606	1859	0.011	0.05	10	2.92	0.17	0.075	
CGP	30083	20-Apr-04	9.53	87.7	1000	126	11.7	1807	7.89	0.145	9.1	24.4	0.23	0.02	895.7	2	1624	1051.4	1.242	1.391	1965	26.49	2.25	0.395	
CGP	30382	08-Jun-04	8.33	95.6	11.3	143	22.1	3013	7.99	0.015	2	48.6	0.05	0.02	2141.1	0.11	3008	2076	0.01	0.056	15	0.93	0.18	0.085	
CGP	25537	29-Jul-02	7.95	112	169	155	31.2	702	8	0.31	4	73.05	1	0.01	61.59	1.254	393	181.7	0.285	0.343	10	27.12	2.264	1.32	
CGP	25657	08-Aug-02	8.19		9.49	180	26.9	808	8.18														1		
CGP	25802	03-Sep-02	10.68	150	14.1	177	31.6	876	8	0.025	2	95.7	0.64	0.01	73.3	0.343	474	236.8	0.1	0.094	10	10.45	0.993	0.675	
CGP	25956	07-Oct-02	7.39	82	169	134	18.1	683	7.91	0.05	2	62.24	1.32	0.01	66.81	0.328	397	222.8	0.24	0.269	79	40	1.658	1.38	
CGP	26110	12-Nov-02	8.07	80	19.2	123	13.2	1264	7.83	0.024	3	146.3	1.7	0.01	116.5	0.44	681	331.7	0.098	0.112	19	38.27	2.15	1.734	
CGP	26253	09-Dec-02	9.68	81	9.17	121	6.3	727	8.01	0.017	2	118.34	1.95	0.01	100.24	0.773	618	319.4	0.019	0.037	41	12.99	2.733	1.977	
CGP	26632	21-Jan-03	11.18		10.8	259	5.6	1108	8.59	0.015	2	118	2.26	0.01	98.9	0.328	560	322.2	0.01	0.032	10		2.598	2.285	
CGP	27285	12-Mar-03	4.8		18.7	262	6.6	1118	8.53	0.015	2	113.9	1.84	0.02	111.5	0.11	652	328.7	0.031	0.046	20		1.97	1.875	
CGP	27367	01-Apr-03	10.15		41.5	268	14.6	1067	8.24	0.015	2.7	100.8	1.78	0.01	96.2	0.202	587	326.8	0.038	0.11	65	95.38	1.992	1.805	
CGP	27535	06-May-03	9.05	96.3	33.7	255	18.5	985	8.68	0.022	2.4	92	1.35	0.02	82.2	0.758	550	308.7	0.067	0.148	36	26.7	2.128	1.392	
CGP	27681	10-Jun-03	7.15	82.2	70.6	144	22.2	843	8.41	0.033	2.8	73.2	0.94	0.02	75	0.67	529	284.9	0.117	0.265	108	110.74	1.63	0.993	
CGP	27844	15-Jul-03	8.07	95.3	6.67	239	23.7	920	8.17	0.065	2.2	91.4	0.89	0.07	69.1	0.327	475	274.1	0.051	0.108	20	16.95	1.287	1.025	
CGP	28142	19-Aug-03	3.76	50.1	6.15	183	25.7	817	7.94	0.016	3.5	94.6	0.05	0.02	58.5	0.282	409	209.1	0.024	0.1	10	0	0.352	0.086	
CGP	28292	23-Sep-03	8.36	88	216	167	17.6	669	8.15	0.036	2	56.1	0.76	0.02	62.7	0.85	349	194	0.156	0.358	168	32.23	1.63	0.816	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO ₃)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO ₃)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	28445	28-Oct-03	9.15	87.4	12.8	291	13.3	1044	8.24	0.015		98.2	1.4	0.02	87.2	0.312	547	362.4	0.062	0.119	16		1.732	1.435	
CGP	28595	09-Dec-03	10.07	79.2	7.03	255	5.2	1010	8.11	0.03	2	88.6	1.57	0.02	78.2	0.155	575	302.7	0.022	0.09	17	24.91	1.745	1.62	
CGP	29424	13-Jan-04	10.76	81.3	11.2	295	3.5	1013	7.81	0.047	5	89.8	2.01	0.02	83.2	0.253	508	340	0.045	0.097	15	30.21	2.283	2.077	
CGP	29640	18-Feb-04	11.24	86.7	27.2	217	4.4	1060	7.91	0.074	2	93.6	1.86	0.02	89.4	0.347	565	311.6	0.09	0.155	27		2.227	1.954	
CGP	29806	22-Mar-04	10.97	105.2	28.6	202	13.5	827	8.57	0.025	2.4	92.6	1.36	0.02	86.5	0.259	596	321.9	0.047	0.119	55	40.16	1.639	1.405	
CGP	30079	19-Apr-04	10.44	110.5	19	207	18.1	966	8.38	0.025	2	94.4	1.04	0.02	82.8	0.642	493	307.3	0.041	0.105	10	23.95	1.702	1.085	
CGP	30378	07-Jun-04	7.91	99.8	37.3	193	27.6	865	8.37	0.025	2.1	70.5	0.27	0.02	258	0.11	502	271	0.094	0.167	50	34.14	0.4	0.315	
CGP	27579	04-Feb-02																							
CGP	25475	26-Jun-02	7.45		14.4	140	34.4	1078	8.28														40.16		
CGP	25538	29-Jul-02	6.96	100	332	101	32.8	523	8.16	0.243	5	54.8	0.56	0.01	167	1.122	460	251.8	0.2	0.212	10	21.98	1.692	0.813	
CGP	25803	03-Sep-02	6.78	99	87.2	133	33.6	757	8.09	0.015	2	71.7	0.62	0.01	247.7	0.394	555	423.4	0.139	0.133	92	40.07	1.024	0.645	
CGP	25957	07-Oct-02	8.05	87	514	112	17.8	370.9	8.02	0.036	2	30.88	1.04	0.01	110.7	0.264	335	237.4	0.31	0.386	232	73.08	1.314	1.086	
CGP	26111	12-Nov-02	8.42	84	31	127	13.4	1008	7.78	0.024	2	90.7	0.67	0.01	295.5	0.345	855	487	0.091	0.157	33	55.97	1.025	0.704	
CGP	26254	09-Dec-02	10.1	83	32.5	113	5.2	757	8.4	0.017	2	81.36	1.17	0.01	272.92	0.558	814	484	0.038	0.061	26	48.78	1.738	1.197	
CGP	26633	21-Jan-03	11.84		23.8	193	5.4	1217	8.61	0.015	2	77.3	1.36	0.01	267.4	0.226	807	484.5	0.02	0.042	19	105.18	1.596	1.385	
CGP	27286	12-Mar-03	11.37		32.1	226	6.9	1261	8.88	0.015	2.1	81.4	1.23	0.02	330.8	0.11	887	531.3	0.039	0.068	38	117.32	1.36	1.265	
CGP	27366	01-Apr-03	6.95		54.2	223	13.3	749	8.31	0.015	2.4	86	0.87	0.01	444.3	0.13	1035	645.7	0.066	0.147	83	365.22	1.01	0.895	
CGP	27536	06-May-03	9.2	102	45.3	161	20.2	720	8.7	0.015	2	89.9	0.7	0.02	433.6	0.579	1021	628.7	0.068	0.165	84	113.88	1.299	0.735	
CGP	27680	10-Jun-03	7.65	88.8	76.3	194	22.9	1264	8.57	0.016	2.4	77.2	0.59	0.02	383.8	0.513	963	556.5	0.075	0.188	86	438.61	1.123	0.626	
CGP	27842	15-Jul-03	7.66	89.5	3.19	155	23.2	1304	8.09	0.04	2	133	0.05	0.02	323.7	0.302	972	579.7	0.015	0.084	10	7.96	0.372	0.11	
CGP	28140	19-Aug-03	5.31	62.2	2.94	230	23.6	1790	7.74	0.017	2.5	216.7	0.05	0.02	408.3	0.422	1177	667.8	0.016	0.089	10	0	0.492	0.087	
CGP	28290	23-Sep-03	9.2	97.8	60.8	170	18.3	990	8.44	0.015	2	81	0.48	0.02	272.7	0.312	699	451.1	0.041	0.158	24	43.03	0.812	0.515	
CGP	28443	28-Oct-03	8.38	81.1	30.8	210	13.6	1191	8.26	0.015		81.7	0.35	0.02	256.6	0.242	704	457.1	0.055	0.127	26	72.03	0.612	0.385	
CGP	28593	09-Dec-03	11.81	91.4	15.1	191	4.5	1085	8.22	0.024	2	67.1	0.99	0.02	219.8	0.172	652	408.6	0.023	0.101	16	26.46	1.182	1.034	
CGP	29422	13-Jan-04	12.11	91.7	45.4	217	3.7	961	7.84	0.033	2	60.5	1.48	0.02	203.2	0.324	560	417.1	0.052	0.131	66	117.06	1.824	1.533	
CGP	29638	18-Feb-04	13.2	99.5	44.2	198	3.5	1212	8.02	0.059	2	72.3	1.41	0.02	248.8	0.347	723	497	0.083	0.149	58	533.14	1.777	1.489	
CGP	29807	22-Mar-04	9.96	97.7	35.9	171	14.5	904	8.61	0.018	2	77.2	0.82	0.02	356.7	0.257	943	589.6	0.059	0.124	81	84.16	1.097	0.858	
CGP	30080	19-Apr-04	9.28	102.4	25.5	138	20.1	1281	8.37	0.1	2	81.2	0.59	0.02	339.3	0.459	904	524.5	0.063	0.077	30	93.97	1.069	0.71	
CGP	30379	07-Jun-04	4.15	53.2	68.3	161	28.4	1016	8.39	0.015	3.7	68.4	0.27	0.02	252.5	0.11	725	395.8	0.032	0.175	118	73.17	0.4	0.305	
CGP	25474	26-Jun-02	8.35		76.9	259	29.9	1462	8.02														0.24		
CGP	25539	29-Jul-02	6.09	79		61	26.4	299.8	7.04	0.421	5	10.88	1.28	0.19	73.2	1.113	226	108.5	0.317	0.358	10	31.63	2.583	1.891	
CGP	25804	03-Sep-02	12.52	176	37.4	287	31	162	8.03	0.063	6	80	0.01	0.25	530	0.878	1124	767	0.098	0.121	45	6.58	1.138	0.323	
CGP	25958	07-Oct-02	7.09	78	384	138	18.1	1117	7.66	0.148	2	40.77	1.34	0.01	324.3	0.257	843	533.9	0.288	0.42	160	22.39	1.607	1.498	
CGP	26112	12-Nov-02	7.6	75	38.8	205	13.4	2447	7.99	0.076	2	110.8	1.13	0.01	911.4	0.458	1974	1048.7	0.062	0.102	45	13.11	1.598	1.216	
CGP	26255	09-Dec-02	13.15	108	9.13	123	5.8	1510	8.89	0.022	3	106.95	0.46	0.01	875.89	0.259	1806	1233.1	0.005	0.064	10	10.05	0.729	0.492	
CGP	26634	21-Jan-03	15.77		10.2	202	5	2428	8.42	0.015	3	106.8	0.54	0.01	868.5	0.527	1818	1179.5	0.005	0.019	10	9.46	1.077	0.565	
CGP	27287	12-Mar-03	11.05		21	299	7.5	2469	8.56	0.015	3.2	92.8	0.45	0.02	977.1	0.11	1953	1249	0.015	0.052	39	18.53	0.58	0.485	
CGP	27365	01-Apr-03	9.83		37.7	356	12.2	2625	8.06	0.015	3.8	92.5	0.33	0.01	1059.4	0.419	2057	1387.3	0.021	0.103	61	23.78	0.759	0.355	
CGP	27537	06-May-03	9.19	101.5	95.3	294	20.2	2456	8.58	0.075	2	82.3	0.58	0.02	1001.2	0.369	2105	1373	0.119	0.134	126	12.58	0.969	0.675	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	26802	19-Feb-03	11.25	96	17.9	200	7.2	865	8.86	0.015	3.8	76	1.8	0.01	87	0.36	505	309.6	0.007	0.06	15	79.59	2.17	1.825	
CGP	27300	24-Mar-03	9.78		147	213	15.7	579	8.39	0.067	4	47.6	1.68	0.02	53.7	0.32	383	221.5	0.153	0.179	111	572.34	2.02	1.767	
CGP	27454	28-Apr-03	6.09		98.6	152	20.2	550	8.48	0.063	2	38.5	1	0.02	48.2	0.398	336	233.2	0.132	0.22	85		1.418	1.083	
CGP	27666	03-Jun-03	8.61	96.3	891	111	21.9	326.2	8.36	0.033	5.1	20.9	0.91	0.02	26.2	0.918	243	118.7	0.299	0.474	543		1.848	0.963	
CGP	27789	08-Jul-03	7.83	100.3	39.8	129	28.1	862	8.29	0.017	4.9	94.1	0.09	0.01	88.4	0.568	462	264.7	0.028	0.121	59	103.86	0.668	0.117	
CGP	28104	12-Aug-03	9.73	129	21.6	149	29.7	1033	8.33	0.015	4.3	140.6	0.07	0.02	98.2	2.138	614	344.4	0.028	0.156	39	45.73	2.228	0.105	
CGP	28056	13-Aug-03	7.23	89.6	29.1	221	26.5	1176	7.7													31.68			
CGP	28271	23-Sep-03	10.36	113.9	1000	129	20.4	261.1	7.79	0.066	3.2	14	0.96	0.13	25.8	1.318	511	90.8	0.119	0.683	1114	175	2.408	1.156	
CGP	28404	21-Oct-03	8.63	93.1	28.4	189	19	808	8.15	0.026	2.1	63.1	1.45	0.02	64	0.323	462	321.9	0.131	0.211	29		1.793	1.496	
CGP	28538	02-Dec-03	10.84	87.4	6.43	210	6.3	1199	8.21	0.015	2.8	78.1	0.97	0.02	73.7	0.635	469	300.9	0.005	0.085	10		1.625	1.005	
CGP	29390	05-Jan-04	14.13	108	5.14	166	4	915	8.51	0.015	3.3	80.6	1.49	0.02	83.9	0.11	491	324.6	0.013	0.076	10	237	1.62	1.525	
CGP	29559	09-Feb-04	12.38	88.5	36.5	171	1.3		8.42	0.108	3.4	71.9	2.6	0.02	93.4	0.415	556	347.7	0.081	0.173	30		3.035	2.728	
CGP	29760	15-Mar-04	9.34	83.4	43.1	142	10.5	656	8.47	0.039	2	60.9	1.89	0.02	78.5	0.437	413	336.1	0.114	0.212	48		2.347	1.949	
CGP	30120	26-Apr-04	8.91	91.3	398	119	16.6	351.4	7.91	0.049	3.9	21.4	0.49	0.02	30.6	1.149	288	135.3	0.199	0.407	43		1.659	0.559	
CGP	30345	02-Jun-04	10.24	123.5	56.4	191	25	781	8.48	0.015	4.6	73.5	0.17	0.02	69.8	0.68	500	296.3	0.018	0.177	87	102.52	0.87	0.205	
CGP	25415	22-Jul-02	9.44	132	33.1	163	31.8	4156	7.46	0.098	3	816.8	0.01	0.01	1105	0.496	3130	1741.8	0.062	0.121	26	3.08	0.516	0.118	
CGP	25521	23-Jul-02	3.67		54.2	159	26.7	4288	7.73														4.62		
CGP	25728	26-Aug-02	6.5	86	79.3	173	28.2	3016	7.47	0.223	6	584.3	0.62	0.01	553	1.239	2333	1248.8	0.096	0.128	43	4.46	1.869	0.853	
CGP	25911	30-Sep-02	8.42	104	47.7	154	24.2	2509	7.69	0.066	4	442.9	1.67	0.01	433.1	1.116	1471	960.4	0.086	0.129	54	0	2.796	1.746	
CGP	26065	04-Nov-02	5.98	52	50.6	121	8	2025	8.53	0.055	4	294.83	3.4	0.01	393.43	0.868	1297	637.2	0.116	0.13	46	17.12	4.278	3.465	
CGP	26202	03-Dec-02	10.35	82	4.67	122	4.5	2611	7.98	0.017	2	753.33	0.49	0.01	972.95	0.577	2865	1620.8	0.033	0.065	42	2.84	1.077	0.517	
CGP	26604	14-Jan-03	8.7	71	3.76	212	5.4	3840	7.44	0.015	5	634.8	0.73	0.01	769.1	0.591	2283	1431.2	0.005	0.011	10	4.29	1.331	0.755	
CGP	26801	19-Feb-03	5.93	51	4.82	191	7.6	4586	8.03	0.015	3.3	818.4	0.5	0.01	891.4	0.551	2878	1693.8	0.005	0.045	10	8.53	1.061	0.525	
CGP	27299	24-Mar-03	7.94		36.6	202	16.5	2115	7.4	0.251	4.7	318.5	2.12	0.02	410	0.979	1405	765.6	0.099	0.099	46	24.27	3.119	2.391	
CGP	27453	28-Apr-03	4.57		69.7	161	20.4	1835	7.99	0.26	3	298.7	1.4	0.02	410.8	1.028	1225	862.3	0.106	0.222	102	17.38	2.448	1.68	
CGP	27665	03-Jun-03	6.97	79	55.7	98	21.3	2971	8.18	0.128	3.1	554.8	1.15	0.02	582.7	1.66	2117	1312.9	0.122	0.267	67	9.67	2.83	1.298	
CGP	27788	08-Jul-03	4.84	60.5	70.9	161	26.9	3541	7.48	0.037	4.2	660.8	0.36	0.01	804.8	1.21	2551	1575.4	0.067	0.23	106	5.54	1.58	0.407	
CGP	28103	12-Aug-03	7.95	98.3	77.2		26.2	2274	8.13	0.028	4.2	366.5	0.4	0.02	477.2	1.188	1567	915.7	0.091	0.244	88	2.26	1.608	0.448	
CGP	28270	23-Sep-03	8.76	94.8	1000	111	19.1	654	7.65	0.03	4.6	68.1	0.95	0.02	118.4	2.198	465	221	0.188	0.592	713	171.8	3.168	1	
CGP	28403	21-Oct-03	6.44	66.5	42.2	238	16.9	3412	7.71	0.062	3	128.6	0.7	0.02	707.4	0.665	2303	1304.6	0.084	0.176	27	10.58	1.385	0.782	
CGP	28537	02-Dec-03	13.52	108.7	4	191	6.1	6200	7.86	0.015	2.3	774.6	0.28	0.02	1112.4	0.64	2955	1621.2	0.005	0.083	10		0.94	0.315	
CGP	29389	05-Jan-04	17.34	134.9	7.6	203	4.7	5310	7.01	0.19	3.4	760.5	0.38	0.02	1047.9	0.338	2837	1588.1	0.016	0.076	10	0	0.738	0.59	
CGP	29558	09-Feb-04	12.41	87.1	126	191	0.9		7.85	0.153	3.2	445.5	2.18	0.02	535.2	0.8	1809	1076.3	0.055	0.133	26	17.94	3	2.353	
CGP	29759	15-Mar-04	8.63	77.4	49.1	223	10.5	2594	7.91	0.108	2	569.7	1.03	0.02	608.4	0.633	2244	1328.7	0.08	0.181	56	20.64	1.683	1.158	
CGP	30119	26-Apr-04	5.73	61	392	98	16.6	580	7.89	0.099	3.9	69.1	0.58	0.02	83.9	1.157	404	200.9	0.193	0.342	236	193.48	1.757	0.699	
CGP	30346	02-Jun-04	8.24	98.3	71.1	184	24.6	610.3	8.14	0.015	2.7	671.1	0.54	0.02	875.6	0.97	2848	1626.8	0.126	0.263	103		1.53	0.575	
CGP	25477	03-Jul-02	5.43		25	115	25	575	6.98														0.16		
CGP	25422	23-Jul-02	6.25		23.8	94	35.6	584	7.41	0.151	4	81.9	0.55	0.01	35.41	0.734	336	154.5	0.018	0.056	10	0	1.294	0.711	
CGP	25734	27-Aug-02	4.9	52	84.2	83	26.6	164.7	8.93	0.158	6	41.25	0.01	0.01	15.19	0.842	259	164.5	0.005	0.164	24	0.63	0.862	0.178	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	25917	01-Oct-02	9.19	117	50.5	76	26.8	267.6	8.2	0.059	3	20.01	0.78	0.01	12.84	0.564	160	90.51	0.035	0.076	24	0.13	1.354	0.849	
CGP	26072	05-Nov-02	8	71	19	111	9.6	295.1	7.98	0.015	3	13.5	0.66	0.01	14.85	0.027	183	106.8	0.037	0.062	10	0.82	0.697	0.685	
CGP	26196	02-Dec-02	9.88	78	22.2	89	4.5	224	8.49	0.015	4	17.02	0.21	0.01	22.55	0.446	221	145.7	0.06	0.085	15	0.29	0.666	0.235	
CGP	26611	15-Jan-03	6.05	46	16.5	104	3.8	769	8.06	0.015	3	123.1	0.19	0.01	32.2	0.491	427	215.7	0.021	0.056	52	0.72	0.691	0.215	
CGP	26792	18-Feb-03	8.73	71	14.4	166	5.1	1062	7.93	0.015	4.4	26.2	0.15		51.4	0.423	544	280.6	0.005	0.039	10	0.73	0.573	0.165	
CGP	27306	25-Mar-03	8.41		36.4	114	16.3	506	8.15	0.015	3.5	50.2	0.41	0.02	36.1	0.445	305	171.4	0.005	0.019	16	5.42	0.875	0.445	
CGP	27458	29-Apr-03	5.12		15.1	101	20.7	700	8.4	0.019	2.5	72	0.2	0.02	54.5	0.532	423	256	0.007	0.09	14	1.17	0.752	0.239	
CGP	27657	02-Jun-03	6.51	75.4	36.8	84	22.5	363.7	8.19	0.103	3.2	30.6	0.31	0.02	25	1.001	214	142.3	0.032	0.14	43	0.41	1.331	0.433	
CGP	27780	07-Jul-03	1.36	13.2	21.1	148	25.6	369.5	6.85	0.068	2.9	25.5	0.09	0.16	16.8	0.715	225	158.2	0.02	0.113	21	0	0.965	0.318	
CGP	28094	11-Aug-03	4.13	49.7	43.5	103	24.6	298.1	9.23	0.041	4.5	15.7	0.03	0.02	16.8	0.785	160	105.6	0.02	0.155	15	0.06	0.835	0.091	
CGP	28261	22-Sep-03	6.08	63.6	51.1	66	17.8	209.3	5.83	0.016	2	99.6	0.14	0.02	21.5	0.677	144	131	0.026	0.126	23	0.45	0.837	0.176	
CGP	28394	20-Oct-03	5.22	51.8	44.2	50	15.1	364.5	8.48	0.046	3.2	45.6	0.07	0.02	12.5	0.343	216	98.8	0.028	0.128	16	0.45	0.433	0.136	
CGP	28528	01-Dec-03	8.66	68.8	30.5	83	5.5	330.3	8.06	0.042	2.7	24.3	0.15	0.02	19.2	0.569	205	103	0.03	0.114	10	0.23	0.739	0.212	
CGP	29396	06-Jan-04	9.59	72.5	78.3	101	3.6	396.6		0.048	2.7	27	0.12	0.02	29.7	0.447	209	135	0.045	0.141	11	2.03	0.587	0.188	
CGP	29563	10-Feb-04	13.58	97.3	31.7	201	1.6		8.16	0.016	2.6	95.6	0.1	0.02	47.2	0.346	388	214.4	0.021	0.098	10	12.71	0.466	0.136	
CGP	29764	16-Mar-04	10.02	88.8	10.6	228	10.1	459	8.28	0.015	3	66.3	0.02	0.02	49.5	0.336	413	254.7	0.013	0.082	10	1.21	0.376	0.055	
CGP	30124	27-Apr-04	7.2	74.1	48.8	145	16.6	347.6	8.01	0.034	2.1	20.1	0.09	0.02	33.8	0.576	250	165.3	0.025	0.119	50	5.96	0.686	0.144	
CGP	30338	01-Jun-04	6.87	80.4	31.2	114	23.1	471	8.04	0.015	2.3	29.6	0.05	0.02	27	0.46	306	183.6	0.016	0.097	12	0.61	0.53	0.085	
CGP	25420	23-Jul-02	3.38	45	17.2	121	29.3	412.1	7.37	0.183	5	22.44	0.01	0.01	22.25	0.837	245	150.1	0.05	0.076	10	0	0.857	0.203	
CGP	25733	27-Aug-02	6.49	83	116	104	26.6	239	7.21	0.315	6	4.37	0.51	0.01	4.34	1.303	152	103.3	0.005	0.092	53	0.98	1.823	0.835	
CGP	25661	30-Aug-02	7.21		56.7	78	24.4	246.4	8.1													0.13			
CGP	25915	01-Oct-02	7.61	92	69.8	105	23.6	242.6	8.19	0.042	3	5.42	0.92	0.01	6.04	0.698	164	105.6	0.047	0.079	113	0.05	1.628	0.972	
CGP	26070	05-Nov-02	5.16	45	35.6	132	8.8	381.1	8.94	0.015	4	8.55	0.66	0.01	12.4	0.374	227	154	0.058	0.078	24	0.67	1.044	0.685	
CGP	26197	02-Dec-02	9.63	76	7.29	104	4.3	297	8.81	0.015	4	18.18	0.05	0.01	14.29	0.24	286	211.7	0.082	0.132	12	0.15	0.3	0.075	
CGP	26609	15-Jan-03	6.42	49	20.4	141	3.2	475.2	8.12	0.015	4	14.9	0.13	0.01	16	0.316	212	196.9	0.005	0.027	10	0.56	0.456	0.155	
CGP	26793	18-Feb-03	9.79	77	12.8	236	4.8	620	8.53	0.015	3.3	21.8	0.1	0.01	21.4	0.217	330	248.4	0.005	0.024	10	4.98	0.327	0.125	
CGP	27304	25-Mar-03	9.33		29.3	133	15.3	481.8	8.49	0.015	2	17.1	0.46	0.02	16.1	0.171	298	201.2	0.005	0.054	10		0.651	0.495	
CGP	27459	29-Apr-03	5.19		48.4	169	20	451.3	8.48	0.018	2	17.1	0.27	0.02	13.7	0.495	289	205.8	0.011	0.011	13		0.785	0.308	
CGP	27658	02-Jun-03	4.91	50.4	38.4	94	23.1	379.1	8.13	0.082	3.2	13.4	0.32	0.02	7.6	0.847	221	155.9	0.019	0.076	23		1.187	0.422	
CGP	27781	07-Jul-03	6.06	76.4	50.3	76	27.2	258	7.99	0.032	3.4	5.9	0.06	0.1	5.4	0.585	165	120	0.025	0.11	62	0.79	0.745	0.192	
CGP	28095	11-Aug-03	3.91	47.6	61.1	111	25.1	313.3	9.01	0.042	4	4.7	0.05	0.03	7.2	0.823	146	102.6	0.067	0.153	24		0.903	0.122	
CGP	28262	22-Sep-03	6.85	73.8	71.3	79	18.8	241.8	7.29	0.015	2.3	5.54	0.19	0.02	4.9	0.984	242	101.2	0.035	0.156	70	2.73	1.194	0.225	
CGP	28395	20-Oct-03	5.01	50.2	40.7	63	15.5	266.4	7.95	0.055	3.2	8.2	0.02	0.02	5	0.515	161	104.4	0.047	0.141	12	1.28	0.555	0.095	
CGP	28529	01-Dec-03	10.33	82.1	29.7	92	5.6	324.8	8.18	0.015	3.3	10.8	0.12	0.02	8.2	0.678	184	124.5	0.073	0.151	10	2.23	0.818	0.155	
CGP	29394	06-Jan-04	11.87	87	19.8	131	2.6	593		0.015	3	17.2	0.03	0.02	15.7	0.11	306	242.4	0.02	0.086	24	0.86	0.16	0.065	
CGP	29564	10-Feb-04	13.43	96.1	99.8	179	1.6		8.41	0.141	3.1	13	0.26	0.02	13.6	0.363	266	172.3	0.026	0.151	43	19.56	0.643	0.421	
CGP	29765	16-Mar-04	9.81	88.6	14.3	131	10.6	572	8.33	0.019	2	39.3	0.04	0.02	21.5	0.334	406	285	0.01	0.096	10		0.394	0.079	
CGP	30125	27-Apr-04	6.91	71.8	56.5	113	17.2	288.2	7.89	0.023	3	11.8	0.1	0.02	8.6	0.932	216	138.7	0.049	0.134	24		1.052	0.143	
CGP	25407	23-Jul-02	3.76	50	30.1	120	28.6	842		0.12	3	140.4	0.01	0.01	18.71	0.855	457	196.7	0.097	0.223	18	10.37	0.875	0.14	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	25739	27-Aug-02	5.13	65	529	76	26.5	295	8.44	0.324	5	29.02	1.09	0.2	10.05	1.637	271	91.02	0.124	0.299	10	68.46	2.927	1.614	
CGP	25895	01-Oct-02	7.17	86	154	89	23.3	478.4	7.75	0.048	5	75.83	1.34	0.01	17.92	0.79	182	140.2	0.208	0.279	32	24.21	2.14	1.398	
CGP	26052	05-Nov-02	10.54	92	206	83	8.9	458.5	7.65	0.019	3	64.87	1.56	0.01	17.58	0.429	323	119.9	0.245	0.259	112	79.02	1.999	1.589	
CGP	26193	03-Dec-02	12.44	100	22.2	171	5.2	959	7.79	0.027	2	145.92	0.52	0.01	29.15	0.926	498	245.1	0.135	0.187	14	18.88	1.456	0.557	
CGP	26589	14-Jan-03	12.58	96	41.1	178	3.7	980	8.75	0.015	2	129.5	0.99	0.01	43.7	0.354	455	237.1	0.078	0.113	10	33.59	1.354	1.015	
CGP	26813	19-Feb-03	12.71	105	2.09	206	6.8	954	8.73	0.015	5.8	123.2	0.43	0.01	32.3	0.11	442	245.3	0.005	0.045	17	28.94	0.55	0.455	
CGP	27323	25-Mar-03	8.38	97.6	141	130	15	573	7.71	0.038	3.6	71.9	0.94	0.02	28.8	1.416	385	162.3	0.103	0.184	103	372.5	2.376	0.998	
CGP	27466	29-Apr-03	8.01	92	100	167	21.9	670	8.1	0.041	2.9	88.9	0.78	0.02	29.4	0.579	443	216.9	0.132	0.25	66	89.87	1.379	0.841	
CGP	27654	03-Jun-03	6.15	74	89.7	151	24.7	708	8.13	0.024	4.4	99.3	0.22	0.02	22.1	1.027	360	195.3	0.059	0.239	71	26.37	1.267	0.264	
CGP	27801	08-Jul-03	6.48	83	104	135	28	495	8.04	0.017	4.5	52.3	0.09	0.08	16.2	0.935	269	123.8	0.122	0.328	70	11.2	1.105	0.187	
CGP	28055	06-Aug-03	5.03	64.1	40.6	192	28.3	662	7.94														2.04		
CGP	28091	12-Aug-03			40.5	197	27	677	7.97	0.02	4.3	70.7	0.08	0.02	17.2	0.606	379	199.8	0.082	0.212	30	1.96	0.706	0.12	
CGP	28239	16-Sep-03	6.54	72	329	92	20.2	311	7.48	0.156	2.4	19	0.6	0.06	13.2	0.67	162	91.1	0.281	0.32	172	49	1.33	0.816	
CGP	28370	21-Oct-03	8.94	93.4	127	105	17.5	421.2	7.53	0.074	4.3	49.8	0.58	0.02	15	0.851	287	108.6	0.119	0.244	36	19.44	1.451	0.674	
CGP	28552	02-Dec-03	11.33	91.4	74.1	114	6.1	348.9	7.59	0.069	2.9	23.2	0.49	0.02	13.7	0.773	214	114	0.154	0.246	16	9.05	1.283	0.579	
CGP	29377	06-Jan-04	12.6	94.3	35.7	169	3.2	771	8.34	0.043	4	108.9	0.5	0.02	27.5	0.463	429	220.6	0.085	0.168	21	7.5	0.983	0.563	
CGP	29582	10-Feb-04	13.68	100.1	221	145	2.5	591	7.99	0.116	2.5	68	0.69	0.02	22.1	1.134	348	171.2	0.092	0.255	162	588.15	1.844	0.826	
CGP	29772	16-Mar-04	10.05	91	281	93	10.9	331.7	7.5	0.126	5.8	29.3	0.36	0.05	14.8	0.82	272	102.2	0.137	0.286	231		1.23	0.536	
CGP	30090	20-Apr-04	8.89	97	17.6	223	19.7	852	8.01	0.026	2.6	100.3	0.02	0.02	35.8	1.044	501	271	0.027	0.12	10	79.17	1.084	0.066	
CGP	30390	08-Jun-04	8.47	101.8	56.4	102	24.9	969	8.05	0.022	3.2	156.2	0.25	0.02	32.7	0.89	513	249	0.088	0.255	53	76.52	1.16	0.292	
CGP	25408	23-Jul-02	3.52	47	61.7	158	28.5	825		0.231	4	107.5	0.01	0.01	21.67	1.398	438	213.1	0.19	0.208	18	4.06	1.418	0.251	
CGP	25740	27-Aug-02	5.54	68	489	71	25.8	347.2	8.64	0.37	4	46.78	1.09	0.27	10.71	1.695	295	96.26	0.209	0.424	11	27.85	3.055	1.73	
CGP	25896	01-Oct-02	6.33	76	64.9	110	23.7	684	7.79	0.043	6	121.5	1.4	0.01	22.46	0.731	227	189.6	0.201	0.246	80	12.92	2.141	1.453	
CGP	26051	05-Nov-02	10.92	95	178	99	8.2	617	7.87	0.034	4	96.56	1.63	0.01	21.07	0.585	279	152.6	0.253	0.263	111	66.19	2.225	1.674	
CGP	26194	03-Dec-02	12.23	99	9.74	263	5.2	1789	8.13	0.021	2	342.2	0.66	0.01	48.7	0.5	906	403.4	0.109	0.16	10	9.7	1.17	0.691	
CGP	26588	14-Jan-03	12.07	64	21.6	231	3.5	1471	8.38	0.015	2	230.2	1.24	0.01	50.6	0.401	738	337.7	0.062	0.12	10	26.03	1.651	1.265	
CGP	26812	19-Feb-03	10.8	90	18	281	6.2	1445	8.53	0.015	2.3	220.8	0.99	0.01	48.5	0.341	686	336.8	0.04	0.058	13	18.46	1.341	1.015	
CGP	27324	25-Mar-03	7.89	97.6	147	138	15.8	729	7.83	0.023	3.2	95.7	0.99	0.02	34.3	1.436	437	186.5	0.122	0.25	127	195.19	2.446	1.033	
CGP	27467	29-Apr-03	7.31	84.2	143	193	22.3	817	7.99	0.14	3.1	107.5	0.76	0.02	33.3	0.752	472	250.9	0.135	0.269	116	69.07	1.532	0.92	
CGP	27472	27-May-03	7.17	79.5	125	156	20.5	720	8.01																
CGP	27655	03-Jun-03	4.8	58	80.7	171	24.3	988	7.8	0.018	4.8	165.1	0.12	0.06	35.5	0.984	521	233.2	0.034	0.222	76	15.16	1.164	0.198	
CGP	27610	23-Jun-03	5.33	67.5		140	27.5	1230	8.08																
CGP	27669	24-Jun-03	5.16	66.7	135	246	28.8	1340	8.09														16.96		
CGP	27802	08-Jul-03	5.08	65	78.7	199	27.7	82.7	7.81	0.019	2.8	118.2	0.12	0.01	23.8	0.941	436	167.8	0.114	0.272	75	3.95	1.071	0.149	
CGP	28092	12-Aug-03			58.4	303	27.6	1403	8.06	0.015	3.6	231.9	0.21	0.02	34.8	0.789	755	309.5	0.102	0.212	40	1.01	1.019	0.245	
CGP	28240	16-Sep-03	5.82	65.3	143	142	20.7	513	7.76	0.108	2.4	44	2.15	0.08	24.3	1.1	352	140.6	0.693	0.776	64	14.42	3.33	2.338	
CGP	28371	21-Oct-03	6.73	71.4	103	122	18	546	7.32	0.039	2.3	80.8	0.55	0.02	15.8	0.79	333	141.5	0.15	0.244	52	5.23	1.36	0.609	
CGP	28553	02-Dec-03	11.35	91	58.6	143	5.9	1000	7.74	0.015	3.3	175.5	0.48	0.02	20.9	0.861	509	221.2	0.111	0.234	19	5.51	1.361	0.515	
CGP	29378	06-Jan-04	14.95	107	10.3	262	1.5	2417	8.75	0.015	5.8	517.2	0.13	0.02	47.8	0.793	1194	465.7	0.052	0.157	10	6.41	0.943	0.165	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (us/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	29583	10-Feb-04	13.73	103.7	314	130	3.4	590	7.85	0.181	4.4	73.7	0.93	0.02	24.6	1.619	334	159.4	0.182	0.367	167		2.569	1.131	
CGP	29773	16-Mar-04	10.2	91	272	82	10.5	375	7.5	0.135	5.2	40.1	0.41	0.05	16.6	1.063	300	108.3	0.147	0.324	232		1.523	0.595	
CGP	30091	20-Apr-04	9.31	102.4	15.9	233	20	1109	8.11	0.023	2.1	165	0.06	0.02	48.5	0.887	598	307.9	0.051	0.14	23	30.75	0.967	0.103	
CGP	30391	08-Jun-04	5.96	72	141	158	25.2	1022	7.73	0.173	3.2	197.7	0.27	0.02	25.5	1.18	567	233.1	0.221	0.375	110	15.57	1.47	0.463	
CGP	25639	05-Aug-02	7.68	109	57.4	151	32.1	1020	8.07	0.277	2	180	0.73	0.01	22.52	0.978	542	205.8			10	1.48	1.718	1.017	
CGP	25781	03-Sep-02	7.5	105	18.2	138	31	874	8.32	0.262	2	138.4	2.15	0.33	23.48	1.021	470	203.2			19	3.55	3.501	2.742	
CGP	25900	30-Sep-02	7.36	91	39.2	134	24.5	981	7.68	0.085	2	213.9	1.65	0.01	27.49	0.662	529	233.7	0.264	0.257	23	14.63	2.322	1.745	
CGP	26055	04-Nov-02	9.88	89	167	110	9.5	672	7.73	0.036	3	122.2	1.72	0.01	22.82	0.601	368	163	0.276	0.276	61	54.96	2.331	1.766	
CGP	26209	02-Dec-02	14.53	121	6.29	260	6.3	1915	8.09	0.033	2	410.41	1.47	0.01	49.01	0.319	1013	430	0.2	0.227	17	10.66	1.799	1.513	
CGP	26594	14-Jan-03	14.39	114	14.8	241	4	1532	8.11	0.015	2	274.6	1.42	0.01	57	0.674	754	373.2	0.058	0.136	35	18.97	2.104	1.445	
CGP	26805	18-Feb-03	12.4	98	8.36	281	4.7	1462	8.43	0.032	3.9	282.2	1.08	0.01	57.7	0.11	835	408.7	0.113	0.129	10	15.98	1.2	1.122	
CGP	27328	24-Mar-03	10.14		116	130	16.8	775	8.01	0.04	3.1	112.8	1.09	0.02	37.7	1.108	452	201.4	0.117	0.158	92	195.27	2.218	1.15	
CGP	27431	28-Apr-03	8.73	87.4	79.4	209	22.6	1037	8.17	0.08	3.2	155.6	0.92	0.02	39.4	0.625	539	289.3	0.147	0.219	59	45.41	1.565	1.02	
CGP	27473	27-May-03	8.4	96.3	93.6	181	22.1	878	8.19																
CGP	27647	03-Jun-03	7	81.8	41.4	225	23	1326	8.14	0.018	2.5	250.5	0.74	0.02	42.8	0.695	730	315.1	0.135	0.302	46	17.64	1.455	0.778	
CGP	27668	05-Jun-03	6.98	77	36	243	20.7	1444	7.8														13.62		
CGP	27611	23-Jun-03	7.57	98.2	36	323	28.8	1646	8.17																
CGP	27757	07-Jul-03	12.44	164.2	30.6	215	29.5	932	8.44	0.016	2.8	159.7	0.65	0.01	32.8	0.863	538	189.9	0.232	0.345	36	4.08	1.523	0.676	
CGP	28068	11-Aug-03	7.29	97.4	29.2	259	30.5	895	8.34	0.153	3.8	76.6	3.14	0.14	47.4	0.947	491	225.8	1.062	1.264	29	0.67	4.227	3.433	
CGP	28227	15-Sep-03	8.72	99.9	98.2	150	22.1	1492	8.02	0.043	6.1	329.7	0.51	0.02	27.2	1.954	1002	255.9	0.109	0.505	125	8.61	2.484	0.573	
CGP	28376	20-Oct-03	9.51	102	34.3	156	18.7	952	8.09	0.066	2.3	163.4	0.85	0.02	27.6	0.16	511	214	0.353	0.523	22	3.11	1.03	0.936	
CGP	28541	01-Dec-03	13.74	110.9	20.6	226	6.2	2450	8.14	0.015	3.1	524.5	2.09	0.02	44.2	0.83	1291	480	0.582	0.639	10	3.2	2.94	2.125	
CGP	29364	05-Jan-04	13.74	102.6	12.5	258	3.2	2633	8.39	0.016	3.1	579.7	2.83	0.02	55.3	0.629	1346	528.2	0.388	0.481	18	4.47	3.479	2.866	
CGP	29587	09-Feb-04	14.03	105.9	122	186	3.6	1127	8.14	0.155	3.8	152.1	1.76	0.02	39.8	1.141	592	261.6	0.236	0.4	147	150.95	2.921	1.935	
CGP	29738	15-Mar-04	9.92	91.7	249	76	11.1	431.6	7.88	0.191	4.3	49.3	0.45	0.05	17.9	1.289	303	108.8	0.171	0.352	143	401.48	1.789	0.691	
CGP	30056	19-Apr-04	9.08	101.2	10.6	276	20.3	1347	8.22	0.015	2.6	211.4	0.05	0.02	53.6	0.777	719	340.8	0.086	0.194	20	31.85	0.847	0.085	
CGP	30320	01-Jun-04	14.02	175.1	16.1	264	27.2	1914	8.47	0.015	3.4	372.9	0.06	0.02	59.9	0.7	1049	411.7	0.391	0.467	18	3.39	0.78	0.095	
FH	25506	17-Jul-02						495																	
FH	25421	23-Jul-02	6.69	97	23.2	110	31.7	526	7.37	0.13	2	28.57	0.01	0.01	15.18	0.82	301	209.6	0.033	0.071	11	0.58	0.84	0.15	
FH	25735	27-Aug-02	6.96	92	80.1		28.3	455.8	7.07	0.281	4	3.9	0.6	0.18	9.44	1.039	124	65.11	0.005	0.055	33	2.03	1.819	1.061	
FH	25663	18-Sep-02	8.17		40.5	206	25.1	347	8.09														0.66		
FH	25916	01-Oct-02	9.89	122	62.5	118	25.4	375.8	8.29	0.06	2	27.31	0.84	0.01	12.19	0.494	210	143	0.035	0.084	29	4.95	1.344	0.91	
FH	26071	05-Nov-02	7.49	67	8.2	146	9.1	540	8.04	0.015	6	38.05	0.64	0.01	18.79	0.244	303	211.3	0.017	0.023	10	10.89	0.894	0.665	
FH	26198	02-Dec-02	11.9	96	3.29	116	5.5	406.2	7.98	0.015	2	56.54	0.09	0.01	23.03	0.166	374	270.2	0.024	0.05	10	4.45	0.266	0.115	
FH	26610	15-Jan-03	7.66	57	6.36	101	2.6	688	8.5	0.015	3	56	0.13	0.01	23.2	0.173	321	258.8	0.005	0.016	10	9.34	0.313	0.155	
FH	26794	18-Feb-03	9.64	78	15.5	181	5.3	690	8.49	0.015	2.5	56.9	0.19	0.01	25.1	0.121	361	228.7	0.005	0.035	10	7.66	0.321	0.215	
FH	27305	25-Mar-03	7.93		29.9	101	15.8	497.8	8.5	0.015	4.2	24.7	0.72	0.02	16.7	0.257	288	211.8	0.017	0.031	21		0.997	0.755	
FH	27460	29-Apr-03	5.39		51.9	171	19.4	391.6	8.28	0.015	3	23.5	0.26	0.02	15	0.331	281	233.1	0.005	0.086	10		0.611	0.295	
FH	27659	02-Jun-03	6.31	61.9	21.1	103	22.4	341.8	8.19	0.031	6	1.9	0.57	0.02	4.9	1.264	117	63.2	0.128	0.318	358	3.8	1.854	0.621	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
FH	27782	07-Jul-03	5.9	76.9	39.3	97	29.1	345.5	8.25	0.017	2.4	16	0.03	0.06	7.2	0.473	199	169.8	0.026	0.093	41	13.94	0.563	0.107	
FH	28096	11-Aug-03	5.4	68.6	66.9	98	27.2	303	8.48	0.105	3.3	13.1	0.04	0.02	9.5	0.758	164	118.4	0.047	0.178	49	1.97	0.818	0.165	
FH	28263	22-Sep-03	7.35	82.1	33	156	20.8	450.4	7.79	0.015	2	3.1	0.02	0.02	8.2	0.518	260	147.4	0.025	0.12	17	9.64	0.558	0.055	
FH	28396	20-Oct-03	8.18	84.2	22.6	118	16.7	451.4	7.99	0.036	2.4	42.9	0.06	0.02	8	0.4	238	155.2	0.024	0.116	24	12.07	0.48	0.116	
FH	28530	01-Dec-03	13.22	105.5	10.6	98	5.6	552	8.15	0.015	2.5	33.7	0.06	0.02	14.2	0.303	284	214.9	0.023	0.088	12	15.5	0.383	0.095	
FH	29395	06-Jan-04	12.48	93	9.09	184	3.1	620		0.015	3.2	29.9	0.04	0.02	16.7	0.11	291	259.2	0.014	0.069	10	15.09	0.17	0.075	
FH	29565	10-Feb-04	11.81	98.2	165	183	1.6		8.33	0.015	2.8	99	0.25	0.02	31.3	0.376	373	212.7	0.014	0.089	27	44.02	0.646	0.285	
FH	29766	16-Mar-04	8.02	74.1	14.7	197	11.5	445.2	8.39	0.031	2.9	23.5	0.16	0.02	17.2	0.357	334	262.5	0.017	0.106	10		0.537	0.211	
FH	30126	27-Apr-04	7.76	81.8	55.5	121	17.9	354.7	8.08	0.027	2	17.8	0.22	0.02	10.2	0.573	239	180.3	0.014	0.14	47		0.813	0.267	
FH	30339	01-Jun-04	7.68	91.9	29.5	103	24.4	507	8.12	0.015	2	23.7	0.02	0.02	14.6	0.35	317	223.1	0.018	0.095	22	16.85	0.39	0.055	
FH	25419	23-Jul-02	4.21	56	18.4	131	28.6	391.5	7.34	0.149	2	3.63	0.55	0.15	7.37	0.651	215	183.1	0.033	0.078	14	0	1.351	0.849	
FH	25732	27-Aug-02	4.49	58	25.3	131	26.3	371.2	7.27	0.17	2	4.01	0.01	0.01	7.4	0.832	201	174.2	0.005	0.102	15	0	0.852	0.19	
FH	25914	01-Oct-02	6.14	73	26.9	153	22.5	357.5	8.07	0.029	7	4.12	0.92	0.01	9.74	0.426	198	167.4	0.022	0.069	23	0	1.356	0.959	
FH	26069	05-Nov-02	6.34	56	14.1	97	8.7	362	7.92	0.015	4	4.37	0.6	0.01	9.91	0.295	209	165.2	0.01	0.029	21	1.42	0.905	0.625	
FH	26199	02-Dec-02	9.74	84	10.5	122	7.4	238.6	8.24	0.015	2	4.83	0.14	0.01	11.33	0.11	191	169.1	0.009	0.039	16	0	0.26	0.165	
FH	26608	15-Jan-03	6.36	49	11.6	106	3.5	454.3	8.42	0.015	4	6	0.13	0.01	15.5	0.228	205	215.2	0.005	0.006	12	0	0.368	0.155	
FH	26795	18-Feb-03	7.16	60	163	183	6.1	453	8.56	0.015	2.9	6.4	0.15	0.01	16.6	0.376	246	209.7	0.005	0.017	16		0.536	0.175	
FH	27303	25-Mar-03	4.15		53.8	122	14.6	361.6	8.39	0.015	3.3	22.2	0.73	0.02	16.1	0.11	287	206.7	0.012	0.032	26		0.86	0.765	
FH	27457	28-Apr-03	5.78		16.3	169	22.1	410.2	8.45	0.015	2.6	3.12	0.18	0.02	12.7	0.268	242	214.1	0.028	0.065	12		0.468	0.215	
FH	27660	02-Jun-03	6.2	68	306	121	20.5	165.1	8.33	0.038	6.7	2.2	0.6	0.02	4.2	1.502	105	72.7	0.185	0.404	571	35.65	2.122	0.658	
FH	27783	07-Jul-03	4.4	54.3	21.5	111	29.3	356.7	8.03	0.015	2.3	2.5	0.01	0.01	6.8	0.534	189	185.7	0.012	0.086	10		0.554	0.035	
FH	28097	11-Aug-03	4.82	46.1	22.8	167	28.4	349.9	8.3	0.015	3.3	7.9	0.03	0.02	6.1	0.34	174	162.6	0.012	0.097	14	0.16	0.39	0.065	
FH	28057	14-Aug-03	4.53	55.5	21.7	151	25.9	346.5	7.43																
FH	28264	22-Sep-03	6.49	72.1	21.6	104	21	321.8	6.05	0.015	2	3	0.02	0.02	8.1	0.486	206	153.2	0.011	0.091	10	0.32	0.526	0.055	
FH	28397	20-Oct-03	5.41	58.2	15.3	122	19	358.1	8.08	0.034	2.3	2.9	0.02	0.02	8.2	0.346	190	156.1	0.014	0.079	11		0.386	0.074	
FH	28531	01-Dec-03	10.52	86.3	19.7	88	6.8	378.7	8.43	0.015	2.9	5	0.06	0.02	12.8	0.516	206	166.3	0.028	0.093	10	3.37	0.596	0.095	
FH	29393	06-Jan-04	9.98	78.9	12.6	181	2.3	944		0.015	3.3	3.8	0.02	0.02	13.1	0.11	289	241	0.01	0.066	15	0	0.15	0.055	
FH	29562	09-Feb-04	11.92	99.7	19	171	2.7	371.2	8.42	0.015	3.9	2.4	0.05	0.02	8.4	0.367	196	178.9	0.032	0.124	15	12.25	0.437	0.085	
FH	29763	15-Mar-04	9.28	91.1	18.7	225	11.1	400.1	8.28	0.018	2.5	2.31	0.02	0.02	9.5	0.251	232	229.7	0.015	0.084	44		0.291	0.058	
FH	30123	26-Apr-04	7.94	84.3	173.3	161	19.4	280.9	8.05	0.015	2.2	2.17	0.14	0.02	8	0.304	223	191.3	0.029	0.107	91	24.7	0.464	0.175	
FH	30340	01-Jun-04	6.53	79	23.3	206	25.4	416.5	8.05	0.015	2.1	2.4	0.02	0.02	9	0.35	292	213.2	0.012	0.079	26		0.39	0.055	
CGP	25637	05-Aug-02	3.8	50	670	88	28.5	373.6	7.56	0.267	2	28.96	1.52	0.01	26.62	1.936	233	107.4	0.223	0.426	10	18.33	3.466	1.797	
CGP	25779	03-Sep-02	5.06	65	382	135	26.6	343.2	7.59	0.268	3	22.71	1.08	0.01	16.99	1.421	294	112.3	0.35	0.34	113	3.24	2.511	1.358	
CGP	25898	30-Sep-02	5.98	69	524	90	21.8	299.9	7.3	0.06	2	20.92	1.28	0.01	17.43	0.579	219	99.2	0.334	0.381	29	25.74	1.869	1.35	
CGP	26053	04-Nov-02	10.51	90	299	107	7.6	516	7.76	0.022	3	57.39	2.84	0.01	43.45	0.472	358	144.2	0.261	0.284	210	82.42	3.322	2.872	
CGP	26207	02-Dec-02	11.65	94	23.3	366	5.3	1543	8.06	0.017	3	182.54	0.5	0.01	151.88	0.48	919	412.8	0.134	0.164	31	7.94	0.99	0.527	
CGP	26592	14-Jan-03	12.81	98	29.3	245	3.3	1317	8.03	0.015	5	168.3	1.2	0.01	120.8	0.359	751	356.2	0.073	0.113	10	18.47	1.569	1.225	
CGP	26803	18-Feb-03	11.43	90	28.6	402	4.9	1706	8.38	0.015	5.1	224	0.31	0.01	169.7	0.11	911	420.4	0.025	0.096	26	16.42	0.43	0.335	
CGP	27326	24-Mar-03	9.2		325	99	13.7	517	7.66	0.12	3.1	60.1	1.39	0.02	42.2	0.11	384	139.7	0.244	0.25	207		1.52	1.53	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO ₃)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO ₃)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
CGP	27429	28-Apr-03	6.49	71.5	172	163	19.9	914	7.88	0.045	4	108.7	0.8	0.02	69.9	0.725	541	267.5	0.135	0.257	104	53.65	1.545	0.865
CGP	27646	03-Jun-03	4.93	58.3	113	222	23.6	1123	7.93	0.038	3.3	150.8	0.52	0.02	58.4	0.988	570	277.4	0.153	0.357	121	7.54	1.528	0.578
CGP	27755	07-Jul-03	3.99	51.3	223	152	28.4	576	7.6	0.016	4	49.8	0.35	0.01	35	0.906	350	126.9	0.19	0.429	112	1.5	1.266	0.376
CGP	28066	11-Aug-03	6.06	78.3	63.4	233	28.6	802	7.89	0.015	5.6	63.7	0.08	0.02	46.4	0.922	446	230.9	0.105	0.259	51	0.2	1.022	0.115
CGP	28058	15-Aug-03	2.6	31.2	64	213	24.5	813	7.98															
CGP	28225	15-Sep-03	4.86	54.1	69.9	262	20.5	809	7.53	0.048	5.2	56.5	0.11	0.02	42	0.967	446	248.2	0.142	0.276	73	3.41	1.097	0.178
CGP	28374	20-Oct-03	4.76	48.3	320	111	16.1	431.5	7.5	0.152	3.4	29.6	3.12	0.22	30.6	1.356	394	152.5	0.257	0.48	195	1.03	4.696	3.492
CGP	28539	01-Dec-03	6.6	52.4	325	96	5.4	183.7	7.27	0.179	3.2	10.6	0.29	0.02	8.7	1.678	382	76.6	0.268	0.457	54	0.03	1.988	0.489
CGP	29366	05-Jan-04	11.29	87.8	33.1	262	4.8	1101	8.19	0.015	4.7	137.9	0.02	0.02	68.2	0.596	602	301.2	0.074	0.208	19	0.23	0.636	0.055
CGP	29585	09-Feb-04	15.96	113.5	148	120	1.3		7.59	0.39	4.4	96.1	2.1	0.02	56.5	1.652	474	189.7	0.239	0.375	95	39.16	3.772	2.51
CGP	29736	15-Mar-04	10.14	93	341	80	11.2	364.7	7.45	0.161	4.8	30.8	0.5	0.05	27.7	1.141	335	99.5	0.197	0.414	154	117.06	1.691	0.711
CGP	30054	19-Apr-04	6.39	69.5	41.4	258	19.5	1541	7.89	0.015	2.3	194.4	0.04	0.02	148.2	0.875	834	390.3	0.062	0.154	48	18.73	0.935	0.075
CGP	30318	01-Jun-04	4.94	58.4	72.7	353	23.7	1534	8.08	0.015	2.8	180.5	0.02	0.02	129.3	0.89	892	405.7	0.157	0.243	67	6.27	0.93	0.055
CGP	25638	05-Aug-02	3.93		440	113	29.5	424.5	7.68	0.32	2	31.51	1.06	0.01	27.18	1.737	266	123.4	0.309	0.441	10	6.16	2.807	1.39
CGP	25780	03-Sep-02	6.63	88	316	126	28	369.2	8.03	0.282	5	23.64	0.92	0.17	17.06	1.666	287	130.1			168	0.66	2.756	1.372
CGP	25899	30-Sep-02	6.13	73	495	119	22.6	379.4	7.48	0.055	2	31.14	1.46	0.01	23.94	0.924	256	131.9	0.315	0.33	29	10.69	2.394	1.525
CGP	26054	04-Nov-02	10.74	94	201	146	8.1	831	7.74	0.017	4	112.7	2.64	0.01	68.82	0.637	523	217.3	0.23	0.272	139	60.77	3.287	2.667
CGP	26208	02-Dec-02	11.58	92	11.8	385	4.9	1802	8.03	0.017	4	230.24	0.44	0.01	186.91	0.57	1057	356.9	0.098	0.111	16	7.24	1.02	0.467
CGP	26593	14-Jan-03	12.89	99	23.1	321	3.6	725	8.06	0.015	6	221.5	1.25	0.01	167.2	0.281	963	441.8	0.043	0.103	29	12.82	1.541	1.275
CGP	26804	18-Feb-03	12.85	104	12.3	346	5.1	1954	8.39	0.015	3.4	280	0.36	0.01	219.9	0.11	1056	435.9	0.013	0.024	10	9.69	0.48	0.385
CGP	27327	24-Mar-03	8.62		262	128	15	746	7.66	0.097	3.1	95.3	1.42	0.02	61.2	1.245	469	186.7	0.225	0.29	212	130.6	2.685	1.537
CGP	27430	28-Apr-03	6.08	70.9	155	238	20.9	1261	8	0.061	2.2	155.1	0.99	0.02	118	0.77	731	355.3	0.113	0.276	102	24.56	1.78	1.071
CGP	27645	03-Jun-03	5.15	62	194	282	24.7	1250	8.26	0.021	4.2	149.5	0.33	0.02	104.2	1.039	749	318.3	0.15	0.36	178	6.64	1.389	0.371
CGP	27667	03-Jun-03	5.15	62	194	282	24.7	1250	8.26													6.64		
CGP	27756	07-Jul-03	4.36	54.9	171	219	27.3	738	8	0.094	6.2	57.8	0.23	0.08	38.1	1.079	415	165.9	0.191	0.412	110	0.56	1.389	0.404
CGP	28067	11-Aug-03	4.21	54	71.3	0.58	28.3	1137	8.29	0.017	8.6	91.7	0.1	0.02	69.4	1.393	651	271.1	0.231	0.485	61	1.14	1.513	0.137
CGP	28226	15-Sep-03	6.98	78	100	325	21.5	1081	8.31	0.015	5.7	99.1	0.02	0.02	63.3	0.937	584	262.1	0.208	0.362	73	0.86	0.977	0.055
CGP	28375	20-Oct-03	6.02	62.3	40.1	279	16.9	971	8.19	0.028	4.4	90.1	0.02	0.02	61	0.95	550	222.8	0.132	0.253	15	0.06	0.99	0.068
CGP	28540	01-Dec-03	6.66	54.6	22.7	336	5.7	994	7.87	0.015	3.7	71.4	0.02	0.02	62	0.763	576	283.7	0.173	0.287	10	0.14	0.803	0.055
CGP	29365	05-Jan-04	9.33	70.1	48.6	350	3.4	1122	8.25	0.015	6.2	91.2	0.02	0.02	68	0.634	643	347.4	0.028	0.182	41	0.45	0.674	0.055
CGP	29586	09-Feb-04	16.16	116.6	60.6	214	1.9		8.11	0.151	4	169.2	1.21	0.02	102.2	1.138	689	312.5	0.177	0.286	26	17.36	2.368	1.381
CGP	29737	15-Mar-04	9.63	87.6	254	132	11.1	698	7.87	0.205	4.2	72.6	0.72	0.05	59.6	1.2	472	179.8	0.202	0.39	112	47.13	1.97	0.975
CGP	30055	19-Apr-04	6.12	66.7	27.7	286	19.7	1612	8.03	0.02	2.1	197.5	0.1	0.02	162	1.052	884	401.1	0.043	0.134	36	16.75	1.172	0.14
CGP	30319	01-Jun-04	6.54	78.5	106	266	24.7	1188	8.1	0.015	4.4	129.6	0.26	0.02	101.6	0.65	700	296.8	0.174	0.296	72	2.37	0.93	0.295
FH	25418	23-Jul-02	2.92	38	48.5	133	27.1	283.9	7.36	0.217	9	4.36	0.56	0.22	5.42	0.851	175	125	0.033	0.12	10	0	1.631	0.997
FH	25731	27-Aug-02	4.12	51	28.2	126	24.6	336.1	7.25	0.18	4	4.34	0.01	0.01	4	0.788	189	150.8	0.005	0.119	21	0	0.808	0.2
FH	25913	01-Oct-02	5.66	66	48.8	113	21.1	300.6	7.9	0.036	3	4.28	0.79	0.01	4.54	0.392	166	132.3	0.024	0.066	27	0	1.192	0.836
FH	26068	05-Nov-02	3.1	27	20.1	95	8.2	336.4	8.93	0.015	6	4.34	0.73	0.01	4.6	0.394	195	143.5	0.017	0.041	21	0	1.134	0.755
FH	26200	02-Dec-02	2.93	26	12.4	118	9.3	276.7	8.89	0.02	7	4.92	0.27	0.01	4.58	0.676	225	182.8	0.108	0.204	11	0	0.956	0.3

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
FH	26607	15-Jan-03	4.85	38	8.37	131	3.8	404.8	8.02	0.015	2	6	0.12	0.01	5.8	0.365	232	190.1	0.005	0.014	10	0	0.495	0.145
FH	26796	18-Feb-03	5.02	41	16.6	164	5.8	447.9	8.06	0.015	3.7	6.2	0.21	0.01	6	0.188	242	199.1	0.005	0.033	10		0.408	0.235
FH	27302	25-Mar-03	4.72			67	15	407.6	8.55	0.015	3.7	10.7	0.6	0.02	13.3	0.11	255	183.5	0.013	0.08	28	155.4	0.73	0.635
FH	27456	28-Apr-03	6.99		32.1	139	22.8	434.2	8.68	0.015	2.6	10.5	0.18	0.02	12.2	0.283	272	230.3	0.011	0.078	18	25.96	0.483	0.215
FH	27661	02-Jun-03	7.5	86.3	254	166	22	362.1	8.25	0.051	3.6	7	0.47	0.02	10.2	0.859	217	172.1	0.049	0.167	207	142.31	1.349	0.541
FH	27784	07-Jul-03	5.09	63.4	66.2	143	28.5	452.1	8.13	0.042	2.6	9.1	0.04	0.04	12.3	0.686	267	248.8	0.009	0.08	18		0.766	0.122
FH	28098	11-Aug-03	2.33	27.2	33.3	182	26.2	427.9	8.28	0.015	2.1	11.8	0.04	0.02	12.3	0.211	219	178.3	0.023	0.13	21		0.271	0.075
FH	28265	22-Sep-03	5.46	60.6	32.7	103	20	339.1	6.76	0.015	3.8	6	0.12	0.02	8.4	0.835	170	155.2	0.046	0.142	27	0	0.975	0.155
FH	28398	20-Oct-03	7.69	77.9	10.9	184	16	441.7	7.96	0.035	3	7.4	0.08	0.02	8.8	0.314	248	203.7	0.017	0.08	10	3.98	0.414	0.135
FH	28449	30-Oct-03	7.59	74.4	7.18	226	14	502	7.66														2.5	
FH	28532	01-Dec-03	11.7	93.3	10.6	245	5.7	575	8.09	0.015	3.3	11.5	0.02	0.02	13.3	0.57	308	255.8	0.016	0.109	10	4.52	0.61	0.055
FH	29392	06-Jan-04	12.02	88.4	12	203	2.6	578		0.015	3.2	13	0.02	0.02	14	0.11	303	244.4	0.008	0.066	19	5.94	0.15	0.055
FH	29561	09-Feb-04	13.31	95.6	29	165	1.7		8.37	0.022	4.3	10.3	0.18	0.02	11.9	0.3	245	225	0.015	0.091	10	33.79	0.5	0.222
FH	29762	15-Mar-04	10.23	94.3	21.7	238	11.5	430.1	8.25	0.022	2	10.6	0.29	0.02	13.6	0.32	339	260	0.021	0.088	20	22.49	0.63	0.332
FH	30122	26-Apr-04	7.71	81.7	179	147	17.7	314.2	8.29	0.015	2	5.4	0.17	0.02	7.5	0.318	215	178.1	0.035	0.111	51		0.508	0.205
FH	30341	01-Jun-04	8.22	97.1	20.6	183	23.8	490.7	8.12	0.015	2	10	0.1	0.02	12.2	0.29	342	238.7	0.006	0.078	27	5.02	0.41	0.135
CGP	25417	23-Jul-02	3.31	23	45.5	149	26	553	7.45	0.236	11	25.36	0.01	0.01	11.87	1.205	315	219.9	0.256	0.312	24	0.68	1.225	0.256
CGP	25730	27-Aug-02	2.12	26	39.2	216	23.6	520	7.23	0.308	6	19.17	0.01	0.01	7.75	1.228	297	217.5	0.112	0.196	10	0	1.248	0.328
CGP	25912	01-Oct-02	3.05	35	112	97	20	308.5	7.26	0.364	2	7.6	1.73	0.01	11.85	0.757	186	124.3	0.18	0.256	87	0	2.497	2.104
CGP	26067	05-Nov-02	3.39	29	137	78	7.3	291.4	8.86	0.052	4	11.65	3.47	0.01	11.73	0.587	272	103.3	0.264	0.298	19	3.58	4.067	3.532
CGP	26201	02-Dec-02	3.45	30	18.5	54	8.5	335.1	8.9	0.026	2	17.26	0.11	0.01	14.49	0.552	290	216.5	0.326	0.359	10	0	0.672	0.146
CGP	26606	15-Jan-03	4.01	31	23.5	116	3.4	827	7.98	0.015	2	48.4	0.17	0.01	54.7	0.285	419	300.6	0.034	0.082	59	0	0.465	0.195
CGP	26797	18-Feb-03	7.5	60	21.8	166	4.8	898	8.25	0.015	3.1	95.1	0.13	0.01	38.7	0.434	458	286.6	0.028	0.056	14		0.574	0.155
CGP	27301	25-Mar-03	3.13		193	133	14.8	378.1	7.79	0.251	6.4	16.4	1.88	0.02	26.7	0.345	351	154.5	0.166	0.201	106		2.245	2.151
CGP	27455	28-Apr-03	4.34		173	166	20.8	417.8	8.28	0.015	2.3	17	1.24	0.02	24.5	0.634	307	191.6	0.171	0.229	66		1.894	1.275
CGP	27785	07-Jul-03	5.11	62.8	71.3	161	29.1	471.1	8.21	0.017	2.8	9.2	0.03	0.05	12.3	0.607	290	250	0.009	0.083	24		0.687	0.097
CGP	28099	11-Aug-03	3.63	45.2	38.3	171	26.8	450.1	8.15	0.018	5.8	20.1	0.05	0.02	12.9	0.324	244	183.7	0.189	0.3	49	0.87	0.394	0.088
CGP	28266	22-Sep-03	6.74	73.8	32.3	98	19.9	338	7.2	0.015	3.3	5.6	0.02	0.02	7.5	0.611	121	154	0.014	0.111	25	0.45	0.651	0.055
CGP	28399	20-Oct-03	7.71	78.3	14.3	136	17.1	396.6	8.08	0.028	2.7	84.9	0.98	0.02	58.1	0.368	439	250.3	0.138	0.217	55	0.68	1.368	1.028
CGP	28448	30-Oct-03	7.59	73.9	10.4	269	14.1	669	7.85														2.19	
CGP	28533	01-Dec-03	12.39	97.8	5.06	142	5.3	920	8.19	0.015	2.5	44.8	0.02	0.02	45.8	0.223	470	332.1	0.029	0.087	10	1.8	0.263	0.055
CGP	29391	06-Jan-04	13.24	92.8	2.87	240	0.9		7.01	0.015	4.1	56.3	0.02	0.02	53.7	0.11	495	307.5	0.017	0.072	10	4.14	0.15	0.055
CGP	29560	09-Feb-04	12.51	91	225	178	2.2	472	8.22	0.38	3.3	43.1	1.98	0.04	38	1.073	462	273.2	0.125	0.284	170	18.99	3.093	2.4
CGP	29761	15-Mar-04	9.62	87.4	39.4	218	11.3	605	8.06	0.074	2	32	0.8	0.02	41.3	0.635	482	316.5	0.072	0.166	113		1.455	0.894
CGP	30121	26-Apr-04	7	74.1	3.71	188	18.5	654	8.06	0.074	2	31.9	0.49	0.06	31.2	0.447	344	263.4	0.069	0.144	46		0.997	0.624
CGP	25556	30-Jul-02	5.39	75	33.2	134	29.1	1435	7.75	0.298	5	21.3	0.67	0.01	619.3	1.425	1139	777.6	0.184	0.197	10	7.4	2.105	0.978
CGP	25658	08-Aug-02	5.9		1.53	237	23.5	1931	7.8														1.14	
CGP	25778	04-Sep-02	8.4	107	5.36	222	24.6	1852	8.16	0.015	3	24.52	0.79	0.19	823.5	0.48	1493	1064.8	0.229	0.213	10	1.83	1.46	0.995
CGP	25973	08-Oct-02	8.26	88	19	212	15.3	1875	8.1	0.105	3	31.29	1.02	0.01	770.7	0.585	1518	1153.3	0.149	0.378	33	13.16	1.615	1.135

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	26091	13-Nov-02	10.05	89	5.94	297	7.5	2461	8.14	0.032	2	46.5	0.47	0.01	1216.4	0.306	2202	1859.5	0.083	0.099	10	13.37	0.786	0.512	
CGP	26244	10-Dec-02	11.57	95	6.37	302	4	2633	8.26	0.04	2	53.83	0.52	0.01	1214.85	0.253	2229	1482.5	0.032	0.063	31	22.73	0.783	0.57	
CGP	26714	22-Jan-03	14.23	104	5.19	245	0.2		8.27	0.032	4	46	0.75	0.01	1172.5	0.342	2153	1530.8	0.018	0.047	21	14.38	1.102	0.792	
CGP	27249	12-Mar-03	11.62	108	5.28	241	9.8	2467	8.15	0.015	2	47.3	0.63	0.02	1206.4	0.232	2191	1437.1	0.026	0.046	14	15.23	0.882	0.665	
CGP	27317	25-Mar-03	10.33		10.7	248	12.7	2335	8.16	0.015	4.7	49.3	0.67	0.02	1227	0.11	2307	1510.8	0.052	0.178	31	17.7	0.8	0.705	
CGP	27551	06-May-03	8.15		7.5	234	16.2	2246	8.08		3.4	41.3	0.72	0.02	1159.4		2088	1477.5	0.077	0.159	24	9.86	0.74	0.74	
CGP	27639	03-Jun-03	6.87	77.1	82.6	190	21.4	2213	7.78	0.234	4	45.3	1.26	0.02	1035.1	1.496	1994	1221.2	0.146	0.307	164	26.02	2.776	1.514	
CGP	27779	08-Jul-03	7.84	91.4	2.93	228	23	2217	8.04	0.016	2	37.4	0.74	0.01	1118	0.292	1975	1392.9	0.07	0.148	25	5.75	1.042	0.766	
CGP	28085	12-Aug-03	7.78	89.9	1.85	227	22.5	1960	7.41	0.051	2.5	28.4	0.79	0.04	911.1	0.369	1775	1190.2	0.084	0.176	10	2.23	1.199	0.881	
CGP	28224	16-Sep-03	8.36	89.7	3.41	215	18.7	1620	7.91	0.048	3.2	26.3	0.54	0.02	896.7	0.182	1650	1163.7	0.055	0.106	16	2.44	0.742	0.608	
CGP	28393	21-Oct-03	8.85	87	0.87	241	14.5	204	8.02	0.066	2.4	26.9	0.59	0.02	988.6	0.13	1728	1160.1	0.089	0.163	10	2.96	0.74	0.676	
CGP	28527	02-Dec-03	9.79	80.2	3.62	243	6.9	255	8.02	0.031	2.4	32.7	0.62	0.02	1195.7	0.118	2055	1404.7	0.04	0.077	10	3.16	0.758	0.671	
CGP	29407	06-Jan-04	12.6	85.9	7.51	271	0	2840	7.48	0.071	3.1	39.8	1.24	0.02	1497.8	0.41	2295	1434.8	0.036	0.112	19		1.67	1.331	
CGP	29576	10-Feb-04	12.61	91.6	10.6	246	2.2	2625	8	0.046	2	40.3	0.45	0.02	1248.9	0.29	2085	1570.8	0.042	0.109	23	12.59	0.76	0.516	
CGP	29755	16-Mar-04	10.03	85.8	5.87	224	8.5	2742	8.25	0.022	3.1	45.3	0.31	0.02	1359	0.38	669	1538	0.028	0.12	62	17.05	0.71	0.352	
CGP	30116	27-Apr-04	8.34	79.9	3.62	224	13.7	2016	8.09	0.028	2	41.8	0.46	0.02	1210.6	0.423	2149	1515.9	0.089	0.123	10	9.96	0.903	0.508	
CGP	30337	02-Jun-04	8.44	100	1.08	210	23.8	1024	7.8	0.077	2	28.1	0.65	0.06	810.2	0.4	1842	1200.8	0.103	0.158	19	2.76	1.11	0.787	
CGP	25573	18-Jun-02	8.22		122	268	22	697	7.86														17.17		
CGP	25555	30-Jul-02	6.89	99	28.9	202	31.7	804	8.52	0.113	2	43.55	0.88	0.01	121.8	0.641	513	328.2	0.14	0.163	15	4.64	1.531	1.003	
CGP	25777	04-Sep-02	8.09	101	16.6	219	23.3	904	8.54	0.015	11	56.8	1.06	0.01	150.1	0.48	542	369	0.072	0.081	25	1.72	1.55	1.085	
CGP	25972	08-Oct-02	8.24	89	52.5	247	16	996	8.22	0.102	4	56.22	1.2	0.01	166.6	0.489	624	399.7	0.165	0.36	53	26.07	1.699	1.312	
CGP	26092	13-Nov-02	10.24	93	9.21	302	8.8	1042	8.38	0.031	2	53.3	0.72	0.01	163.2	0.367	664	383.6	0.074	0.085	19	18.18	1.097	0.761	
CGP	26245	10-Dec-02	12.57	103	31.8	337	4	1078	8.47	0.03	2	46.84	0.56	0.01	155.66	0.277	610	406.7	0.05	0.088	44	45.78	0.847	0.6	
CGP	26715	22-Jan-03	12.81	99	10.8	288	2.2	998	8.54	0.015	5	43.2	0.87	0.01	158.2	0.432	622	414.7	0.013	0.033	19	20.18	1.312	0.895	
CGP	27250	12-Mar-03	10.51	102	15.8	274	11.2	970	8.41	0.015	2	44.3	0.93	0.02	162.1	0.391	634	405.8	0.023	0.048	21	20.78	1.341	0.965	
CGP	27316	25-Mar-03	8.62		28.9	297	13.6	1087	8.37	0.015	3.6	50.5	0.91	0.02	174.7	0.11	717	411.4	0.005	0.013	58	22.51	1.04	0.945	
CGP	27552	06-May-03	9.13		25.1	281	17	996	8.39	0.022	2.8	49.5	0.89	0.02	158.6	0.839	639	380.7	0.071	0.172	32	13	1.749	0.932	
CGP	27638	03-Jun-03	8.12	91.4	42.6	256	21.2	944	8.24	0.021	2.3	49.6	1.28	0.02	146.7	0.52	643	382	0.099	0.213	50	8.24	1.82	1.321	
CGP	27778	08-Jul-03	7.76	89.7	22.7	233	22.6	785	8.31	0.015	2.2	51.4	1.1	0.01	144.6	0.281	532	366.3	0.084	0.183	39	5.85	1.391	1.125	
CGP	28084	12-Aug-03	7.81	88.2	8.55	212	21.3	625	7.3	0.015	2.3	47.7	1.01	0.02	135.2	0.353	571	342.8	0.021	0.099	10	2.94	1.383	1.045	
CGP	28223	16-Sep-03	8.46	89.6	13.5	202	18.2	822	8.3	0.015	3.5	50	0.7	0.02	132.4	0.368	529	307.3	0.01	0.075	33	2.83	1.088	0.735	
CGP	28392	21-Oct-03	8.92	87	8.22	271	14.2	834	8.31	0.023	2.6	48.4	0.49	0.02	135.9	0.24	581	366.3	0.03	0.099	89	5.09	0.75	0.533	
CGP	28526	02-Dec-03	10	82	10.6	282	6.3	980	8.37	0.015	4.1	41.4	0.79	0.02	127.4	0.569	603	360.4	0.018	0.09	24	9.62	1.379	0.825	
CGP	29406	06-Jan-04	13.41	91.8	16.3	325	0	1092	8.31	0.035	2.9	49.2	0.84	0.02	145.3	0.459	667	396.2	0.016	0.09	18		1.319	0.895	
CGP	29575	10-Feb-04	13.19	97.3	36.9	278	2.5	647	8.2	0.045	2.1	39.1	0.59	0.02	135.9	0.623	577	353.4	0.051	0.136	69	17.84	1.233	0.655	
CGP	29754	16-Mar-04	10.97	94.5	42	279	8.9	1056	8.32	0.025	2.7	44.8	0.59	0.02	167.8	0.604	932	409	0.049	0.151	11	27.03	1.214	0.635	
CGP	30115	27-Apr-04	8.72	83.9	18.4	293	13.6	964	8.27	0.015	2	43.5	0.5	0.02	147.5	0.537	646	395.3	0.034	0.12	28	15.83	1.057	0.535	
CGP	30336	02-Jun-04	8.7	101.5	5.37	212	23	1047	8.26	0.015	2	68	0.64	0.02	206.9	0.28	735	422.6	0.048	0.068	18	2.14	0.94	0.675	
CGP	25574	18-Jun-02	7.27		2.13	227	29.8	1371	7.69													5.5			

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	25554	30-Jul-02	7.61	110	9.27	159	31.5	1702	8.16	0.171	2	228.2	0.56	0.01	330.7	0.615	1050	498.7	0.037	0.037	10	2.26	1.185	0.741	
CGP	25776	04-Sep-02	8.01	100	1.54	179	23.8	1717	8.27	0.015	2	227.7	0.01	0.01	313.9	0.332	1041	496	0.017	0.016	10	0.35	0.352	0.035	
CGP	25971	08-Oct-02	8.14	88	11.3	218	16	1779	7.98	0.037	5	204.3	0.96	0.01	338.5	0.722	1114	618.4	0.047	0.114	20	16.8	1.692	1.007	
CGP	26093	13-Nov-02	11.13	103	3.78	247	9	1657	8.27	0.028	4	199.7	0.37	0.01	292.9	0.387	1076	490.2	0.013	0.054	14	11.34	0.767	0.408	
CGP	26246	10-Dec-02	12.56	103	3.83	266	4.2	1748	8.3	0.015	2	204.99	0.83	0.01	286	0.503	1005	535.6	0.005	0.029	10	16.01	1.343	0.855	
CGP	26716	22-Jan-03	13.39	101	12.5	247	1.7		8.41	0.015	3	182	1.05	0.01	251.7	0.638	1029	502.7	0.005	0.011	20	10.12	1.698	1.075	
CGP	27251	12-Mar-03	11.54	115	6.14	232	12.2	1422	8.33	0.015	2	164.1	0.84	0.02	238.8	0.54	909	458.5	0.005	0.005	16	10.84	1.4	0.875	
CGP	27315	25-Mar-03	11.17		5.07	225	12.1	1558	8.35	0.015	3.4	182.4	0.5	0.02	260.2	0.11	986	455.6	0.005	0.039	10	11.36	0.63	0.535	
CGP	27553	06-May-03	9.7		11.4	217	18.5	1472	8.2	0.02	2	183.5	0.25	0.02	246.5	0.881	925	463.2	0.005	0.005	17	6.34	1.151	0.29	
CGP	27637	03-Jun-03	7.95	92.3	11.2	222	22.6	1448	8.03	0.075	2.9	170.2	0.38	0.02	241.3	0.615	920	447.5	0.019	0.092	13	4.25	1.015	0.475	
CGP	27777	08-Jul-03	6.62	77.8	13.1	173	23.7	1237	8.88	0.028	2.2	179.4	0.12	0.01	247.9	0.656	854	436.7	0.018	0.081	10	1.34	0.786	0.158	
CGP	28391	21-Oct-03	8.71	85.9	4.65	230	14.7	1647	8.09	0.022	2	30.3	0.02	0.02	275.7	0.291	979	478.5	0.007	0.058	10	1.88	0.331	0.062	
CGP	28525	02-Dec-03	10.57	85.9	4.79	226	6.5	1547	8.09	0.015	2.5	34.5	0.29	0.02	244.5	0.355	922	408.7	0.005	0.049	13	4.27	0.665	0.325	
CGP	29405	06-Jan-04	8.05		5.03	225	-0.1	1701	11.94	0.018	3.1	190.9	0.49	0.02	265.8	0.341	1020	481	0.005	0.05	14		0.851	0.528	
CGP	29574	10-Feb-04	13.29	95.4	3.63	225	1.8		7.93	0.15	2	165.5	0.61	0.02	226.4	0.336	865	463.4	0.005	0.064	17	7.5	0.966	0.78	
CGP	29753	16-Mar-04	10.41	89.1	6.2	156	8.5	1460	7.94	0.015	3.9	169.1	0.26	0.02	241.9	0.498	943	462.6	0.005	0.078	10	22.05	0.778	0.295	
CGP	30114	27-Apr-04	8.07	78.7	10.1	243	14.3	1416	7.85	0.015	2	174	0.13	0.02	244.4	0.892	888	435.4	0.006	0.067	23	4.72	1.042	0.165	
CGP	30335	02-Jun-04	8.85	105.4	6.53	196	24.1	1580	8.06	0.03	2	202.2	0.22	0.02	273.7	0.54	1055	498.9	0.017	0.062	12	1.07	0.78	0.27	
CGP	25571	06-Jun-02	5.65		16.4	234	30.2	1785	7.9														0.47		
CGP	25520	23-Jul-02	8.2	127	7.66	170	35.6	1855	8.2	0.189	3	245.4	0.01	0.01	361.5	0.642	1146	498.8	0.018	0.035	10	0.14	0.662	0.209	
CGP	25719	27-Aug-02	5.38	61	786	92	18.7	388.7	7.86	0.229	4	27.13	0.9	0.19	50.44	1.899	245	109.6	0.071	0.25	143	17.75	2.989	1.319	
CGP	25885	01-Oct-02	3.86	44	313	222	18.6	1875	7.82	0.835	2	271.3	1.49	0.01	394.4	1.587	1226	574.6	0.121	0.22	249	0	3.087	2.335	
CGP	26084	05-Nov-02	11.26	102	4.29	279	8.4	1975	8.14	0.015	2	242	0.74	0.01	357.4	0.474	1197	565.1	0.02	0.04	10	2.51	1.224	0.765	
CGP	26223	03-Dec-02	10.01	82	3.6	253	4.3	1836	8.1	0.015	2	229.03	0.08	0.01	301.94	0.366	1151	553.8	0.005	0.027	10	1.94	0.456	0.105	
CGP	26701	15-Jan-03	10.89	83	4.06	248	1.5		8.19	0.015	3	206.6	0.24	0.01	293.2	0.462	1148	552.6	0.005	0.005	10	1.58	0.712	0.265	
CGP	26787	19-Feb-03	9.27	78	320	257	5.7	1799	8.07	0.015	5.5	218.1	0.22	0.01	297.5	0.38	1075	536.5	0.005	0.005	10	2.67	0.61	0.245	
CGP	27341	01-Apr-03	7.64		3.81	252	10.5	1843	7.87	0.015	2.8	233	0.09	0.01	317.4	0.337	1182	551	0.005	0.015	10	2.38	0.437	0.115	
CGP	27445	29-Apr-03	3.84	39.1	1.53	259	16.1	1732	7.5	0.015	3.5	221.3	0.02	0.02	284.1	0.955	1065	506.8	0.005	0.005	10	1.65	0.995	0.055	
CGP	27699	10-Jun-03	5.05	56.4	4.34	265	20.7	1905	7.75	0.034	2	239.4	0.02	0.02	329.8	0.792	1220	547.6	0.019	0.088	10	1.11	0.832	0.074	
CGP	28582	09-Dec-03	9.42	71.3	1.66	262	3.7	1727	7.96	0.015	3	198.1	0.09	0.02	252.9	0.333	1024	476.2	0.016	0.07	10		0.443	0.125	
CGP	29432	13-Jan-04	11.03	77.8	1.3	244	1.1		8.08	0.015	3.1	165.5	0.23	0.02	197.5	0.215	839	406.4	0.005	0.066	10	0.95	0.465	0.265	
CGP	29625	18-Feb-04	10.51	78.8	1.97	229	3.3	1582	8.06	0.015	2.6	183.8	0.02	0.02	234.9	0.38	975	462.9	0.005	0.062	10	1.16	0.42	0.055	
CGP	29797	23-Feb-04	7.87	71.6	2.34	256	11.1	1817	7.83	0.016	2.4	212.1	0.02	0.02	281.3	0.369	1102	539.7	0.005	0.087	10	1.9	0.409	0.056	
CGP	30070	20-Apr-04	5.09	51.9	2.68	236	16.2	1729	7.73	0.022	2	214.6	0.02	0.02	267.3	0.76	1040	504.2	0.02	0.061	10	1.55	0.8	0.062	
SWT	25572	06-Jul-02	0.44		12.6	191	18.1	629	7.69														5.03		
SWT	25519	23-Jul-02	8.2	111	27.6	199	27.6	703	8.28	0.071	3	66.8	1.01	0.01	32.59	0.634	382	226.7	0.014	0.104	69	4.8	1.654	1.091	
SWT	25720	27-Aug-02	6.17	72	158	98	19	335.7	7.86	0.305	6	32.49	0.88	0.01	15.38	1.51	222	110.4	0.066	0.213	39	16.23	2.4	1.195	
SWT	25886	01-Oct-02	7.79	91	7.83	211	19	693	8.08	0.026	2	66.3	1.38	0.01	33.48	0.11	406	244.8	0.016	0.032	12	5.25	1.5	1.416	
SWT	26083	05-Nov-02	10.55	101	3.66	212	10.7	653	8.26	0.015	2	80.19	1.63	0.01	38.83	0.196	439	223.5	0.019	0.034	10	8.54	1.836	1.655	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
SWT	26224	03-Dec-02	9.83	86	2.55	207	7.8	745	8.16	0.015	2	72.11	1.5	0.01	36.41	0.199	427	259.1	0.011	0.056	10	8.38	1.709	1.525	
SWT	26702	15-Jan-03	11.48	97	3.5	209	5.3	748	8.23	0.015	2	72.2	1.56	0.01	37.7	0.11	444	227.6	0.005	0.005	10	7.95	1.68	1.585	
SWT	26788	19-Feb-03	10.71	98	3.59	206	8.5	731	8.25	0.015	5.1	69.3	1.33	0.01	35	0.11	391	236.8	0.005	0.005	10	9.43	1.45	1.355	
SWT	27342	01-Apr-03	10.22		5.45	201	11.1	738	8.19	0.015	2	74.69	1.12	0.01	37.5	0.11	451	230.6	0.005	0.025	10	8.83	1.24	1.145	
SWT	27446	29-Apr-03	8.81		4.78	210	15	707	7.96	0.019	2	72.5	1.04	0.02	35.5	0.553	445	273.9	0.005	0.005	10	7.71	1.613	1.079	
SWT	27700	10-Jun-03	6.81	73.5	10.4	207	19	714	8.04	0.024	2	68.5	0.91	0.04	32	0.264	434	240.6	0.011	0.071	23	5.69	1.214	0.974	
SWT	27830	15-Jul-03	7.61	85.8	16.2	199	21.3	709	8.1	0.021	2.6	71.6	0.86	0.02	33	0.11	418	228.4	0.013	0.07	31	4.69	0.99	0.901	
SWT	28128	19-Aug-03	7.87	89.2	14.1	202	21.5	692	8.17	0.015	2.9	69.4	0.85	0.02	30.4	0.349	401	231	0.009	0.079	22	3.23	1.219	0.885	
SWT	28251	16-Sep-03	7.61	81.1	9.94	197	18.4	700	8.04	0.015	2	69.4	1	0.02	32.2	0.164	356	173.2	0.007	0.064	16	5.56	1.184	1.035	
SWT	28421	28-Oct-03	8.72	82.8	4.02	204	13	717	8.14	0.015		66.7	1.1	0.02	32.5	0.11	395	246.6	0.005	0.051	10	5.21	1.23	1.135	
SWT	28583	09-Dec-03	9.72	78.5	3.24	218	6.2	705	8.25	0.015	2.2	63.2	1.19	0.02	31.4	0.11	404	244	0.005	0.048	10		1.32	1.225	
SWT	29433	13-Jan-04	10.21	83	3.23	222	6.4	710	8.21	0.015	2	64.6	1.3	0.02	32.7	0.11	404	257.3	0.005	0.064	10	6.94	1.43	1.335	
SWT	29626	18-Feb-04	10.68	87.8	3.56	204	6.9	701	8.3	0.015	2	63.4	1.26	0.02	31.3	0.11	450	246.7	0.009	0.064	10	7.39	1.39	1.295	
SWT	29798	23-Mar-04	11.26	106.6	3.73	209	12.8	738	8.25	0.016	2	68.9	0.93	0.02	36.1	0.178	442	259.1	0.005	0.075	23	8.28	1.128	0.966	
SWT	30071	20-Apr-04	9.31	96.5	9.89	207	17	698	8.15	0.03	2	68.5	0.79	0.02	34.8	0.333	373	251.5	0.014	0.066	21	9.12	1.143	0.84	
SWT	30367	08-Jun-04	7.67	85.6	19	195	20.7	685	8.14	0.015	2	71.5	0.83	0.02	33.2	0.21	413	245.7	0.023	0.078	33	5.44	1.06	0.865	
SWT	25561	03-Jun-02	7.79		2.39	229	23.1	611	7.9																0.63
SWT	25509	22-Jul-02	7.48	93	2.27	219	22.9	609	8.12	0.117	2	28.11	1.67	0.01	27.31	0.369	356	244.1	0.02	0.031	10	0.24	2.049	1.797	
SWT	25724	27-Aug-02	6.12	75	12.8	162	21.5	529	7.83	0.256	3	33.82	1.03	0.01	42.1	1.193	305	187.3	0.005	0.102	10	3.16	2.233	1.296	
SWT	25887	01-Oct-02	6.8	80	1.19	225	19.4	608	7.92	0.021	2	27.07	1.97	0.01	27.48	0.11	361	254.6	0.008	0.021	10	0.61	2.09	2.001	
SWT	26073	04-Nov-02	8.76	78	0.33	257	7.1	720	8.11	0.015	4	37.79	2.05	0.01	38.81	0.163	405	276.1	0.005	0.02	10	2.66	2.223	2.075	
SWT	26227	03-Dec-02	11.32	96	0.44	238	5.5	660	8.2	0.015	3	32.67	2.35	0.01	33.12	0.298	390	210.6	0.005	0.023	10	1.04	2.658	2.375	
SWT	26706	15-Jan-03	12.97	105			3.3	652	8.3	0.015	2	30	2.5	0.01	32.6	0.162	347	230.8	0.005	0.005	10	0.93	2.672	2.525	
SWT	26791	19-Feb-03	12.2	112	0.58	228	8.2	638	8.33	0.015	3.9	31	2.3	0.06	31.5	0.194	353	235.3	0.005	0.005	10	1.72	2.554	2.375	
SWT	27346	01-Apr-03	9.67		0.69	2.34	15.9	654	8.06	0.015	2.5	33.7	1.57	0.01	33.6	0.11	393	266	0.005	0.017	10	1.33	1.69	1.595	
SWT	27449	29-Apr-03	9.61	100.1	0.67	249	17.3	606	7.92	0.015	2.7	26.6	0.91	0.02	25.3	0.601	307	266.6	0.005	0.005	10	0.8	1.531	0.945	
SWT	27703	10-Jun-03	6.45	70.6	1.28	240	19	619	7.88	0.02	4.3	25.4	0.87	0.06	24.5	0.213	377	261.5	0.006	0.065	10	0.62	1.143	0.95	
SWT	27833	15-Jul-03	7.77	98.3	4.07	223	27.4	592	8.26	0.036	3.5	25.3	1.69	0.02	31.4	0.081	328	237.8	0.018	0.069	24	0.19	1.791	1.746	
SWT	28249	15-Sep-03	8.98	104.7	0.99	215	23.1	572	8.3	0.018	2	28.9	1.33	0.02	30.1	0.287	304	188.9	0.005	0.05	12	0.26	1.637	1.368	
SWT	28424	28-Oct-03	10.25	96.8	0.81	243	12.6	635	8.25	0.015		26.5	1.55	0.02	29.2	0.2	385	261.5	0.005	0.075	10	0.7	1.77	1.585	
SWT	28581	08-Dec-03	12.34	108.1	0.94	233	9.6	603	8.4	0.015	2	25.8	2.14	0.02	28.4	0.063	327	266.7	0.005	0.044	10		2.223	2.175	
SWT	29436	13-Jan-04	15.54	127.2	2.13	224	6.7	600	8.55	0.015	2	26.2	2.32	0.02	28.8	0.187	362	241	0.005	0.064	10	1.16	2.527	2.355	
SWT	29629	18-Feb-04	15.77	134.3	2.01	224	8.3	603	8.52	0.015	2.2	27.4	2.03	0.02	30.6	0.22	307	232.8	0.013	0.07	10	1.4	2.27	2.065	
SWT	29801	23-Mar-04	14.1	147.7	1.48	232	17.6	637	8.29	0.027	2	31.4	1.27	0.02	36	0.299	391	266.3	0.005	0.072	16	1.43	1.589	1.317	
SWT	30074	20-Apr-04	10.98	120.9	6.1	240	20.1	660	8.24	0.015	2	30.5	0.83	0.02	32.3	0.47	374	275	0.005	0.063	12	1.68	1.32	0.865	
SWT	30370	08-Jun-04	7.73	92.6	32.5	227	24.5	594	8.17	0.053	2	23.8	1.33	0.02	26.1	0.25	350	253.2	0.034	0.136	55	0.43	1.6	1.403	
SWT	25570	06-Jun-02	5.9			207		778	7.87																11.26
SWT	25510	22-Jul-02	9.18	118	20.2	194	24.9	973	8.3	0.093	2	122.4	0.71	0.01	69.39	0.4444	538	272.8	0.025	0.085	37	1.67	1.1644	0.813	
SWT	25723	27-Aug-02	7.27	90	142	204	22.9	884	8.16	0.195	3	95.8	1.07	0.22	66.74	1.109	558	290.5	0.043	0.171	11	25.62	2.399	1.485	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
SWT	25884	30-Sep-02	8.42	113	18.1	215	26.1	993	8.41	0.027	2	125.6	1.17	0.01	69	0.388	564	298.9	0.034	0.051	37	8.84	1.568	1.207
SWT	26074	04-Nov-02	10.06	90	22.7	232	7.3	1030	8.44	0.015	4	130	1.25	0.01	69.62	0.406	559	311.7	0.033	0.055	47	15.84	1.666	1.275
SWT	26222	02-Dec-02	10.51	101	10.1	217	10.8	981	8.52	0.02	2	134.06	0.74	0.01	70.27	0.355	578	268.7	0.013	0.026	15	12.09	1.105	0.77
SWT	26705	15-Jan-03	14.63	118	8.02	225	3.6	999	8.42	0.015	2	121	0.81	0.01	67.7	0.179	526	289	0.005	0.005	10	13.35	0.999	0.835
SWT	26786	18-Feb-03	11.25	106	7.38	224	9.2	188	8.54	0.015	2.2	122.1	0.76	0.01	65.1	0.11	537	255.4	0.005	0.005	10	12.61	0.88	0.785
SWT	27345	01-Apr-03	13.3		4.86	208	14.9	959	8.49	0.015	2	124.6	0.23	0.01	65.5	0.11	557	277.3	0.005	0.032	10	14.72	0.35	0.255
SWT	27444	28-Apr-03	10.68	122.8	9.53	201	22.3	909	8.37	0.016	2	126.1	0.19	0.02	62.8	0.341	494	285.9	0.005	0.055	24	12.53	0.551	0.226
SWT	27698	09-Jun-03	7.36	95.2	106	177	28.6	682	8.21	0.025	3.4	75.3	0.53	0.02	43.6	0.735	389	222	0.038	0.178	144	12.03	1.285	0.575
SWT	27828	14-Jul-03	7.72	107.2	4.86	167	32.9	805	8.26	0.03	2.2	136.4	0.05	0.02	70	0.105	507	241.8	0.008	0.053	10	1.18	0.175	0.1
SWT	28248	15-Sep-03	10.41	126.2	6.55	168	25	770	8.66	0.017	2	104.1	0.2	0.02	55.2	0.318	403	231.4	0.005	0.067	22	7.12	0.538	0.237
SWT	28419	27-Oct-03	11.64	118.8	5.78	206	16.4	941	8.48	0.015		127	0.42	0.02	67.6	0.211	514	326.7	0.006	0.051	10	7.82	0.651	0.455
SWT	28580	08-Dec-03	11.17	97	16.8	238	9.1	970	8.5	0.015	3	116	0.66	0.02	64.8	0.221	525	293.1	0.018	0.116	24		0.901	0.695
SWT	29431	12-Jan-04	11.97	100.8	7.72	215	7.9	963	8.57	0.015	2.3	119.9	0.69	0.02	65.2	0.11	557	305.3	0.005	0.06	10	10.61	0.82	0.725
SWT	29624	17-Feb-04	11.92	109.4	6.22	208	11.5	937	8.44	0.015	2.1	115.5	0.55	0.02	62.2	0.171	563	290.5	0.008	0.065	10	11.29	0.741	0.585
SWT	29796	22-Mar-04	11.42	119.5	6.02	201	17.5	944	8.49	0.017	2.1	121.4	0.23	0.02	64.4	0.379	532	280.4	0.005	0.091	10	16.46	0.629	0.267
SWT	30069	19-Apr-04	10.88	129.1	7.39	178	23.9	900	8.49	0.021	2	120.4	0.04	0.02	66.3	0.715	491	257.8	0.029	0.055	10	13.06	0.775	0.081
SWT	30365	07-Jun-04	7.58	100.8	51.3	212	30.3	949	8.24	0.015	2	123.4	0.45	0.02	67.2	0.58	562	294.1	0.056	0.127	81	11.7	1.05	0.485
SWT	25569	06-Jun-02	6.71		47.6	213	17.1	815	7.91													7.5		
SWT	25518	23-Jul-02	7.41	96	14.5	188	25.7	998	7.86	0.102	2	124.9	0.75	0.01	80.97	0.357	562	277.3	0.095	0.1	17	3.51	1.117	0.862
SWT	25721	27-Aug-02	6.73	82	29.4	231	21	995	7.94	0.075	3	109.5	1.35	0.01	68.5	0.62	595	338.3	0.061	0.137	41	10.47	1.98	1.435
SWT	25889	01-Oct-02	7.96	95	12	222	20.4	1043	7.94	0.048	2	130.1	1.41	0.01	73.6	0.284	594	332.9	0.045	0.067	16	5.62	1.704	1.468
SWT	26082	05-Nov-02	10.46	96	6.05	236	8.2	8.04	10.69	0.015	5	142.4	1.53	0.01	77.26	0.393	616	329.2	0.027	0.04	10	6.64	1.933	1.555
SWT	26225	03-Dec-02	9.95	87	4.19	220	6.8	1031	8.05	0.02	2	128.52	0.95	0.01	73.22	0.362	587	324.6	0.009	0.03	10	7.46	1.322	0.98
SWT	26703	15-Jan-03	10.7	89	7.31	220	4.5	1040	8.14	0.015	6	126.9	1.05	0.01	72.4	0.153	591	321.1	0.005	0.005	10	7.36	1.213	1.075
SWT	26789	19-Feb-03	10.21	92	7.36	226	7.8	1025	8.12	0.015	5.7	123.6	0.92	0.01	67.9	0.191	542	307.8	0.005	0.01	10	7.59	1.121	0.945
SWT	27343	01-Apr-03	12		7.52	213	12.6	1015	8.21	0.015	2	130.4	0.47	0.01	69	0.222	547	315.3	0.005	0.029	10	7.48	0.702	0.495
SWT	27447	29-Apr-03	8.77	89.3	9.38	232	16.2	985	7.91	0.048	2	126	0.62	0.02	65.5	1.013	584	343.2	0.006	0.093	11	6.99	1.653	0.688
SWT	27701	10-Jun-03	6.66	72.2	37.6	212	19.3	882	7.83	0.147	2.1	101.5	0.86	0.02	56	0.553	527	279.2	0.06	0.159	53	7.55	1.433	1.027
SWT	27831	15-Jul-03	7.49	88.5	4.22	204	23.7	1029	7.81	0.057	2.9	147.3	0.56	0.02	71.3	0.211	615	290.4	0.013	0.067	10	2.23	0.791	0.637
SWT	28129	19-Aug-03	6.68	77.1	12.3	199	22.5	1041	7.74	0.06	3.9	150.8	0.8	0.02	68.5	0.44	612	294.8	0.014	0.092	18	1.35	1.26	0.88
SWT	28252	16-Sep-03	6.96	74.6	38	171	18.7	767	7.78	0.06	2	91	0.69	0.02	52	0.48	399	236.6	0.06	0.135	47	6.91	1.19	0.77
SWT	28422	28-Oct-03	8.84	84.2	6.27	218	13.2	1002	7.97	0.025		24.8	0.68	0.02	69.4	0.111	587	225.1	0.027	0.05	10	4.94	0.811	0.725
SWT	28584	09-Dec-03	10.2	81.3	5.12	237	5.3	1007	8.07	0.015	2.5	114	0.76	0.02	64.7	0.117	550	311.8	0.006	0.064	10		0.897	0.795
SWT	29434	13-Jan-04	12.19	98.1	7.37	224	6	1001	8.19	0.015	2.2	118.7	0.84	0.02	66.8	0.139	597	308	0.005	0.058	10	7.31	0.999	0.875
SWT	29627	18-Feb-04	12.23	102.4	6.21	219	7.6	986	8.22	0.019	2.4	116.7	0.72	0.02	64.7	0.281	547	316.8	0.018	0.07	10	7.07	1.021	0.759
SWT	29799	23-Mar-04	11.61	113.1	15.1	229	14.1	994	8.19	0.027	2	114.9	0.53	0.02	63.5	0.309	584	316.2	0.005	0.101	29	8.21	0.859	0.577
SWT	30072	20-Apr-04	8.67	75.3	1000		9.2	131	8.38	0.352	11.4	7.4	0.33	0.05	4.69	6.063	56	53.9	0.676	1.479	1956		6.443	0.732
SWT	30368	08-Jun-04	7.33	83.6	21.6	204	21.7	995	7.86	0.033	2	127.4	0.61	0.02	63.7	0.45	548	304.1	0.056	0.121	78	7.85	1.08	0.663
SWT	25562	03-Jun-02	10.82		5.75	136	24.5	1090	8.61													0.12		

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
SWT	25517	23-Jul-02	5.8	76	4.82	107	25	1006	8.61	0.124	5	191.1	0.01	0.01	53.32	0.521	514	133.8	0.016	0.03	10	0.06	0.541	0.144	
SWT	25722	27-Aug-02	3.38	41	4.12	159	20.7	933	7.79	0.085	3	169.7	0.01	0.01	44.04	0.485	554	209.7	0.005	0.044	10	0.21	0.505	0.105	
SWT	25888	01-Oct-02	5.64	67	3.48	184	19	1118	7.77	0.015	2	181.8	0.53	0.01	54.75	0.399	588	230.4	0.008	0.031	10	0.35	0.939	0.555	
SWT	26081	05-Nov-02	10.87	91	6.7	214	4.5	981	8.16	0.015	11	186.8	0.62	0.01	52.31	0.236	637	256.9	0.011	0.039	10	0.54	0.866	0.645	
SWT	26226	03-Dec-02	9.44	79	3.5	208	4.6	1207	7.97	0.015	3	196.41	0.07	0.06	50.84	0.083	641	279.25	0.008	0.011	10	0.48	0.213	0.145	
SWT	26704	15-Jan-03	10.15	81	5.1	215	2.8	1252	8.03	0.015	2	200.5	0.16	0.01	52.2	0.25	621	293	0.005	0.005	10	0.52	0.42	0.185	
SWT	26790	19-Feb-03	9.08	80	11.7	214	6.7	1219	8.04	0.015	7	194.4	0.48	0.01	50.42	0.277	632	286	0.005	0.026	10	0.71	0.767	0.505	
SWT	27344	01-Apr-03	7.12		4.74	200	11.8	1197	7.87	0.015	2	204.8	0.06	0.01	55.4	0.264	676	272.4	0.005	0.028	10	0.47	0.334	0.085	
SWT	27448	29-Apr-03	3.37	34.7	1.81	198	16.6	1171	7.52	0.015	2.2	196.6	0.11	0.02	50	0.722	658	284.9	0.005	0.005	10	0.36	0.852	0.145	
SWT	27702	10-Jun-03	2.22	24.7	2.79	178	20.6	1066	7.68	0.052	2.9	179.5	0.02	0.02	45.2	0.467	551	225.5	0.015	0.092	10	0.03	0.507	0.092	
SWT	27832	15-Jul-03	4.72	57.1	2.97	153	24.8	1004	7.83	0.015	5.2	190	0.05	0.02	48.7	0.403	549	192.9	0.005	0.067	10	0.11	0.473	0.085	
SWT	28130	19-Aug-03	5.66	66.3	2.17	128	23.3	1004	8.15	0.022	5	189.3	0.04	0.02	52.4	0.934	551	160.9	0.012	0.117	13	0.1	0.994	0.082	
SWT	28184	28-Aug-03	4.28	50.8			24		7.8																
SWT	28253	16-Sep-03	4.77	50.9	3.99	199	18.4	1086	7.71	0.023	2	181.3	0.02	0.02	48.8	0.486	551	230.4	0.005	0.065	10	0.26	0.526	0.063	
SWT	28423	28-Oct-03	7.39	67.5	6.12	209	11.3	1113	7.86	0.015		41.9	0.06	0.02	49.3	0.192	621	261	0.009	0.072	10	0.29	0.272	0.095	
SWT	28576	08-Dec-03	12.21	95.9	4.87	214	5	1163	8.16	0.016	3.6	180.9	0.13	0.02	48.8	0.193	645	259.1	0.007	0.068	10		0.343	0.166	
SWT	29435	13-Jan-04	10.11	77.9	8.03	218	4.4	1158	7.95	0.015	2.1	182.9	0.07	0.02	48.8	0.306	642	266.9	0.01	0.078	10	0.29	0.396	0.105	
SWT	29628	18-Feb-04	10.8	87	10.4	223	6.1	1176	8.13	0.015	4.5	184	0.02	0.02	48.3	0.292	619	279.9	0.025	0.092	10	0.32	0.332	0.055	
SWT	29800	23-Mar-04	9.61	91.6	10.1	211	13.2	1163	8.26	0.015	2.5	183.3	0.02	0.02	48.3	0.364	649	271.6	0.005	0.089	23	0.29	0.404	0.055	
SWT	30073	20-Apr-04	9.03	96.7	12.3	183	16.8	1112	8.24	0.015	3.3	189.2	0.02	0.02	46.2	0.66	563	244.6	0.015	0.08	15	0.55	0.7	0.055	
SWT	30369	08-Jun-04	5.25	60	9.1	187	22	1088	7.83	0.015	3.9	185.9	0.02	0.02	49	0.79	593	222.9	0.018	0.088	10	0.19	0.83	0.055	
SWT	25566	05-Jun-02	3.45		16.4	247	18.2	1563	7.6														1.53		
SWT	25516	23-Jul-02	1.7	22	4.01	248	25	1931	7.6	0.077	2	217.6	0.01	0.01	406.1	0.405	1254	660.2	0.015	0.03	10	0.15	0.425	0.097	
SWT	25716	26-Aug-02	3.26	46	3.74	246	28.3	1960	7.51	0.015	2	218	0.01	0.01	439.6	0.379	1304	747.3	0.005	0.033	12	0.24	0.399	0.035	
SWT	25881	30-Sep-02	7.36	90	7.16	251	21.9	2065	7.83	0.019	2	220.2	0.51	0.01	519	0.3	1390	854.3	0.011	0.032	16	0.06	0.82	0.539	
SWT	26080	05-Nov-02	9.62	82	1.49	251	5.2	1482	8.08	0.015	3	229.2	0.52	0.01	118.2	0.359	866	388.9	0.009	0.019	10	2.05	0.889	0.545	
SWT	26219	02-Dec-02	10.41	91	2.04	254	6.7	1487	8.07	0.023	2	225.86	0.07	0.01	118.5	0.294	860	403.9	0.009	0.04	10	2.68	0.374	0.103	
SWT	26698	14-Jan-03	11.33	95	1.46	242	4.6	1434	8.13	0.015	4	218	0.05	0.01	105	0.242	823	382.9	0.005	0.005	10	3.28	0.302	0.075	
SWT	26783	18-Feb-03	10.52	92	3.9	229	6.6	1408	8.11	0.015	2	211.2	0.06	0.01	98.3	0.306	739	356	0.005	0.031	10	3.13	0.376	0.085	
SWT	27338	31-Mar-03	10.59		5.61	240	14.3	1400	8	0.015	2.2	224.4	0.07	0.01	98.4	0.45	805	360.4	0.005	0.032	19	3.3	0.53	0.095	
SWT	27441	28-Apr-03	6.83		4.03	257	16.9	1413	7.75	0.015	2.2	220.8	0.02	0.02	98.9	0.201	867	382.6	0.01	0.055	10	2.64	0.241	0.055	
SWT	27695	09-Jun-03	7.24	83.2	3.33	258	22.2	1406	7.82	0.018	2	214.6	0.02	0.02	95.3	0.506	841	380.3	0.007	0.064	10	1.94	0.546	0.058	
SWT	27825	14-Jul-03	5.76	75.1	5.43	247	29.4	1834	7.65	0.015	2.6	230.8	0.02	0.02	393.8	0.312	1282	658.9	0.005	0.06	10	0.05	0.352	0.055	
SWT	28123	18-Aug-03	5.63	71.9	21.5	239	28.1	2048	7.78	0.015	3.4	238.8	0.07	0.02	494.8	0.652	1484	751.4	0.005	0.09	26		0.742	0.105	
SWT	28245	15-Sep-03	6.44	70.5	5.93	258	19.8	1490	7.83	0.034	2	231.1	0.02	0.02	118.2	0.436	832	387.6	0.197	0.056	18	1.39	0.476	0.074	
SWT	28416	27-Oct-03	9.44	87.5	3.7	256	11.9	1510	7.93	0.018		61.3	0.02	0.02	133.6	0.283	836	431.7	0.016	0.045	10	1.12	0.323	0.058	
SWT	28577	08-Dec-03	10.67	83.9	0.84	249	5.1	1406	8.08	0.015	2.2	204	0.02	0.02	95.7	0.187	739	343.3	0.005	0.052	10		0.227	0.055	
SWT	29428	12-Jan-04	12.03	87.6	0.53	235	2.3	1265	8.1	0.015	2.2	192.1	0.02	0.02	85.9	0.124	688	341.3	0.005	0.052	10	3.57	0.164	0.055	
SWT	29621	17-Feb-04	12.46	96.8	1.02	232	4.7	1306	8.15	0.015	2	196.6	0.02	0.02	86.9	0.252	754	348.8	0.005	0.059	10	3.26	0.292	0.055	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N
SWT	29793	22-Mar-04	12.26	112.4	2.71	250	11.5	1352	8.02	0.016	2	195.4	0.02	0.02	80	0.255	795	359.9	0.005	0.088	10	3.01	0.295	0.056
SWT	30066	19-Apr-04	8.02	83	2.5	256	17.1	1040	7.8	0.015	2	205.1	0.02	0.02	83	0.696	783	372.1	0.018	0.05	10	3.04	0.736	0.055
SWT	30362	07-Jun-04	6.65	83.5	4.24	252	27	1806	7.6	0.015	2.7	219.1	0.02	0.02	301.1	0.56	1206	616.3	0.011	0.064	10	0.27	0.6	0.055
SWT	25565	04-Jun-02	4.31		4.54	247	22.6	2911	7.76													0.1		
SWT	25515	23-Jul-02	0.12	2	20.9	117	22.9	3821	8.12	0.292	9	949	0.01	0.01	324.3	1.218	2114	467.7	0.005	0.008	10	0	1.238	0.312
SWT	25715	26-Aug-02	13.44	177	10.7	112	25.8	4880	8.67	0.668	11	1162.8	0.01	0.01	564.3	3.449	2847	773.9	0.005	0.038	10	0	3.469	0.688
SWT	25880	30-Sep-02	7.94	95	2.05	197	19	3305	8.07	0.03	3	732	0.53	0.01	328.1	0.674	1838	564.6	0.007	0.042	10	0	1.214	0.57
SWT	26079	05-Nov-02	10.51	91	1	248	5.3	2422	8.2	0.015	5	532.8	0.53	0.01	223.6	0.329	1357	449.9	0.006	0.026	10	0.59	0.869	0.555
SWT	26218	02-Dec-02	11.02	93	1.88	272	4.6	2724	8.13	0.015	2	522.8	0.05	0.01	239.22	0.281	1560	522.8	0.009	0.021	10	0.92	0.341	0.075
SWT	26697	14-Jan-03	10.91	90	1.12	266	3.9	2570	8.15	0.015	3	503.3	0.07	0.01	230.5	0.131	1478	500.9	0.005	0.005	10	0.5	0.211	0.095
SWT	26782	18-Feb-03	10.3	92	1.5	257	6.2	2603	8.13	0.015	2	503.7	0.07	0.01	223.6	0.151	1432	506.2	0.005	0.007	10	0.89	0.231	0.095
SWT	27337	31-Mar-03	12.26		2.12	269	13.4	2556	8.1	0.015	2.5	498.1	0.07	0.01	227.6	0.11	1414	507.1	0.005	0.012	10	0.75	0.19	0.095
SWT	27440	28-Apr-03	7.62	80.7	1.45	249	18.1	2555	7.8	0.015	3.5	530.4	0.02	0.02	230.2	0.436	1546	466.8	0.005	0.045	10	0.68	0.476	0.055
SWT	27694	09-Jun-03	5.8	65.1	0.5	260	20.9	2481	7.64	0.015	2.2	470.2	0.02	0.02	198	0.02	1412	0.55	0.007	0.054	10	0.55	0.06	0.055
SWT	27824	14-Jul-03	9.58	122.5	8.56	175	28.5	2640	7.55	0.018	4.5	605.8	0.08	0.02	237.1	0.851	1561	409.5	0.005	0.069	10	0	0.951	0.118
SWT	28122	18-Aug-03	8.56	106	2.13	117	26.8	2572	8.05	0.017	4.3	527.4	0.06	0.02	303.2	1.689	1587	410.9	0.005	0.084	10		1.769	0.097
SWT	28244	15-Sep-03	9.29	98.8	1.01	265	18.2	2748	7.88	0.02	2	486.6	0.02	0.02	225.7	0.437	1528	523.9	0.02	0.051	12	0.3	0.477	0.06
SWT	28415	27-Oct-03	12.65	109.7	0.62	284	9.1	2847	8.07	0.015		160.3	0.02	0.02	245.5	0.306	1644	542.6	0.005	0.054	10	0.32	0.346	0.055
SWT	28575	08-Dec-03	9.17	72	0.52	281	5.1	2729	8.02	0.015	2.4	411.4	0.02	0.02	306.8	0.256	1562	585.4	0.005	0.046	10		0.296	0.055
SWT	29427	12-Jan-04	10.75	75.2	0.59	277	0.8		8.07	0.015	2.5	497.3	0.02	0.02	221.7	0.173	1432	499.5	0.005	0.057	10	1.19	0.213	0.055
SWT	29620	17-Feb-04	10.56	76.3	0.54	260	2		8.04	0.05	2.9	475.8	0.02	0.02	215.7	0.339	1454	502.7	0.005	0.065	10	1.17	0.379	0.09
SWT	29792	22-Mar-04	7.84	69.6	0.58	272	10.1	2465	7.82	0.016	2	440.9	0.02	0.02	194.8	0.299	1396	485.1	0.005	0.085	10	1.16	0.339	0.056
SWT	30065	19-Apr-04	3.96	39.8	1	273	15.6	2487	7.66	0.02	2	467.8	0.02	0.02	204.6	0.914	1414	477.2	0.019	0.065	10	0.82	0.954	0.06
SWT	30361	07-Jun-04	11.06	134.2	2.95	221	25.2	2897	7.81	0.015	3.4	586.3	0.02	0.02	244.8	0.96	1730	485.6	0.011	0.084	10	0.32	1	0.055
CGP	25582	03-Jul-02	5.77		15.8	238	24.4	1530	7.6													2.02		
CGP	25552	30-Jul-02	6.23	80	11	182	25.1	1566	7.79	0.093	2	164.9	0.01	0.01	329.9	0.651	1037	527.9	0.046	0.05	10	1.51	0.671	0.113
CGP	25774	03-Sep-02	9.24	134	6.03	199	31.1	1562	7.8	0.015	3	185.3	0.01	0.01	356.3	0.553	1053	560.8	0.039	0.041	10	1.16	0.573	0.035
CGP	25969	08-Oct-02	9.01	96	4.58	245	16.6	1795	7.82	0.015	2	198.3	0.56	0.01	373.3	0.59	1137	658.7	0.013	0.036	10	1.26	1.16	0.585
CGP	26095	13-Nov-02	11.8	113	39.8	173	10.3	1016	8.56	0.042	2	136.6	0.31	0.01	109.9	0.41	584	262.6	0.02	0.045	35	74.17	0.73	0.362
CGP	26248	10-Dec-02	12.63	104	17.1	215	4.8	1138	8.48	0.055	2	140.49	0.27	0.01	133.4	0.558	655	310.6	0.005	0.039	10	19.54	0.838	0.335
CGP	26713	21-Jan-03	12.94	103			3.9	598	8.53	0.005	5	131.6	0.3	0.01	113.1	0.402	632	311.9	0.005	0.005	10	64.9	0.712	0.315
CGP	27252	12-Mar-03	12.55	117	17.4	192	9.3	1048	8.42	0.015	2	133.1	0.38	0.02	110.6	0.398	595	288.5	0.005	0.015	26	68.9	0.798	0.415
CGP	27313	25-Mar-03	9.32		41.2	212	11.5	1056	8.36	0.015	2.7	131.6	0.52	0.02	110.1	0.11	629	291.1	0.005	0.121	41	65.26	0.65	0.555
CGP	27555	06-May-03	9.38		36.3	193	20	1103	8.15	0.063	2.4	141.1	0.26	0.02	131.5	0.111	712	312.4	0.011	0.063	30	18.1	0.391	0.343
CGP	27775	08-Jul-03	5.78	69.4	67	179	24.6	1034	7.95	0.063	3.7	132.9	0.11	0.06	104.5	0.678	565	249.7	0.036	0.142	54	26.83	0.848	0.233
CGP	28081	12-Aug-03	5.04	60.8	72.5	175	24.7	1079	7.36	0.118	3.8	146	0.1	0.02	115.8	0.942	640	277.4	0.034	0.159	58	16.69	1.062	0.238
CGP	28221	16-Sep-03	6.41	70.6	79.6	165	20	1068	8.16	0.046	4.1	146.9	0.08	0.02	110.4	0.891	617	257.4	0.038	0.14	76	21.87	0.991	0.146
CGP	28390	21-Oct-03	6.87	68.8	59.7	168	15.4	1168	7.98	0.068	2.7	142.2	0.06	0.02	123.4	0.643	703	285.7	0.018	0.129	113	11.38	0.723	0.148
CGP	28524	02-Dec-03	9.74	76.5	25	189	5.1	1301	7.94	0.047	2.8	150.2	0.1	0.02	151.1	0.691	701	331.7	0.015	0.082	30	7.53	0.811	0.167

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
CGP	29404	06-Jan-04	12.56	88.9	9.05	148	1.2	1170	8.29	0.032	3.6	144.7	0.14	0.02	114.9	0.606	657	290.6	0.005	0.072	10	52.02	0.766	0.192	
CGP	29573	10-Feb-04	13.43	103.9	8.02	178	4.5	1526	7.64	0.02	2.2	159.8	0.05	0.02	228.6	0.5	892	478.3	0.021	0.067	15	3.16	0.57	0.09	
CGP	29752	15-Mar-04	10.56	98.2	25	164	12	1050	8.16	0.016	4.4	125.6	0.02	0.02	98.9	0.572	621	276.4	0.005	0.092	24		0.612	0.056	
CGP	30113	26-Apr-04	11.68	132.6	37.1	167	21.4	1074	8.07	0.033	2	137.6	0.07	0.02	119.1	0.997	637	294	0.022	0.098	44	15.89	1.087	0.123	
CGP	30333	02-Jun-04	5.18	56.7	53.1	192	19.8	1213	7.59	0.04	2	156.5	0.08	0.02	153.3	0.79	772	329.2	0.033	0.143	32	8.69	0.89	0.14	
CGP	25578	20-Jun-02	7.45		35.3	202	21.4	963	8.15													33.82			
CGP	25553	30-Jul-02	6.92	89	134	138	24.5	752	8.1	0.191	4	83.6	0.76	0.01	80.2	1.242	434	211.2	0.058	0.096	10	29.89	2.012	0.961	
CGP	25775	04-Sep-02	7.48	91	5.86	176	21.6	1050	7.97	0.015	2	121.6	0.7	0.01	113.4	0.356	565	292.3			10	17.18	1.066	0.725	
CGP	25970	08-Oct-02	7.9	85	23.1	211	15.6	907	8.15	0.015	3	89.78	1.18	0.01	91.94	0.307	523	320.5	0.026	0.087	33	43.25	1.497	1.205	
CGP	26094	13-Nov-02	11.15	107	6.63	236	10.2	1027	8.33	0.025	4	110.3	1.01	0.01	107.4	0.368	608	257.9	0.012	0.027	18	50.87	1.388	1.045	
CGP	26247	10-Dec-02	11.44	99	6.73	252	6.2	992	8.4	0.015	2	101.35	1.4	0.01	95.65	0.159	534	335.3	0.005	0.03	12	59.53	1.569	1.425	
CGP	26717	22-Jan-03	12.29	99	13.3	229	3.7	1047	8.41	0.015	5	110.2	1.38	0.01	96.9	0.471	619	337.4	0.005	0.014	24	57.13	1.861	1.405	
CGP	27253	12-Mar-03	11.5	126	11.8	249	16.4	1013	8.93	0.015	2	116.5	0.99	0.02	93.3	0.296	581	309.6	0.005	0.024	28	77.12	1.306	1.025	
CGP	27314	25-Mar-03	8.05		16.1	241	12.3	962	8.3	0.015	4.5	114.5	1	0.02	87.3	0.11	622	307.3	0.005	0.088	28	72.86	1.13	1.035	
CGP	27554	06-May-03	10.41	112.9	27.7	223	19.1	1001	8.32	0.015	2.7	114.4	0.53	0.02	97.9	0.83	560	313.2	0.016	0.108	54	49.28	1.38	0.565	
CGP	27636	03-Jun-03	7.89	86.9	17.4	214	20	711	8.03	0.017	2.5	121	0.43	0.02	107	0.511	631	306.4	0.012	0.096	40	33.21	0.961	0.467	
CGP	27635	03-Jun-03	6.08	68	56.1	180	20.8	1118	7.93	0.129	2.9	142.8	0.34	0.02	133	0.766	698	303.3	0.023	0.164	56	16.59	1.126	0.489	
CGP	27776	08-Jul-03	6.86	79.7	22.4	242	22.8	1176	8.07	0.015	3.5	150.7	0.3	0.01	91.1	0.753	622	327.7	0.012	0.118	46	59.64	1.063	0.325	
CGP	28082	12-Aug-03	5.85	67	12.8	173	22.1	703	7.69	0.028	2.6	119.5	0.31	0.02	106.2	0.407	603	273.9	0.007	0.119	27	24.41	0.737	0.358	
CGP	28220	15-Sep-03	10.94	131.1	6.51	183	24.4	1016	8.35	0.015	2.8	122.2	0.51	0.02	119.3	0.342	566	253.6	0.009	0.074	17	22.02	0.872	0.545	
CGP	28389	20-Oct-03	10.95	126.3	7.78	196	22.3	1091	8.26	0.029	2.4	112.1	0.63	0.02	113.6	0.148	612	300.3	0.008	0.067	29	22	0.798	0.679	
CGP	28523	01-Dec-03	11.35	99.7	12.5	215	9.7	1056	8.37	0.015	2.2	102.3	1.28	0.02	99.1	0.294	575	328.1	0.016	0.063	28	37.64	1.594	1.315	
CGP	29403	05-Jan-04	13.76	100.6	20.6	216	2.4	1120	8.41	0.015	3	104.6	1.25	0.02	108.1	0.442	623	344.3	0.005	0.082	39	35.04	1.712	1.285	
CGP	29572	09-Feb-04	12.06	105.9	9.23	196	9.6	783	8.2	0.015	2	99.9	1.28	0.02	97.4	0.257	549	289.3	0.008	0.062	26	50.25	1.557	1.315	
CGP	29751	15-Mar-04	10.56	109.1	25.2	215	17	944	8.15	0.016	3.8	123.4	0.87	0.02	97.8	0.618	636	297.3	0.014	0.113	73	98.86	1.508	0.906	
CGP	30112	26-Apr-04	8.65	96.3	80.2	270	21.4	810	7.99	0.015	2.7	93.6	0.58	0.02	73.1	1.054	532	285.6	0.038	0.166	115	87.45	1.654	0.615	
CGP	30334	02-Jun-04	9.01	100.7	18.4	195	20.3	862	7.82	0.015	2	127	0.36	0.02	114.9	0.39	665	308.7	0.02	0.083	48	27.14	0.77	0.395	
SWT	25564	04-Jun-02	4.22		299	732	17.9	3549	8.19																
SWT	25713	26-Aug-02	0.94	12	6.35	460	21.6	2838	7.68	0.288	4	190.7	0.01	0.01	987.3	0.946	2235	891.5	0.005	0.062	10	0	0.966	0.308	
SWT	25879	30-Sep-02	0.43	5	3.04	480	16.4	3041	7.3	0.031	3	179.4	0.63	0.01	894	0.902	2073	887.3	0.007	0.098	12	0	1.542	0.671	
SWT	26077	04-Nov-02	8.79	88	15.9	432	9.6	2529	7.56	0.015	5	167.3	0.63	0.01	702.6	0.727	1772	717.6	0.012	0.032	10	0	1.367	0.655	
SWT	26216	02-Dec-02	1.18	10	10.6	449	3.5	2780	7.53	0.154	4	158.21	0.07	0.14	774.06	0.963	1906	646.9	0.03	0.074	24	0	1.173	0.364	
SWT	26780	18-Feb-03	6.15	54	8.07	424	4.6	2863	8.24	0.015	3.3	170.5	0.2	0.01	774.3	0.668	1764	710.9	0.005	0.047	10	0	0.878	0.225	
SWT	27336	31-Mar-03	2.65		9.36	558	9.3	4026	7.74	0.021	3	238.4	0.24	0.01	1255.5	1.954	2937	1358.5	0.005	0.046	10	0	2.204	0.271	
SWT	27438	28-Apr-03	1.06	10.6	22.6	597	14.7	3022	7.66	0.04	5.6	243.1	0.02	0.02	1353	1.584	3188	1259.8	0.058	0.2	10	0	1.624	0.08	
SWT	27693	09-Jun-03	7.71	83.8	8.27	467	21	2713	7.75	0.022	4.5	153.5	0.02	0.02	729.9	0.958	1771	693.7	0.01	0.087	10	0	0.998	0.062	
SWT	25563	04-Jun-02	3.33		5.64	387	18	1518	8.11																
SWT	25513	22-Jul-02	9.69	142	12.4	253	27.5	1593	8.21	0.299	6	53.8	0.55	0.01	557.3	1.027	1134	518.5	0.028	0.04	10	0.01	1.587	0.859	
SWT	25714	26-Aug-02	2.6	35	33	175	22.3	898	8.08	0.178	6	28.93	0.47	0.19	205.5	1.107	549	290	0.005	0.059	26	0	1.767	0.838	

Appendix A.1 Raw chemical and physical water quality data.

Ecoregion	SAMPLEID	Date	DO (mg/L)	DOPerSat	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	Total N	Available N	
SWT	25878	30-Sep-02	5.03	58	26.7	248	15.6	1189	7.94	0.038	3	25.89	0.58	0.01	318.5	0.185	751	375.4	0.032	0.047	18	0.11	0.775	0.628	
SWT	26078	04-Nov-02	10.23	96	28.7	278	6.7	1172	8.17	0.015	6	29.16	0.58	0.01	307.3	0.361	735	365.3	0.023	0.045	29	0.07	0.951	0.605	
SWT	26217	02-Dec-02	9.24	82	6.82	327	4.2	1443	8.03	0.02	2	47.8	0.13	0.01	485.72	0.235	1172	465.9	0.012	0.04	10	0	0.375	0.16	
SWT	26695	14-Jan-03	8.9	79	8.23	348	4.5	1627	7.9	0.015	5	59.1	0.11	0.01	628.7	0.277	1430	648	0.006	0.015	10	0.05	0.397	0.135	
SWT	26781	18-Feb-03	9.43	89	8.52	367	6	2249	8.16	0.015	2	70.3	0.08	0.01	715.3	0.11	1516	760.9	0.005	0.005	11	0.01	0.2	0.105	
SWT	27335	31-Mar-03	8.59		12.8	345	8.6	2565	8.11	0.015	2.3	89	0.12	0.01	935.6	0.169	1883	833.5	0.005	0.03	10	0.17	0.299	0.145	
SWT	27439	28-Apr-03	6.47	66.8	30.4	375	10.9	2533	7.99	0.015	3.4	89.9	0.18	0.02	962.6	0.489	1971	876.6	0.013	0.097	20	0	0.689	0.215	
SWT	27692	09-Jun-03	4.57	49.8	35.5	277	19.4	1689	7.64	0.015	4.7	45.7	0.02	0.02	508.1	0.539	1148	414.1	0.019	0.13	24	1.34	0.579	0.055	
SWT	27822	14-Jul-03	2.39	26.5	9.55	304	21.8	1524	7.98	0.028	4.3	62.1	0.09	0.02	638.2	0.528	1265	550.4	0.012	0.084	10	0	0.638	0.138	
SWT	28120	18-Aug-03	1.82	20	32.9	260	20.3	1400	7.76	0.026	6.5	42.9	0.08	0.02	369	1.122	822	354.3	0.013	0.145	36		1.222	0.126	
SWT	28185	28-Aug-03	0.57	6.3			20.3		8.03													0			
SWT	28243	15-Sep-03	3.45	33.9	7.12	388	14.3	2336	7.66	0.016	2.5	68.9	0.02	0.02	629.7	0.505	1403	679.8	0.005	0.081	21	0	0.545	0.056	
SWT	28414	27-Oct-03	3.97	31.7	1.52	450	5.7	2163	7.64	0.015		65.8	0.02	0.02	628	0.321	1426	765.8	0.015	0.064	10		0.361	0.055	
SWT	28574	08-Dec-03	3.53	26.8	12	459	4	2639	7.55	0.275	3.4	92.2	0.34	0.02	807.2	1.103	1877	848.5	0.027	0.148	10		1.463	0.635	
SWT	29426	12-Jan-04	5.37	39.8	10.4	410	3.3	2770	7.69	0.015	2.9	92.2	0.02	0.02	1030.3	0.467	1927	906.6	0.02	0.115	10		0.507	0.055	
SWT	29619	17-Feb-04	7.59	59.3	21	425	5.2	3005	7.83	0.015	3.6	99.7	0.02	0.02	1074.3	0.553	2226	1042.3	0.005	0.085	10		0.593	0.055	
SWT	29791	22-Mar-04	7.32	62.3	13.7	404	8.7	2226	8.31	0.02	3.1	75.7	0.02	0.02	654	0.626	1505	699.6	0.006	0.115	10		0.666	0.06	
SWT	30064	19-Apr-04	5.15	47.7	18.6	339	11.9	3354	8.12	0.021	3.1	125.7	0.02	0.02	1416.7	1.153	2529	1067.2	0.038	0.101	20		1.193	0.061	
SWT	30360	07-Jun-04	6.42	76.9	13.1	346	24.4	2168	7.63	0.015	3.4	172.6	0.05	0.02	1524.5	1.13	3230	1309.6	0.018	0.108	10		1.2	0.085	

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Lagoon Creek	OK620900-01-0180J	25406	23-Jul-02	800	1590
Lagoon Creek	OK620900-01-0180J	25736	27-Aug-02	1267	380
Lagoon Creek	OK620900-01-0180J	25894	01-Oct-02	20	20
Lagoon Creek	OK620900-01-0180J	27465	29-Apr-03	40	160
Lagoon Creek	OK620900-01-0180J	27653	03-Jun-03	980	830
Lagoon Creek	OK620900-01-0180J	27800	08-Jul-03	1070	1810
Lagoon Creek	OK620900-01-0180J	28090	12-Aug-03	80	40
Lagoon Creek	OK620900-01-0180J	28237	15-Sep-03	605	670
Lagoon Creek	OK620900-01-0180J	28369	21-Oct-03	40	110
Lagoon Creek	OK620900-01-0180J	30089	20-Apr-04	25	110
Lagoon Creek	OK620900-01-0180J	30389	08-Jun-04	95	85
Euchee Creek	OK620900-01-0290D	25405	22-Jul-02	80	230
Euchee Creek	OK620900-01-0290D	25738	26-Aug-02	80	20
Euchee Creek	OK620900-01-0290D	25893	30-Sep-02	40	20
Euchee Creek	OK620900-01-0290D	27464	28-Apr-03	80	200
Euchee Creek	OK620900-01-0290D	27652	02-Jun-03	280	180
Euchee Creek	OK620900-01-0290D	27799	07-Jul-03	60	40
Euchee Creek	OK620900-01-0290D	28089	11-Aug-03	280	60
Euchee Creek	OK620900-01-0290D	28238	15-Sep-03	580	420
Euchee Creek	OK620900-01-0290D	28368	20-Oct-03	70	90
Euchee Creek	OK620900-01-0290D	30088	19-Apr-04	40	35
Euchee Creek	OK620900-01-0290D	30387	07-Jun-04	380	360
Salt Creek	OK620900-02-0020D	25411	23-Jul-02	500	40
Salt Creek	OK620900-02-0020D	25743	27-Aug-02	440	160
Salt Creek	OK620900-02-0020D	25892	30-Sep-02	1600	1200
Salt Creek	OK620900-02-0020D	27463	28-Apr-03	280	40
Salt Creek	OK620900-02-0020D	27651	02-Jun-03	90	200
Salt Creek	OK620900-02-0020D	27804	08-Jul-03	20	90
Salt Creek	OK620900-02-0020D	28088	11-Aug-03	180	20
Salt Creek	OK620900-02-0020D	28236	15-Sep-03	740	470
Salt Creek	OK620900-02-0020D	28373	21-Oct-03	60	75
Salt Creek	OK620900-02-0020D	30087	19-Apr-04	35	125
Salt Creek	OK620900-02-0020D	30388	07-Jun-04	400	185
Council Creek	OK620900-02-0050H	25410	23-Jul-02	50	100
Council Creek	OK620900-02-0050H	25742	27-Aug-02	740	280
Council Creek	OK620900-02-0050H	25891	30-Sep-02	20	20
Council Creek	OK620900-02-0050H	27462	29-Apr-03	70	190
Council Creek	OK620900-02-0050H	27650	02-Jun-03	190	510
Council Creek	OK620900-02-0050H	27798	07-Jul-03	30	320
Council Creek	OK620900-02-0050H	28087	11-Aug-03	200	100
Council Creek	OK620900-02-0050H	28235	15-Sep-03	380	530
Council Creek	OK620900-02-0050H	28367	20-Oct-03	10	65
Council Creek	OK620900-02-0050H	30086	19-Apr-04	35	220
Council Creek	OK620900-02-0050H	30386	07-Jun-04	140	500
Dugout Creek	OK620900-03-0080C	25404	22-Jul-02	315	90
Dugout Creek	OK620900-03-0080C	25737	26-Aug-02	1020	300
Dugout Creek	OK620900-03-0080C	25890	30-Sep-02	70	230
Dugout Creek	OK620900-03-0080C	27461	28-Apr-03	120	180
Dugout Creek	OK620900-03-0080C	27649	02-Jun-03	440	625
Dugout Creek	OK620900-03-0080C	27797	07-Jul-03	445	500
Dugout Creek	OK620900-03-0080C	28086	11-Aug-03	40	80
Dugout Creek	OK620900-03-0080C	28234	15-Sep-03	360	570
Dugout Creek	OK620900-03-0080C	28366	20-Oct-03	160	340
Dugout Creek	OK620900-03-0080C	30085	19-Apr-04	370	355

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E.Coli</i>	<i>Enterococcus</i>
Dugout Creek	OK620900-03-0080C	30385	07-Jun-04	500	160
Beaver Creek	OK620900-03-0230C	25644	06-Aug-02	70	50
Beaver Creek	OK620900-03-0230C	25786	04-Sep-02	20	20
Beaver Creek	OK620900-03-0230C	25905	01-Oct-02	100	
Beaver Creek	OK620900-03-0230C	27333	25-Mar-03	180	50
Beaver Creek	OK620900-03-0230C	27436	29-Apr-03	360	40
Beaver Creek	OK620900-03-0230C	27643	02-Jun-03	60	65
Beaver Creek	OK620900-03-0230C	27762	08-Jul-03	10	70
Beaver Creek	OK620900-03-0230C	28073	12-Aug-03	20	20
Beaver Creek	OK620900-03-0230C	28232	16-Sep-03	220	280
Beaver Creek	OK620900-03-0230C	28381	21-Oct-03	110	90
Beaver Creek	OK620900-03-0230C	30061	20-Apr-04	40	35
Beaver Creek	OK620900-03-0230C	30325	02-Jun-04	10	20
Stillwater Creek (Lower)	OK620900-04-0040C	25409	23-Jul-02	260	140
Stillwater Creek (Lower)	OK620900-04-0040C	25741	27-Aug-02	2567	766
Stillwater Creek (Lower)	OK620900-04-0040C	25897	01-Oct-02	400	20
Stillwater Creek (Lower)	OK620900-04-0040C	27468	29-Apr-03	240	100
Stillwater Creek (Lower)	OK620900-04-0040C	27656	03-Jun-03	200	380
Stillwater Creek (Lower)	OK620900-04-0040C	27803	08-Jul-03	100	380
Stillwater Creek (Lower)	OK620900-04-0040C	28093	12-Aug-03	180	40
Stillwater Creek (Lower)	OK620900-04-0040C	28241	16-Sep-03	520	380
Stillwater Creek (Lower)	OK620900-04-0040C	28372	21-Oct-03	170	210
Stillwater Creek (Lower)	OK620900-04-0040C	30092	20-Apr-04	75	305
Stillwater Creek (Lower)	OK620900-04-0040C	30392	08-Jun-04	500	175
Stillwater Creek (Upper)	OK620900-04-0070T	25640	05-Aug-02	480	370
Stillwater Creek (Upper)	OK620900-04-0070T	25782	03-Sep-02	20	20
Stillwater Creek (Upper)	OK620900-04-0070T	25901	30-Sep-02	67	
Stillwater Creek (Upper)	OK620900-04-0070T	27329	24-Mar-03	120	110
Stillwater Creek (Upper)	OK620900-04-0070T	27432	28-Apr-03	80	500
Stillwater Creek (Upper)	OK620900-04-0070T	27648	03-Jun-03	160	300
Stillwater Creek (Upper)	OK620900-04-0070T	27758	07-Jul-03	90	375
Stillwater Creek (Upper)	OK620900-04-0070T	28069	11-Aug-03	20	20
Stillwater Creek (Upper)	OK620900-04-0070T	28228	15-Sep-03	350	240
Stillwater Creek (Upper)	OK620900-04-0070T	28377	20-Oct-03	40	510
Stillwater Creek (Upper)	OK620900-04-0070T	30057	19-Apr-04	140	280
Stillwater Creek (Upper)	OK620900-04-0070T	30321	01-Jun-04	120	290
Cooper Creek	OK620910-02-0040C	25395	22-Jul-02	120	200
Cooper Creek	OK620910-02-0040C	25789	03-Sep-02	100	280
Cooper Creek	OK620910-02-0040C	25943	07-Oct-02	367	100
Cooper Creek	OK620910-02-0040C	27353	01-Apr-03	10	30
Cooper Creek	OK620910-02-0040C	27567	13-May-03	50	20
Cooper Creek	OK620910-02-0040C	27688	10-Jun-03	460	860
Cooper Creek	OK620910-02-0040C	27813	15-Jul-03	40	290
Cooper Creek	OK620910-02-0040C	28116	19-Aug-03	10	40
Cooper Creek	OK620910-02-0040C	28273	22-Sep-03	30	60
Cooper Creek	OK620910-02-0040C	28427	27-Oct-03	30	20
Cooper Creek	OK620910-02-0040C	30098	26-Apr-04	470	340
Cooper Creek	OK620910-02-0040C	30355	07-Jun-04	30	65
Salt Creek	OK620910-02-0100D	25399	23-Jul-02	270	450
Salt Creek	OK620910-02-0100D	25793	03-Sep-02	20	60
Salt Creek	OK620910-02-0100D	25947	07-Oct-02	200	33
Salt Creek	OK620910-02-0100D	27351	31-Mar-03	10	10
Salt Creek	OK620910-02-0100D	27544	05-May-03	20	20
Salt Creek	OK620910-02-0100D	27686	09-Jun-03	60	140

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Salt Creek	OK620910-02-0100D	27811	14-Jul-03	10	80
Salt Creek	OK620910-02-0100D	28114	18-Aug-03	20	80
Salt Creek	OK620910-02-0100D	28281	23-Sep-03	10	100
Salt Creek	OK620910-02-0100D	28425	27-Oct-03	40	110
Salt Creek	OK620910-02-0100D	30096	26-Apr-04	455	285
Salt Creek	OK620910-02-0100D	30353	07-Jun-04	20	25
Deep Creek	OK620910-02-0250C	25400	23-Jul-02	170	340
Deep Creek	OK620910-02-0250C	25795	04-Sep-02	20	200
Deep Creek	OK620910-02-0250C	25949	08-Oct-02	1100	167
Deep Creek	OK620910-02-0250C	27350	31-Mar-03	30	50
Deep Creek	OK620910-02-0250C	27543	05-May-03	580	220
Deep Creek	OK620910-02-0250C	27685	09-Jun-03	1640	1060
Deep Creek	OK620910-02-0250C	27810	14-Jul-03	60	50
Deep Creek	OK620910-02-0250C	28113	18-Aug-03	640	70
Deep Creek	OK620910-02-0250C	28280	23-Sep-03	170	230
Deep Creek	OK620910-02-0250C	28434	28-Oct-03	340	310
Deep Creek	OK620910-02-0250C	30105	27-Apr-04	500	580
Deep Creek	OK620910-02-0250C	30352	07-Jun-04	55	15
Indian Creek	OK620910-02-0310C	25401	23-Jul-02	470	270
Indian Creek	OK620910-02-0310C	25796	04-Sep-02	20	260
Indian Creek	OK620910-02-0310C	25950	08-Oct-02	767	67
Indian Creek	OK620910-02-0310C	27349	31-Mar-03	10	10
Indian Creek	OK620910-02-0310C	27542	05-May-03	20	60
Indian Creek	OK620910-02-0310C	27684	09-Jun-03	240	520
Indian Creek	OK620910-02-0310C	27809	14-Jul-03	120	120
Indian Creek	OK620910-02-0310C	28112	18-Aug-03	70	450
Indian Creek	OK620910-02-0310C	28279	23-Sep-03	40	230
Indian Creek	OK620910-02-0310C	28433	28-Oct-03	60	120
Indian Creek	OK620910-02-0310C	30104	27-Apr-04	120	670
Indian Creek	OK620910-02-0310C	30351	07-Jun-04	85	55
Skeleton Creek (Lower)	OK620910-03-0010F	25643	06-Aug-02	30	20
Skeleton Creek (Lower)	OK620910-03-0010F	25785	04-Sep-02	20	40
Skeleton Creek (Lower)	OK620910-03-0010F	25904	01-Oct-02	100	
Skeleton Creek (Lower)	OK620910-03-0010F	27332	25-Mar-03	60	30
Skeleton Creek (Lower)	OK620910-03-0010F	27435	29-Apr-03	180	80
Skeleton Creek (Lower)	OK620910-03-0010F	27642	02-Jun-03	50	210
Skeleton Creek (Lower)	OK620910-03-0010F	27761	08-Jul-03	10	10
Skeleton Creek (Lower)	OK620910-03-0010F	28072	12-Aug-03	20	20
Skeleton Creek (Lower)	OK620910-03-0010F	28231	16-Sep-03	70	50
Skeleton Creek (Lower)	OK620910-03-0010F	28380	21-Oct-03	40	250
Skeleton Creek (Lower)	OK620910-03-0010F	30060	20-Apr-04	35	30
Skeleton Creek (Lower)	OK620910-03-0010F	30324	02-Jun-04	20	20
Skeleton Creek (Upper)	OK620910-03-0010S	25641	06-Aug-02	60	30
Skeleton Creek (Upper)	OK620910-03-0010S	25783	04-Sep-02	20	60
Skeleton Creek (Upper)	OK620910-03-0010S	25902	01-Oct-02	34	
Skeleton Creek (Upper)	OK620910-03-0010S	27330	25-Mar-03	60	90
Skeleton Creek (Upper)	OK620910-03-0010S	27433	29-Apr-03	80	60
Skeleton Creek (Upper)	OK620910-03-0010S	27640	02-Jun-03	50	110
Skeleton Creek (Upper)	OK620910-03-0010S	27759	08-Jul-03	40	80
Skeleton Creek (Upper)	OK620910-03-0010S	28070	12-Aug-03	40	60
Skeleton Creek (Upper)	OK620910-03-0010S	28229	16-Sep-03	80	240
Skeleton Creek (Upper)	OK620910-03-0010S	28378	21-Oct-03	80	260
Skeleton Creek (Upper)	OK620910-03-0010S	30058	20-Apr-04	30	75
Skeleton Creek (Upper)	OK620910-03-0010S	30322	02-Jun-04	10	20

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	E.Coli	Enterococcus
Otter Creek	OK620910-03-0040C	25642	06-Aug-02	80	130
Otter Creek	OK620910-03-0040C	25784	04-Sep-02	20	80
Otter Creek	OK620910-03-0040C	25903	01-Oct-02	134	
Otter Creek	OK620910-03-0040C	27331	25-Mar-03	210	20
Otter Creek	OK620910-03-0040C	27434	29-Apr-03	200	220
Otter Creek	OK620910-03-0040C	27641	02-Jun-03	50	210
Otter Creek	OK620910-03-0040C	27760	08-Jul-03	10	220
Otter Creek	OK620910-03-0040C	28071	12-Aug-03	20	20
Otter Creek	OK620910-03-0040C	28230	16-Sep-03	200	230
Otter Creek	OK620910-03-0040C	28379	21-Oct-03	190	620
Otter Creek	OK620910-03-0040C	30059	20-Apr-04	20	60
Otter Creek	OK620910-03-0040C	30323	02-Jun-04	20	20
Cottonwood Creek	OK620910-04-0010D	25645	06-Aug-02	75	110
Cottonwood Creek	OK620910-04-0010D	25787	04-Sep-02	20	60
Cottonwood Creek	OK620910-04-0010D	25906	01-Oct-02	34	
Cottonwood Creek	OK620910-04-0010D	27334	25-Mar-03	10	40
Cottonwood Creek	OK620910-04-0010D	27437	29-Apr-03	40	60
Cottonwood Creek	OK620910-04-0010D	27644	02-Jun-03	10	110
Cottonwood Creek	OK620910-04-0010D	27763	08-Jul-03	140	160
Cottonwood Creek	OK620910-04-0010D	28074	12-Aug-03	20	20
Cottonwood Creek	OK620910-04-0010D	28233	16-Sep-03	130	250
Cottonwood Creek	OK620910-04-0010D	28382	21-Oct-03	80	280
Cottonwood Creek	OK620910-04-0010D	30062	21-Apr-04	25	60
Cottonwood Creek	OK620910-04-0010D	30326	03-Jun-04	1000	395
Kingfisher Creek	OK620910-05-0010J	25396	22-Jul-02	70	190
Kingfisher Creek	OK620910-05-0010J	25790	03-Sep-02	340	160
Kingfisher Creek	OK620910-05-0010J	25944	07-Oct-02	67	33
Kingfisher Creek	OK620910-05-0010J	27354	01-Apr-03	360	30
Kingfisher Creek	OK620910-05-0010J	27568	13-May-03	550	130
Kingfisher Creek	OK620910-05-0010J	27689	10-Jun-03	480	740
Kingfisher Creek	OK620910-05-0010J	27814	15-Jul-03	30	110
Kingfisher Creek	OK620910-05-0010J	28117	10-Aug-03	310	240
Kingfisher Creek	OK620910-05-0010J	28274	22-Sep-03	40	70
Kingfisher Creek	OK620910-05-0010J	28428	27-Oct-03	30	70
Kingfisher Creek	OK620910-05-0010J	30099	26-Apr-04	990	300
Kingfisher Creek	OK620910-05-0010J	30356	09-Jun-04	500	395
Uncle John's Creek	OK620910-05-0030C	25398	22-Jul-02	110	240
Uncle John's Creek	OK620910-05-0030C	25792	03-Sep-02	20	40
Uncle John's Creek	OK620910-05-0030C	25946	07-Oct-02	100	33
Uncle John's Creek	OK620910-05-0030C	27356	01-Apr-03	70	50
Uncle John's Creek	OK620910-05-0030C	27570	13-May-03	160	135
Uncle John's Creek	OK620910-05-0030C	27691	10-Jun-03	190	420
Uncle John's Creek	OK620910-05-0030C	27816	15-Jul-03	40	340
Uncle John's Creek	OK620910-05-0030C	28119	19-Aug-03	20	120
Uncle John's Creek	OK620910-05-0030C	28276	22-Sep-03	10	150
Uncle John's Creek	OK620910-05-0030C	28430	27-Oct-03	110	120
Uncle John's Creek	OK620910-05-0030C	30101	26-Apr-04	5	80
Uncle John's Creek	OK620910-05-0030C	30358	09-Jun-04	155	595
Dead Indian Creek	OK620910-05-0080D	25397	22-Jul-02	70	50
Dead Indian Creek	OK620910-05-0080D	25791	03-Sep-02	500	100
Dead Indian Creek	OK620910-05-0080D	25945	07-Oct-02	233	33
Dead Indian Creek	OK620910-05-0080D	27355	01-Apr-03	10	30
Dead Indian Creek	OK620910-05-0080D	27569	13-May-03	240	330
Dead Indian Creek	OK620910-05-0080D	27690	10-Jun-03	960	960

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Dead Indian Creek	OK620910-05-0080D	27815	15-Jul-03	70	80
Dead Indian Creek	OK620910-05-0080D	28118	19-Aug-03	820	320
Dead Indian Creek	OK620910-05-0080D	28275	22-Sep-03	90	180
Dead Indian Creek	OK620910-05-0080D	28429	27-Oct-03	30	140
Dead Indian Creek	OK620910-05-0080D	30100	26-Apr-04	1000	330
Dead Indian Creek	OK620910-05-0080D	30357	09-Jun-04	500	230
Turkey Creek (Lower)	OK620910-06-0010B	25394	22-Jul-02	70	170
Turkey Creek (Lower)	OK620910-06-0010B	25788	03-Sep-02	140	20
Turkey Creek (Lower)	OK620910-06-0010B	25942	07-Oct-02	1367	100
Turkey Creek (Lower)	OK620910-06-0010B	27352	01-Apr-03	30	10
Turkey Creek (Lower)	OK620910-06-0010B	27566	13-May-03	20	80
Turkey Creek (Lower)	OK620910-06-0010B	27687	10-Jun-03	280	3000
Turkey Creek (Lower)	OK620910-06-0010B	27812	15-Jul-03	10	10
Turkey Creek (Lower)	OK620910-06-0010B	28115	10-Aug-03	10	30
Turkey Creek (Lower)	OK620910-06-0010B	28272	22-Sep-03	130	250
Turkey Creek (Lower)	OK620910-06-0010B	28426	27-Oct-03	10	80
Turkey Creek (Lower)	OK620910-06-0010B	30097	26-Apr-04	1000	290
Turkey Creek (Lower)	OK620910-06-0010B	30354	07-Jun-04	70	10
Turkey Creek (Upper)	OK620910-06-0010T	25403	23-Jul-02	80	50
Turkey Creek (Upper)	OK620910-06-0010T	25797	04-Sep-02	20	100
Turkey Creek (Upper)	OK620910-06-0010T	25951	08-Oct-02	633	133
Turkey Creek (Upper)	OK620910-06-0010T	27347	31-Mar-03	110	30
Turkey Creek (Upper)	OK620910-06-0010T	27540	05-May-03	140	60
Turkey Creek (Upper)	OK620910-06-0010T	27682	09-Jun-03	580	1320
Turkey Creek (Upper)	OK620910-06-0010T	27807	14-Jul-03	180	120
Turkey Creek (Upper)	OK620910-06-0010T	28110	18-Aug-03	220	170
Turkey Creek (Upper)	OK620910-06-0010T	28277	23-Sep-03	340	690
Turkey Creek (Upper)	OK620910-06-0010T	28431	28-Oct-03	100	90
Turkey Creek (Upper)	OK620910-06-0010T	30102	27-Apr-04	970	530
Turkey Creek (Upper)	OK620910-06-0010T	30349	07-Jun-04	70	105
Griever Creek	OK620920-01-0130G	25546	29-Jul-02	2667	3300
Griever Creek	OK620920-01-0130G	25769	03-Sep-02	20	440
Griever Creek	OK620920-01-0130G	25963	07-Oct-02	100	50
Griever Creek	OK620920-01-0130G	27308	24-Mar-03	120	30
Griever Creek	OK620920-01-0130G	27545	05-May-03	400	20
Griever Creek	OK620920-01-0130G	27630	02-Jun-03	3000	3000
Griever Creek	OK620920-01-0130G	27770	07-Jul-03	40	150
Griever Creek	OK620920-01-0130G	28076	11-Aug-03	80	200
Griever Creek	OK620920-01-0130G	28215	15-Sep-03	20	160
Griever Creek	OK620920-01-0130G	28384	20-Oct-03	140	90
Griever Creek	OK620920-01-0130G	30107	26-Apr-04	485	500
Griever Creek	OK620920-01-0130G	30327	01-Jun-04	50	80
Main Creek	OK620920-01-0180F	25547	29-Jul-02	4000	3600
Main Creek	OK620920-01-0180F	25768	03-Sep-02	280	660
Main Creek	OK620920-01-0180F	25964	07-Oct-02	67	267
Main Creek	OK620920-01-0180F	27307	24-Mar-03	110	40
Main Creek	OK620920-01-0180F	27546	05-May-03	100	80
Main Creek	OK620920-01-0180F	27629	02-Jun-03	330	280
Main Creek	OK620920-01-0180F	27769	07-Jul-03	130	230
Main Creek	OK620920-01-0180F	28075	11-Aug-03	260	320
Main Creek	OK620920-01-0180F	28214	15-Sep-03	120	350
Main Creek	OK620920-01-0180F	28383	20-Oct-03	140	250
Main Creek	OK620920-01-0180F	30106	26-Apr-04	175	170
Main Creek	OK620920-01-0180F	30328	01-Jun-04	100	60

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Long Creek	OK620920-02-0080D	25548	29-Jul-02	2000	1825
Long Creek	OK620920-02-0080D	25770	03-Sep-02	80	220
Long Creek	OK620920-02-0080D	25965	07-Oct-02	100	33
Long Creek	OK620920-02-0080D	27309	24-Mar-03	20	30
Long Creek	OK620920-02-0080D	27547	05-May-03	100	100
Long Creek	OK620920-02-0080D	27631	02-Jun-03	50	200
Long Creek	OK620920-02-0080D	27771	07-Jul-03	90	340
Long Creek	OK620920-02-0080D	28077	11-Aug-03	100	180
Long Creek	OK620920-02-0080D	28216	15-Sep-03	470	170
Long Creek	OK620920-02-0080D	28385	20-Oct-03	80	160
Long Creek	OK620920-02-0080D	30108	26-Apr-04	80	430
Long Creek	OK620920-02-0080D	30329	01-Jun-04	90	10
Eagle Chief Creek (Lower)	OK620920-04-0010C	25402	23-Jul-02	8000	4400
Eagle Chief Creek (Lower)	OK620920-04-0010C	27348	31-Mar-03	80	40
Eagle Chief Creek (Lower)	OK620920-04-0010C	27541	05-May-03	100	100
Eagle Chief Creek (Lower)	OK620920-04-0010C	27683	09-Jun-03	1460	1160
Eagle Chief Creek (Lower)	OK620920-04-0010C	27808	14-Jul-03	30	10
Eagle Chief Creek (Lower)	OK620920-04-0010C	28111	18-Aug-03	30	50
Eagle Chief Creek (Lower)	OK620920-04-0010C	28278	23-Sep-03	10	80
Eagle Chief Creek (Lower)	OK620920-04-0010C	28432	28-Oct-03	60	40
Eagle Chief Creek (Lower)	OK620920-04-0010C	30103	27-Apr-04	830	460
Eagle Chief Creek (Lower)	OK620920-04-0010C	30350	07-Jun-04	90	10
Eagle Chief Creek	OK620920-04-0010G	25542	30-Jul-02	1910	1434
Eagle Chief Creek	OK620920-04-0010G	25794	04-Sep-02	20	180
Eagle Chief Creek	OK620920-04-0010G	25807	04-Sep-02	20	80
Eagle Chief Creek	OK620920-04-0010G	25948	08-Oct-02	333	200
Eagle Chief Creek	OK620920-04-0010G	25961	08-Oct-02	400	267
Eagle Chief Creek	OK620920-04-0010G	27362	31-Mar-03	30	70
Eagle Chief Creek	OK620920-04-0010G	27534	06-May-03	20	20
Eagle Chief Creek	OK620920-04-0010G	27676	09-Jun-03	220	840
Eagle Chief Creek	OK620920-04-0010G	27839	14-Jul-03	110	140
Eagle Chief Creek	OK620920-04-0010G	28137	18-Aug-03	80	240
Eagle Chief Creek	OK620920-04-0010G	28287	22-Sep-03	140	200
Eagle Chief Creek	OK620920-04-0010G	28440	27-Oct-03	80	70
Eagle Chief Creek	OK620920-04-0010G	30084	20-Apr-04	405	75
Eagle Chief Creek	OK620920-04-0010G	30383	08-Jun-04	345	105
Buffalo Creek (Lower)	OK620920-05-0010G	25549	29-Jul-02	2667	3334
Buffalo Creek (Lower)	OK620920-05-0010G	25771	03-Sep-02	20	60
Buffalo Creek (Lower)	OK620920-05-0010G	25966	07-Oct-02	167	33
Buffalo Creek (Lower)	OK620920-05-0010G	27310	24-Mar-03	20	10
Buffalo Creek (Lower)	OK620920-05-0010G	27548	05-May-03	40	20
Buffalo Creek (Lower)	OK620920-05-0010G	27632	02-Jun-03	120	30
Buffalo Creek (Lower)	OK620920-05-0010G	27772	07-Jul-03	150	80
Buffalo Creek (Lower)	OK620920-05-0010G	28078	11-Aug-03	290	140
Buffalo Creek (Lower)	OK620920-05-0010G	28217	15-Sep-03	30	10
Buffalo Creek (Lower)	OK620920-05-0010G	28386	20-Oct-03	50	40
Buffalo Creek (Lower)	OK620920-05-0010G	30109	26-Apr-04	330	485
Buffalo Creek (Lower)	OK620920-05-0010G	30330	01-Jun-04	10	20
Buffalo Creek (Upper)	OK620920-05-0010P	25550	29-Jul-02	3920	1580
Buffalo Creek (Upper)	OK620920-05-0010P	25772	03-Sep-02	60	220
Buffalo Creek (Upper)	OK620920-05-0010P	25967	07-Oct-02	200	67
Buffalo Creek (Upper)	OK620920-05-0010P	27311	24-Mar-03	20	10
Buffalo Creek (Upper)	OK620920-05-0010P	27549	05-May-03	160	20
Buffalo Creek (Upper)	OK620920-05-0010P	27633	02-Jun-03	320	180

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Buffalo Creek (Upper)	OK620920-05-0010P	27773	07-Jul-03	190	50
Buffalo Creek (Upper)	OK620920-05-0010P	28079	11-Aug-03	340	40
Buffalo Creek (Upper)	OK620920-05-0010P	28218	15-Sep-03	30	20
Buffalo Creek (Upper)	OK620920-05-0010P	28387	20-Oct-03	180	70
Buffalo Creek (Upper)	OK620920-05-0010P	30110	26-Apr-04	445	500
Buffalo Creek (Upper)	OK620920-05-0010P	30331	01-Jun-04	100	20
Sand Creek	OK620920-05-0050G	25551	29-Jul-02	165	495
Sand Creek	OK620920-05-0050G	25773	03-Sep-02	80	240
Sand Creek	OK620920-05-0050G	25968	07-Oct-02	400	33
Sand Creek	OK620920-05-0050G	27312	24-Mar-03	10	30
Sand Creek	OK620920-05-0050G	27550	05-May-03	100	100
Sand Creek	OK620920-05-0050G	27634	02-Jun-03	550	240
Sand Creek	OK620920-05-0050G	27774	07-Jul-03	130	290
Sand Creek	OK620920-05-0050G	28080	11-Aug-03	1780	200
Sand Creek	OK620920-05-0050G	28219	15-Sep-03	190	680
Sand Creek	OK620920-05-0050G	28388	20-Oct-03	40	300
Sand Creek	OK620920-05-0050G	30111	26-Apr-04	490	500
Sand Creek	OK620920-05-0050G	30332	01-Jun-04	1000	1000
Cimarron River	OK620930-00-0010T	25512	22-Jul-02	460	180
Cimarron River	OK620930-00-0010T	25717	26-Aug-02	60	40
Cimarron River	OK620930-00-0010T	25882	30-Sep-02	140	
Cimarron River	OK620930-00-0010T	27339	31-Mar-03	10	10
Cimarron River	OK620930-00-0010T	27442	28-Apr-03	40	40
Cimarron River	OK620930-00-0010T	27696	09-Jun-03	40	90
Cimarron River	OK620930-00-0010T	27826	14-Jul-03	80	140
Cimarron River	OK620930-00-0010T	28124	18-Aug-03	70	100
Cimarron River	OK620930-00-0010T	28246	15-Sep-03	10	10
Cimarron River	OK620930-00-0010T	28417	27-Oct-03	30	20
Cimarron River	OK620930-00-0010T	30067	19-Apr-04	5	70
Cimarron River	OK620930-00-0010T	30363	07-Jun-04	105	45
Crooked Creek	OK620930-00-0100G	25511	22-Jul-02	710	840
Crooked Creek	OK620930-00-0100G	25535	29-Jul-02	1600	1720
Crooked Creek	OK620930-00-0100G	25718	26-Aug-02	120	100
Crooked Creek	OK620930-00-0100G	25883	30-Sep-02	40	
Crooked Creek	OK620930-00-0100G	27340	31-Mar-03	10	10
Crooked Creek	OK620930-00-0100G	27443	28-Apr-03	90	20
Crooked Creek	OK620930-00-0100G	27697	09-Jun-03	80	70
Crooked Creek	OK620930-00-0100G	27827	14-Jul-03	150	150
Crooked Creek	OK620930-00-0100G	28125	18-Aug-03	40	250
Crooked Creek	OK620930-00-0100G	28247	15-Sep-03	10	10
Crooked Creek	OK620930-00-0100G	28418	27-Oct-03	70	20
Crooked Creek	OK620930-00-0100G	30068	19-Apr-04	10	40
Crooked Creek	OK620930-00-0100G	30077	19-Apr-04	25	30
Crooked Creek	OK620930-00-0100G	30376	07-Jun-04	500	135
Crooked Creek	OK620930-00-0100G	30364	07-Jun-04	80	55
Wild Horse Creek	OK621000-02-0040F	25534	29-Jul-02	2667	3167
Wild Horse Creek	OK621000-02-0040F	25799	03-Sep-02	20	20
Wild Horse Creek	OK621000-02-0040F	25953	07-Oct-02	1066	67
Wild Horse Creek	OK621000-02-0040F	27358	31-Mar-03	690	190
Wild Horse Creek	OK621000-02-0040F	27530	06-May-03	420	140
Wild Horse Creek	OK621000-02-0040F	27672	09-Jun-03	1100	1560
Wild Horse Creek	OK621000-02-0040F	27835	14-Jul-03	110	530
Wild Horse Creek	OK621000-02-0040F	28133	18-Aug-03	70	360
Wild Horse Creek	OK621000-02-0040F	28283	22-Sep-03	1000	450

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Wild Horse Creek	OK621000-02-0040F	28436	28-Oct-03	150	230
Wild Horse Creek	OK621000-02-0040F	30076	19-Apr-04	85	20
Wild Horse Creek	OK621000-02-0040F	30375	07-Jun-04	280	190
Bois d'Arc	OK621000-03-0010C	25412	22-Jul-02	300	20
Bois d'Arc	OK621000-03-0010C	25725	26-Aug-02	1600	40
Bois d'Arc	OK621000-03-0010C	25907	30-Sep-02	140	15
Bois d'Arc	OK621000-03-0010C	27450	28-Apr-03	80	200
Bois d'Arc	OK621000-03-0010C	27662	03-Jun-03	1980	870
Bois d'Arc	OK621000-03-0010C	28100	12-Aug-03	240	140
Bois d'Arc	OK621000-03-0010C	28267	25-Sep-03	240	470
Bois d'Arc	OK621000-03-0010C	28400	21-Oct-03	90	200
Bois d'Arc	OK621000-03-0010C	30117	26-Apr-04	110	470
Bois d'Arc	OK621000-03-0010C	30342	02-Jun-04	80	70
Deer Creek	OK621000-04-0010D	25414	22-Jul-02	130	40
Deer Creek	OK621000-04-0010D	25727	26-Aug-02	800	20
Deer Creek	OK621000-04-0010D	25909	30-Sep-02	40	60
Deer Creek	OK621000-04-0010D	27452	28-Apr-03	240	180
Deer Creek	OK621000-04-0010D	27664	03-Jun-03	100	60
Deer Creek	OK621000-04-0010D	27787	08-Jul-03	60	60
Deer Creek	OK621000-04-0010D	28102	12-Aug-03	40	20
Deer Creek	OK621000-04-0010D	28269	23-Sep-03	970	480
Deer Creek	OK621000-04-0010D	28402	21-Oct-03	120	280
Deer Creek	OK621000-04-0010D	30118	26-Apr-04	570	280
Deer Creek	OK621000-04-0010D	30344	02-Jun-04	50	50
Pond Creek	OK621000-05-0010D	25533	29-Jul-02	1600	1500
Pond Creek	OK621000-05-0010D	25798	03-Sep-02	120	20
Pond Creek	OK621000-05-0010D	25952	07-Oct-02	500	33
Pond Creek	OK621000-05-0010D	27357	31-Mar-03	60	100
Pond Creek	OK621000-05-0010D	27529	06-May-03	440	480
Pond Creek	OK621000-05-0010D	27671	09-Jun-03	420	1900
Pond Creek	OK621000-05-0010D	27834	14-Jul-03	10	115
Pond Creek	OK621000-05-0010D	28132	18-Aug-03	40	170
Pond Creek	OK621000-05-0010D	28282	22-Sep-03	1000	1000
Pond Creek	OK621000-05-0010D	28435	27-Oct-03	30	310
Pond Creek	OK621000-05-0010D	30075	19-Apr-04	40	20
Pond Creek	OK621000-05-0010D	30374	07-Jun-04	230	285
Crooked Creek	OK621000-06-0010C	25800	03-Sep-02	20	20
Crooked Creek	OK621000-06-0010C	25954	07-Oct-02	833	100
Crooked Creek	OK621000-06-0010C	27359	31-Mar-03	190	90
Crooked Creek	OK621000-06-0010C	27531	06-May-03	900	200
Crooked Creek	OK621000-06-0010C	27673	09-Jun-03	440	1160
Crooked Creek	OK621000-06-0010C	27836	14-Jul-03	130	120
Crooked Creek	OK621000-06-0010C	28134	18-Aug-03	10	30
Crooked Creek	OK621000-06-0010C	28284	22-Sep-03	530	330
Crooked Creek	OK621000-06-0010C	28437	27-Oct-03	90	90
Salt Fk of Arkansas R	OK621010-01-0010D	25536	29-Jul-02	30	80
Salt Fk of Arkansas R	OK621010-01-0010D	25801	03-Sep-02	20	20
Salt Fk of Arkansas R	OK621010-01-0010D	25955	07-Oct-02	200	33
Salt Fk of Arkansas R	OK621010-01-0010D	27360	31-Mar-03	30	30
Salt Fk of Arkansas R	OK621010-01-0010D	27532	06-May-03	40	20
Salt Fk of Arkansas R	OK621010-01-0010D	27674	09-Jun-03	20	20
Salt Fk of Arkansas R	OK621010-01-0010D	27837	14-Jul-03	10	10
Salt Fk of Arkansas R	OK621010-01-0010D	28135	18-Aug-03	10	20
Salt Fk of Arkansas R	OK621010-01-0010D	28285	22-Sep-03	40	30

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Salt Fk of Arkansas R	OK621010-01-0010D	28438	27-Oct-03	20	750
Salt Fk of Arkansas R	OK621010-01-0010D	30078	19-Apr-04	65	100
Salt Fk of Arkansas R	OK621010-01-0010D	30377	07-Jun-04	70	30
Clay Creek	OK621010-01-0090R	25543	30-Jul-02	1920	650
Clay Creek	OK621010-01-0090R	25808	04-Sep-02	20	140
Clay Creek	OK621010-01-0090R	25962	08-Oct-02	1133	250
Clay Creek	OK621010-01-0090R	27361	31-Mar-03	140	60
Clay Creek	OK621010-01-0090R	27533	06-May-03	60	20
Clay Creek	OK621010-01-0090R	27675	09-Jun-03	500	1840
Clay Creek	OK621010-01-0090R	27838	14-Jul-03	40	70
Clay Creek	OK621010-01-0090R	28136	18-Aug-03	10	120
Clay Creek	OK621010-01-0090R	28286	22-Sep-03	250	1000
Clay Creek	OK621010-01-0090R	28439	27-Oct-03	10	60
Clay Creek	OK621010-01-0090R	30384	08-Jun-04	500	100
Turkey Creek	OK621010-01-0230G	25541	30-Jul-02	1630	1975
Turkey Creek	OK621010-01-0230G	25805	04-Sep-02	20	300
Turkey Creek	OK621010-01-0230G	25959	08-Oct-02	2167	267
Turkey Creek	OK621010-01-0230G	27364	01-Apr-03	120	300
Turkey Creek	OK621010-01-0230G	27538	06-May-03	80	340
Turkey Creek	OK621010-01-0230G	27678	10-Jun-03	220	780
Turkey Creek	OK621010-01-0230G	27841	15-Jul-03	2000	1100
Turkey Creek	OK621010-01-0230G	28139	19-Aug-03	90	340
Turkey Creek	OK621010-01-0230G	28289	22-Sep-03	560	970
Turkey Creek	OK621010-01-0230G	28442	27-Oct-03	350	490
Turkey Creek	OK621010-01-0230G	30082	20-Apr-04	500	5
Turkey Creek	OK621010-01-0230G	30381	08-Jun-04	195	145
Yellowstone Creek	OK621010-01-0270C	25540	30-Jul-02	760	290
Yellowstone Creek	OK621010-01-0270C	25806	04-Sep-02	20	60
Yellowstone Creek	OK621010-01-0270C	25960	08-Oct-02	200	33
Yellowstone Creek	OK621010-01-0270C	27363	31-Mar-03	110	10
Yellowstone Creek	OK621010-01-0270C	27539	06-May-03	380	20
Yellowstone Creek	OK621010-01-0270C	27677	09-Jun-03	20	120
Yellowstone Creek	OK621010-01-0270C	27840	14-Jul-03	30	2000
Yellowstone Creek	OK621010-01-0270C	28138	18-Aug-03	10	250
Yellowstone Creek	OK621010-01-0270C	28288	22-Sep-03	170	50
Yellowstone Creek	OK621010-01-0270C	28441	27-Oct-03	10	20
Yellowstone Creek	OK621010-01-0270C	30083	20-Apr-04	1000	270
Yellowstone Creek	OK621010-01-0270C	30382	08-Jun-04	155	70
Sandy Creek	OK621010-02-0010D	25537	29-Jul-02	650	250
Sandy Creek	OK621010-02-0010D	25802	03-Sep-02	20	20
Sandy Creek	OK621010-02-0010D	25956	07-Oct-02	967	133
Sandy Creek	OK621010-02-0010D	27367	01-Apr-03	60	530
Sandy Creek	OK621010-02-0010D	27535	06-May-03	160	160
Sandy Creek	OK621010-02-0010D	27681	10-Jun-03	880	1020
Sandy Creek	OK621010-02-0010D	27844	15-Jul-03	300	230
Sandy Creek	OK621010-02-0010D	28142	19-Aug-03	110	530
Sandy Creek	OK621010-02-0010D	28292	23-Sep-03	1000	555
Sandy Creek	OK621010-02-0010D	28445	28-Oct-03	205	310
Sandy Creek	OK621010-02-0010D	30079	19-Apr-04	45	85
Sandy Creek	OK621010-02-0010D	30378	07-Jun-04	185	45
Medicine Lodge Creek	OK621010-03-0010D	25538	29-Jul-02	1330	460
Medicine Lodge Creek	OK621010-03-0010D	25803	03-Sep-02	60	80
Medicine Lodge Creek	OK621010-03-0010D	25957	07-Oct-02	800	67
Medicine Lodge Creek	OK621010-03-0010D	27366	01-Apr-03	70	50

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Medicine Lodge Creek	OK621010-03-0010D	27536	06-May-03	180	70
Medicine Lodge Creek	OK621010-03-0010D	27680	10-Jun-03	430	1710
Medicine Lodge Creek	OK621010-03-0010D	27842	15-Jul-03	210	570
Medicine Lodge Creek	OK621010-03-0010D	28140	19-Aug-03	1000	1000
Medicine Lodge Creek	OK621010-03-0010D	28290	23-Sep-03	270	300
Medicine Lodge Creek	OK621010-03-0010D	28443	28-Oct-03	180	240
Medicine Lodge Creek	OK621010-03-0010D	30080	19-Apr-04	55	25
Medicine Lodge Creek	OK621010-03-0010D	30379	07-Jun-04	380	145
Driftwood Creek	OK621010-03-0030C	25539	29-Jul-02	4000	5150
Driftwood Creek	OK621010-03-0030C	25804	03-Sep-02	20	60
Driftwood Creek	OK621010-03-0030C	25958	07-Oct-02	633	333
Driftwood Creek	OK621010-03-0030C	27365	01-Apr-03	60	710
Driftwood Creek	OK621010-03-0030C	27537	06-May-03	260	100
Driftwood Creek	OK621010-03-0030C	27679	10-Jun-03	780	980
Driftwood Creek	OK621010-03-0030C	27843	15-Jul-03	100	280
Driftwood Creek	OK621010-03-0030C	28141	19-Aug-03	80	480
Driftwood Creek	OK621010-03-0030C	28291	23-Sep-03	150	360
Driftwood Creek	OK621010-03-0030C	28444	28-Oct-03	90	280
Driftwood Creek	OK621010-03-0030C	30081	19-Apr-04	10	15
Driftwood Creek	OK621010-03-0030C	30380	07-Jun-04	490	350
Chickaskia River (lower)	OK621100-00-0010B	25413	22-Jul-02	130	30
Chickaskia River (lower)	OK621100-00-0010B	25726	26-Aug-02	1600	40
Chickaskia River (lower)	OK621100-00-0010B	25908	30-Sep-02	20	20
Chickaskia River (lower)	OK621100-00-0010B	27451	28-Apr-03	260	140
Chickaskia River (lower)	OK621100-00-0010B	27663	03-Jun-03	270	480
Chickaskia River (lower)	OK621100-00-0010B	27786	08-Jul-03	20	40
Chickaskia River (lower)	OK621100-00-0010B	28101	12-Aug-03	60	20
Chickaskia River (lower)	OK621100-00-0010B	28268	23-Sep-03	2000	1960
Chickaskia River (lower)	OK621100-00-0010B	28401	21-Oct-03	170	180
Chickaskia River (lower)	OK621100-00-0010B	30343	02-Jun-04	30	10
Chickaskia Creek (Middle)	OK621100-00-0010M	25416	22-Jul-02	50	20
Chickaskia Creek (Middle)	OK621100-00-0010M	25729	26-Aug-02	1880	20
Chickaskia Creek (Middle)	OK621100-00-0010M	25910	30-Sep-02	20	20
Chickaskia Creek (Middle)	OK621100-00-0010M	27454	28-Apr-03	220	190
Chickaskia Creek (Middle)	OK621100-00-0010M	27666	03-Jun-03	140	240
Chickaskia Creek (Middle)	OK621100-00-0010M	27789	08-Jul-03	10	10
Chickaskia Creek (Middle)	OK621100-00-0010M	28104	12-Aug-03	20	20
Chickaskia Creek (Middle)	OK621100-00-0010M	28271	23-Sep-03	2000	1660
Chickaskia Creek (Middle)	OK621100-00-0010M	28404	21-Oct-03	60	80
Chickaskia Creek (Middle)	OK621100-00-0010M	30120	26-Apr-04	1000	330
Chickaskia Creek (Middle)	OK621100-00-0010M	30345	02-Jun-04	10	10
Bitter Creek	OK621100-00-0100G	25415	22-Jul-02	60	20
Bitter Creek	OK621100-00-0100G	25728	26-Aug-02	900	20
Bitter Creek	OK621100-00-0100G	25911	30-Sep-02	140	20
Bitter Creek	OK621100-00-0100G	27453	28-Apr-03	40	60
Bitter Creek	OK621100-00-0100G	27665	03-Jun-03	1730	3000
Bitter Creek	OK621100-00-0100G	27788	08-Jul-03	30	80
Bitter Creek	OK621100-00-0100G	28103	12-Aug-03	100	40
Bitter Creek	OK621100-00-0100G	28270	23-Sep-03	1000	1000
Bitter Creek	OK621100-00-0100G	28403	21-Oct-03	110	290
Bitter Creek	OK621100-00-0100G	30119	26-Apr-04	580	660
Bitter Creek	OK621100-00-0100G	30346	02-Jun-04	50	100
Gray Horse Creek	OK621200-01-0400C	25422	23-Jul-02	435	390
Gray Horse Creek	OK621200-01-0400C	25734	27-Aug-02	1700	480

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Gray Horse Creek	OK621200-01-0400C	25917	01-Oct-02	140	40
Gray Horse Creek	OK621200-01-0400C	27458	29-Apr-03	20	20
Gray Horse Creek	OK621200-01-0400C	27657	02-Jun-03	2170	1220
Gray Horse Creek	OK621200-01-0400C	27780	07-Jul-03	30	10
Gray Horse Creek	OK621200-01-0400C	28094	11-Aug-03	80	20
Gray Horse Creek	OK621200-01-0400C	28261	22-Sep-03	970	275
Gray Horse Creek	OK621200-01-0400C	28394	20-Oct-03	220	80
Gray Horse Creek	OK621200-01-0400C	30124	27-Apr-04	150	240
Gray Horse Creek	OK621200-01-0400C	30338	01-Jun-04	110	30
Doga Creek	OK621200-02-0020C	25420	23-Jul-02	260	130
Doga Creek	OK621200-02-0020C	25733	27-Aug-02	1600	740
Doga Creek	OK621200-02-0020C	25915	01-Oct-02	320	80
Doga Creek	OK621200-02-0020C	27459	29-Apr-03	80	280
Doga Creek	OK621200-02-0020C	27658	02-Jun-03	210	290
Doga Creek	OK621200-02-0020C	27781	07-Jul-03	50	40
Doga Creek	OK621200-02-0020C	28095	11-Aug-03	60	20
Doga Creek	OK621200-02-0020C	28262	22-Sep-03	230	220
Doga Creek	OK621200-02-0020C	28395	20-Oct-03	160	80
Doga Creek	OK621200-02-0020C	30125	27-Apr-04	180	110
Black Bear Creek: Lower	OK621200-03-0010D	25407	23-Jul-02	720	170
Black Bear Creek: Lower	OK621200-03-0010D	25739	27-Aug-02	2100	1250
Black Bear Creek: Lower	OK621200-03-0010D	25895	01-Oct-02	60	20
Black Bear Creek: Lower	OK621200-03-0010D	27466	29-Apr-03	180	80
Black Bear Creek: Lower	OK621200-03-0010D	27654	03-Jun-03	1110	790
Black Bear Creek: Lower	OK621200-03-0010D	27801	08-Jul-03	130	140
Black Bear Creek: Lower	OK621200-03-0010D	28091	12-Aug-03	20	20
Black Bear Creek: Lower	OK621200-03-0010D	28239	16-Sep-03	670	390
Black Bear Creek: Lower	OK621200-03-0010D	28370	21-Oct-03	100	130
Black Bear Creek: Lower	OK621200-03-0010D	30090	20-Apr-04	120	165
Black Bear Creek: Lower	OK621200-03-0010D	30390	08-Jun-04	500	95
Black Bear Creek	OK621200-03-0010M	25408	23-Jul-02	580	180
Black Bear Creek	OK621200-03-0010M	25740	27-Aug-02	3000	700
Black Bear Creek	OK621200-03-0010M	25896	01-Oct-02	20	60
Black Bear Creek	OK621200-03-0010M	27467	29-Apr-03	740	440
Black Bear Creek	OK621200-03-0010M	27655	03-Jun-03	270	170
Black Bear Creek	OK621200-03-0010M	27802	08-Jul-03	50	290
Black Bear Creek	OK621200-03-0010M	28092	12-Aug-03	40	20
Black Bear Creek	OK621200-03-0010M	28240	16-Sep-03	730	210
Black Bear Creek	OK621200-03-0010M	28371	21-Oct-03	180	480
Black Bear Creek	OK621200-03-0010M	30091	20-Apr-04	105	95
Black Bear Creek	OK621200-03-0010M	30391	08-Jun-04	160	135
Black Bear Creek	OK621200-03-0010W	25639	05-Aug-02	70	20
Black Bear Creek	OK621200-03-0010W	25781	03-Sep-02	20	20
Black Bear Creek	OK621200-03-0010W	25900	30-Sep-02	100	
Black Bear Creek	OK621200-03-0010W	27431	28-Apr-03	120	120
Black Bear Creek	OK621200-03-0010W	27647	03-Jun-03	340	190
Black Bear Creek	OK621200-03-0010W	27757	07-Jul-03	50	120
Black Bear Creek	OK621200-03-0010W	28068	11-Aug-03	20	20
Black Bear Creek	OK621200-03-0010W	28227	15-Sep-03	670	440
Black Bear Creek	OK621200-03-0010W	28376	20-Oct-03	230	190
Black Bear Creek	OK621200-03-0010W	30056	19-Apr-04	15	40
Black Bear Creek	OK621200-03-0010W	30320	01-Jun-04	30	30
Salt Creek	OK621200-04-0010F	25421	23-Jul-02	50	10
Salt Creek	OK621200-04-0010F	25735	27-Aug-02	1600	190

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Salt Creek	OK621200-04-0010F	25916	01-Oct-02	80	20
Salt Creek	OK621200-04-0010F	27460	29-Apr-03	40	20
Salt Creek	OK621200-04-0010F	27659	02-Jun-03	3000	3000
Salt Creek	OK621200-04-0010F	27782	07-Jul-03	10	10
Salt Creek	OK621200-04-0010F	28096	11-Aug-03	20	20
Salt Creek	OK621200-04-0010F	28263	22-Sep-03	130	70
Salt Creek	OK621200-04-0010F	28396	20-Oct-03	120	90
Salt Creek	OK621200-04-0010F	30126	27-Apr-04	360	180
Salt Creek	OK621200-04-0010F	30339	01-Jun-04	10	40
Salt Creek	OK621200-04-0010P	25419	23-Jul-02	70	100
Salt Creek	OK621200-04-0010P	25732	27-Aug-02	20	120
Salt Creek	OK621200-04-0010P	25914	01-Oct-02	100	20
Salt Creek	OK621200-04-0010P	27457	28-Apr-03	60	20
Salt Creek	OK621200-04-0010P	27660	02-Jun-03	3000	3000
Salt Creek	OK621200-04-0010P	27783	07-Jul-03	10	10
Salt Creek	OK621200-04-0010P	28097	11-Aug-03	20	20
Salt Creek	OK621200-04-0010P	28264	22-Sep-03	10	40
Salt Creek	OK621200-04-0010P	28397	20-Oct-03	50	20
Salt Creek	OK621200-04-0010P	30123	26-Apr-04	560	230
Salt Creek	OK621200-04-0010P	30340	01-Jun-04	110	90
Red Rock Creek	OK621200-05-0010K	25637	05-Aug-02	940	400
Red Rock Creek	OK621200-05-0010K	25779	03-Sep-02	60	20
Red Rock Creek	OK621200-05-0010K	25898	30-Sep-02	164	
Red Rock Creek	OK621200-05-0010K	27326	24-Mar-03	370	170
Red Rock Creek	OK621200-05-0010K	27429	28-Apr-03	140	220
Red Rock Creek	OK621200-05-0010K	27646	03-Jun-03	150	100
Red Rock Creek	OK621200-05-0010K	27755	07-Jul-03	160	330
Red Rock Creek	OK621200-05-0010K	28066	11-Aug-03	80	20
Red Rock Creek	OK621200-05-0010K	28225	15-Sep-03	200	595
Red Rock Creek	OK621200-05-0010K	28374	20-Oct-03	350	330
Red Rock Creek	OK621200-05-0010K	30054	19-Apr-04	60	80
Red Rock Creek	OK621200-05-0010K	30318	01-Jun-04	230	240
Red Rock Creek: Upper	OK621200-05-0160G	25638	05-Aug-02	1600	240
Red Rock Creek: Upper	OK621200-05-0160G	25780	03-Sep-02	120	240
Red Rock Creek: Upper	OK621200-05-0160G	25899	30-Sep-02	100	
Red Rock Creek: Upper	OK621200-05-0160G	27327	24-Mar-03	250	210
Red Rock Creek: Upper	OK621200-05-0160G	27430	28-Apr-03	140	300
Red Rock Creek: Upper	OK621200-05-0160G	27645	03-Jun-03	260	170
Red Rock Creek: Upper	OK621200-05-0160G	27756	07-Jul-03	50	120
Red Rock Creek: Upper	OK621200-05-0160G	28067	11-Aug-03	220	20
Red Rock Creek: Upper	OK621200-05-0160G	28226	15-Sep-03	80	320
Red Rock Creek: Upper	OK621200-05-0160G	28375	20-Oct-03	70	260
Red Rock Creek: Upper	OK621200-05-0160G	30055	19-Apr-04	20	70
Red Rock Creek: Upper	OK621200-05-0160G	30319	01-Jun-04	240	310
Beaver Creek	OK621210-00-0050L	25418	23-Jul-02	1120	440
Beaver Creek	OK621210-00-0050L	25731	27-Aug-02	340	160
Beaver Creek	OK621210-00-0050L	25913	01-Oct-02	60	20
Beaver Creek	OK621210-00-0050L	27456	28-Apr-03	140	120
Beaver Creek	OK621210-00-0050L	27661	02-Jun-03	3000	3000
Beaver Creek	OK621210-00-0050L	27784	07-Jul-03	20	10
Beaver Creek	OK621210-00-0050L	28098	11-Aug-03	60	200
Beaver Creek	OK621210-00-0050L	28265	22-Sep-03	130	160
Beaver Creek	OK621210-00-0050L	28398	20-Oct-03	70	70
Beaver Creek	OK621210-00-0050L	30122	26-Apr-04	350	310

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E.Coli</i>	<i>Enterococcus</i>
Beaver Creek	OK621210-00-0050L	30341	01-Jun-04	150	30
Bent Creek	OK720500-01-0070D	25556	30-Jul-02	800	410
Bent Creek	OK720500-01-0070D	25778	04-Sep-02	80	120
Bent Creek	OK720500-01-0070D	25973	08-Oct-02	433	150
Bent Creek	OK720500-01-0070D	27317	25-Mar-03	120	210
Bent Creek	OK720500-01-0070D	27551	06-May-03	460	380
Bent Creek	OK720500-01-0070D	27639	03-Jun-03	980	1005
Bent Creek	OK720500-01-0070D	27779	08-Jul-03	160	510
Bent Creek	OK720500-01-0070D	28085	12-Aug-03	160	120
Bent Creek	OK720500-01-0070D	28224	16-Sep-03	50	370
Bent Creek	OK720500-01-0070D	28393	21-Oct-03	50	165
Bent Creek	OK720500-01-0070D	30116	27-Apr-04	330	330
Bent Creek	OK720500-01-0070D	30337	02-Jun-04	50	80
Persimmon Creek	OK720500-01-0150G	25555	30-Jul-02	490	580
Persimmon Creek	OK720500-01-0150G	25777	04-Sep-02	140	260
Persimmon Creek	OK720500-01-0150G	25972	08-Oct-02	867	133
Persimmon Creek	OK720500-01-0150G	27316	25-Mar-03	100	150
Persimmon Creek	OK720500-01-0150G	27552	06-May-03	440	300
Persimmon Creek	OK720500-01-0150G	27638	03-Jun-03	210	230
Persimmon Creek	OK720500-01-0150G	27778	08-Jul-03	410	450
Persimmon Creek	OK720500-01-0150G	28084	12-Aug-03	200	140
Persimmon Creek	OK720500-01-0150G	28223	16-Sep-03	540	430
Persimmon Creek	OK720500-01-0150G	28392	21-Oct-03	100	270
Persimmon Creek	OK720500-01-0150G	30115	27-Apr-04	260	225
Persimmon Creek	OK720500-01-0150G	30336	02-Jun-04	105	260
Indian Creek	OK720500-01-0200D	25554	30-Jul-02	150	150
Indian Creek	OK720500-01-0200D	25776	04-Sep-02	80	140
Indian Creek	OK720500-01-0200D	25971	08-Oct-02	233	33
Indian Creek	OK720500-01-0200D	27315	25-Mar-03	90	30
Indian Creek	OK720500-01-0200D	27553	06-May-03	40	80
Indian Creek	OK720500-01-0200D	27637	03-Jun-03	80	80
Indian Creek	OK720500-01-0200D	27777	08-Jul-03	10	110
Indian Creek	OK720500-01-0200D	28391	21-Oct-03	50	140
Indian Creek	OK720500-01-0200D	30114	27-Apr-04	110	180
Indian Creek	OK720500-01-0200D	30335	02-Jun-04	400	240
Otter Creek	OK720500-02-0050B	25520	23-Jul-02	830	460
Otter Creek	OK720500-02-0050B	25719	27-Aug-02	2667	2566
Otter Creek	OK720500-02-0050B	25885	01-Oct-02	420	
Otter Creek	OK720500-02-0050B	27341	01-Apr-03	100	240
Otter Creek	OK720500-02-0050B	27445	29-Apr-03	380	180
Otter Creek	OK720500-02-0050B	27699	10-Jun-03	140	350
Otter Creek	OK720500-02-0050B	30070	20-Apr-04	430	500
Clear Creek	OK720500-02-0070G	25519	23-Jul-02	800	140
Clear Creek	OK720500-02-0070G	25720	27-Aug-02	1600	2660
Clear Creek	OK720500-02-0070G	25886	01-Oct-02	160	
Clear Creek	OK720500-02-0070G	27342	01-Apr-03	40	50
Clear Creek	OK720500-02-0070G	27446	29-Apr-03	100	160
Clear Creek	OK720500-02-0070G	27700	10-Jun-03	170	320
Clear Creek	OK720500-02-0070G	27830	15-Jul-03	430	790
Clear Creek	OK720500-02-0070G	28128	19-Aug-03	250	1000
Clear Creek	OK720500-02-0070G	28251	16-Sep-03	430	460
Clear Creek	OK720500-02-0070G	28421	28-Oct-03	130	220
Clear Creek	OK720500-02-0070G	30071	20-Apr-04	105	190
Clear Creek	OK720500-02-0070G	30367	08-Jun-04	345	180

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	E.Coli	Enterococcus
Spring Creek	OK720500-02-0100D	25509	22-Jul-02	1135	680
Spring Creek	OK720500-02-0100D	25724	27-Aug-02	1900	1920
Spring Creek	OK720500-02-0100D	25887	01-Oct-02	200	90
Spring Creek	OK720500-02-0100D	27346	01-Apr-03	55	105
Spring Creek	OK720500-02-0100D	27449	29-Apr-03	160	320
Spring Creek	OK720500-02-0100D	27703	10-Jun-03	660	1520
Spring Creek	OK720500-02-0100D	27833	15-Jul-03	450	805
Spring Creek	OK720500-02-0100D	28249	15-Sep-03	30	320
Spring Creek	OK720500-02-0100D	28424	28-Oct-03	50	135
Spring Creek	OK720500-02-0100D	30074	20-Apr-04	500	500
Spring Creek	OK720500-02-0100D	30370	08-Jun-04	225	155
Kiowa Creek	OK720500-02-0130C	25510	22-Jul-02	500	210
Kiowa Creek	OK720500-02-0130C	25723	27-Aug-02	1720	1140
Kiowa Creek	OK720500-02-0130C	25884	30-Sep-02	20	
Kiowa Creek	OK720500-02-0130C	27345	01-Apr-03	10	10
Kiowa Creek	OK720500-02-0130C	27444	28-Apr-03	20	20
Kiowa Creek	OK720500-02-0130C	27698	09-Jun-03	580	150
Kiowa Creek	OK720500-02-0130C	27828	14-Jul-03	40	240
Kiowa Creek	OK720500-02-0130C	28248	15-Sep-03	20	60
Kiowa Creek	OK720500-02-0130C	28419	27-Oct-03	90	50
Kiowa Creek	OK720500-02-0130C	30069	19-Apr-04	10	115
Kiowa Creek	OK720500-02-0130C	30365	07-Jun-04	70	50
Kiowa Creek	OK720500-02-0130K	25518	23-Jul-02	1670	770
Kiowa Creek	OK720500-02-0130K	25721	27-Aug-02	780	200
Kiowa Creek	OK720500-02-0130K	25889	01-Oct-02	30	10
Kiowa Creek	OK720500-02-0130K	27343	01-Apr-03	20	20
Kiowa Creek	OK720500-02-0130K	27447	29-Apr-03	240	60
Kiowa Creek	OK720500-02-0130K	27701	10-Jun-03	370	290
Kiowa Creek	OK720500-02-0130K	27831	15-Jul-03	230	150
Kiowa Creek	OK720500-02-0130K	28129	19-Aug-03	140	130
Kiowa Creek	OK720500-02-0130K	28252	16-Sep-03	260	240
Kiowa Creek	OK720500-02-0130K	28422	28-Oct-03	40	50
Kiowa Creek	OK720500-02-0130K	30072	20-Apr-04	1000	1000
Kiowa Creek	OK720500-02-0130K	30368	08-Jun-04	95	160
Duck Pond Creek	OK720500-02-0250F	25517	23-Jul-02	780	160
Duck Pond Creek	OK720500-02-0250F	25722	27-Aug-02	320	440
Duck Pond Creek	OK720500-02-0250F	25888	01-Oct-02	80	70
Duck Pond Creek	OK720500-02-0250F	27344	01-Apr-03	30	50
Duck Pond Creek	OK720500-02-0250F	27448	29-Apr-03	60	20
Duck Pond Creek	OK720500-02-0250F	27702	10-Jun-03	780	910
Duck Pond Creek	OK720500-02-0250F	27832	15-Jul-03	110	240
Duck Pond Creek	OK720500-02-0250F	28130	19-Aug-03	90	130
Duck Pond Creek	OK720500-02-0250F	28253	16-Sep-03	270	640
Duck Pond Creek	OK720500-02-0250F	28423	28-Oct-03	190	310
Duck Pond Creek	OK720500-02-0250F	30073	20-Apr-04	100	500
Duck Pond Creek	OK720500-02-0250F	30369	08-Jun-04	365	305
Clear Creek	OK720500-02-0300F	25516	23-Jul-02	210	200
Clear Creek	OK720500-02-0300F	25716	26-Aug-02	20	20
Clear Creek	OK720500-02-0300F	25881	30-Sep-02	20	
Clear Creek	OK720500-02-0300F	27338	31-Mar-03	20	80
Clear Creek	OK720500-02-0300F	27441	28-Apr-03	20	80
Clear Creek	OK720500-02-0300F	27695	09-Jun-03	200	510
Clear Creek	OK720500-02-0300F	27825	14-Jul-03	30	180
Clear Creek	OK720500-02-0300F	28123	18-Aug-03	40	30

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E. Coli</i>	<i>Enterococcus</i>
Clear Creek	OK720500-02-0300F	28245	15-Sep-03	75	50
Clear Creek	OK720500-02-0300F	28416	27-Oct-03	30	70
Clear Creek	OK720500-02-0300F	30066	19-Apr-04	20	195
Clear Creek	OK720500-02-0300F	30362	07-Jun-04	110	60
Palo Duro Creek	OK720500-02-0500G	25515	23-Jul-02	1470	580
Palo Duro Creek	OK720500-02-0500G	25715	26-Aug-02	450	60
Palo Duro Creek	OK720500-02-0500G	25880	30-Sep-02	100	
Palo Duro Creek	OK720500-02-0500G	27337	31-Mar-03	10	10
Palo Duro Creek	OK720500-02-0500G	27440	28-Apr-03	20	20
Palo Duro Creek	OK720500-02-0500G	27694	09-Jun-03	130	140
Palo Duro Creek	OK720500-02-0500G	27824	14-Jul-03	50	240
Palo Duro Creek	OK720500-02-0500G	28122	18-Aug-03	120	150
Palo Duro Creek	OK720500-02-0500G	28244	15-Sep-03	70	80
Palo Duro Creek	OK720500-02-0500G	28415	27-Oct-03	90	90
Palo Duro Creek	OK720500-02-0500G	30065	19-Apr-04	35	100
Palo Duro Creek	OK720500-02-0500G	30361	07-Jun-04	500	215
Wolf Creek (Lower)	OK720500-03-0010C	25552	30-Jul-02	60	60
Wolf Creek (Lower)	OK720500-03-0010C	25774	03-Sep-02	20	20
Wolf Creek (Lower)	OK720500-03-0010C	25969	08-Oct-02	33	33
Wolf Creek (Lower)	OK720500-03-0010C	27313	25-Mar-03	20	40
Wolf Creek (Lower)	OK720500-03-0010C	27555	06-May-03	20	40
Wolf Creek (Lower)	OK720500-03-0010C	27775	08-Jul-03	10	175
Wolf Creek (Lower)	OK720500-03-0010C	28081	12-Aug-03	40	80
Wolf Creek (Lower)	OK720500-03-0010C	28221	16-Sep-03	60	220
Wolf Creek (Lower)	OK720500-03-0010C	28390	21-Oct-03	50	140
Wolf Creek (Lower)	OK720500-03-0010C	30113	26-Apr-04	5	40
Wolf Creek (Lower)	OK720500-03-0010C	30333	02-Jun-04	145	165
Wolf Creek: Upper	OK720500-03-0010G	25553	30-Jul-02	1800	290
Wolf Creek: Upper	OK720500-03-0010G	25775	04-Sep-02	40	40
Wolf Creek: Upper	OK720500-03-0010G	25970	08-Oct-02	300	33
Wolf Creek: Upper	OK720500-03-0010G	27314	25-Mar-03	130	100
Wolf Creek: Upper	OK720500-03-0010G	27554	06-May-03	4000	80
Wolf Creek: Upper	OK720500-03-0010G	27636	03-Jun-03	70	100
Wolf Creek: Upper	OK720500-03-0010G	27635	03-Jun-03	275	300
Wolf Creek: Upper	OK720500-03-0010G	27776	08-Jul-03	60	80
Wolf Creek: Upper	OK720500-03-0010G	28082	12-Aug-03	160	20
Wolf Creek: Upper	OK720500-03-0010G	28220	15-Sep-03	10	20
Wolf Creek: Upper	OK720500-03-0010G	28389	20-Oct-03	10	50
Wolf Creek: Upper	OK720500-03-0010G	30112	26-Apr-04	230	175
Wolf Creek: Upper	OK720500-03-0010G	30334	02-Jun-04	90	30
Cold Springs Creek	OK720900-00-0100D	25713	26-Aug-02	120	380
Cold Springs Creek	OK720900-00-0100D	25879	30-Sep-02	34	
Cold Springs Creek	OK720900-00-0100D	27336	31-Mar-03	40	660
Cold Springs Creek	OK720900-00-0100D	27438	28-Apr-03	20	400
Cold Springs Creek	OK720900-00-0100D	27693	09-Jun-03	10	60
Cimarron River	OK720900-00-0180C	25513	22-Jul-02	660	320
Cimarron River	OK720900-00-0180C	25714	26-Aug-02	540	100
Cimarron River	OK720900-00-0180C	25878	30-Sep-02	34	
Cimarron River	OK720900-00-0180C	27335	31-Mar-03	10	20
Cimarron River	OK720900-00-0180C	27439	28-Apr-03	20	40
Cimarron River	OK720900-00-0180C	27692	09-Jun-03	50	430
Cimarron River	OK720900-00-0180C	27822	14-Jul-03	35	125
Cimarron River	OK720900-00-0180C	28120	18-Aug-03	30	35
Cimarron River	OK720900-00-0180C	28243	15-Sep-03	10	20

Appendix A.2. Raw bacteria data.

Site Name	WBID	SAMPLEID	Date	<i>E.Coli</i>	<i>Enterococcus</i>
Cimarron River	OK720900-00-0180C	28414	27-Oct-03	45	65
Cimarron River	OK720900-00-0180C	30064	19-Apr-04	5	10
Cimarron River	OK720900-00-0180C	30360	07-Jun-04	5	5

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Alkalinity	OK620900-01-0180J	Lagoon Creek	21	0	136.05	9.32	42.71	60	103	130	162	222
Alkalinity	OK620900-01-0290D	Euchee Creek	21	0	148.3	11	50.4	11.8	124	149	179.5	219
Alkalinity	OK620900-02-0020D	Salt Creek: Payne Co.	22	0	174.9	13.2	62.1	9.1	149.3	189.5	217.5	253
Alkalinity	OK620900-02-0050H	Council Creek	21	0	168.29	9.13	41.84	105	133	159	196	265
Alkalinity	OK620900-03-0080C	Dugout Creek	21	0	231.9	10.9	49.8	147	184	242	264.5	309
Alkalinity	OK620900-03-0230C	Beaver Creek: Logan Co.	21	0	220.8	13.6	62.5	115	169.5	222	284	315
Alkalinity	OK620900-04-0040C	Stillwater Creek: Lower	21	0	100.38	7.78	35.65	37	71	96	128	172
Alkalinity	OK620900-04-0070T	Stillwater Creek: Upper	21	0	208.4	15.4	70.7	130	146	194	257	375
Alkalinity	OK620910-02-0040C	Cooper Creek	21	1	295.8	16.6	76	148	270.5	299	336.5	474
Alkalinity	OK620910-02-0100D	Salt Creek: Kingfisher Co.	20	1	147.7	11.1	49.8	25	112.5	155.5	194.3	223
Alkalinity	OK620910-02-0250C	Deep Creek	21	1	225.81	8.23	37.7	137	201.5	221	249	293
Alkalinity	OK620910-02-0310C	Indian Creek: Major Co.	21	0	233.76	6.99	32.02	159	216	233	260.5	277
Alkalinity	OK620910-03-0010F	Skeleton Creek: Lower	21	0	260.3	11.4	52.2	185	209.5	254	315	346
Alkalinity	OK620910-03-0010S	Skeleton Creek: Upper	20	1	285.1	11.3	50.7	180	247.5	298.5	327.5	361
Alkalinity	OK620910-03-0040C	Otter Creek: Logan Co.	21	0	232.9	16.2	74.2	114	172	233	307	350
Alkalinity	OK620910-04-0010D	Cottonwood Creek	21	0	168.81	8.19	37.54	110	138.5	162	205	227
Alkalinity	OK620910-05-0010J	Kingfisher Creek	21	0	254.05	8.28	37.95	175	228	253	276.5	344
Alkalinity	OK620910-05-0030C	Uncle John's Creek	21	1	253.24	5.92	27.13	197	232.5	253	270.5	305
Alkalinity	OK620910-05-0080D	Dead Indian Creek	21	1	254.8	14.8	67.8	74	232	263	301.5	347
Alkalinity	OK620910-06-0010B	Turkey Creek: Lower	20	2	282.5	16.7	74.5	112	237	292.5	343.5	397
Alkalinity	OK620910-06-0010T	Turkey Creek: Upper	21	0	322.4	15.1	69.3	201	263.5	341	378	409
Alkalinity	OK620920-01-0130G	Griever Creek	21	0	175.86	9.81	44.95	84	149.5	172	215.5	248
Alkalinity	OK620920-01-0180F	Main Creek	20	1	154.2	8.83	39.48	85	122	152.5	193.5	223
Alkalinity	OK620920-02-0080D	Long Creek	21	0	162.95	9.06	41.5	60	136	163	197.5	229
Alkalinity	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	252.3	11.8	49.9	140	228.5	252	292.3	320
Alkalinity	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	21	3	235.95	8.64	39.57	189	195	233	272	313
Alkalinity	OK620920-05-0010G	Buffalo Creek: Lower	20	1	176.9	8	35.8	104	148.5	180	209.25	225
Alkalinity	OK620920-05-0010P	Buffalo Creek: Upper	20	2	210.45	7.66	34.26	140	183.75	216.5	236.5	261
Alkalinity	OK620920-05-0050G	Sand Creek	21	0	211.14	8.53	39.08	120	185.5	220	246.5	261
Alkalinity	OK620930-00-0010T	Cimarron River: Beaver Co.	21	0	215.71	5.22	23.93	149	208	223	230	254
Alkalinity	OK620930-00-0100G	Crooked Creek: Beaver Co.	24	0	212.5	8.68	42.52	145	183.5	209	225	362
Alkalinity	OK621000-02-0040F	Wild Horse Creek	21	0	299.4	22.9	104.9	50	242	312	361.5	512
Alkalinity	OK621000-03-0010C	Bois d'Arc	20	0	162.7	14.3	63.8	43	109.5	178	209	257
Alkalinity	OK621000-04-0010D	Deer Creek	21	0	186.8	10.7	48.9	85	153	189	223	273
Alkalinity	OK621000-05-0010D	Pond Creek	21	0	243.3	27.4	125.7	47	140	230	370	443
Alkalinity	OK621000-06-0010C	Crooked Creek: Grant Co.	15	0	278.1	28.5	110.5	2.2	197	329	366	393
Alkalinity	OK621010-01-0010D	Salt Fork of Arkansas River	21	0	120.9	7.58	34.72	63	99.5	109	151	188
Alkalinity	OK621010-01-0090R	Clay Creek	20	1	268.1	23	102.8	96	182.8	283	333.5	448
Alkalinity	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	225.1	11.3	50.7	126	183.3	225	258	332

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Alkalinity	OK621010-01-0270C	Yellowstone Creek	21	0	135.38	7.79	35.7	33	119.5	141	158.5	188
Alkalinity	OK621010-02-0010D	Sandy Creek	21	0	206	12	55	121	161	202	257	295
Alkalinity	OK621010-03-0010D	Medicine Lodge Creek	21	1	169.71	8.81	40.36	101	135.5	170	204	230
Alkalinity	OK621010-03-0030C	Driftwood Creek	21	0	242.9	19.3	88.4	61	187.5	245	311.5	398
Alkalinity	OK621100-00-0010B	Chickaskia River: Lower	21	0	155	9.29	42.59	63	117.5	166	185	222
Alkalinity	OK621100-00-0010M	Chickaskia Creek: Middle	22	0	161.41	8.92	41.84	72	129	160.5	193.25	241
Alkalinity	OK621100-00-0100G	Bitter Creek	20	1	167.8	9.16	40.96	98	130	168	199.25	238
Alkalinity	OK621200-01-0400C	Gray Horse Creek	21	0	113.14	9.47	43.38	50	83.5	103	130	228
Alkalinity	OK621200-02-0020C	Doga Creek	20	0	119.6	9.07	40.58	63	92.5	112	132.75	236
Alkalinity	OK621200-03-0010D	Black Bear Creek: Lower	21	0	139.9	9.72	44.52	76	97.5	135	174.5	223
Alkalinity	OK621200-03-0010M	Black Bear Creek (downstream)	23	0	175.3	13.7	65.8	71	130	158	233	303
Alkalinity	OK621200-03-0010W	Black Bear Creek (upstream)	23	0	204	13.4	64.2	76	150	215	259	323
Alkalinity	OK621200-04-0010F	Salt Creek: Lower	20	2	135.4	8.56	38.29	97	101.5	118	178.5	206
Alkalinity	OK621200-04-0010P	Salt Creek: Upper	21	0	143.9	8.08	37.01	88	116	131	170	225
Alkalinity	OK621200-05-0010K	Red Rock Creek	21	0	193.2	21.6	99.1	80	103	163	260	402
Alkalinity	OK621200-05-0160G	Red Rock Creek: Upper	21	0	233	22.3	102.3	0.6	130	266	323	385
Alkalinity	OK621210-00-0050L	Beaver Creek: Osage Co.	21	0	155.8	10.3	47.2	67	122	147	183.5	245
Alkalinity	OK621210-00-0270C	Chilocco Creek	19	0	156.6	12.7	55.4	54	116	161	188	269
Alkalinity	OK720500-01-0070D	Bent Creek	21	0	232.9	7.62	34.91	134	218.5	234	245.5	302
Alkalinity	OK720500-01-0150G	Persimmon Creek	21	0	264.67	8.54	39.13	202	226	274	290.5	337
Alkalinity	OK720500-01-0200D	Indian Creek: Woodward Co.	19	0	216.47	6.96	30.34	156	196	225	232	266
Alkalinity	OK720500-02-0050B	Otter Creek: Harper Co.	16	0	234.9	11.3	45.3	92	230.3	250	258.5	279
Alkalinity	OK720500-02-0070G	Clear Creek: Harper Co.	21	0	200.38	5.36	24.57	98	199	206	209.5	222
Alkalinity	OK720500-02-0100D	Spring Creek	19	1	216.3	12.7	55.3	2.3	223	228	240	257
Alkalinity	OK720500-02-0130C	Kiowa Creek: Harper Co.	20	0	204.85	4.44	19.83	167	195.75	207.5	216.5	238
Alkalinity	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	215.9	3.68	16.47	171	206	219.5	228.25	237
Alkalinity	OK720500-02-0250F	Duck Pond Creek	21	1	187.52	7.19	32.93	107	168.5	199	214	223
Alkalinity	OK720500-02-0300F	Clear Creek: Beaver Co.	21	0	247.48	1.86	8.52	229	241	249	255	258
Alkalinity	OK720500-02-0500G	Palo Duro Creek	21	0	234.2	12.3	56.5	112	209	260	272	284
Alkalinity	OK720500-03-0010C	Wolf Creek: Lower	19	1	188.11	5.77	25.15	148	168	182	199	245
Alkalinity	OK720500-03-0010G	Wolf Creek: Upper	22	0	211.45	6.6	30.98	138	192	214.5	237.25	270
Alkalinity	OK720900-00-0100D	Cold Springs Creek	9	0	511	33.7	101	424	440.5	467	577.5	732
Alkalinity	OK720900-00-0180C	Cimarron River: Cimarron Co.	21	1	341.2	16	73.5	175	277.5	346	396	459
Ammonia (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	0.0463	0.0149	0.0665	0.005	0.015	0.021	0.0453	0.257
Ammonia (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	0.237	0.129	0.576	0.015	0.021	0.035	0.187	2.617
Ammonia (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	0.02448	0.00465	0.02131	0.012	0.015	0.015	0.025	0.089
Ammonia (mg/L)	OK620900-02-0050H	Council Creek	20	1	0.0394	0.0117	0.0523	0.015	0.015	0.0185	0.0268	0.215
Ammonia (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	0.0667	0.0154	0.0688	0.015	0.02	0.0405	0.0818	0.248
Ammonia (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	0.03665	0.00932	0.04166	0.015	0.015	0.0175	0.031	0.172

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Ammonia (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	19	2	0.277	0.118	0.516	0.015	0.058	0.077	0.173	2.206
Ammonia (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	0.1248	0.0371	0.166	0.015	0.0153	0.059	0.1303	0.635
Ammonia (mg/L)	OK620910-02-0040C	Cooper Creek	19	3	0.0719	0.0202	0.088	0.015	0.015	0.029	0.113	0.273
Ammonia (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	0.02795	0.00748	0.03261	0.015	0.015	0.015	0.027	0.155
Ammonia (mg/L)	OK620910-02-0250C	Deep Creek	20	2	0.0519	0.0162	0.0723	0.015	0.015	0.026	0.0508	0.308
Ammonia (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	0.0212	0.00255	0.01142	0.015	0.015	0.0175	0.023	0.064
Ammonia (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	0.052	0.0138	0.0615	0.015	0.015	0.024	0.0805	0.257
Ammonia (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	0.0825	0.0165	0.0739	0.015	0.0263	0.047	0.1563	0.224
Ammonia (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	0.0468	0.0115	0.0512	0.015	0.015	0.02	0.0515	0.16
Ammonia (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	0.0569	0.0212	0.0948	0.015	0.0158	0.032	0.0523	0.448
Ammonia (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	0.0531	0.0123	0.0549	0.015	0.0153	0.0245	0.082	0.189
Ammonia (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	0.0422	0.0109	0.0489	0.015	0.0173	0.03	0.0435	0.234
Ammonia (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	0.088	0.0179	0.0802	0.015	0.0233	0.0685	0.1198	0.268
Ammonia (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	0.0717	0.0193	0.0863	0.015	0.015	0.037	0.0823	0.348
Ammonia (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	0.0878	0.0159	0.0709	0.015	0.0333	0.0715	0.1418	0.275
Ammonia (mg/L)	OK620920-01-0130G	Griever Creek	20	1	0.0554	0.0214	0.0959	0.015	0.015	0.015	0.057	0.429
Ammonia (mg/L)	OK620920-01-0180F	Main Creek	20	1	0.0654	0.0413	0.1847	0.015	0.015	0.015	0.0315	0.844
Ammonia (mg/L)	OK620920-02-0080D	Long Creek	20	1	0.0437	0.0201	0.0901	0.015	0.015	0.015	0.0253	0.416
Ammonia (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	0.17	0.137	0.583	0.015	0.015	0.024	0.036	2.5
Ammonia (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	0.0564	0.0184	0.0862	0.015	0.0183	0.029	0.059	0.418
Ammonia (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	0.0826	0.0508	0.2273	0.015	0.015	0.017	0.0353	1.034
Ammonia (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	0.0668	0.0371	0.166	0.015	0.015	0.019	0.0338	0.761
Ammonia (mg/L)	OK620920-05-0050G	Sand Creek	20	1	0.0695	0.0131	0.0587	0.015	0.02	0.043	0.129	0.184
Ammonia (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	0.033	0.0108	0.0484	0.015	0.015	0.019	0.0275	0.232
Ammonia (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	0.06	0.0299	0.1433	0.015	0.015	0.017	0.029	0.695
Ammonia (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	0.1153	0.047	0.2103	0.015	0.0193	0.06	0.1355	0.971
Ammonia (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	0.0834	0.0232	0.1013	0.015	0.016	0.041	0.106	0.365
Ammonia (mg/L)	OK621000-04-0010D	Deer Creek	20	1	0.0607	0.0133	0.0596	0.015	0.015	0.025	0.1075	0.173
Ammonia (mg/L)	OK621000-05-0010D	Pond Creek	20	1	0.0934	0.0313	0.1401	0.015	0.0155	0.0425	0.1035	0.602
Ammonia (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	0.0774	0.0209	0.0784	0.015	0.015	0.0565	0.1058	0.302
Ammonia (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	0.0863	0.0256	0.1145	0.015	0.015	0.022	0.1665	0.441
Ammonia (mg/L)	OK621010-01-0090R	Clay Creek	19	2	0.0807	0.0284	0.1239	0.015	0.017	0.025	0.085	0.472
Ammonia (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	0.0614	0.0191	0.0856	0.015	0.015	0.0285	0.0705	0.379
Ammonia (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	0.02645	0.00749	0.03348	0.015	0.015	0.015	0.015	0.145
Ammonia (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	0.0442	0.0145	0.0648	0.015	0.0163	0.025	0.0443	0.31
Ammonia (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	0.0374	0.0118	0.0527	0.015	0.015	0.017	0.0353	0.243
Ammonia (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	0.0859	0.0239	0.1069	0.015	0.0173	0.0645	0.098	0.421
Ammonia (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	0.0586	0.0144	0.0627	0.015	0.015	0.021	0.092	0.243
Ammonia (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	0.0513	0.0145	0.0649	0.015	0.015	0.036	0.0628	0.305

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Ammonia (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	0.0933	0.0184	0.0823	0.015	0.0198	0.064	0.1468	0.26
Ammonia (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	0.0453	0.00986	0.04407	0.015	0.015	0.0265	0.05625	0.158
Ammonia (mg/L)	OK621200-02-0020C	Doga Creek	19	1	0.0564	0.0179	0.078	0.015	0.015	0.019	0.055	0.315
Ammonia (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	0.067	0.0166	0.0742	0.015	0.0205	0.0395	0.1055	0.324
Ammonia (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	0.0817	0.0216	0.0965	0.015	0.0158	0.0285	0.1388	0.37
Ammonia (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	0.0782	0.0188	0.0839	0.015	0.016	0.038	0.136	0.277
Ammonia (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	0.0441	0.0143	0.0642	0.015	0.015	0.015	0.0348	0.281
Ammonia (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	0.0324	0.00987	0.04414	0.015	0.015	0.015	0.02625	0.17
Ammonia (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	0.0937	0.0244	0.1093	0.015	0.015	0.0415	0.1588	0.39
Ammonia (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	0.0738	0.021	0.0937	0.015	0.015	0.0205	0.0963	0.32
Ammonia (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	0.0395	0.0125	0.0557	0.015	0.015	0.015	0.0358	0.217
Ammonia (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	0.1066	0.0315	0.1335	0.015	0.015	0.027	0.2398	0.38
Ammonia (mg/L)	OK720500-01-0070D	Bent Creek	19	2	0.0654	0.0173	0.0755	0.015	0.022	0.04	0.071	0.298
Ammonia (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	0.02985	0.00624	0.0279	0.015	0.015	0.018	0.03075	0.113
Ammonia (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	0.0388	0.011	0.0467	0.015	0.015	0.019	0.0318	0.171
Ammonia (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	0.0973	0.0555	0.215	0.015	0.015	0.015	0.034	0.835
Ammonia (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	0.0346	0.0145	0.0649	0.015	0.015	0.015	0.0233	0.305
Ammonia (mg/L)	OK720500-02-0100D	Spring Creek	19	1	0.0375	0.0133	0.0582	0.015	0.015	0.015	0.027	0.256
Ammonia (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	0.03137	0.00996	0.04342	0.015	0.015	0.016	0.025	0.195
Ammonia (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	0.0582	0.0173	0.0773	0.015	0.015	0.03	0.06	0.352
Ammonia (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	0.0266	0.0064	0.02863	0.015	0.015	0.015	0.0205	0.124
Ammonia (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	0.02	0.00316	0.01415	0.015	0.015	0.015	0.018	0.077
Ammonia (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	0.0648	0.0346	0.1548	0.015	0.015	0.015	0.02	0.668
Ammonia (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	0.04216	0.00679	0.0296	0.005	0.015	0.04	0.063	0.118
Ammonia (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	0.03071	0.00967	0.0443	0.015	0.015	0.015	0.021	0.191
Ammonia (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	0.0733	0.0348	0.0983	0.015	0.0165	0.0265	0.1255	0.288
Ammonia (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	0.0536	0.0196	0.0877	0.015	0.015	0.0155	0.0275	0.299
CBOD5 (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	3.375	0.235	1.052	2	2.725	3.2	4	5.6
CBOD5 (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	5.13	0.482	2.157	2	3.425	5	6.375	9
CBOD5 (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	3.505	0.22	1.009	2	2.85	3.5	4	6
CBOD5 (mg/L)	OK620900-02-0050H	Council Creek	20	1	3.495	0.229	1.025	2	2.675	3.35	4.075	5.8
CBOD5 (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	3.805	0.232	1.038	2	2.925	3.8	4.575	6
CBOD5 (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	3.995	0.343	1.535	2	3	3.75	4.925	8
CBOD5 (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	3.34	0.246	1.099	2	2.175	3.1	4.25	5
CBOD5 (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	3.65	0.443	1.983	2	2.025	2.95	4.8	8.7
CBOD5 (mg/L)	OK620910-02-0040C	Cooper Creek	19	3	3.989	0.363	1.584	2	2.6	4	5	8
CBOD5 (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	18	3	3.117	0.432	1.832	2	2	2.35	3.8	9.4
CBOD5 (mg/L)	OK620910-02-0250C	Deep Creek	19	3	3.368	0.315	1.374	2	2	3	4.2	6.3
CBOD5 (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	19	2	2.637	0.172	0.748	2	2	2.4	3	4.1

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
CBOD5 (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	4.645	0.452	2.021	2	3.025	4.45	6	9.4
CBOD5 (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	3.965	0.267	1.194	2	3.025	4	4.8	7
CBOD5 (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	3.675	0.326	1.459	2	2.25	3.6	4.775	6.7
CBOD5 (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	3.49	0.292	1.305	2	2.525	3	4.25	7
CBOD5 (mg/L)	OK620910-05-0010J	Kingfisher Creek	19	2	2.979	0.234	1.022	2	2	2.6	4	5.2
CBOD5 (mg/L)	OK620910-05-0030C	Uncle John's Creek	19	3	2.811	0.224	0.978	2	2	2.4	3.2	5
CBOD5 (mg/L)	OK620910-05-0080D	Dead Indian Creek	19	3	3.326	0.246	1.072	2	2.6	3	4.3	5.2
CBOD5 (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	19	3	3.389	0.311	1.354	2	2	3	4.8	5.8
CBOD5 (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	19	2	3.389	0.326	1.422	2	2	2.9	4.4	6.4
CBOD5 (mg/L)	OK620920-01-0130G	Griever Creek	20	1	3.26	0.302	1.35	2	2.025	2.85	4.375	6.3
CBOD5 (mg/L)	OK620920-01-0180F	Main Creek	20	1	2.775	0.183	0.819	2	2	2.8	3.15	5
CBOD5 (mg/L)	OK620920-02-0080D	Long Creek	20	1	2.755	0.187	0.836	2	2	2.55	3.075	5
CBOD5 (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	17	2	3.153	0.283	1.168	2	2.15	2.8	4	5.7
CBOD5 (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	21	3	2.643	0.184	0.845	2	2	2.4	3.1	5
CBOD5 (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	2.66	0.249	1.116	2	2	2	3.1	6
CBOD5 (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	2.975	0.287	1.285	2	2	2.8	3.3	6.8
CBOD5 (mg/L)	OK620920-05-0050G	Sand Creek	20	1	3.675	0.515	2.304	2	2.325	3.15	4.3	12.5
CBOD5 (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	19	2	4.084	0.63	2.747	2	2.4	3	4.8	13.4
CBOD5 (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	22	2	3.595	0.473	2.221	2	2	3	4	10.7
CBOD5 (mg/L)	OK621000-02-0040F	Wild Horse Creek	19	2	3.426	0.264	1.152	2	2.5	3.1	4	6.1
CBOD5 (mg/L)	OK621000-03-0010C	Bois d' Arc	19	1	3.184	0.243	1.058	2	2.3	3	3.9	6
CBOD5 (mg/L)	OK621000-04-0010D	Deer Creek	20	1	3.92	0.285	1.275	2	3	3.8	4.975	7
CBOD5 (mg/L)	OK621000-05-0010D	Pond Creek	19	2	3.574	0.318	1.388	2	2.7	3	4.6	7
CBOD5 (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	13	2	3.862	0.355	1.282	2	2.45	4.2	5	5.5
CBOD5 (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	19	2	5.021	0.444	1.937	2	4	4.6	6.6	8.4
CBOD5 (mg/L)	OK621010-01-0090R	Clay Creek	18	3	4.133	0.532	2.259	2	2.5	3.35	5.25	10
CBOD5 (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	18	3	2.617	0.235	0.996	2	2	2	3	5.4
CBOD5 (mg/L)	OK621010-01-0270C	Yellowstone Creek	19	2	2.726	0.394	1.715	2	2	2	3	9.1
CBOD5 (mg/L)	OK621010-02-0010D	Sandy Creek	19	2	2.532	0.19	0.829	2	2	2.1	2.8	5
CBOD5 (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	19	3	2.321	0.175	0.764	2	2	2	2.4	5
CBOD5 (mg/L)	OK621010-03-0030C	Driftwood Creek	19	2	3.158	0.271	1.183	2	2	3	3.8	6
CBOD5 (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	3.426	0.339	1.48	2	2	3.2	4.1	7
CBOD5 (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	3.32	0.256	1.143	2	2	3.35	4.225	5.1
CBOD5 (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	3.58	0.231	1.033	2	3	3.35	4.2	6
CBOD5 (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	3.23	0.214	0.956	2	2.625	3	3.875	6
CBOD5 (mg/L)	OK621200-02-0020C	Doga Creek	19	1	3.358	0.232	1.013	2	3	3.2	4	6
CBOD5 (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	3.66	0.265	1.187	2	2.675	3.4	4.475	5.8
CBOD5 (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	3.525	0.277	1.238	2	2.325	3.25	4.3	6
CBOD5 (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	3.05	0.227	1.013	2	2.075	3.05	3.7	6.1

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
CBOD5 (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	3.01	0.271	1.21	2	2	2.65	3.275	6
CBOD5 (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	3.165	0.321	1.434	2	2.125	2.75	3.75	7
CBOD5 (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	3.695	0.247	1.107	2	3	3.35	4.775	5.6
CBOD5 (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	4.27	0.376	1.682	2	3.175	4.1	5.525	8.6
CBOD5 (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	3.645	0.406	1.815	2	2.225	3.25	3.95	9
CBOD5 (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	3.739	0.545	2.312	2	2	2.95	4.525	11
CBOD5 (mg/L)	OK720500-01-0070D	Bent Creek	20	1	2.89	0.211	0.941	2	2	2.75	3.35	5
CBOD5 (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	3.155	0.456	2.04	2	2	2.45	3.575	11
CBOD5 (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	2.667	0.213	0.904	2	2	2.1	3.175	5
CBOD5 (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	2.86	0.247	0.955	2	2	2.8	3.1	5.5
CBOD5 (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	19	2	2.516	0.258	1.125	2	2	2	2.6	6
CBOD5 (mg/L)	OK720500-02-0100D	Spring Creek	18	2	2.617	0.19	0.808	2	2	2.1	3.125	4.3
CBOD5 (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	18	2	2.35	0.139	0.591	2	2	2.05	2.475	4
CBOD5 (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	19	2	3.321	0.54	2.354	2	2	2.2	3.9	11.4
CBOD5 (mg/L)	OK720500-02-0250F	Duck Pond Creek	19	3	3.8	0.513	2.235	2	2.1	3	5	11
CBOD5 (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	19	2	2.342	0.13	0.565	2	2	2	2.6	4
CBOD5 (mg/L)	OK720500-02-0500G	Palo Duro Creek	19	2	3.642	0.559	2.438	2	2	2.9	4.3	11
CBOD5 (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	2.863	0.22	0.958	2	2	2.7	3.7	5
CBOD5 (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	2.933	0.193	0.886	2	2.1	2.7	3.65	5
CBOD5 (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	4.05	0.335	0.947	3	3.075	4	4.875	5.6
CBOD5 (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	19	3	3.853	0.332	1.446	2	2.9	3.4	5	6.5
Chloride (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	77.2	14.4	64.5	8.8	43.3	61.1	90.5	285.3
Chloride (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	27.08	2.94	13.16	8.7	17.13	24.64	37.78	55.7
Chloride (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	262	212	972	14	35	50	69	4503
Chloride (mg/L)	OK620900-02-0050H	Council Creek	20	1	56.79	5.72	25.57	25	35.85	45.89	74.24	109.1
Chloride (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	143.9	17.5	78.4	68.9	96.5	111.3	159.8	373
Chloride (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	146.3	17.8	79.7	58	85	122.5	190.7	394.7
Chloride (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	116	12.3	54.9	35.1	63.2	115.6	176.5	194.6
Chloride (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	30.53	2.27	10.17	12.6	24.4	29.25	39.38	48.36
Chloride (mg/L)	OK620910-02-0040C	Cooper Creek	20	2	322.4	30.1	134.4	51	226.8	361.7	411.7	530.9
Chloride (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	5433	623	2715	708	3967	5311	7234	10277
Chloride (mg/L)	OK620910-02-0250C	Deep Creek	20	2	120.69	9.77	43.68	57.85	82.83	121.4	161.7	194.56
Chloride (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	152.83	4.93	22.05	93.69	147.98	156.3	165.43	184.3
Chloride (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	189.9	17.5	78.3	50.1	132.4	186.1	226.3	400.6
Chloride (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	244.7	20.7	92.5	37.2	189.3	257.2	301.8	408.3
Chloride (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	76.06	8.85	39.59	22.59	47.72	64.15	101.63	162.3
Chloride (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	120.75	5.2	23.27	65.2	112.51	116.9	131.23	188.6
Chloride (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	256.4	17.5	78.1	136.3	204.1	231.1	322.3	452.4
Chloride (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	84.39	4.2	18.77	54.2	71.85	82.3	92.25	130.9

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Chloride (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	158	22.1	98.8	55.4	63.3	117.4	236.9	328.1
Chloride (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	167.7	15.6	69.6	18.3	126.4	192.9	212.1	261.9
Chloride (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	235.6	29	129.7	57.8	135.6	228.5	266.7	593
Chloride (mg/L)	OK620920-01-0130G	Griever Creek	20	1	182.2	11.4	50.8	99.2	153.2	169.5	232.6	280.2
Chloride (mg/L)	OK620920-01-0180F	Main Creek	20	1	221.7	12.9	57.8	29.5	206	218.9	268.5	286
Chloride (mg/L)	OK620920-02-0080D	Long Creek	20	1	186.4	16.2	72.3	53.8	156.4	187.1	215.4	314.9
Chloride (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	67.7	5.49	23.27	6.4	64.7	70.9	78.56	101.1
Chloride (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	104.19	8.05	37.75	11.08	71.08	105.8	137.55	163.9
Chloride (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	161.9	10.5	47.2	36.5	143.5	182.6	195.3	198.8
Chloride (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	158.2	10.5	46.8	22	148.2	172.8	191.3	197
Chloride (mg/L)	OK620920-05-0050G	Sand Creek	20	1	117.3	5.75	25.71	44.75	102.33	117.4	139.5	153.7
Chloride (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	1191.4	25.3	112.9	1022.2	1100	1183.6	1257.2	1450
Chloride (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	993.5	79.8	382.8	45.9	692.9	1177.1	1238.4	1373.8
Chloride (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	245.5	27.9	124.7	18.7	183	269.7	306.5	565.1
Chloride (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	99.1	9.73	42.4	23.65	71.2	105.8	139.5	155.64
Chloride (mg/L)	OK621000-04-0010D	Deer Creek	20	1	223	22.3	99.6	45.3	148.8	219	301.1	418.6
Chloride (mg/L)	OK621000-05-0010D	Pond Creek	20	1	137.8	18.3	82	7.8	43.8	169	201.5	244.2
Chloride (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	139.7	17.1	64	42.9	85.5	128.3	203.2	227.4
Chloride (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	1363	155	693	436	845	1199	1732	3063
Chloride (mg/L)	OK621010-01-0090R	Clay Creek	19	2	2605	633	2761	26	278	1503	5120	8229
Chloride (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	78.44	5.06	22.62	22.6	62.13	87.27	97.8	101
Chloride (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	45.56	1.84	8.24	24.4	42.41	47.7	51.7	56.9
Chloride (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	93.17	4.67	20.88	56.1	77.05	93.1	100.15	146.3
Chloride (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	84.02	8.16	36.5	30.88	69.23	79.15	84.93	216.7
Chloride (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	85.87	6.65	29.72	10.88	80.23	90.5	104.58	138.3
Chloride (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	118.9	13.1	57.2	14.2	87.7	121.8	153.9	270.3
Chloride (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	66.84	7.05	31.54	14	40.78	72.7	87.35	140.6
Chloride (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	501.6	54.9	245.7	68.1	303.7	562.3	732.8	818.4
Chloride (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	46.25	7.26	32.45	13.5	21.15	30.1	70.58	123.1
Chloride (mg/L)	OK621200-02-0020C	Doga Creek	19	1	13.67	1.94	8.46	4.37	5.9	13	17.2	39.3
Chloride (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	82.33	9.47	42.33	19	50.43	73.87	119.63	156.2
Chloride (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	158.9	25.5	114.1	40.1	84.5	119.9	215	517.2
Chloride (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	238	32	143.2	49.3	141.8	195.7	317.8	579.7
Chloride (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	31	5.15	23.03	1.9	16.45	26.01	41.69	99
Chloride (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	4.763	0.982	4.391	2.17	2.425	3.715	4.958	22.2
Chloride (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	93.7	15.4	68.7	10.6	29.9	61.9	163.9	224
Chloride (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	120	15.9	71	23.6	71.7	97.2	165.7	280
Chloride (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	7.887	0.659	2.947	4.28	5.04	7.2	10.575	13
Chloride (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	32.55	6.05	25.65	5.6	15.21	22.73	45.7	95.1

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Chloride (mg/L)	OK720500-01-0070D	Bent Creek	20	1	37.68	2.13	9.52	21.3	28.18	40.05	45.83	53.83
Chloride (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	48.87	1.45	6.48	39.1	43.74	48.8	51.18	68
Chloride (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	171.8	12.8	54.2	30.3	168.2	182.2	202.7	228.2
Chloride (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	207.2	14.5	56.2	27.1	198.1	218.1	239.4	271.3
Chloride (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	67.61	2.05	9.18	32.49	66.4	69.1	71.98	80.19
Chloride (mg/L)	OK720500-02-0100D	Spring Creek	19	1	29.051	0.838	3.651	23.8	26.2	28.11	31.4	37.79
Chloride (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	119	3.24	14.11	75.3	116	122.1	126.1	136.4
Chloride (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	112.84	8.07	36.08	7.4	110.63	124.25	129.71	150.8
Chloride (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	180.52	7.52	33.62	41.9	181.43	186.35	193.58	204.8
Chloride (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	208.71	8.26	36.92	61.3	204.28	218	225.5	238.8
Chloride (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	553.2	45.6	203.8	160.3	471.6	503.5	572.9	1162.8
Chloride (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	147.65	4.29	18.71	125.6	133.1	142.2	156.5	198.3
Chloride (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	113.4	3.51	16.09	83.6	101.83	114.4	121.9	150.7
Chloride (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	187.6	12.3	34.8	153.5	160.5	175	226.5	243.1
Chloride (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	71.87	7.91	35.39	25.89	46.23	67.35	91.63	172.6
Cond (uS/cm)	OK620900-01-0180J	Lagoon Creek	21	0	569.7	64	293.3	164.3	367	522	681.5	1552
Cond (uS/cm)	OK620900-01-0290D	Euchee Creek	21	0	451.1	27.7	127	200.4	372.5	440	528	687
Cond (uS/cm)	OK620900-02-0020D	Salt Creek: Payne Co.	22	0	1274	657	3082	234	496	615	736	15050
Cond (uS/cm)	OK620900-02-0050H	Council Creek	21	0	556.6	37.1	170.2	355.5	422.5	486.2	694.5	959
Cond (uS/cm)	OK620900-03-0080C	Dugout Creek	21	0	937.5	58.3	267	390.9	861	916	1045	1753
Cond (uS/cm)	OK620900-03-0230C	Beaver Creek: Logan Co.	21	0	1045.6	72.2	330.9	540	776.5	1058	1249	1927
Cond (uS/cm)	OK620900-04-0040C	Stillwater Creek: Lower	21	0	870.4	64.1	293.8	434.8	583.2	905	1084.5	1376
Cond (uS/cm)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	601.6	41.1	183.6	339.3	453.2	571.5	768.5	981
Cond (uS/cm)	OK620910-02-0040C	Cooper Creek	21	1	2355	116	529	1171	1934	2340	2848	3032
Cond (uS/cm)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	20	1	14686	1480	6618	12	12320	16170	18580	27130
Cond (uS/cm)	OK620910-02-0250C	Deep Creek	21	1	1970	156	717	1038	1387	1883	2599	3264
Cond (uS/cm)	OK620910-02-0310C	Indian Creek: Major Co.	21	0	1184.9	47.9	219.7	655	1071	1162	1386	1483
Cond (uS/cm)	OK620910-03-0010F	Skeleton Creek: Lower	21	0	1580.6	92.4	423.4	840	1231	1572	1839.5	2579
Cond (uS/cm)	OK620910-03-0010S	Skeleton Creek: Upper	21	0	1891.4	83	380.3	1222	1591.5	1922	2160	2499
Cond (uS/cm)	OK620910-03-0040C	Otter Creek: Logan Co.	21	0	838.8	72.6	332.6	388.1	505.5	779	1203.5	1393
Cond (uS/cm)	OK620910-04-0010D	Cottonwood Creek	21	0	1176.4	31.2	143.1	776	1078.5	1202	1266.5	1412
Cond (uS/cm)	OK620910-05-0010J	Kingfisher Creek	21	0	2422	105	480	1601	2040	2356	2866	3255
Cond (uS/cm)	OK620910-05-0030C	Uncle John's Creek	21	1	1217.6	49	224.7	565	1083	1263	1309	1622
Cond (uS/cm)	OK620910-05-0080D	Dead Indian Creek	21	1	1754	155	709	893	1156	1549	2447	3165
Cond (uS/cm)	OK620910-06-0010B	Turkey Creek: Lower	20	2	1261.1	89.6	400.5	226.3	1101.5	1373.5	1560.5	1648
Cond (uS/cm)	OK620910-06-0010T	Turkey Creek: Upper	21	0	1548	103	473	614	1224	1680	1754	2639
Cond (uS/cm)	OK620920-01-0130G	Griever Creek	19	2	3394	112	490	2523	3143	3391	3849	4446
Cond (uS/cm)	OK620920-01-0180F	Main Creek	19	2	3197	150	655	1346	2644	3421	3517	4081
Cond (uS/cm)	OK620920-02-0080D	Long Creek	19	2	3240	433	1888	29	2411	2960	3931	9808

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Cond (uS/cm)	OK620920-04-0010C	Eagle Chief Creek: Lower	19	0	1281.6	88.7	386.7	212.7	1082	1306	1610	1927
Cond (uS/cm)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	23	1	2121	137	655	576	1715	2157	2659	3474
Cond (uS/cm)	OK620920-05-0010G	Buffalo Creek: Lower	21	0	2750	159	729	1219	2375	2971	3296	3529
Cond (uS/cm)	OK620920-05-0010P	Buffalo Creek: Upper	21	1	2548	139	637	551	2300	2835	2949	3098
Cond (uS/cm)	OK620920-05-0050G	Sand Creek	21	0	3514	369	1693	36	3187	3480	3661	9806
Cond (uS/cm)	OK620930-00-0010T	Cimarron River: Beaver Co.	21	0	4443	131	599	2170	4306	4613	4749	5150
Cond (uS/cm)	OK620930-00-0100G	Crooked Creek: Beaver Co.	24	0	3907	242	1186	548	3444	4331	4735	4949
Cond (uS/cm)	OK621000-02-0040F	Wild Horse Creek	20	1	1858	130	581	176	1662	1898	2296	2829
Cond (uS/cm)	OK621000-03-0010C	Bois d'Arc	19	1	1191	105	458	347	887	1159	1573	1878
Cond (uS/cm)	OK621000-04-0010D	Deer Creek	20	1	1347	112	502	446	990	1217	1831	2088
Cond (uS/cm)	OK621000-05-0010D	Pond Creek	21	0	1138	121	556	137	649	1361	1559	1840
Cond (uS/cm)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	1397	133	498	645	897	1534	1871	1964
Cond (uS/cm)	OK621010-01-0010D	Salt Fork of Arkansas River	21	0	4633	595	2726	6	2749	4397	6575	10490
Cond (uS/cm)	OK621010-01-0090R	Clay Creek	20	1	7775	1683	7525	11	1307	4327	15720	24460
Cond (uS/cm)	OK621010-01-0230G	Turkey Creek: Woods Co.	19	2	2926	184	802	1342	2418	3075	3676	4161
Cond (uS/cm)	OK621010-01-0270C	Yellowstone Creek	20	1	2729	107	477	1490	2400	2930	3044	3113
Cond (uS/cm)	OK621010-02-0010D	Sandy Creek	21	0	922.5	35.2	161.1	669	812.5	920	1052	1264
Cond (uS/cm)	OK621010-03-0010D	Medicine Lodge Creek	21	1	1020.9	68.3	313	370.9	757	1016	1239	1790
Cond (uS/cm)	OK621010-03-0030C	Driftwood Creek	21	0	1853	146	671	162	1486	2066	2366	2625
Cond (uS/cm)	OK621100-00-0010B	Chickaskia River: Lower	20	1	964.3	71.2	318.4	271.1	709.5	1025	1213.8	1532
Cond (uS/cm)	OK621100-00-0010M	Chickaskia Creek: Middle	21	1	741.9	56.4	258.5	261.1	564.5	790	891.5	1199
Cond (uS/cm)	OK621100-00-0100G	Bitter Creek	20	1	2956	338	1512	580	2048	2791	4077	6200
Cond (uS/cm)	OK621200-01-0400C	Gray Horse Creek	20	1	437.9	48.5	216.8	164.7	295.9	367	557.8	1062
Cond (uS/cm)	OK621200-02-0020C	Doga Creek	19	1	372.8	29.2	127.1	239	258	324.8	475.2	620
Cond (uS/cm)	OK621200-03-0010D	Black Bear Creek: Lower	21	0	635.6	50.6	231.9	295	439.9	662	847	980
Cond (uS/cm)	OK621200-03-0010M	Black Bear Creek (downstream)	23	0	959	110	526	83	590	825	1340	2417
Cond (uS/cm)	OK621200-03-0010W	Black Bear Creek (upstream)	23	0	1293	114	548	432	895	1127	1532	2633
Cond (uS/cm)	OK621200-04-0010F	Salt Creek: Lower	21	1	465.9	24.1	110.6	303	365.3	451.4	533	690
Cond (uS/cm)	OK621200-04-0010P	Salt Creek: Upper	21	0	385.2	31.4	144	165.1	348.2	362	405.2	944
Cond (uS/cm)	OK621200-05-0010K	Red Rock Creek	20	1	840	108	485	184	388	806	1269	1706
Cond (uS/cm)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	1026.7	97.7	436.9	369.2	728.3	1037.5	1250	1954
Cond (uS/cm)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	407.1	19.8	88.5	276.7	336.2	417.8	451.1	578
Cond (uS/cm)	OK621210-00-0270C	Chilocco Creek	18	1	528	46.6	197.7	291.4	368.1	471.6	657.8	920
Cond (uS/cm)	OK720500-01-0070D	Bent Creek	20	1	1948	166	741	204	1678	2115	2466	2840
Cond (uS/cm)	OK720500-01-0150G	Persimmon Creek	21	0	922.3	31.6	144.6	625	813	970	1044.5	1092
Cond (uS/cm)	OK720500-01-0200D	Indian Creek: Woodward Co.	17	2	1556.6	37.2	153.2	1237	1435	1558	1701.5	1779
Cond (uS/cm)	OK720500-02-0050B	Otter Creek: Harper Co.	14	2	1703	104	390	389	1729	1808	1860	1975
Cond (uS/cm)	OK720500-02-0070G	Clear Creek: Harper Co.	21	0	688.2	18.7	85.5	335.7	692.5	705	724	748
Cond (uS/cm)	OK720500-02-0100D	Spring Creek	20	0	620.1	8.85	39.59	529	600.75	610	648.5	720

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Cond (uS/cm)	OK720500-02-0130C	Kiowa Creek: Harper Co.	20	0	877.8	41.4	185.3	188	824.8	942.5	972.3	1030
Cond (uS/cm)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	21	0	894.8	62.1	284.4	8	933.5	998	1027	1043
Cond (uS/cm)	OK720500-02-0250F	Duck Pond Creek	21	1	1109.9	18.9	86.5	933	1036	1113	1173.5	1252
Cond (uS/cm)	OK720500-02-0300F	Clear Creek: Beaver Co.	21	0	1552.7	60.6	277.8	1040	1403	1482	1820	2065
Cond (uS/cm)	OK720500-02-0500G	Palo Duro Creek	19	2	2853	136	594	2422	2555	2640	2897	4880
Cond (uS/cm)	OK720500-03-0010C	Wolf Creek: Lower	20	0	1204.8	60.6	271.2	598	1051.5	1120.5	1469.8	1795
Cond (uS/cm)	OK720500-03-0010G	Wolf Creek: Upper	22	0	959.3	29.1	136.3	703	849	996.5	1051.5	1176
Cond (uS/cm)	OK720900-00-0100D	Cold Springs Creek	9	0	3040	155	466	2529	2747	2863	3295	4026
Cond (uS/cm)	OK720900-00-0180C	Cimarron River: Cimarron Co.	21	1	2003	145	664	898	1481	2163	2549	3354
DO (mg/L)	OK620900-01-0180J	Lagoon Creek	21	0	7.936	0.675	3.093	3.97	5.395	7.2	10.65	14.93
DO (mg/L)	OK620900-01-0290D	Euchee Creek	21	0	10.102	0.766	3.51	4.69	7.235	9.81	13.425	15.31
DO (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	22	0	7.814	0.541	2.538	3.91	6.145	7.285	9.863	13.65
DO (mg/L)	OK620900-02-0050H	Council Creek	21	0	8.57	0.577	2.643	1.95	7.125	8.68	10.555	13.17
DO (mg/L)	OK620900-03-0080C	Dugout Creek	21	0	7.225	0.715	3.277	2.02	4.85	5.62	9.93	14.67
DO (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	21	0	9.4	0.509	2.33	4.28	7.925	9.24	10.49	13.76
DO (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	8.343	0.653	2.921	4.47	6.06	7.54	10.79	13.67
DO (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	21	0	6.616	0.651	2.985	2.72	4.51	6.49	8.405	15.04
DO (mg/L)	OK620910-02-0040C	Cooper Creek	22	0	9.99	0.953	4.471	2.84	5.525	10.335	14.24	17.7
DO (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	21	0	12.768	0.784	3.592	4.78	10.485	13.71	15.03	19
DO (mg/L)	OK620910-02-0250C	Deep Creek	22	0	10.234	0.834	3.91	3.44	6.895	11.035	14.093	15.48
DO (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	21	0	11.152	0.597	2.736	6.1	9.09	10.96	13.215	16.69
DO (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	21	0	10.073	0.667	3.057	5.21	7.75	9.5	12.95	15.09
DO (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	21	0	9.398	0.705	3.232	4.4	7.08	8.43	13.015	14.87
DO (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	21	0	8.874	0.695	3.187	3.99	6.475	8.16	12.185	14.6
DO (mg/L)	OK620910-04-0010D	Cottonwood Creek	21	0	9.427	0.62	2.841	1.88	7.845	9.05	11.24	13.56
DO (mg/L)	OK620910-05-0010J	Kingfisher Creek	21	0	9.763	0.537	2.46	6.63	7.525	9.28	12.355	14.08
DO (mg/L)	OK620910-05-0030C	Uncle John's Creek	22	0	10.99	0.778	3.649	4.3	8.543	10.445	13.063	18.61
DO (mg/L)	OK620910-05-0080D	Dead Indian Creek	22	0	10.374	0.838	3.928	2.68	7.645	9.065	13.13	17.25
DO (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	22	0	8.993	0.788	3.695	3.4	6.128	7.465	12.24	16.59
DO (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	21	0	10.573	0.747	3.425	4.75	7.53	10.73	13.73	15.91
DO (mg/L)	OK620920-01-0130G	Griever Creek	21	0	10.2	0.518	2.372	7.32	7.95	9.44	12.505	14.46
DO (mg/L)	OK620920-01-0180F	Main Creek	21	0	9.754	0.547	2.504	5.97	7.785	9.14	12.005	14.21
DO (mg/L)	OK620920-02-0080D	Long Creek	21	0	10.475	0.507	2.322	5.48	8.98	10.25	12.35	14.14
DO (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	19	0	10.654	0.592	2.583	5.16	8.86	10.6	12.65	15.34
DO (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	24	0	10.855	0.577	2.826	5.37	8.525	11.34	12.92	15.58
DO (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	21	0	10.184	0.583	2.673	4.43	8.365	10.55	12.335	14.22
DO (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	22	0	11.959	0.8	3.754	5.55	9.385	11.635	14.768	20
DO (mg/L)	OK620920-05-0050G	Sand Creek	21	0	9.804	0.698	3.198	4.92	6.615	9.92	12.62	14.4
DO (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	21	0	10.025	0.288	1.319	8.01	8.98	9.8	11.33	12.28

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
DO (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	24	0	10.78	0.363	1.777	6.15	9.893	11.108	12.135	13.84
DO (mg/L)	OK621000-02-0040F	Wild Horse Creek	21	0	8.608	0.71	3.251	4.33	5.545	8.1	11.475	15.7
DO (mg/L)	OK621000-03-0010C	Bois d'Arc	20	0	8.463	0.654	2.923	5.2	6.418	7.295	9.605	14.41
DO (mg/L)	OK621000-04-0010D	Deer Creek	21	0	9.059	0.556	2.55	5.19	7.16	8.18	11.62	13.52
DO (mg/L)	OK621000-05-0010D	Pond Creek	21	0	8.27	0.781	3.579	3.49	5.345	7.15	11.15	15.36
DO (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	15	0	9.329	0.865	3.352	4.35	6.31	9.92	11.92	15.91
DO (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	21	0	11.245	0.599	2.746	8.16	9.215	9.95	13.07	19.09
DO (mg/L)	OK621010-01-0090R	Clay Creek	20	1	11.914	0.769	3.439	6.1	8.7	11.975	14.785	18.55
DO (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	21	0	8.066	0.76	3.484	3.16	4.12	8.01	11.095	13.73
DO (mg/L)	OK621010-01-0270C	Yellowstone Creek	21	0	9.961	0.465	2.13	5.64	8.495	9.98	11.605	14.36
DO (mg/L)	OK621010-02-0010D	Sandy Creek	21	0	8.81	0.437	2.001	3.76	7.93	9.05	10.56	11.24
DO (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	21	1	8.849	0.509	2.332	4.15	7.205	8.42	10.735	13.2
DO (mg/L)	OK621010-03-0030C	Driftwood Creek	21	0	9.208	0.759	3.478	3.09	6.345	9.19	12.45	15.77
DO (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	21	0	8.51	0.616	2.822	5.31	5.955	7.46	10.6	14.76
DO (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	22	0	9.07	0.543	2.547	2.23	7.515	9.44	10.48	14.13
DO (mg/L)	OK621100-00-0100G	Bitter Creek	21	0	8.206	0.699	3.204	3.67	5.955	7.95	9.1	17.34
DO (mg/L)	OK621200-01-0400C	Gray Horse Creek	21	0	7.199	0.57	2.611	1.36	5.325	6.87	8.96	13.58
DO (mg/L)	OK621200-02-0020C	Doga Creek	20	0	7.465	0.606	2.709	3.38	5.168	6.88	9.75	13.43
DO (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	8.944	0.661	2.954	3.76	6.495	8.68	12.163	13.68
DO (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	22	1	8.282	0.694	3.256	3.52	5.488	7.24	11.028	14.95
DO (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	23	0	10.22	0.576	2.761	6.98	7.57	9.51	13.74	14.53
DO (mg/L)	OK621200-04-0010F	Salt Creek: Lower	21	1	8.373	0.5	2.292	5.39	6.825	7.76	9.765	13.22
DO (mg/L)	OK621200-04-0010P	Salt Creek: Upper	21	0	6.78	0.499	2.287	4.15	4.675	6.34	8.61	11.92
DO (mg/L)	OK621200-05-0010K	Red Rock Creek	21	0	7.593	0.782	3.582	2.6	4.895	6.39	10.9	15.96
DO (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	21	0	7.893	0.725	3.323	3.93	5.585	6.63	10.185	16.16
DO (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	21	0	6.627	0.686	3.145	2.33	4.42	5.66	7.965	13.31
DO (mg/L)	OK621210-00-0270C	Chilocco Creek	19	0	6.307	0.805	3.511	2.12	3.39	5.11	7.71	13.24
DO (mg/L)	OK720500-01-0070D	Bent Creek	21	0	9.305	0.493	2.261	5.39	7.995	8.44	10.95	14.23
DO (mg/L)	OK720500-01-0150G	Persimmon Creek	21	0	9.59	0.427	1.956	6.89	8.17	8.72	10.74	13.41
DO (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	19	0	9.634	0.48	2.09	6.62	8.01	8.85	11.17	13.39
DO (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	16	0	7.811	0.664	2.655	3.84	5.163	8.035	10.385	11.26
DO (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	21	0	8.651	0.526	2.412	0.44	7.64	8.81	10.385	11.48
DO (mg/L)	OK720500-02-0100D	Spring Creek	20	0	10.132	0.658	2.942	6.12	7.74	9.64	12.305	15.77
DO (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	20	0	10.164	0.498	2.226	5.9	7.895	10.595	11.585	14.63
DO (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	21	0	9.036	0.435	1.994	6.66	7.145	8.77	10.58	12.23
DO (mg/L)	OK720500-02-0250F	Duck Pond Creek	22	0	7.351	0.632	2.962	2.22	4.758	7.255	10.12	12.21
DO (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	21	0	8.175	0.682	3.127	1.7	6.1	8.02	10.63	12.46
DO (mg/L)	OK720500-02-0500G	Palo Duro Creek	21	0	8.936	0.701	3.213	0.12	7.73	9.58	10.965	13.44
DO (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	20	0	9.306	0.649	2.902	5.04	6.275	9.35	12.363	13.43

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
DO (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	22	0	9.48	0.483	2.264	5.85	7.473	9.71	11.373	13.76
DO (mg/L)	OK720900-00-0100D	Cold Springs Creek	9	0	3.68	1.06	3.18	0.43	1	2.65	6.93	8.79
DO (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	22	0	5.712	0.609	2.856	0.57	3.42	5.26	8.668	10.23
DOPercSat	OK620900-01-0180J	Lagoon Creek	20	1	76.97	3.88	17.36	49	64.25	78	91.25	107.8
DOPercSat	OK620900-01-0290D	Eucler Creek	20	1	104.29	7.18	32.09	61	75.75	98	127.5	170
DOPercSat	OK620900-02-0020D	Salt Creek: Payne Co.	19	3	78.72	3.44	15.01	57	71	76	90.3	112
DOPercSat	OK620900-02-0050H	Council Creek	19	2	85.21	4.78	20.85	23	80	86	97.2	128
DOPercSat	OK620900-03-0080C	Dugout Creek	19	2	69.28	4.87	21.22	26	54	69	88	105.4
DOPercSat	OK620900-03-0230C	Beaver Creek: Logan Co.	19	2	99.66	4.39	19.16	35	95	101	108	132.9
DOPercSat	OK620900-04-0040C	Stillwater Creek: Lower	19	2	84.58	4.13	18.02	55	69	85	102	111
DOPercSat	OK620900-04-0070T	Stillwater Creek: Upper	19	2	64.42	4.99	21.75	29	51.6	64.9	80.5	108.5
DOPercSat	OK620910-02-0040C	Cooper Creek	20	2	100.35	9.81	43.86	34.3	55.5	99	134.4	177.6
DOPercSat	OK620910-02-0100D	Salt Creek: Kingfisher Co.	17	4	129.22	8.17	33.67	59.2	105.5	122	152.05	204
DOPercSat	OK620910-02-0250C	Deep Creek	20	2	108.83	8.57	38.31	40.7	89.33	106.7	138.93	189.3
DOPercSat	OK620910-02-0310C	Indian Creek: Major Co.	19	2	118.22	4.96	21.64	82.8	98.1	117	139.7	149
DOPercSat	OK620910-03-0010F	Skeleton Creek: Lower	20	1	104.56	5.51	24.65	66.8	89.75	101.95	116.63	186.3
DOPercSat	OK620910-03-0010S	Skeleton Creek: Upper	19	2	94.45	3.47	15.12	55.9	86.2	94	104.6	121
DOPercSat	OK620910-03-0040C	Otter Creek: Logan Co.	19	2	89.58	3.75	16.35	56.6	80.3	88.8	102	120
DOPercSat	OK620910-04-0010D	Cottonwood Creek	19	2	99.11	5.89	25.66	16	94.1	98.2	115.9	140.2
DOPercSat	OK620910-05-0010J	Kingfisher Creek	19	2	99.12	3.55	15.49	60	91.1	99.8	104.8	140
DOPercSat	OK620910-05-0030C	Uncle John's Creek	19	3	116.45	8.34	36.36	52.7	92	108.6	142.4	197
DOPercSat	OK620910-05-0080D	Dead Indian Creek	20	2	105.97	9.02	40.33	26.2	85.53	101.7	124.08	186
DOPercSat	OK620910-06-0010B	Turkey Creek: Lower	20	2	88.93	6.74	30.12	43.3	70.65	80.5	106.8	167.9
DOPercSat	OK620910-06-0010T	Turkey Creek: Upper	19	2	100.16	7.07	30.83	58.5	79.4	93	114	185
DOPercSat	OK620920-01-0130G	Griever Creek	19	2	95.38	2.07	9.01	64	92	97	101.3	105
DOPercSat	OK620920-01-0180F	Main Creek	19	2	93.24	1.76	7.65	69	89.7	94	98	104
DOPercSat	OK620920-02-0080D	Long Creek	19	2	100.01	4.4	19.18	66.6	92	97.3	106	164
DOPercSat	OK620920-04-0010C	Eagle Chief Creek: Lower	15	4	104.01	4.3	16.65	63	90	108	118	128.1
DOPercSat	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	20	4	112.37	7.11	31.79	62.6	91.78	105.5	133.3	183.1
DOPercSat	OK620920-05-0010G	Buffalo Creek: Lower	19	2	101.49	4.39	19.16	55	97	102.3	112.6	139.3
DOPercSat	OK620920-05-0010P	Buffalo Creek: Upper	20	2	119.84	7	31.31	66.3	101.63	116.65	140.15	183.8
DOPercSat	OK620920-05-0050G	Sand Creek	19	2	100.44	5.33	23.24	60.1	74.7	104	112.8	143
DOPercSat	OK620930-00-0010T	Cimarron River: Beaver Co.	19	2	112.18	2.85	12.43	96	101.6	110.3	123.9	134
DOPercSat	OK620930-00-0100G	Crooked Creek: Beaver Co.	21	3	115.64	4.49	20.56	79	101.83	112	133.95	157.4
DOPercSat	OK621000-02-0040F	Wild Horse Creek	17	4	75.15	4.55	18.75	40	60.95	78	89.7	114.7
DOPercSat	OK621000-03-0010C	Bois d'Arc	18	2	81.77	4.23	17.96	55	70.6	79.65	93.93	114.1
DOPercSat	OK621000-04-0010D	Deer Creek	18	3	91.81	5.18	21.98	63	82	87.05	99.5	163
DOPercSat	OK621000-05-0010D	Pond Creek	17	4	77.56	4.88	20.13	51	62.9	70.2	88.35	118
DOPercSat	OK621000-06-0010C	Crooked Creek: Grant Co.	12	3	92.11	6.29	21.78	68	72.08	86.05	110.08	136

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
DOPercSat	OK621010-01-0010D	Salt Fork of Arkansas River	17	4	114.08	3.93	16.21	90	103.8	114	122.2	146.9
DOPercSat	OK621010-01-0090R	Clay Creek	15	6	113.69	7.1	27.5	82	89	116.4	137.4	164
DOPercSat	OK621010-01-0230G	Turkey Creek: Woods Co.	17	4	74.16	5.77	23.77	37.5	45	84	92.7	104.9
DOPercSat	OK621010-01-0270C	Yellowstone Creek	17	4	102.43	3.41	14.05	68	95.8	101.7	108.55	125.7
DOPercSat	OK621010-02-0010D	Sandy Creek	17	4	92.18	5.05	20.81	50.1	81.15	87.4	102.5	150
DOPercSat	OK621010-03-0010D	Medicine Lodge Creek	17	5	88.84	3.31	13.63	53.2	83.5	91.4	99.25	102.4
DOPercSat	OK621010-03-0030C	Driftwood Creek	17	4	88.42	8.05	33.19	37	71.45	78	104.75	176
DOPercSat	OK621100-00-0010B	Chickaskia River: Lower	17	4	85.91	5.48	22.6	54	66.35	87	99.5	148
DOPercSat	OK621100-00-0010M	Chickaskia Creek: Middle	19	3	96.12	5.95	25.95	18	87.4	96	113.9	136
DOPercSat	OK621100-00-0100G	Bitter Creek	18	3	85.81	5.75	24.41	51	65.13	84	99.73	134.9
DOPercSat	OK621200-01-0400C	Gray Horse Creek	17	4	68.86	5.57	22.95	13.2	51.9	71	79.2	117
DOPercSat	OK621200-02-0020C	Doga Creek	17	3	70.06	4.38	18.08	45	49.6	76	85	96.1
DOPercSat	OK621200-03-0010D	Black Bear Creek: Lower	20	1	87.29	3.3	14.77	50	76.25	92	97.45	105
DOPercSat	OK621200-03-0010M	Black Bear Creek (downstream)	22	1	80.06	3.59	16.83	47	66.35	77.75	95.65	107
DOPercSat	OK621200-03-0010W	Black Bear Creek (upstream)	22	1	105.39	4.96	23.25	77	91.53	100.55	109.48	175.1
DOPercSat	OK621200-04-0010F	Salt Creek: Lower	18	4	84.84	3.86	16.36	57	72.73	83.15	96.25	122
DOPercSat	OK621200-04-0010P	Salt Creek: Upper	19	2	68.92	3.58	15.62	46.1	56	68	84	99.7
DOPercSat	OK621200-05-0010K	Red Rock Creek	20	1	71.18	4.74	21.19	31.2	52.83	69.25	90	113.5
DOPercSat	OK621200-05-0160G	Red Rock Creek: Upper	19	2	77.27	4.16	18.14	54	62	73	92	116.6
DOPercSat	OK621210-00-0050L	Beaver Creek: Osage Co.	19	2	64.59	5.88	25.61	26	38	66	88.4	97.1
DOPercSat	OK621210-00-0270C	Chilocco Creek	17	2	59.48	6.42	26.47	23	30.5	62.8	82.85	97.8
DOPercSat	OK720500-01-0070D	Bent Creek	18	3	90.25	2.27	9.63	75	84.4	89.35	96.25	108
DOPercSat	OK720500-01-0150G	Persimmon Creek	18	3	93.49	1.52	6.47	82	88.8	92.4	99.5	103
DOPercSat	OK720500-01-0200D	Indian Creek: Woodward Co.	15	4	95.37	2.88	11.14	77.8	85.9	95.4	103	115
DOPercSat	OK720500-02-0050B	Otter Creek: Harper Co.	14	2	73.14	6.15	23	39.1	55.28	74.7	82.25	127
DOPercSat	OK720500-02-0070G	Clear Creek: Harper Co.	18	3	89.24	2.52	10.71	72	82.38	86.9	97.25	111
DOPercSat	OK720500-02-0100D	Spring Creek	18	2	102.24	4.88	20.72	70.6	89.45	99.2	114.23	147.7
DOPercSat	OK720500-02-0130C	Kiowa Creek: Harper Co.	18	2	109.04	2.88	12.23	90	99.85	108.3	118.98	129.1
DOPercSat	OK720500-02-0130K	Kiowa Creek: Beaver Co.	19	2	88.25	2.39	10.43	72.2	81.3	88.5	96	113.1
DOPercSat	OK720500-02-0250F	Duck Pond Creek	20	2	68.81	4.62	20.67	24.7	52.45	71.75	85.5	96.7
DOPercSat	OK720500-02-0300F	Clear Creek: Beaver Co.	18	3	80.74	4.71	19.97	22	74.3	83.7	91.25	112.4
DOPercSat	OK720500-02-0500G	Palo Duro Creek	19	2	88.94	8.28	36.08	2	72	91	106	177
DOPercSat	OK720500-03-0010C	Wolf Creek: Lower	17	3	92.55	5.77	23.79	56.7	70	96	108.5	134
DOPercSat	OK720500-03-0010G	Wolf Creek: Upper	20	2	99.01	3.9	17.45	67	87.43	99.35	108.58	131.1
DOPercSat	OK720900-00-0100D	Cold Springs Creek	7	2	37.6	13.9	36.9	5	10	12	83.8	88
DOPercSat	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	56.44	7.12	31.85	6.3	32.25	53.9	78.48	142
Flow (cfs)	OK620900-01-0180J	Lagoon Creek	19	2	4.96	2.54	11.06	0	0.06	0.72	5.52	48.27
Flow (cfs)	OK620900-01-0290D	Euchee Creek	12	9	3.853	0.722	2.502	1.01	1.74	3.34	5.013	9.46
Flow (cfs)	OK620900-02-0020D	Salt Creek: Payne Co.	22	0	4.16	1.62	7.6	0	0.02	0.52	5.27	29.77

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Flow (cfs)	OK620900-02-0050H	Council Creek	15	6	2.243	0.756	2.927	0	0	1.24	3.24	8.5
Flow (cfs)	OK620900-03-0080C	Dugout Creek	20	1	0.881	0.228	1.017	0	0.28	0.47	1.163	3.82
Flow (cfs)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	6.56	2.17	9.71	0	0.76	3.16	7.13	41.95
Flow (cfs)	OK620900-04-0040C	Stillwater Creek: Lower	18	3	22.49	8.34	35.38	5.07	8.27	9.91	13.69	140.96
Flow (cfs)	OK620900-04-0070T	Stillwater Creek: Upper	19	2	13.8	10.3	45.1	0	0.2	0.6	1.8	195.7
Flow (cfs)	OK620910-02-0040C	Cooper Creek	18	4	5.42	1.49	6.32	0	0.99	2.32	8.95	21.92
Flow (cfs)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	20	1	13.91	2.14	9.55	3.44	9.24	11.36	17.21	42
Flow (cfs)	OK620910-02-0250C	Deep Creek	17	5	4.18	1.18	4.86	0.36	1.04	2.4	6.18	18.78
Flow (cfs)	OK620910-02-0310C	Indian Creek: Major Co.	21	0	8.59	1.04	4.78	1.9	4.68	8.25	11.44	23.25
Flow (cfs)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	45.45	9.48	42.4	4.15	14.53	24.47	71.75	147.77
Flow (cfs)	OK620910-03-0010S	Skeleton Creek: Upper	19	2	22.55	4.11	17.93	2.05	9.64	13.8	37.64	59.14
Flow (cfs)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	12.28	6.02	26.94	0	1.58	4.04	10.1	122.45
Flow (cfs)	OK620910-04-0010D	Cottonwood Creek	20	1	47.34	6.38	28.52	24.72	29.45	37.36	57.71	153.31
Flow (cfs)	OK620910-05-0010J	Kingfisher Creek	21	0	14.14	2.54	11.62	1.41	4.71	10.76	23.21	38.22
Flow (cfs)	OK620910-05-0030C	Uncle John's Creek	21	1	6.82	1.43	6.56	0.24	1.42	4.67	11.99	19.76
Flow (cfs)	OK620910-05-0080D	Dead Indian Creek	20	2	2.045	0.452	2.023	0.05	0.303	1.175	4.12	6.38
Flow (cfs)	OK620910-06-0010B	Turkey Creek: Lower	21	1	75.2	42.5	194.5	7.1	14.4	26.2	54.5	915.7
Flow (cfs)	OK620910-06-0010T	Turkey Creek: Upper	21	0	15.43	2.94	13.49	0.12	4.44	15.63	23.73	53.57
Flow (cfs)	OK620920-01-0130G	Griever Creek	21	0	24.9	22.3	102	0.1	0.6	3.1	4.2	469.9
Flow (cfs)	OK620920-01-0180F	Main Creek	21	0	13.86	3.86	17.68	3.34	5	9.63	14.58	84.74
Flow (cfs)	OK620920-02-0080D	Long Creek	20	1	3.706	0.715	3.199	0	0.588	3.83	5.678	9.96
Flow (cfs)	OK620920-04-0010C	Eagle Chief Creek: Lower	19	0	99.8	57.4	250.3	13.4	15.5	33.6	77.4	1125.6
Flow (cfs)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	23	1	18	11.4	54.6	1.3	2.5	4.8	10.5	267
Flow (cfs)	OK620920-05-0010G	Buffalo Creek: Lower	19	2	19.62	6.9	30.08	3.87	7.34	12.19	20.66	140.3
Flow (cfs)	OK620920-05-0010P	Buffalo Creek: Upper	21	1	8.52	1.73	7.92	1.96	3.66	6.29	9.07	34.92
Flow (cfs)	OK620920-05-0050G	Sand Creek	17	4	1.222	0.322	1.327	0	0.02	1	1.645	4.34
Flow (cfs)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	29.21	2.11	9.43	8.77	21.83	31.78	35.78	46.11
Flow (cfs)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	8.27	1.94	9.32	0.1	2.51	7	8.75	43.78
Flow (cfs)	OK621000-02-0040F	Wild Horse Creek	20	1	4.087	0.943	4.216	0	0.68	2.37	6.575	14.94
Flow (cfs)	OK621000-03-0010C	Bois d'Arc	19	1	14.28	2.78	12.11	3.29	5.04	9.05	20.42	43.64
Flow (cfs)	OK621000-04-0010D	Deer Creek	21	0	4.94	1.48	6.8	0.43	1.21	2.28	5.89	31.54
Flow (cfs)	OK621000-05-0010D	Pond Creek	21	0	41.2	13.1	60.1	0.9	5.7	16	40.2	218.3
Flow (cfs)	OK621000-06-0010C	Crooked Creek: Grant Co.	15	0	14.63	3.49	13.52	0.61	6.46	9.16	22.98	52.28
Flow (cfs)	OK621010-01-0010D	Salt Fork of Arkansas River	19	2	351	102	445	4	76	203	343	1446
Flow (cfs)	OK621010-01-0090R	Clay Creek	19	2	4.72	1.61	7.01	0	0.4	2.06	5.19	26.03
Flow (cfs)	OK621010-01-0230G	Turkey Creek: Woods Co.	17	4	2.63	1.01	4.15	0	0.58	1.78	2.71	17.96
Flow (cfs)	OK621010-01-0270C	Yellowstone Creek	21	0	3.32	1.26	5.79	0.05	0.91	1.39	2.62	26.49
Flow (cfs)	OK621010-02-0010D	Sandy Creek	17	4	33.25	7.06	29.13	0	14.97	27.12	39.14	110.74
Flow (cfs)	OK621010-03-0010D	Medicine Lodge Creek	21	1	117.7	31.4	143.9	0	40.1	73.1	115.5	533.1

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Flow (cfs)	OK621010-03-0030C	Driftwood Creek	21	0	11.29	2.32	10.61	0.24	3.46	9	16.24	39.35
Flow (cfs)	OK621100-00-0010B	Chickaskia River: Lower	15	6	149.6	54.3	210.5	32.6	46.1	68.3	105.7	771.6
Flow (cfs)	OK621100-00-0010M	Chickaskia Creek: Middle	15	7	128.9	36.6	141.7	27.3	34.6	79.6	175	572.3
Flow (cfs)	OK621100-00-0100G	Bitter Creek	19	2	27.3	12.7	55.3	0	3.1	8.5	17.9	193.5
Flow (cfs)	OK621200-01-0400C	Gray Horse Creek	21	0	1.628	0.656	3.008	0	0.195	0.61	1.19	12.71
Flow (cfs)	OK621200-02-0020C	Doga Creek	14	6	2.5	1.36	5.09	0	0.15	0.83	2.36	19.56
Flow (cfs)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	79.8	32.2	144.2	2	10.6	27.7	78.4	588.2
Flow (cfs)	OK621200-03-0010M	Black Bear Creek (downstream)	19	4	28.7	10.2	44.6	1	5.5	15.2	27.9	195.2
Flow (cfs)	OK621200-03-0010W	Black Bear Creek (upstream)	21	2	47.8	20.8	95.3	0.7	3.5	13.6	38.6	401.5
Flow (cfs)	OK621200-04-0010F	Salt Creek: Lower	17	5	10.2	2.49	10.26	0.58	2.92	9.34	14.52	44.02
Flow (cfs)	OK621200-04-0010P	Salt Creek: Upper	13	8	5.99	3.18	11.47	0	0	0.16	7.81	35.65
Flow (cfs)	OK621200-05-0010K	Red Rock Creek	19	2	22.18	7.2	31.37	0.03	1.5	7.94	25.74	117.06
Flow (cfs)	OK621200-05-0160G	Red Rock Creek: Upper	21	0	17.3	6.62	30.36	0.06	0.76	6.64	17.06	130.6
Flow (cfs)	OK621210-00-0050L	Beaver Creek: Osage Co.	17	4	23.6	11.7	48.3	0	0	4	24.2	155.4
Flow (cfs)	OK621210-00-0270C	Chilocco Creek	13	6	2.57	1.42	5.12	0	0	0.68	2.89	18.99
Flow (cfs)	OK720500-01-0070D	Bent Creek	20	1	10.09	1.65	7.39	1.14	2.81	9.91	15.02	26.02
Flow (cfs)	OK720500-01-0150G	Persimmon Creek	20	1	14.37	2.49	11.12	1.72	4.75	14.42	20.63	45.78
Flow (cfs)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	7.67	1.45	6.14	0.35	2.17	5.92	11.35	22.05
Flow (cfs)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	2.52	1.11	4.29	0	0.95	1.58	2.38	17.75
Flow (cfs)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	7.185	0.621	2.777	3.23	5.22	7.165	8.5	16.23
Flow (cfs)	OK720500-02-0100D	Spring Creek	19	1	1.105	0.182	0.794	0.19	0.61	0.93	1.43	3.16
Flow (cfs)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	11.57	1.22	5.3	1.18	8.84	12.03	13.35	25.62
Flow (cfs)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	19	2	6.528	0.498	2.169	1.35	5.62	7.31	7.55	10.47
Flow (cfs)	OK720500-02-0250F	Duck Pond Creek	20	2	0.3125	0.0418	0.1867	0.03	0.1375	0.29	0.4775	0.71
Flow (cfs)	OK720500-02-0300F	Clear Creek: Beaver Co.	19	2	1.932	0.296	1.291	0.05	0.27	2.05	3.13	3.57
Flow (cfs)	OK720500-02-0500G	Palo Duro Creek	19	2	0.54	0.0957	0.4171	0	0.1	0.55	0.89	1.19
Flow (cfs)	OK720500-03-0010C	Wolf Creek: Lower	19	1	25.31	5.92	25.79	1.16	3.16	16.69	52.02	74.17
Flow (cfs)	OK720500-03-0010G	Wolf Creek: Upper	22	0	45.69	4.92	23.08	16.59	26.46	40.45	59.56	98.86
Flow (cfs)	OK720900-00-0100D	Cold Springs Creek	9	0	0	0	0	0	0	0	0	0
Flow (cfs)	OK720900-00-0180C	Cimarron River: Cimarron Co.	14	8	0.1257	0.0944	0.3533	0	0	0.005	0.08	1.34
Base Flow (cfs)	OK620900-01-0180J	Lagoon Creek	18	2	2.556	0.851	3.611	0	0.06	0.665	4.335	12.54
Base Flow (cfs)	OK620900-01-0290D	Euchee Creek	12	9	3.853	0.722	2.502	1.01	1.74	3.34	5.013	9.46
Base Flow (cfs)	OK620900-02-0020D	Salt Creek: Payne Co.	22	0	4.16	1.62	7.6	0	0.02	0.52	5.27	29.77
Base Flow (cfs)	OK620900-02-0050H	Council Creek	15	6	2.243	0.756	2.927	0	0	1.24	3.24	8.5
Base Flow (cfs)	OK620900-03-0080C	Dugout Creek	20	1	0.881	0.228	1.017	0	0.28	0.47	1.163	3.82
Base Flow (cfs)	OK620900-03-0230C	Beaver Creek: Logan Co.	19	1	4.7	1.18	5.12	0	0.66	2.51	6.71	16.96
Base Flow (cfs)	OK620900-04-0040C	Stillwater Creek: Lower	16	3	10.83	1.32	5.3	5.07	8.03	9.16	12.71	27.77
Base Flow (cfs)	OK620900-04-0070T	Stillwater Creek: Upper	18	2	3.68	2.3	9.75	0	0.15	0.41	1.08	39.34
Base Flow (cfs)	OK620910-02-0040C	Cooper Creek	18	3	5.42	1.49	6.32	0	0.99	2.32	8.95	21.92

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Base Flow (cfs)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	20	1	13.91	2.14	9.55	3.44	9.24	11.36	17.21	42
Base Flow (cfs)	OK620910-02-0250C	Deep Creek	17	4	4.18	1.18	4.86	0.36	1.04	2.4	6.18	18.78
Base Flow (cfs)	OK620910-02-0310C	Indian Creek: Major Co.	21	0	8.59	1.04	4.78	1.9	4.68	8.25	11.44	23.25
Base Flow (cfs)	OK620910-03-0010F	Skeleton Creek: Lower	17	1	31.45	6.11	25.21	4.15	12.78	20.57	52.48	84.79
Base Flow (cfs)	OK620910-03-0010S	Skeleton Creek: Upper	19	1	22.55	4.11	17.93	2.05	9.64	13.8	37.64	59.14
Base Flow (cfs)	OK620910-03-0040C	Otter Creek: Logan Co.	18	1	5.51	1.5	6.35	0	1.29	3.58	7.83	25.55
Base Flow (cfs)	OK620910-04-0010D	Cottonwood Creek	19	0	41.76	3.26	14.21	24.72	29.15	36.02	57.66	70.01
Base Flow (cfs)	OK620910-05-0010J	Kingfisher Creek	21	0	14.14	2.54	11.62	1.41	4.71	10.76	23.21	38.22
Base Flow (cfs)	OK620910-05-0030C	Uncle John's Creek	21	1	6.82	1.43	6.56	0.24	1.42	4.67	11.99	19.76
Base Flow (cfs)	OK620910-05-0080D	Dead Indian Creek	20	2	2.045	0.452	2.023	0.05	0.303	1.175	4.12	6.38
Base Flow (cfs)	OK620910-06-0010B	Turkey Creek: Lower	19	1	28.33	4.24	18.49	7.07	14.02	21.02	45.24	60.87
Base Flow (cfs)	OK620910-06-0010T	Turkey Creek: Upper	21	0	15.43	2.94	13.49	0.12	4.44	15.63	23.73	53.57
Base Flow (cfs)	OK620920-01-0130G	Griever Creek	20	0	2.681	0.52	2.326	0.12	0.628	2.38	4.16	8.62
Base Flow (cfs)	OK620920-01-0180F	Main Creek	20	0	10.32	1.6	7.16	3.34	4.83	9.08	14.3	34.85
Base Flow (cfs)	OK620920-02-0080D	Long Creek	20	1	3.706	0.715	3.199	0	0.588	3.83	5.678	9.96
Base Flow (cfs)	OK620920-04-0010C	Eagle Chief Creek: Lower	17	0	39.22	6.84	28.2	13.4	15.42	32.95	59.85	105.54
Base Flow (cfs)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	1	6.67	1.23	5.76	1.28	2.46	4.37	9.53	22.58
Base Flow (cfs)	OK620920-05-0010G	Buffalo Creek: Lower	18	2	12.91	1.72	7.32	3.87	7.13	11.92	18.19	28.62
Base Flow (cfs)	OK620920-05-0010P	Buffalo Creek: Upper	20	1	7.2	1.17	5.25	1.96	3.53	6.01	8.92	24.15
Base Flow (cfs)	OK620920-05-0050G	Sand Creek	17	4	1.222	0.322	1.327	0	0.02	1	1.645	4.34
Base Flow (cfs)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	29.21	2.11	9.43	8.77	21.83	31.78	35.78	46.11
Base Flow (cfs)	OK620930-00-0100G	Crooked Creek: Beaver Co.	22	1	6.66	1.13	5.31	0.1	2.49	6.41	8.17	24.56
Base Flow (cfs)	OK621000-02-0040F	Wild Horse Creek	20	0	4.087	0.943	4.216	0	0.68	2.37	6.575	14.94
Base Flow (cfs)	OK621000-03-0010C	Bois d'Arc	19	1	14.28	2.78	12.11	3.29	5.04	9.05	20.42	43.64
Base Flow (cfs)	OK621000-04-0010D	Deer Creek	21	0	4.94	1.48	6.8	0.43	1.21	2.28	5.89	31.54
Base Flow (cfs)	OK621000-05-0010D	Pond Creek	18	0	22.89	8.69	36.87	0.87	4.43	10.45	26.49	161.64
Base Flow (cfs)	OK621000-06-0010C	Crooked Creek: Grant Co.	15	0	14.63	3.49	13.52	0.61	6.46	9.16	22.98	52.28
Base Flow (cfs)	OK621010-01-0010D	Salt Fork of Arkansas River	15	1	190	40.4	156.5	15.6	75.7	166.9	253.3	633.3
Base Flow (cfs)	OK621010-01-0090R	Clay Creek	17	2	2.874	0.998	4.114	0	0.335	0.9	4.77	16.16
Base Flow (cfs)	OK621010-01-0230G	Turkey Creek: Woods Co.	17	4	2.63	1.01	4.15	0	0.58	1.78	2.71	17.96
Base Flow (cfs)	OK621010-01-0270C	Yellowstone Creek	20	0	2.164	0.533	2.384	0.05	0.898	1.37	2.293	9.47
Base Flow (cfs)	OK621010-02-0010D	Sandy Creek	16	4	28.4	5.47	21.9	0	13.98	26.91	37.24	95.38
Base Flow (cfs)	OK621010-03-0010D	Medicine Lodge Creek	19	1	78.9	17.9	78.2	0	40.1	72	105.2	365.2
Base Flow (cfs)	OK621010-03-0030C	Driftwood Creek	19	0	9.23	1.92	8.37	0.24	3.14	7.8	13.11	31.63
Base Flow (cfs)	OK621100-00-0010B	Chickaskia River: Lower	13	4	74.5	15	53.9	32.6	43.1	57.1	90.2	237
Base Flow (cfs)	OK621100-00-0010M	Chickaskia Creek: Middle	12	3	78.1	16.7	57.8	27.3	33	73	101	237
Base Flow (cfs)	OK621100-00-0100G	Bitter Creek	17	2	9.01	1.86	7.67	0	2.96	5.54	17.25	24.27
Base Flow (cfs)	OK621200-01-0400C	Gray Horse Creek	21	0	1.628	0.656	3.008	0	0.195	0.61	1.19	12.71
Base Flow (cfs)	OK621200-02-0020C	Doga Creek	13	6	1.185	0.39	1.406	0	0.14	0.79	1.755	4.98

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Base Flow (cfs)	OK621200-03-0010D	Black Bear Creek: Lower	17	0	33.36	7.25	29.88	1.96	9.71	24.21	62.76	89.87
Base Flow (cfs)	OK621200-03-0010M	Black Bear Creek (downstream)	18	3	19.4	4.6	19.52	1.01	5.44	14.79	26.49	69.07
Base Flow (cfs)	OK621200-03-0010W	Black Bear Creek (upstream)	18	2	14.24	3.64	15.43	0.67	3.34	9.64	17.97	54.96
Base Flow (cfs)	OK621200-04-0010F	Salt Creek: Lower	16	5	8.09	1.4	5.6	0.58	2.47	8.5	13.47	16.85
Base Flow (cfs)	OK621200-04-0010P	Salt Creek: Upper	12	8	3.52	2.18	7.54	0	0	0.08	2.88	24.7
Base Flow (cfs)	OK621200-05-0010K	Red Rock Creek	18	1	16.91	5.18	21.97	0.03	1.38	7.74	20.48	82.42
Base Flow (cfs)	OK621200-05-0160G	Red Rock Creek: Upper	20	0	11.63	3.61	16.14	0.06	0.71	6.64	15.77	60.77
Base Flow (cfs)	OK621210-00-0050L	Beaver Creek: Osage Co.	15	4	6.95	2.85	11.02	0	0	2.5	5.94	33.79
Base Flow (cfs)	OK621210-00-0270C	Chilocco Creek	12	6	1.199	0.414	1.434	0	0	0.68	2.093	4.14
Base Flow (cfs)	OK720500-01-0070D	Bent Creek	20	1	10.09	1.65	7.39	1.14	2.81	9.91	15.02	26.02
Base Flow (cfs)	OK720500-01-0150G	Persimmon Creek	20	1	14.37	2.49	11.12	1.72	4.75	14.42	20.63	45.78
Base Flow (cfs)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	7.67	1.45	6.14	0.35	2.17	5.92	11.35	22.05
Base Flow (cfs)	OK720500-02-0050B	Otter Creek: Harper Co.	14	1	1.429	0.225	0.842	0	0.83	1.565	2.05	2.67
Base Flow (cfs)	OK720500-02-0070G	Clear Creek: Harper Co.	19	1	6.709	0.42	1.831	3.23	5.21	6.94	8.38	9.43
Base Flow (cfs)	OK720500-02-0100D	Spring Creek	19	1	1.105	0.182	0.794	0.19	0.61	0.93	1.43	3.16
Base Flow (cfs)	OK720500-02-0130C	Kiowa Creek: Harper Co.	18	1	10.788	0.986	4.182	1.18	8.585	11.865	13.133	16.46
Base Flow (cfs)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	19	1	6.528	0.498	2.169	1.35	5.62	7.31	7.55	10.47
Base Flow (cfs)	OK720500-02-0250F	Duck Pond Creek	20	2	0.3125	0.0418	0.1867	0.03	0.1375	0.29	0.4775	0.71
Base Flow (cfs)	OK720500-02-0300F	Clear Creek: Beaver Co.	19	2	1.932	0.296	1.291	0.05	0.27	2.05	3.13	3.57
Base Flow (cfs)	OK720500-02-0500G	Palo Duro Creek	19	2	0.54	0.0957	0.4171	0	0.1	0.55	0.89	1.19
Base Flow (cfs)	OK720500-03-0010C	Wolf Creek: Lower	19	0	25.31	5.92	25.79	1.16	3.16	16.69	52.02	74.17
Base Flow (cfs)	OK720500-03-0010G	Wolf Creek: Upper	22	0	45.69	4.92	23.08	16.59	26.46	40.45	59.56	98.86
Base Flow (cfs)	OK720900-00-0100D	Cold Springs Creek	9	0	0	0.000000	0	0	0	0	0	0
Base Flow (cfs)	OK720900-00-0180C	Cimarron River: Cimarron Co.	14	8	0.1257	0.0944	0.3533	0	0	0.005	0.08	1.34
Nitrate (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	0.2015	0.0504	0.2255	0.01	0.02	0.12	0.2175	0.75
Nitrate (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	0.931	0.274	1.225	0.01	0.133	0.57	1.143	5.45
Nitrate (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	0.302	0.103	0.474	0.01	0.02	0.11	0.48	1.98
Nitrate (mg/L)	OK620900-02-0050H	Council Creek	20	1	0.187	0.0535	0.2395	0.01	0.02	0.06	0.3025	0.77
Nitrate (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	0.2415	0.0608	0.2718	0.01	0.045	0.16	0.3375	0.92
Nitrate (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	0.3225	0.0789	0.353	0.01	0.085	0.165	0.5425	1.36
Nitrate (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	9.83	1.28	5.73	0.98	4.32	11.1	14.35	19.24
Nitrate (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	0.3325	0.0606	0.2712	0.02	0.1125	0.235	0.5675	0.94
Nitrate (mg/L)	OK620910-02-0040C	Cooper Creek	20	2	0.924	0.159	0.709	0.01	0.355	0.805	1.298	2.3
Nitrate (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	1.086	0.237	1.032	0.01	0.02	0.81	2.24	3.05
Nitrate (mg/L)	OK620910-02-0250C	Deep Creek	20	2	1.152	0.16	0.714	0.2	0.598	0.91	1.858	2.33
Nitrate (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	4.705	0.177	0.793	2.59	4.195	4.865	5.36	5.73
Nitrate (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	1.998	0.337	1.506	0.02	0.545	1.885	3.358	4.85
Nitrate (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	4.277	0.631	2.821	0.09	2.33	3.575	5.763	10.32
Nitrate (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	0.619	0.168	0.75	0.06	0.095	0.365	1.003	3.28

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Nitrate (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	5.464	0.473	2.116	0.02	3.985	5.595	6.525	8.76
Nitrate (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	1.245	0.156	0.698	0.29	0.678	1.02	1.913	2.45
Nitrate (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	0.978	0.157	0.704	0.01	0.265	0.98	1.355	2.24
Nitrate (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	1.447	0.156	0.699	0.2	0.778	1.465	2.098	2.5
Nitrate (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	1.223	0.154	0.69	0.11	0.748	1.215	1.833	2.22
Nitrate (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	1.031	0.136	0.61	0.02	0.418	1.085	1.595	1.87
Nitrate (mg/L)	OK620920-01-0130G	Griever Creek	20	1	0.247	0.0631	0.2823	0.01	0.08	0.13	0.3325	1.08
Nitrate (mg/L)	OK620920-01-0180F	Main Creek	20	1	0.552	0.0782	0.3496	0.05	0.2425	0.6	0.73	1.41
Nitrate (mg/L)	OK620920-02-0080D	Long Creek	20	1	0.575	0.0962	0.4302	0.06	0.0825	0.56	1.01	1.22
Nitrate (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	2.664	0.302	1.282	0.62	1.525	2.865	3.47	4.85
Nitrate (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	1.774	0.152	0.714	0.65	1.245	1.67	2.39	3.07
Nitrate (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	0.427	0.118	0.528	0.01	0.085	0.26	0.618	2.29
Nitrate (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	0.54	0.1	0.449	0.01	0.155	0.4	0.888	1.65
Nitrate (mg/L)	OK620920-05-0050G	Sand Creek	20	1	0.248	0.0558	0.2495	0.01	0.0525	0.17	0.4075	0.8
Nitrate (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	1.607	0.332	1.483	0.01	0.388	1.06	2.983	5.05
Nitrate (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	0.407	0.146	0.703	0.01	0.05	0.08	0.515	2.54
Nitrate (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	2.003	0.534	2.388	0.02	0.158	1.315	2.868	9.81
Nitrate (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	1.251	0.191	0.833	0.01	0.63	1.13	1.55	3.69
Nitrate (mg/L)	OK621000-04-0010D	Deer Creek	20	1	0.94	0.18	0.803	0.01	0.245	0.77	1.35	2.6
Nitrate (mg/L)	OK621000-05-0010D	Pond Creek	20	1	1.035	0.116	0.519	0.25	0.633	0.94	1.453	1.98
Nitrate (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	1.94	0.56	2.095	0.37	1.05	1.395	1.945	9.01
Nitrate (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	0.363	0.124	0.557	0.01	0.02	0.045	0.578	2.13
Nitrate (mg/L)	OK621010-01-0090R	Clay Creek	19	2	0.917	0.187	0.814	0.02	0.13	0.75	1.46	2.78
Nitrate (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	0.257	0.0586	0.2622	0.02	0.05	0.195	0.3475	0.96
Nitrate (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	0.168	0.0478	0.2136	0.01	0.02	0.1	0.225	0.8
Nitrate (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	1.3	0.133	0.596	0.05	0.903	1.355	1.825	2.26
Nitrate (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	0.765	0.0954	0.4268	0.05	0.5	0.685	1.1375	1.48
Nitrate (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	0.4345	0.0935	0.418	0.01	0.105	0.29	0.5875	1.34
Nitrate (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	1.107	0.162	0.707	0.01	0.62	1.15	1.62	2.5
Nitrate (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	1.18	0.167	0.745	0.01	0.585	1.225	1.77	2.6
Nitrate (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	0.975	0.184	0.824	0.01	0.423	0.66	1.338	3.4
Nitrate (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	0.2165	0.0489	0.2185	0.01	0.075	0.145	0.285	0.78
Nitrate (mg/L)	OK621200-02-0020C	Doga Creek	19	1	0.2263	0.0573	0.2497	0.01	0.05	0.12	0.32	0.92
Nitrate (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	0.577	0.0974	0.4355	0.01	0.2275	0.51	0.9	1.56
Nitrate (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	0.71	0.132	0.589	0.01	0.15	0.605	1.065	2.15
Nitrate (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	1.268	0.189	0.845	0.05	0.67	1.085	1.75	3.14
Nitrate (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	0.2475	0.0601	0.2686	0.01	0.04	0.145	0.4925	0.84
Nitrate (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	0.22	0.0639	0.286	0.01	0.02	0.095	0.4575	0.92
Nitrate (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	0.904	0.206	0.921	0.02	0.155	0.51	1.363	3.12

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Nitrate (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	0.679	0.154	0.687	0.02	0.1	0.4	1.173	2.64
Nitrate (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	0.25	0.0549	0.2455	0.01	0.05	0.175	0.425	0.79
Nitrate (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	0.73	0.231	0.98	0.01	0.02	0.15	1.363	3.47
Nitrate (mg/L)	OK720500-01-0070D	Bent Creek	20	1	0.6945	0.0547	0.2448	0.31	0.525	0.66	0.78	1.26
Nitrate (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	0.8275	0.0513	0.2295	0.49	0.6025	0.855	0.99	1.28
Nitrate (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	0.4383	0.0748	0.3173	0.01	0.1975	0.375	0.665	1.05
Nitrate (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	0.279	0.111	0.43	0.01	0.02	0.09	0.24	1.49
Nitrate (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	1.1235	0.0578	0.2586	0.79	0.8875	1.07	1.3225	1.63
Nitrate (mg/L)	OK720500-02-0100D	Spring Creek	19	1	1.669	0.125	0.543	0.83	1.27	1.67	2.14	2.5
Nitrate (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	0.5658	0.0827	0.3605	0.04	0.23	0.55	0.76	1.25
Nitrate (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	0.8215	0.0701	0.3136	0.33	0.6125	0.755	0.9425	1.53
Nitrate (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	0.126	0.0416	0.1859	0.01	0.02	0.055	0.125	0.62
Nitrate (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	0.0795	0.0336	0.1503	0.01	0.02	0.02	0.0675	0.52
Nitrate (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	0.084	0.0345	0.1543	0.01	0.02	0.02	0.07	0.53
Nitrate (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	0.1805	0.0387	0.1686	0.01	0.06	0.1	0.3	0.56
Nitrate (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	0.8138	0.0831	0.381	0.3	0.47	0.76	1.215	1.4
Nitrate (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	0.2275	0.0929	0.2627	0.01	0.02	0.135	0.5325	0.63
Nitrate (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	0.175	0.0459	0.2054	0.02	0.02	0.085	0.3	0.58
Nitrite (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	0.0255	0.00925	0.04136	0.01	0.01	0.02	0.02	0.2
Nitrite (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	0.038	0.0107	0.048	0.01	0.01	0.02	0.0475	0.2
Nitrite (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	0.01667	0.00159	0.0073	0.01	0.01	0.02	0.02	0.04
Nitrite (mg/L)	OK620900-02-0050H	Council Creek	20	1	0.018	0.00247	0.01105	0.01	0.01	0.02	0.02	0.06
Nitrite (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	0.016	0.00112	0.00503	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	0.023	0.00729	0.03262	0.01	0.01	0.02	0.02	0.16
Nitrite (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	0.09	0.0479	0.2142	0.01	0.0125	0.02	0.065	0.96
Nitrite (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	0.031	0.0115	0.0514	0.01	0.01	0.02	0.02	0.24
Nitrite (mg/L)	OK620910-02-0040C	Cooper Creek	20	2	0.0465	0.0302	0.1351	0.01	0.01	0.02	0.02	0.62
Nitrite (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	0.0737	0.057	0.2486	0.01	0.01	0.02	0.02	1.1
Nitrite (mg/L)	OK620910-02-0250C	Deep Creek	20	2	0.027	0.0107	0.048	0.01	0.01	0.02	0.02	0.23
Nitrite (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	0.029	0.00732	0.03275	0.01	0.01	0.02	0.02	0.14
Nitrite (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	0.054	0.0382	0.171	0.01	0.01	0.02	0.02	0.78
Nitrite (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	0.562	0.515	2.301	0.01	0.01	0.02	0.02	10.33
Nitrite (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	0.0555	0.0259	0.116	0.01	0.01	0.02	0.02	0.46
Nitrite (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	0.306	0.275	1.228	0.01	0.01	0.02	0.06	5.52
Nitrite (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	0.0335	0.0172	0.077	0.01	0.01	0.02	0.02	0.36
Nitrite (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	0.019	0.00289	0.01294	0.01	0.01	0.02	0.02	0.07
Nitrite (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	0.043	0.0167	0.0746	0.01	0.01	0.02	0.02	0.33
Nitrite (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	0.018	0.00247	0.01105	0.01	0.01	0.02	0.02	0.06
Nitrite (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	19	2	0.01632	0.00114	0.00496	0.01	0.01	0.02	0.02	0.02

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Nitrite (mg/L)	OK620920-01-0130G	Griever Creek	20	1	0.0165	0.00109	0.00489	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK620920-01-0180F	Main Creek	20	1	0.0165	0.00109	0.00489	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK620920-02-0080D	Long Creek	20	1	0.0165	0.00109	0.00489	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	0.0478	0.0103	0.0439	0.01	0.0175	0.02	0.065	0.15
Nitrite (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	0.01773	0.00227	0.01066	0.01	0.01	0.02	0.02	0.06
Nitrite (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	0.027	0.0102	0.0457	0.01	0.01	0.02	0.02	0.22
Nitrite (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	0.0265	0.00971	0.04344	0.01	0.01	0.02	0.02	0.21
Nitrite (mg/L)	OK620920-05-0050G	Sand Creek	20	1	0.019	0.00289	0.01294	0.01	0.01	0.02	0.02	0.07
Nitrite (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	0.016	0.00112	0.00503	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	0.02522	0.00982	0.04708	0.01	0.01	0.02	0.02	0.24
Nitrite (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	0.0305	0.0105	0.047	0.01	0.0125	0.02	0.02	0.22
Nitrite (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	0.02632	0.00971	0.04232	0.01	0.01	0.02	0.02	0.2
Nitrite (mg/L)	OK621000-04-0010D	Deer Creek	20	1	0.016	0.00112	0.00503	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK621000-05-0010D	Pond Creek	20	1	0.0415	0.012	0.0537	0.01	0.02	0.02	0.05	0.2
Nitrite (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	0.0479	0.0148	0.0552	0.01	0.02	0.02	0.0625	0.22
Nitrite (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	0.0205	0.0038	0.01701	0.01	0.01	0.02	0.02	0.09
Nitrite (mg/L)	OK621010-01-0090R	Clay Creek	19	2	0.02211	0.00555	0.02417	0.01	0.01	0.02	0.02	0.12
Nitrite (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	0.0165	0.00109	0.00489	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	0.0165	0.00109	0.00489	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	0.019	0.00289	0.01294	0.01	0.01	0.02	0.02	0.07
Nitrite (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	0.0165	0.00109	0.00489	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	0.0395	0.0142	0.0634	0.01	0.0125	0.02	0.02	0.25
Nitrite (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	0.02158	0.00613	0.02672	0.01	0.01	0.02	0.02	0.13
Nitrite (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	0.034	0.0132	0.0592	0.01	0.01	0.02	0.02	0.26
Nitrite (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	0.016	0.00112	0.00503	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK621200-01-0400C	Gray Horse Creek	19	2	0.02421	0.00762	0.03322	0.01	0.01	0.02	0.02	0.16
Nitrite (mg/L)	OK621200-02-0020C	Doga Creek	19	1	0.02105	0.00458	0.01997	0.01	0.01	0.02	0.02	0.1
Nitrite (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	0.0325	0.00973	0.04351	0.01	0.01	0.02	0.02	0.2
Nitrite (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	0.0355	0.013	0.0583	0.01	0.01	0.02	0.02	0.27
Nitrite (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	0.0395	0.0166	0.0742	0.01	0.01	0.02	0.02	0.33
Nitrite (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	0.027	0.0084	0.03757	0.01	0.01	0.02	0.02	0.18
Nitrite (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	0.023	0.00677	0.03028	0.01	0.01	0.02	0.02	0.15
Nitrite (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	0.0275	0.0103	0.0462	0.01	0.01	0.02	0.02	0.22
Nitrite (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	0.029	0.00827	0.03698	0.01	0.01	0.02	0.02	0.17
Nitrite (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	0.028	0.0102	0.0457	0.01	0.01	0.02	0.02	0.22
Nitrite (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	0.02111	0.00342	0.01451	0.01	0.01	0.02	0.02	0.06
Nitrite (mg/L)	OK720500-01-0070D	Bent Creek	20	1	0.0285	0.00889	0.03977	0.01	0.01	0.02	0.02	0.19
Nitrite (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	0.0165	0.00109	0.00489	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	0.01611	0.00118	0.00502	0.01	0.01	0.02	0.02	0.02

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Nitrite (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	0.0267	0.0117	0.0455	0.01	0.01	0.02	0.02	0.19
Nitrite (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	0.017	0.00164	0.00733	0.01	0.01	0.02	0.02	0.04
Nitrite (mg/L)	OK720500-02-0100D	Spring Creek	19	1	0.02053	0.00337	0.01471	0.01	0.01	0.02	0.02	0.06
Nitrite (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	0.0268	0.0108	0.047	0.01	0.01	0.02	0.02	0.22
Nitrite (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	0.0175	0.00204	0.0091	0.01	0.01	0.02	0.02	0.05
Nitrite (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	0.0185	0.00244	0.01089	0.01	0.01	0.02	0.02	0.06
Nitrite (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	0.016	0.00112	0.00503	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	0.016	0.00112	0.00503	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	0.01895	0.00252	0.011	0.01	0.01	0.02	0.02	0.06
Nitrite (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	0.01667	0.00105	0.00483	0.01	0.01	0.02	0.02	0.02
Nitrite (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	0.0288	0.016	0.0452	0.01	0.01	0.01	0.02	0.14
Nitrite (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	0.025	0.00875	0.03914	0.01	0.01	0.02	0.02	0.19
TKN (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	0.5608	0.0739	0.3303	0.11	0.2908	0.546	0.6998	1.229
TKN (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	1.07	0.225	1.006	0.168	0.577	0.903	1.178	5.09
TKN (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	0.3987	0.0476	0.2182	0.11	0.2265	0.354	0.525	0.871
TKN (mg/L)	OK620900-02-0050H	Council Creek	20	1	0.5961	0.0705	0.3153	0.11	0.3743	0.5435	0.8258	1.432
TKN (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	0.6163	0.076	0.3397	0.11	0.403	0.5775	0.8685	1.483
TKN (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	0.6374	0.0721	0.3225	0.11	0.3353	0.6685	0.787	1.306
TKN (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	19	2	1.168	0.158	0.689	0.11	0.725	1.062	1.361	3.401
TKN (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	0.6075	0.0895	0.4004	0.11	0.3635	0.467	0.7138	1.541
TKN (mg/L)	OK620910-02-0040C	Cooper Creek	19	3	0.7725	0.0967	0.4215	0.117	0.44	0.651	1.05	1.655
TKN (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	0.5145	0.0605	0.2639	0.11	0.325	0.509	0.608	1.134
TKN (mg/L)	OK620910-02-0250C	Deep Creek	20	2	0.5341	0.0548	0.245	0.11	0.3053	0.523	0.7475	0.953
TKN (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	0.4176	0.0378	0.1689	0.11	0.3105	0.385	0.4963	0.78
TKN (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	1.02	0.111	0.495	0.11	0.616	0.913	1.48	1.924
TKN (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	1.037	0.105	0.47	0.11	0.685	1	1.344	2.241
TKN (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	0.6831	0.0889	0.3977	0.11	0.3405	0.6335	0.9233	1.619
TKN (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	0.789	0.076	0.34	0.11	0.6015	0.795	0.9248	1.75
TKN (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	0.587	0.0567	0.2536	0.11	0.3915	0.5235	0.794	1.128
TKN (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	0.47	0.0555	0.248	0.11	0.296	0.4235	0.6413	1.011
TKN (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	0.6349	0.0787	0.352	0.11	0.3623	0.631	0.754	1.742
TKN (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	1.25	0.533	2.385	0.11	0.481	0.609	1.062	11.26
TKN (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	0.8574	0.0866	0.3872	0.112	0.6335	0.7715	1.0963	1.846
TKN (mg/L)	OK620920-01-0130G	Griever Creek	20	1	0.64	0.165	0.737	0.11	0.31	0.477	0.579	3.577
TKN (mg/L)	OK620920-01-0180F	Main Creek	20	1	1.177	0.76	3.4	0.11	0.304	0.405	0.552	15.601
TKN (mg/L)	OK620920-02-0080D	Long Creek	20	1	0.588	0.15	0.67	0.137	0.331	0.471	0.586	3.362
TKN (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	0.87	0.494	2.097	0.11	0.255	0.339	0.558	9.233
TKN (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	0.697	0.177	0.828	0.11	0.363	0.531	0.729	4.244
TKN (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	0.983	0.389	1.742	0.11	0.472	0.616	0.787	8.329

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TKN (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	0.894	0.236	1.057	0.27	0.528	0.667	0.885	5.316
TKN (mg/L)	OK620920-05-0050G	Sand Creek	20	1	0.7394	0.0868	0.3883	0.11	0.481	0.652	1.015	1.68
TKN (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	0.826	0.112	0.499	0.36	0.468	0.646	1.12	2.085
TKN (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	0.585	0.104	0.5	0.11	0.256	0.576	0.759	2.539
TKN (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	0.976	0.128	0.573	0.11	0.636	0.843	1.158	2.765
TKN (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	0.6634	0.0889	0.3877	0.185	0.386	0.623	0.872	1.666
TKN (mg/L)	OK621000-04-0010D	Deer Creek	20	1	0.7623	0.075	0.3352	0.33	0.5243	0.703	0.925	1.493
TKN (mg/L)	OK621000-05-0010D	Pond Creek	20	1	1.018	0.2	0.894	0.11	0.51	0.75	1.1	3.195
TKN (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	0.76	0.109	0.406	0.11	0.542	0.641	1.164	1.434
TKN (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	1.245	0.151	0.676	0.11	0.749	1.155	1.706	2.742
TKN (mg/L)	OK621010-01-0090R	Clay Creek	19	2	0.8814	0.0951	0.4147	0.11	0.565	0.85	1.121	1.821
TKN (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	0.529	0.0815	0.3644	0.11	0.2745	0.461	0.6158	1.558
TKN (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	0.3119	0.0945	0.4227	0.11	0.11	0.179	0.3025	2
TKN (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	0.4372	0.066	0.2953	0.11	0.2545	0.328	0.663	1.254
TKN (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	0.3594	0.0507	0.2269	0.11	0.23	0.318	0.4498	1.122
TKN (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	0.5571	0.0583	0.2605	0.11	0.3503	0.5285	0.7543	1.113
TKN (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	0.7439	0.0861	0.3751	0.291	0.48	0.649	0.889	1.702
TKN (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	0.659	0.111	0.496	0.11	0.321	0.503	0.911	2.138
TKN (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	0.9452	0.0982	0.439	0.338	0.6015	0.919	1.1803	2.198
TKN (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	0.5379	0.0482	0.2157	0.027	0.4285	0.5115	0.7055	1.001
TKN (mg/L)	OK621200-02-0020C	Doga Creek	19	1	0.5696	0.0744	0.3244	0.11	0.316	0.515	0.837	1.303
TKN (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	0.8155	0.0791	0.3537	0.11	0.5858	0.8355	1.004	1.637
TKN (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	0.9423	0.0845	0.3777	0.341	0.7363	0.874	1.16	1.695
TKN (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	0.8042	0.0912	0.4079	0.11	0.626	0.7385	1.0103	1.954
TKN (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	0.4564	0.0686	0.3066	0.11	0.2473	0.3665	0.5593	1.264
TKN (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	0.4201	0.0697	0.3119	0.11	0.2553	0.348	0.5085	1.502
TKN (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	0.908	0.114	0.509	0.11	0.505	0.898	1.302	1.936
TKN (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	0.9388	0.0918	0.4103	0.11	0.6403	0.9435	1.1845	1.737
TKN (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	0.443	0.0564	0.2524	0.11	0.2848	0.3425	0.6835	0.859
TKN (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	0.5792	0.0753	0.3193	0.11	0.3398	0.5695	0.6655	1.228
TKN (mg/L)	OK720500-01-0070D	Bent Creek	19	2	0.4328	0.0879	0.3833	0.11	0.232	0.342	0.423	1.496
TKN (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	0.443	0.0378	0.1691	0.11	0.299	0.4455	0.561	0.839
TKN (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	0.514	0.0488	0.2069	0.11	0.3398	0.5215	0.6425	0.892
TKN (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	0.663	0.126	0.487	0.215	0.366	0.462	0.792	1.899
TKN (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	0.279	0.073	0.3263	0.11	0.11	0.171	0.3158	1.51
TKN (mg/L)	OK720500-02-0100D	Spring Creek	19	1	0.2879	0.0588	0.2564	0.063	0.162	0.213	0.299	1.193
TKN (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	0.3678	0.0605	0.2635	0.105	0.171	0.341	0.4444	1.109
TKN (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	0.637	0.289	1.295	0.111	0.196	0.333	0.473	6.063
TKN (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	0.4162	0.0494	0.2211	0.083	0.2535	0.3815	0.5123	0.934

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TKN (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	0.36	0.0341	0.1526	0.124	0.2528	0.309	0.4465	0.696
TKN (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	0.651	0.175	0.785	0.02	0.194	0.334	0.898	3.449
TKN (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	0.5838	0.0546	0.238	0.11	0.41	0.59	0.691	0.997
TKN (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	0.482	0.0649	0.2974	0.11	0.295	0.39	0.6855	1.242
TKN (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	1.088	0.158	0.446	0.668	0.771	0.952	1.429	1.954
TKN (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	0.6004	0.0823	0.368	0.11	0.288	0.5165	1.084	1.153
Total N	OK620900-01-0180	Lagoon Creek	20	1	0.788	0.105	0.469	0.317	0.475	0.609	1.141	2.179
Total N	OK620900-01-0290	Euchee Creek	20	1	2.039	0.477	2.135	0.517	0.988	1.712	2.06	10.55
Total N	OK620900-02-0020	Salt Creek: Payne Co.	21	1	0.718	0.121	0.555	0.17	0.375	0.531	0.994	2.543
Total N	OK620900-02-0050	Council Creek	20	1	0.801	0.102	0.457	0.15	0.49	0.796	1.016	2.212
Total N	OK620900-03-0080	Dugout Creek	20	1	0.874	0.108	0.484	0.177	0.509	0.827	1.274	1.848
Total N	OK620900-03-0230	Beaver Creek: Logan Co.	20	1	0.9829	0.0926	0.4141	0.29	0.6948	0.9565	1.2745	1.845
Total N	OK620900-04-0040	Stillwater Creek: Lower	20	1	11.03	1.28	5.74	1.73	5.44	12.95	15.31	19.36
Total N	OK620900-04-0070	Stillwater Creek: Upper	20	1	0.971	0.126	0.565	0.32	0.538	0.868	1.157	2.541
Total N	OK620910-02-0040	Cooper Creek	20	2	1.704	0.155	0.694	0.297	1.205	1.655	2.272	2.985
Total N	OK620910-02-0100	Salt Creek: Kingfisher Co.	19	2	1.674	0.23	1.003	0.536	0.659	1.414	2.54	3.665
Total N	OK620910-02-0250	Deep Creek	20	2	1.713	0.144	0.643	0.74	1.028	1.704	2.322	2.63
Total N	OK620910-02-0310	Indian Creek: Major Co.	20	1	5.152	0.154	0.687	3.39	4.499	5.191	5.731	6.06
Total N	OK620910-03-0010	Skeleton Creek: Lower	20	1	3.072	0.274	1.223	1.537	2.276	2.675	3.925	5.94
Total N	OK620910-03-0010	Skeleton Creek: Upper	20	1	5.876	0.634	2.835	2.635	3.655	5.126	6.877	11.801
Total N	OK620910-03-0040	Otter Creek: Logan Co.	20	1	1.357	0.208	0.928	0.36	0.644	1.126	2.084	4.063
Total N	OK620910-04-0010	Cottonwood Creek	20	1	6.558	0.383	1.711	3.024	5.381	6.508	7.351	9.561
Total N	OK620910-05-0010	Kingfisher Creek	20	1	1.865	0.149	0.664	0.77	1.355	1.823	2.406	3.098
Total N	OK620910-05-0030	Uncle John's Creek	20	2	1.466	0.144	0.642	0.25	1.075	1.414	1.886	2.915
Total N	OK620910-05-0080	Dead Indian Creek	20	2	2.124	0.169	0.756	0.894	1.519	2.19	2.844	3.302
Total N	OK620910-06-0010	Turkey Creek: Lower	20	2	2.491	0.526	2.354	0.919	1.552	2.069	2.572	12.2
Total N	OK620910-06-0010	Turkey Creek: Upper	20	1	1.904	0.137	0.612	0.768	1.536	1.901	2.431	2.906
Total N	OK620920-01-0130	Griever Creek	20	1	0.904	0.21	0.939	0.41	0.448	0.576	0.838	4.477
Total N	OK620920-01-0180	Main Creek	20	1	1.745	0.793	3.545	0.427	0.781	0.951	1.127	16.731
Total N	OK620920-02-0080	Long Creek	20	1	1.179	0.195	0.873	0.373	0.683	0.957	1.47	4.452
Total N	OK620920-04-0010	Eagle Chief Creek: Lower	18	1	3.582	0.497	2.109	1.077	2.055	3.376	4.196	10.543
Total N	OK620920-04-0010	Eagle Chief Creek: Woods Co.	22	2	2.488	0.192	0.901	1.209	1.909	2.261	3.044	5.144
Total N	OK620920-05-0010	Buffalo Creek: Lower	20	1	1.436	0.499	2.233	0.33	0.708	0.974	1.15	10.839
Total N	OK620920-05-0010	Buffalo Creek: Upper	20	2	1.46	0.312	1.396	0.548	0.98	1.121	1.436	7.176
Total N	OK620920-05-0050	Sand Creek	20	1	1.0064	0.0828	0.3701	0.158	0.6925	1.081	1.2563	1.81
Total N	OK620930-00-0010	Cimarron River: Beaver Co.	20	1	2.449	0.289	1.291	0.819	1.317	2.288	3.528	5.576
Total N	OK620930-00-0100	Crooked Creek: Beaver Co.	23	1	1.016	0.21	1.007	0.19	0.372	0.718	1.007	3.899
Total N	OK621000-02-0040	Wild Horse Creek	20	1	3.009	0.53	2.369	0.769	1.085	2.374	4.021	10.449
Total N	OK621000-03-0010	Bois d'Arc	19	1	1.941	0.197	0.857	0.809	1.148	1.755	2.696	3.887

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Total N	OK621000-04-0010	Deer Creek	20	1	1.718	0.193	0.863	0.46	0.985	1.531	2.277	3.333
Total N	OK621000-05-0010	Pond Creek	20	1	2.094	0.271	1.213	1.059	1.165	1.609	2.717	5.125
Total N	OK621000-06-0010	Crooked Creek: Grant Co.	14	1	2.748	0.551	2.061	1.201	1.804	2.316	2.73	9.623
Total N	OK621010-01-0010	Salt Fork of Arkansas River	20	1	1.628	0.166	0.744	0.55	1.093	1.436	2.312	3.095
Total N	OK621010-01-0090	Clay Creek	19	2	1.82	0.186	0.809	0.808	1.156	1.585	2.483	3.662
Total N	OK621010-01-0230	Turkey Creek: Woods Co.	20	1	0.802	0.109	0.487	0.26	0.481	0.695	0.956	2.408
Total N	OK621010-01-0270	Yellowstone Creek	20	1	0.496	0.11	0.493	0.152	0.209	0.345	0.517	2.25
Total N	OK621010-02-0010	Sandy Creek	20	1	1.756	0.14	0.628	0.352	1.63	1.739	2.208	2.733
Total N	OK621010-03-0010	Medicine Lodge Creek	20	2	1.141	0.101	0.45	0.372	0.862	1.11	1.537	1.824
Total N	OK621010-03-0030	Driftwood Creek	20	1	1.031	0.121	0.542	0.39	0.613	0.953	1.467	2.583
Total N	OK621100-00-0010	Chickaskia River: Lower	19	2	1.873	0.16	0.697	0.736	1.461	1.879	2.33	3.219
Total N	OK621100-00-0010	Chickaskia Creek: Middle	20	2	1.873	0.135	0.604	0.668	1.621	1.895	2.317	3.035
Total N	OK621100-00-0100	Bitter Creek	20	1	1.936	0.22	0.985	0.516	1.141	1.646	2.822	4.278
Total N	OK621200-01-0400	Gray Horse Creek	20	1	0.7775	0.0632	0.2826	0.376	0.5765	0.718	0.8718	1.354
Total N	OK621200-02-0020	Doga Creek	19	1	0.817	0.1	0.438	0.16	0.456	0.785	1.052	1.823
Total N	OK621200-03-0010	Black Bear Creek: Lower	20	1	1.425	0.129	0.578	0.55	1.089	1.307	1.747	2.927
Total N	OK621200-03-0010	Black Bear Creek (downstream)	20	3	1.688	0.157	0.702	0.943	1.166	1.444	2.204	3.33
Total N	OK621200-03-0010	Black Bear Creek (upstream)	20	3	2.112	0.209	0.937	0.78	1.472	1.952	2.812	4.227
Total N	OK621200-04-0010	Salt Creek: Lower	20	2	0.731	0.106	0.472	0.17	0.385	0.587	0.881	1.854
Total N	OK621200-04-0010	Salt Creek: Upper	20	1	0.663	0.106	0.474	0.15	0.387	0.497	0.858	2.122
Total N	OK621200-05-0010	Red Rock Creek	20	1	1.839	0.256	1.146	0.43	0.998	1.537	2.38	4.696
Total N	OK621200-05-0160	Red Rock Creek: Upper	20	1	1.646	0.183	0.819	0.48	0.98	1.451	2.388	3.287
Total N	OK621210-00-0050	Beaver Creek: Osage Co.	20	1	0.721	0.0856	0.3828	0.15	0.4313	0.62	0.9703	1.631
Total N	OK621210-00-0270	Chilocco Creek	18	1	1.33	0.251	1.065	0.15	0.547	1.111	1.982	4.067
Total N	OK720500-01-0070	Bent Creek	20	1	1.134	0.122	0.547	0.71	0.759	0.893	1.395	2.776
Total N	OK720500-01-0150	Persimmon Creek	20	1	1.287	0.0655	0.2928	0.75	1.0648	1.3155	1.496	1.82
Total N	OK720500-01-0200	Indian Creek: Woodward Co.	18	1	0.9684	0.0926	0.3928	0.331	0.7415	0.9085	1.2245	1.698
Total N	OK720500-02-0050	Otter Creek: Harper Co.	15	1	0.969	0.225	0.873	0.409	0.443	0.662	0.995	3.087
Total N	OK720500-02-0070	Clear Creek: Harper Co.	20	1	1.4195	0.074	0.3307	0.99	1.1915	1.355	1.6438	2.4
Total N	OK720500-02-0100	Spring Creek	19	1	1.977	0.105	0.457	1.143	1.6	2.049	2.27	2.672
Total N	OK720500-02-0130	Kiowa Creek: Harper Co.	19	1	0.96	0.118	0.515	0.175	0.629	0.88	1.164	2.399
Total N	OK720500-02-0130	Kiowa Creek: Beaver Co.	20	1	1.476	0.274	1.225	0.702	0.923	1.156	1.598	6.443
Total N	OK720500-02-0250	Duck Pond Creek	20	2	0.5607	0.0534	0.239	0.213	0.3563	0.506	0.8143	0.994
Total N	OK720500-02-0300	Clear Creek: Beaver Co.	20	1	0.4555	0.0465	0.2079	0.164	0.2968	0.3875	0.5865	0.889
Total N	OK720500-02-0500	Palo Duro Creek	20	1	0.751	0.175	0.784	0.06	0.247	0.428	0.989	3.469
Total N	OK720500-03-0010	Wolf Creek: Lower	19	1	0.7833	0.0449	0.1957	0.391	0.65	0.766	0.89	1.16
Total N	OK720500-03-0010	Wolf Creek: Upper	21	1	1.3124	0.081	0.371	0.737	1.012	1.38	1.5815	2.012
Total N	OK720900-00-0100	Cold Springs Creek	8	1	1.344	0.156	0.442	0.878	0.974	1.27	1.604	2.204
Total N	OK720900-00-0180	Cimarron River: Cimarron Co.	20	2	0.8	0.102	0.456	0.2	0.425	0.652	1.198	1.767

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Available N	OK620900-01-0180	Lagoon Creek	20	1	0.2733	0.0636	0.2845	0.055	0.0798	0.2145	0.2773	1.207
Available N	OK620900-01-0290	Euchee Creek	21	0	1.148	0.372	1.707	0	0.158	0.93	1.248	8.077
Available N	OK620900-02-0020	Salt Creek: Payne Co.	22	0	0.3279	0.0999	0.4688	0	0.062	0.135	0.4875	2.016
Available N	OK620900-02-0050	Council Creek	21	0	0.2328	0.0548	0.2511	0	0.0665	0.11	0.305	0.877
Available N	OK620900-03-0080	Dugout Creek	21	0	0.3087	0.0629	0.2885	0	0.093	0.235	0.4405	0.963
Available N	OK620900-03-0230	Beaver Creek: Logan Co.	21	0	0.364	0.0756	0.3466	0	0.14	0.195	0.6075	1.395
Available N	OK620900-04-0040	Stillwater Creek: Lower	21	0	9.7	1.32	6.07	0	4.27	12.34	14.16	19.32
Available N	OK620900-04-0070	Stillwater Creek: Upper	21	0	0.465	0.0942	0.4315	0	0.167	0.268	0.739	1.635
Available N	OK620910-02-0040	Cooper Creek	22	0	0.944	0.158	0.742	0	0.263	0.883	1.483	2.31
Available N	OK620910-02-0100	Salt Creek: Kingfisher Co.	21	0	1.075	0.243	1.115	0	0.076	0.555	2.105	3.362
Available N	OK620910-02-0250	Deep Creek	22	0	1.119	0.162	0.761	0	0.457	0.996	1.945	2.365
Available N	OK620910-02-0310	Indian Creek: Major Co.	21	0	4.529	0.283	1.295	0	4.065	4.68	5.407	5.765
Available N	OK620910-03-0010	Skeleton Creek: Lower	21	0	2.004	0.325	1.491	0	0.723	1.955	3.362	4.888
Available N	OK620910-03-0010	Skeleton Creek: Upper	21	0	4.687	0.662	3.033	0	2.443	3.818	6.123	10.453
Available N	OK620910-03-0040	Otter Creek: Logan Co.	21	0	0.686	0.165	0.756	0	0.13	0.505	1.156	3.322
Available N	OK620910-04-0010	Cottonwood Creek	21	0	5.548	0.449	2.058	0	4.37	5.567	6.554	8.895
Available N	OK620910-05-0010	Kingfisher Creek	21	0	1.268	0.163	0.745	0	0.741	1.056	1.999	2.505
Available N	OK620910-05-0030	Uncle John's Creek	22	0	0.944	0.156	0.73	0	0.17	1.016	1.361	2.285
Available N	OK620910-05-0080	Dead Indian Creek	22	0	1.434	0.172	0.808	0	0.689	1.55	2.053	2.592
Available N	OK620910-06-0010	Turkey Creek: Lower	22	0	1.193	0.162	0.758	0	0.548	1.126	1.718	2.436
Available N	OK620910-06-0010	Turkey Creek: Upper	21	0	1.08	0.142	0.653	0	0.374	1.12	1.642	1.981
Available N	OK620920-01-0130	Griever Creek	21	0	0.3037	0.0771	0.3533	0	0.115	0.176	0.345	1.329
Available N	OK620920-01-0180	Main Creek	21	0	0.604	0.103	0.471	0	0.245	0.635	0.748	1.974
Available N	OK620920-02-0080	Long Creek	21	0	0.605	0.104	0.476	0	0.115	0.585	1.031	1.506
Available N	OK620920-04-0010	Eagle Chief Creek: Lower	19	0	2.731	0.32	1.393	0	1.646	3.055	3.525	4.896
Available N	OK620920-04-0010	Eagle Chief Creek: Woods Co.	24	0	1.694	0.171	0.84	0	1.258	1.593	2.296	3.119
Available N	OK620920-05-0010	Buffalo Creek: Lower	21	0	0.511	0.165	0.756	0	0.096	0.313	0.653	3.544
Available N	OK620920-05-0010	Buffalo Creek: Upper	22	0	0.575	0.128	0.6	0	0.165	0.451	0.818	2.621
Available N	OK620920-05-0050	Sand Creek	21	0	0.3205	0.0598	0.2739	0	0.1135	0.241	0.4275	0.904
Available N	OK620930-00-0010	Cimarron River: Beaver Co.	21	0	1.577	0.322	1.478	0	0.331	0.749	2.992	5.086
Available N	OK620930-00-0100	Crooked Creek: Beaver Co.	24	0	0.471	0.153	0.751	0	0.08	0.115	0.565	2.565
Available N	OK621000-02-0040	Wild Horse Creek	21	0	2.046	0.519	2.377	0	0.187	1.352	2.961	9.856
Available N	OK621000-03-0010	Bois d' Arc	20	0	1.293	0.197	0.879	0	0.628	1.208	1.668	3.729
Available N	OK621000-04-0010	Deer Creek	21	0	0.968	0.182	0.833	0	0.24	0.763	1.395	2.625
Available N	OK621000-05-0010	Pond Creek	21	0	1.114	0.136	0.622	0	0.689	0.936	1.675	2.178
Available N	OK621000-06-0010	Crooked Creek: Grant Co.	15	0	1.928	0.532	2.059	0	1.154	1.527	2.039	9.052
Available N	OK621010-01-0010	Salt Fork of Arkansas River	21	0	0.447	0.131	0.601	0	0.063	0.155	0.625	2.235
Available N	OK621010-01-0090	Clay Creek	21	0	0.923	0.19	0.872	0	0.095	0.803	1.421	2.805
Available N	OK621010-01-0230	Turkey Creek: Woods Co.	21	0	0.3189	0.0684	0.3136	0	0.103	0.21	0.401	1.229

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Available N	OK621010-01-0270	Yellowstone Creek	21	0	0.2009	0.049	0.2244	0	0.055	0.095	0.2535	0.825
Available N	OK621010-02-0010	Sandy Creek	21	0	1.298	0.141	0.646	0	0.905	1.392	1.84	2.285
Available N	OK621010-03-0010	Medicine Lodge Creek	22	0	0.744	0.1	0.47	0	0.365	0.723	1.114	1.533
Available N	OK621010-03-0030	Driftwood Creek	21	0	0.533	0.112	0.512	0	0.161	0.355	0.694	1.891
Available N	OK621100-00-0010	Chickaskia River: Lower	21	0	1.074	0.167	0.765	0	0.207	1.177	1.595	2.682
Available N	OK621100-00-0010	Chickaskia Creek: Middle	22	0	1.15	0.171	0.803	0	0.183	1.296	1.782	2.728
Available N	OK621100-00-0100	Bitter Creek	21	0	1.032	0.188	0.863	0	0.483	0.755	1.489	3.465
Available N	OK621200-01-0400	Gray Horse Creek	21	0	0.2712	0.0498	0.2283	0	0.136	0.188	0.3755	0.849
Available N	OK621200-02-0020	Doga Creek	20	0	0.2886	0.0606	0.2708	0	0.1018	0.1735	0.4218	0.972
Available N	OK621200-03-0010	Black Bear Creek: Lower	21	0	0.644	0.105	0.479	0	0.226	0.563	0.92	1.614
Available N	OK621200-03-0010	Black Bear Creek (downstream)	23	0	0.719	0.135	0.647	0	0.165	0.595	1.131	2.338
Available N	OK621200-03-0010	Black Bear Creek (upstream)	23	0	1.205	0.201	0.962	0	0.573	1.02	1.766	3.433
Available N	OK621200-04-0010	Salt Creek: Lower	22	0	0.2897	0.0653	0.3062	0	0.09	0.16	0.3765	1.061
Available N	OK621200-04-0010	Salt Creek: Upper	21	0	0.2623	0.0662	0.3032	0	0.0565	0.155	0.42	0.959
Available N	OK621200-05-0010	Red Rock Creek	21	0	0.976	0.218	0.997	0	0.147	0.578	1.444	3.492
Available N	OK621200-05-0160	Red Rock Creek: Upper	21	0	0.744	0.158	0.722	0	0.103	0.404	1.377	2.667
Available N	OK621210-00-0050	Beaver Creek: Osage Co.	21	0	0.3024	0.0613	0.281	0	0.1285	0.205	0.4365	0.997
Available N	OK621210-00-0270	Chilocco Creek	19	0	0.813	0.235	1.025	0	0.088	0.256	1.275	3.532
Available N	OK720500-01-0070	Bent Creek	21	0	0.7477	0.0718	0.3291	0	0.543	0.705	0.9295	1.514
Available N	OK720500-01-0150	Persimmon Creek	21	0	0.8322	0.065	0.2979	0	0.645	0.895	1.024	1.321
Available N	OK720500-01-0200	Indian Creek: Woodward Co.	19	0	0.4673	0.0772	0.3365	0	0.165	0.408	0.78	1.075
Available N	OK720500-02-0050	Otter Creek: Harper Co.	16	0	0.378	0.155	0.621	0	0.058	0.12	0.265	2.335
Available N	OK720500-02-0070	Clear Creek: Harper Co.	21	0	1.1191	0.0765	0.3507	0	0.9335	1.135	1.345	1.655
Available N	OK720500-02-0100	Spring Creek	20	0	1.641	0.143	0.641	0	1.301	1.671	2.15	2.525
Available N	OK720500-02-0130	Kiowa Creek: Harper Co.	20	0	0.5928	0.0919	0.4111	0	0.2415	0.58	0.806	1.485
Available N	OK720500-02-0130	Kiowa Creek: Beaver Co.	21	0	0.8544	0.0757	0.3469	0	0.6755	0.795	1.0035	1.555
Available N	OK720500-02-0250	Duck Pond Creek	22	0	0.1555	0.0375	0.1757	0	0.055	0.0935	0.1503	0.645
Available N	OK720500-02-0300	Clear Creek: Beaver Co.	21	0	0.11	0.0318	0.1456	0	0.055	0.058	0.096	0.545
Available N	OK720500-02-0500	Palo Duro Creek	21	0	0.157	0.0431	0.1973	0	0.055	0.075	0.1075	0.688
Available N	OK720500-03-0010	Wolf Creek: Lower	20	0	0.2296	0.0365	0.1635	0	0.1155	0.1795	0.341	0.585
Available N	OK720500-03-0010	Wolf Creek: Upper	22	0	0.822	0.0869	0.4074	0	0.4835	0.8155	1.225	1.425
Available N	OK720900-00-0100	Cold Springs Creek	9	0	0.2929	0.0807	0.2421	0	0.071	0.271	0.5095	0.671
Available N	OK720900-00-0180	Cimarron River: Cimarron Co.	22	0	0.2305	0.0592	0.2779	0	0.055	0.1155	0.3125	0.859
pH (SU)	OK620900-01-0180J	Lagoon Creek	20	1	7.5685	0.0765	0.342	6.96	7.33	7.505	7.91	8.15
pH (SU)	OK620900-01-0290D	Euchee Creek	20	1	8.019	0.143	0.639	6.99	7.508	8.1	8.63	9.06
pH (SU)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	7.759	0.108	0.495	7.18	7.405	7.69	8.005	9.48
pH (SU)	OK620900-02-0050H	Council Creek	20	1	7.931	0.108	0.482	7.48	7.65	7.885	8.033	9.69
pH (SU)	OK620900-03-0080C	Dugout Creek	20	1	7.817	0.131	0.584	5.98	7.638	7.88	8.12	8.82
pH (SU)	OK620900-03-0230C	Beaver Creek: Logan Co.	21	0	8.1043	0.0391	0.1794	7.58	8.06	8.13	8.225	8.4

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
pH (SU)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	7.635	0.0958	0.4286	6.99	7.25	7.63	7.91	8.46
pH (SU)	OK620900-04-0070T	Stillwater Creek: Upper	21	0	7.549	0.0627	0.2874	7.03	7.325	7.62	7.77	8.15
pH (SU)	OK620910-02-0040C	Cooper Creek	22	0	8.1427	0.0759	0.3558	6.93	8.0225	8.215	8.35	8.58
pH (SU)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	20	1	8.0625	0.0785	0.3511	7.07	7.92	8.1	8.29	8.49
pH (SU)	OK620910-02-0250C	Deep Creek	21	1	8.085	0.128	0.586	7.11	7.82	8.06	8.27	10.18
pH (SU)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	8.22	0.0501	0.2242	7.7	8.14	8.255	8.365	8.54
pH (SU)	OK620910-03-0010F	Skeleton Creek: Lower	21	0	8.3762	0.0618	0.2831	7.75	8.195	8.38	8.64	8.89
pH (SU)	OK620910-03-0010S	Skeleton Creek: Upper	21	0	8.2429	0.0488	0.2238	7.62	8.125	8.27	8.42	8.59
pH (SU)	OK620910-03-0040C	Otter Creek: Logan Co.	21	0	8.1514	0.0498	0.228	7.56	8.025	8.2	8.27	8.5
pH (SU)	OK620910-04-0010D	Cottonwood Creek	21	0	8.0624	0.0395	0.181	7.58	7.98	8.08	8.195	8.33
pH (SU)	OK620910-05-0010J	Kingfisher Creek	21	0	7.9938	0.0701	0.3212	6.93	7.935	8.07	8.155	8.32
pH (SU)	OK620910-05-0030C	Uncle John's Creek	22	0	8.24	0.0648	0.3038	7.63	8.015	8.305	8.4525	8.65
pH (SU)	OK620910-05-0080D	Dead Indian Creek	22	0	8.0786	0.0417	0.1956	7.76	7.945	8.045	8.2325	8.55
pH (SU)	OK620910-06-0010B	Turkey Creek: Lower	22	0	8.2245	0.067	0.3142	7.24	8.0225	8.295	8.4225	8.63
pH (SU)	OK620910-06-0010T	Turkey Creek: Upper	20	1	8.2425	0.059	0.2639	7.8	8.08	8.245	8.4075	8.83
pH (SU)	OK620920-01-0130G	Griever Creek	21	0	8.0305	0.0543	0.2487	7.24	7.95	8.06	8.225	8.27
pH (SU)	OK620920-01-0180F	Main Creek	21	0	7.9914	0.054	0.2477	7.08	7.955	8.04	8.125	8.25
pH (SU)	OK620920-02-0080D	Long Creek	21	0	8.0414	0.0409	0.1872	7.67	7.885	8.11	8.215	8.32
pH (SU)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	8.199	0.134	0.568	7.1	7.978	8.165	8.258	10.19
pH (SU)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	24	0	8.0908	0.0782	0.3833	7.35	7.8475	8.05	8.3075	8.98
pH (SU)	OK620920-05-0010G	Buffalo Creek: Lower	21	0	8.099	0.0505	0.2316	7.52	8.015	8.15	8.27	8.4
pH (SU)	OK620920-05-0010P	Buffalo Creek: Upper	22	0	8.1291	0.0517	0.2423	7.58	7.98	8.185	8.3275	8.38
pH (SU)	OK620920-05-0050G	Sand Creek	21	0	7.7686	0.0834	0.382	6.85	7.455	7.91	8.09	8.18
pH (SU)	OK620930-00-0010T	Cimarron River: Beaver Co.	21	0	8.6119	0.023	0.1055	8.42	8.53	8.61	8.695	8.8
pH (SU)	OK620930-00-0100G	Crooked Creek: Beaver Co.	24	0	8.3515	0.0388	0.1901	7.62	8.3325	8.37	8.48	8.56
pH (SU)	OK621000-02-0040F	Wild Horse Creek	21	0	8.1667	0.0614	0.2813	7.78	7.96	8.15	8.36	8.92
pH (SU)	OK621000-03-0010C	Bois d'Arc	20	0	8.0765	0.0852	0.3809	7.51	7.8875	8.075	8.28	8.89
pH (SU)	OK621000-04-0010D	Deer Creek	21	0	8.251	0.0585	0.2682	7.54	8.145	8.29	8.395	8.62
pH (SU)	OK621000-05-0010D	Pond Creek	21	0	7.855	0.119	0.545	6.77	7.535	7.95	8.23	8.85
pH (SU)	OK621000-06-0010C	Crooked Creek: Grant Co.	15	0	8.2027	0.0653	0.2529	7.76	7.97	8.26	8.37	8.71
pH (SU)	OK621010-01-0010D	Salt Fork of Arkansas River	21	0	8.5119	0.0884	0.4052	7.71	8.285	8.45	8.71	9.48
pH (SU)	OK621010-01-0090R	Clay Creek	21	0	8.139	0.0969	0.4439	7.16	7.84	8.13	8.415	8.88
pH (SU)	OK621010-01-0230G	Turkey Creek: Woods Co.	21	0	7.8671	0.077	0.3527	7.08	7.705	7.85	8.13	8.43
pH (SU)	OK621010-01-0270C	Yellowstone Creek	21	0	8.0624	0.0704	0.3225	7.41	7.885	7.99	8.285	8.94
pH (SU)	OK621010-02-0010D	Sandy Creek	21	0	8.1919	0.0575	0.2635	7.81	7.97	8.17	8.395	8.68
pH (SU)	OK621010-03-0010D	Medicine Lodge Creek	21	1	8.2752	0.0665	0.305	7.74	8.055	8.28	8.505	8.88
pH (SU)	OK621010-03-0030C	Driftwood Creek	21	0	8.0648	0.0859	0.3935	7.04	7.89	8.02	8.315	8.89
pH (SU)	OK621100-00-0010B	Chickaskia River: Lower	21	0	8.2843	0.0632	0.2898	7.58	8.16	8.24	8.46	8.78
pH (SU)	OK621100-00-0010M	Chickaskia Creek: Middle	22	0	8.1923	0.0909	0.4263	7.13	7.88	8.275	8.4725	8.94

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
pH (SU)	OK621100-00-0100G	Bitter Creek	21	0	7.7871	0.0745	0.3416	7.01	7.475	7.85	8.01	8.53
pH (SU)	OK621200-01-0400C	Gray Horse Creek	20	1	7.983	0.167	0.748	5.83	7.943	8.105	8.37	9.23
pH (SU)	OK621200-02-0020C	Doga Creek	19	1	8.18	0.116	0.507	7.21	7.95	8.18	8.49	9.01
pH (SU)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	7.9745	0.0835	0.3735	7.48	7.665	7.98	8.1225	8.75
pH (SU)	OK621200-03-0010M	Black Bear Creek (downstream)	22	1	7.9895	0.0742	0.3479	7.32	7.7825	7.93	8.115	8.75
pH (SU)	OK621200-03-0010W	Black Bear Creek (upstream)	23	0	8.1322	0.0452	0.2166	7.68	8.02	8.14	8.32	8.47
pH (SU)	OK621200-04-0010F	Salt Creek: Lower	20	2	8.119	0.0822	0.3677	7.07	8.0025	8.17	8.375	8.5
pH (SU)	OK621200-04-0010P	Salt Creek: Upper	20	1	8.006	0.132	0.592	6.05	7.948	8.16	8.413	8.56
pH (SU)	OK621200-05-0010K	Red Rock Creek	21	0	7.7676	0.0647	0.2967	7.27	7.545	7.76	8.005	8.38
pH (SU)	OK621200-05-0160G	Red Rock Creek: Upper	21	0	8.029	0.0527	0.2415	7.48	7.87	8.03	8.255	8.39
pH (SU)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	8.09	0.119	0.531	6.76	7.915	8.125	8.35	8.93
pH (SU)	OK621210-00-0270C	Chilocco Creek	19	0	7.949	0.12	0.524	7.01	7.45	8.06	8.22	8.9
pH (SU)	OK720500-01-0070D	Bent Creek	21	0	7.9843	0.052	0.2383	7.41	7.8	8.04	8.155	8.27
pH (SU)	OK720500-01-0150G	Persimmon Creek	21	0	8.2805	0.0585	0.2681	7.3	8.25	8.31	8.4	8.54
pH (SU)	OK720500-01-0200D	Indian Creek: Woodward Co.	19	0	8.356	0.208	0.905	7.69	7.98	8.16	8.33	11.94
pH (SU)	OK720500-02-0050B	Otter Creek: Harper Co.	16	0	7.9413	0.0483	0.1932	7.5	7.8225	7.93	8.095	8.2
pH (SU)	OK720500-02-0070G	Clear Creek: Harper Co.	21	0	8.131	0.0327	0.1499	7.69	8.06	8.16	8.25	8.3
pH (SU)	OK720500-02-0100D	Spring Creek	20	0	8.1775	0.0467	0.2088	7.83	7.955	8.22	8.3	8.55
pH (SU)	OK720500-02-0130C	Kiowa Creek: Harper Co.	20	0	8.393	0.0399	0.1784	7.87	8.27	8.44	8.4975	8.66
pH (SU)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	21	0	8.134	0.133	0.611	7.74	7.86	7.97	8.19	10.69
pH (SU)	OK720500-02-0250F	Duck Pond Creek	22	0	7.9986	0.0591	0.2772	7.52	7.7975	7.96	8.16	8.61
pH (SU)	OK720500-02-0300F	Clear Creek: Beaver Co.	21	0	7.8781	0.0451	0.2069	7.51	7.7	7.83	8.08	8.15
pH (SU)	OK720500-02-0500G	Palo Duro Creek	21	0	7.9876	0.0538	0.2464	7.55	7.805	8.05	8.125	8.67
pH (SU)	OK720500-03-0010C	Wolf Creek: Lower	20	0	8.0325	0.0772	0.3451	7.36	7.7925	8.025	8.3425	8.56
pH (SU)	OK720500-03-0010G	Wolf Creek: Upper	22	0	8.1968	0.0549	0.2577	7.69	8.02	8.175	8.355	8.93
pH (SU)	OK720900-00-0100D	Cold Springs Creek	9	0	7.739	0.101	0.303	7.3	7.545	7.68	7.97	8.24
pH (SU)	OK720900-00-0180C	Cimarron River: Cimarron Co.	22	0	7.9336	0.0478	0.2242	7.55	7.6825	7.985	8.1125	8.31
Sulfate (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	23.85	2.63	11.76	5.35	14.28	23.13	33.08	48.31
Sulfate (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	35.89	3.66	16.36	12.2	21.31	31.35	50.81	62.1
Sulfate (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	79.8	53.1	243.6	11	15.9	28.5	34.6	1141.7
Sulfate (mg/L)	OK620900-02-0050H	Council Creek	20	1	14.88	1.44	6.44	1.8	10.15	16.83	18.85	29.7
Sulfate (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	30.56	7.19	32.16	14.71	18.28	22.3	27.88	163.3
Sulfate (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	53.16	4.07	18.21	27.35	37.92	49.95	63.73	96.9
Sulfate (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	68.85	5.5	24.59	31.2	46.78	66.3	89.48	114.3
Sulfate (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	31.54	4.37	19.53	12.56	17.77	24.67	40.8	81.5
Sulfate (mg/L)	OK620910-02-0040C	Cooper Creek	20	2	430.9	33.9	151.5	201.3	321.2	391.3	539.6	702.5
Sulfate (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	1155.8	36.7	160	792.6	1100.2	1188.7	1229.2	1543.3
Sulfate (mg/L)	OK620910-02-0250C	Deep Creek	20	2	714.1	96.4	430.9	0.3	333.9	680.5	1109.3	1456.4
Sulfate (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	130.5	10.6	47.4	5.3	102.1	131.7	162.2	209.2

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Sulfate (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	169.3	13.1	58.4	80	122.5	170.9	196.6	335.9
Sulfate (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	225.2	15	67.1	111.6	179.6	230	261	395.7
Sulfate (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	56.94	7.33	32.79	17.25	26.5	53.48	95.1	109.9
Sulfate (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	174.62	5.85	26.17	122.5	148.3	179.81	186.58	221.6
Sulfate (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	641.1	37.3	166.8	378.1	481.9	654.7	806.5	872.8
Sulfate (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	259.9	17.7	79	153.2	198.6	248.1	302.4	429.1
Sulfate (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	431.8	59.6	266.7	121.2	201	377.8	673.2	928.7
Sulfate (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	96.7	7.03	31.42	16.9	85.18	106.3	119.13	130.1
Sulfate (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	109.31	7.1	31.77	50.9	93.43	104.8	124.35	178.6
Sulfate (mg/L)	OK620920-01-0130G	Griever Creek	20	1	1609.8	59.9	267.8	1229.9	1428.5	1542.3	1832.3	2138.6
Sulfate (mg/L)	OK620920-01-0180F	Main Creek	20	1	1580.7	61.9	277	623	1547.2	1574.2	1641.1	1993.3
Sulfate (mg/L)	OK620920-02-0080D	Long Creek	20	1	1217.5	85.8	383.7	687	920.9	1129.7	1624.7	1874.3
Sulfate (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	346.1	36.6	155.4	2.7	265.6	333.1	464.4	589.8
Sulfate (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	913.2	79.5	372.8	211	576.2	830.5	1283.8	1468.6
Sulfate (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	1287.8	76.3	341.3	527.1	1029.5	1437.9	1498	1723.8
Sulfate (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	1099	78	348.6	155.8	978.7	1184.6	1249.4	1803
Sulfate (mg/L)	OK620920-05-0050G	Sand Creek	20	1	1783.2	82.2	367.5	640.8	1668.4	1816.6	2020.8	2390.6
Sulfate (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	197.7	1.4	6.26	184.1	193.25	197.1	200.08	214.5
Sulfate (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	194.96	9	43.18	52.13	185.7	195.7	205.1	287
Sulfate (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	221.6	21.7	97.1	11.1	134	265	296.9	380.3
Sulfate (mg/L)	OK621000-03-0010C	Bois d' Arc	19	1	250.3	29.6	128.9	43.2	144.5	225.2	363.2	476.3
Sulfate (mg/L)	OK621000-04-0010D	Deer Creek	20	1	96.37	8.61	38.49	26.2	59.32	94.95	128.98	163.3
Sulfate (mg/L)	OK621000-05-0010D	Pond Creek	20	1	114.8	14.5	64.8	8.7	61.7	122.5	172.8	218.6
Sulfate (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	186.5	32.9	122.9	63.1	99.5	157	260.6	526.1
Sulfate (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	398.7	30	134	77.7	333.8	398.3	492.6	667.3
Sulfate (mg/L)	OK621010-01-0090R	Clay Creek	19	2	990.6	97.8	426.4	80.5	772.8	1076.9	1237.8	1615.8
Sulfate (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	1816	101	451	656	1506	1933	2073	2550
Sulfate (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	1650.8	59.6	266.5	895.7	1546.9	1649.5	1853.9	2141.1
Sulfate (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	91.89	9.44	42.23	58.5	70.15	83	98.23	258
Sulfate (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	291.8	19.4	87	110.7	248	272.8	352.4	444.3
Sulfate (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	710.3	55.9	250.1	73.2	552.8	712	909.3	1059.4
Sulfate (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	102.68	7.99	34.82	27.2	72.99	111.9	130	150.5
Sulfate (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	66.71	5.3	23.7	25.8	49.07	71.75	88.05	98.2
Sulfate (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	644.6	67.3	301.1	83.9	416.4	595.6	887.5	1112.4
Sulfate (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	28.7	3.02	13.5	12.5	16.8	26	35.93	54.5
Sulfate (mg/L)	OK621200-02-0020C	Doga Creek	19	1	11.8	1.37	5.99	4.34	6.04	12.4	16	22.25
Sulfate (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	22.9	2.01	9.01	10.05	15.3	20.41	29.34	43.7
Sulfate (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	30.47	2.82	12.6	10.71	21.22	25.05	44.73	50.6
Sulfate (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	39.28	3.02	13.5	17.9	27.27	39.6	52.45	59.9

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Sulfate (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	15.03	1.52	6.79	4.9	9.46	14.8	18.39	31.3
Sulfate (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	10.043	0.769	3.441	4.2	7.55	9.25	12.775	16.6
Sulfate (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	65.5	11.2	49.9	8.7	28.4	44.9	108.1	169.7
Sulfate (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	89.1	12.6	56.4	17.1	60	68.4	114.6	219.9
Sulfate (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	9.247	0.815	3.646	4	5.515	9.5	12.3	14
Sulfate (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	27.95	4.16	17.63	7.5	11.87	25.6	42.43	58.1
Sulfate (mg/L)	OK720500-01-0070D	Bent Creek	20	1	1084.1	49.2	220.1	619.3	900.3	1166	1216	1497.8
Sulfate (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	151.83	4.34	19.42	121.8	135.9	148.8	162.93	206.9
Sulfate (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	267.82	7.74	32.83	226.4	243.78	255.95	287.73	338.5
Sulfate (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	281.4	21	81.5	50.4	252.9	293.2	329.8	394.4
Sulfate (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	33.1	1.07	4.79	15.38	32.05	33.1	35.95	38.83
Sulfate (mg/L)	OK720500-02-0100D	Spring Creek	19	1	31.01	1.03	4.51	24.5	27.48	30.6	33.12	42.1
Sulfate (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	64.87	1.43	6.24	43.6	64.4	66.3	69	70.27
Sulfate (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	64.68	3.48	15.56	4.69	63.95	68.2	72.13	80.97
Sulfate (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	49.854	0.66	2.951	44.04	48.4	49.15	52.283	55.4
Sulfate (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	198.5	35.4	158.3	80	95.4	111.6	370.6	519
Sulfate (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	259.5	18.4	82.1	194.8	222.2	230.4	288.8	564.3
Sulfate (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	162.5	20.6	89.8	98.9	110.4	119.1	153.3	373.3
Sulfate (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	101.17	2.98	13.67	73.1	92.62	97.9	110.75	133
Sulfate (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	933.8	87.6	247.7	702.6	740.9	834.2	1188.5	1353
Sulfate (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	719.8	78.6	351.6	205.5	491.3	634	955.9	1524.5
Temp (°C)	OK620900-01-0180J	Lagoon Creek	20	1	15.84	1.95	8.73	2	6.65	19.3	23.6	26.5
Temp (°C)	OK620900-01-0290D	Euchee Creek	21	0	18	2.01	9.2	3.4	7.45	20.6	26.6	29.9
Temp (°C)	OK620900-02-0020D	Salt Creek: Payne Co.	22	0	16.84	2.03	9.5	2.1	6.83	18.35	25.48	32.2
Temp (°C)	OK620900-02-0050H	Council Creek	21	0	16.71	2.08	9.53	2.5	6.05	17.5	23.65	31.5
Temp (°C)	OK620900-03-0080C	Dugout Creek	21	0	15.93	1.94	8.89	1.8	7.1	17.6	23.4	28.5
Temp (°C)	OK620900-03-0230C	Beaver Creek: Logan Co.	21	0	18.7	2.36	10.81	2.1	7.05	22.3	28.5	32.1
Temp (°C)	OK620900-04-0040C	Stillwater Creek: Lower	21	0	17.67	2.1	9.62	1.8	7.8	20.9	26.45	30.9
Temp (°C)	OK620900-04-0070T	Stillwater Creek: Upper	21	0	16.81	2.07	9.5	1.9	7.2	18.6	25.45	29.6
Temp (°C)	OK620910-02-0040C	Cooper Creek	22	0	17.71	2.06	9.68	0.6	7.25	18.65	26.13	31.4
Temp (°C)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	21	0	20.22	2.34	10.73	2.5	11.3	23.4	28.65	35.5
Temp (°C)	OK620910-02-0250C	Deep Creek	22	0	18.98	1.84	8.61	4.7	10.63	21.15	26.35	31.5
Temp (°C)	OK620910-02-0310C	Indian Creek: Major Co.	21	0	19.02	2.06	9.43	5.6	8.4	18.3	25.7	33.8
Temp (°C)	OK620910-03-0010F	Skeleton Creek: Lower	21	0	18.02	2.15	9.87	3.6	7.15	21.1	27.35	29.9
Temp (°C)	OK620910-03-0010S	Skeleton Creek: Upper	21	0	17.16	2.05	9.42	2.8	6.2	20.1	25.65	29
Temp (°C)	OK620910-03-0040C	Otter Creek: Logan Co.	21	0	16.94	2.13	9.76	2.5	6.55	20.8	25.95	30.6
Temp (°C)	OK620910-04-0010D	Cottonwood Creek	21	0	17.98	2.06	9.45	2	7.95	19.3	26.9	30.9
Temp (°C)	OK620910-05-0010J	Kingfisher Creek	21	0	16.83	2.03	9.3	0.6	7.2	17	25.1	30.4
Temp (°C)	OK620910-05-0030C	Uncle John's Creek	22	0	20.08	2.25	10.54	0.1	9.5	20.5	28.2	36.6

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Temp (°C)	OK620910-05-0080D	Dead Indian Creek	22	0	17.89	2.07	9.69	0.6	8.33	18.4	25.2	32.4
Temp (°C)	OK620910-06-0010B	Turkey Creek: Lower	22	0	16.5	1.94	9.08	0.2	6.7	16.35	25.45	28.2
Temp (°C)	OK620910-06-0010T	Turkey Creek: Upper	21	0	15.97	2.23	10.21	2.3	4.6	16.9	24.7	33.6
Temp (°C)	OK620920-01-0130G	Griever Creek	20	1	13.89	1.99	8.89	0	4	15.85	21.7	26.4
Temp (°C)	OK620920-01-0180F	Main Creek	21	0	13.55	1.81	8.28	0.5	4.15	14.7	21.55	24.6
Temp (°C)	OK620920-02-0080D	Long Creek	21	0	15.3	2.13	9.75	0.2	4.75	17.2	23.9	30.5
Temp (°C)	OK620920-04-0010C	Eagle Chief Creek: Lower	19	0	15.87	1.97	8.58	4.6	7.5	14.3	23	30.9
Temp (°C)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	24	0	17.96	1.7	8.34	2.2	11.15	19.2	23.68	33.2
Temp (°C)	OK620920-05-0010G	Buffalo Creek: Lower	21	0	17.09	2.08	9.52	0.7	7.3	18.7	25.2	32.8
Temp (°C)	OK620920-05-0010P	Buffalo Creek: Upper	22	0	17.43	1.94	9.1	0.8	7.88	19.2	25.18	30.5
Temp (°C)	OK620920-05-0050G	Sand Creek	21	0	16.71	1.86	8.53	2.1	6.8	19.1	23.65	27.8
Temp (°C)	OK620930-00-0010T	Cimarron River: Beaver Co.	21	0	20.12	2.19	10.05	5.4	9.8	21.1	29.8	34.8
Temp (°C)	OK620930-00-0100G	Crooked Creek: Beaver Co.	24	0	18.57	2	9.81	4.6	8.3	20.85	27.29	32.9
Temp (°C)	OK621000-02-0040F	Wild Horse Creek	21	0	14.62	1.92	8.78	1.7	5.85	15.9	22.25	29.1
Temp (°C)	OK621000-03-0010C	Bois d'Arc	20	0	14.31	1.92	8.56	0.8	5.6	15.05	22.03	28.3
Temp (°C)	OK621000-04-0010D	Deer Creek	21	0	16.87	2.3	10.52	0.7	6.2	17.7	25.35	33.8
Temp (°C)	OK621000-05-0010D	Pond Creek	21	0	15.2	1.93	8.84	2.6	5.75	17.8	22.9	28
Temp (°C)	OK621000-06-0010C	Crooked Creek: Grant Co.	15	0	16.11	2.4	9.31	2	6.8	16.9	26.5	29.1
Temp (°C)	OK621010-01-0010D	Salt Fork of Arkansas River	21	0	17.79	2.07	9.5	3.7	8.8	18.4	26.75	32.7
Temp (°C)	OK621010-01-0090R	Clay Creek	21	0	18.2	2.01	9.21	2.2	9.75	22	25.3	30.5
Temp (°C)	OK621010-01-0230G	Turkey Creek: Woods Co.	21	0	14.24	1.74	7.99	0.4	6.95	15.2	22.25	23.9
Temp (°C)	OK621010-01-0270C	Yellowstone Creek	21	0	17.43	2.17	9.92	0.4	9.15	17.8	24.05	35.7
Temp (°C)	OK621010-02-0010D	Sandy Creek	21	0	16.54	1.98	9.09	3.5	6.45	17.6	24.7	31.6
Temp (°C)	OK621010-03-0010D	Medicine Lodge Creek	21	1	17.11	2.2	10.08	3.5	6.15	17.8	23.4	34.4
Temp (°C)	OK621010-03-0030C	Driftwood Creek	21	0	16.37	1.99	9.12	2.7	6.65	18.1	24.15	31
Temp (°C)	OK621100-00-0010B	Chickaskia River: Lower	21	0	16.3	2.06	9.42	1.7	6.55	17.8	25.3	28.1
Temp (°C)	OK621100-00-0010M	Chickaskia Creek: Middle	22	0	17.51	2.13	10.01	1.3	6.98	19.6	26.88	32.6
Temp (°C)	OK621100-00-0100G	Bitter Creek	21	0	16.53	2.07	9.47	0.9	6.85	16.9	25.4	31.8
Temp (°C)	OK621200-01-0400C	Gray Horse Creek	21	0	16.2	2.14	9.81	1.6	5.3	16.6	24.8	35.6
Temp (°C)	OK621200-02-0020C	Doga Creek	20	0	15.38	2.11	9.45	1.6	5	16.35	24.2	29.3
Temp (°C)	OK621200-03-0010D	Black Bear Creek: Lower	21	0	16.8	2.08	9.55	2.5	6.45	19.7	25.7	28.6
Temp (°C)	OK621200-03-0010M	Black Bear Creek (downstream)	23	0	17.43	2	9.58	1.5	6.2	20.5	25.8	28.8
Temp (°C)	OK621200-03-0010W	Black Bear Creek (upstream)	23	0	18.2	2.08	9.97	3.2	6.3	20.7	27.2	32.1
Temp (°C)	OK621200-04-0010F	Salt Creek: Lower	21	1	16.6	2.16	9.91	1.6	5.55	17.9	25.25	31.7
Temp (°C)	OK621200-04-0010P	Salt Creek: Upper	21	0	16.74	2.05	9.41	2.3	7.1	19.4	25.65	29.3
Temp (°C)	OK621200-05-0010K	Red Rock Creek	21	0	16.15	2.07	9.49	1.3	5.35	19.5	24.1	28.6
Temp (°C)	OK621200-05-0160G	Red Rock Creek: Upper	21	0	16.55	2.12	9.71	1.9	5.4	19.7	24.7	29.5
Temp (°C)	OK621210-00-0050L	Beaver Creek: Osage Co.	21	0	15.59	1.9	8.71	1.7	7	16	23.3	28.5
Temp (°C)	OK621210-00-0270C	Chilocco Creek	19	0	14.44	2.05	8.94	0.9	5.3	14.8	20.8	29.1

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Temp (°C)	OK720500-01-0070D	Bent Creek	21	0	14.2	1.91	8.75	0	7.2	14.5	22.75	29.1
Temp (°C)	OK720500-01-0150G	Persimmon Creek	21	0	14.36	1.85	8.48	0	7.55	14.2	21.65	31.7
Temp (°C)	OK720500-01-0200D	Indian Creek: Woodward Co.	19	0	14.47	2.2	9.59	-0.1	6.5	14.3	23.7	31.5
Temp (°C)	OK720500-02-0050B	Otter Creek: Harper Co.	16	0	12.86	2.55	10.21	1.1	3.85	10.8	18.68	35.6
Temp (°C)	OK720500-02-0070G	Clear Creek: Harper Co.	21	0	14.54	1.37	6.28	5.3	8.15	15	19	27.6
Temp (°C)	OK720500-02-0100D	Spring Creek	20	0	15.66	1.65	7.36	3.3	8.23	17.45	22.55	27.4
Temp (°C)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	18.16	2.03	8.86	3.6	9.2	17.5	25	32.9
Temp (°C)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	21	0	14.36	1.49	6.84	4.5	7.7	14.1	20.7	25.7
Temp (°C)	OK720500-02-0250F	Duck Pond Creek	22	0	14.82	1.7	7.98	2.8	5.83	16.7	22.33	25
Temp (°C)	OK720500-02-0300F	Clear Creek: Beaver Co.	21	0	15.56	1.99	9.13	2.3	5.9	16.9	23.6	29.4
Temp (°C)	OK720500-02-0500G	Palo Duro Creek	21	0	14.48	1.99	9.11	0.8	5.2	15.6	22.75	28.5
Temp (°C)	OK720500-03-0010C	Wolf Creek: Lower	20	0	15.29	1.96	8.74	1.2	6.15	16	23.65	31.1
Temp (°C)	OK720500-03-0010G	Wolf Creek: Upper	22	0	16.54	1.45	6.82	2.4	10.08	19.55	21.73	24.5
Temp (°C)	OK720900-00-0100D	Cold Springs Creek	9	0	13.18	2.24	6.73	3.5	6.95	14.7	19.45	21.6
Temp (°C)	OK720900-00-0180C	Cimarron River: Cimarron Co.	22	0	12.89	1.65	7.73	3.3	5.58	11.4	20.3	27.5
TotDisSolids (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	343.4	34.5	154.3	150	230.3	332	417	797
TotDisSolids (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	283.4	15.2	68	166	221.3	292	337.8	425
TotDisSolids (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	770	430	1970	157	281	365	408	9357
TotDisSolids (mg/L)	OK620900-02-0050H	Council Creek	20	1	316.4	16.9	75.5	195	255.5	314	360.3	458
TotDisSolids (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	535.9	37.1	165.8	349	441	485.5	591.3	978
TotDisSolids (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	567.4	36.4	162.9	258	434.5	585.5	669.5	946
TotDisSolids (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	463.6	32.2	144.1	252	307.8	466.5	587.5	702
TotDisSolids (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	340.2	23.3	104.1	195	247.8	304.5	433.8	539
TotDisSolids (mg/L)	OK620910-02-0040C	Cooper Creek	20	2	1543.2	77.5	346.5	755	1274.8	1612.5	1836	2065
TotDisSolids (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	11289	914	3983	2502	8835	11224	14274	18266
TotDisSolids (mg/L)	OK620910-02-0250C	Deep Creek	20	2	1406	158	708	10	802	1388	2044	2725
TotDisSolids (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	742.3	24	107.1	529	649	760.5	814.5	927
TotDisSolids (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	852.6	55.1	246.5	438	655	843	1027	1421
TotDisSolids (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	1058	75.4	337.3	266	914.5	1162.5	1259.5	1549
TotDisSolids (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	488.1	37.6	168.1	259	319.3	489.5	638.8	760
TotDisSolids (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	685.8	19.1	85.5	482	641.8	708	748	777
TotDisSolids (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	1694.2	87.1	389.4	1142	1303.5	1688.5	2007	2288
TotDisSolids (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	799.2	29	129.5	599	700.3	793	875.8	1070
TotDisSolids (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	1204	128	573	510	739	989	1637	2179
TotDisSolids (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	1207	459	2054	453	636	807	898	9908
TotDisSolids (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	926.5	51.9	232.3	464	875.5	930.5	974.8	1448
TotDisSolids (mg/L)	OK620920-01-0130G	Griever Creek	20	1	2858	87.8	392.8	2210	2618	2793	3197.8	3514
TotDisSolids (mg/L)	OK620920-01-0180F	Main Creek	20	1	2889	102	457	1103	2910	2966	3083	3268
TotDisSolids (mg/L)	OK620920-02-0080D	Long Creek	20	1	2346	145	648	1202	1875	2149	2912	3416

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotDisSolids (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	927.8	61	258.8	271	773.8	890.5	1121	1383
TotDisSolids (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	1843	157	735	445	1266	1652	2417	3708
TotDisSolids (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	2341	129	576	918	2064	2598	2730	2879
TotDisSolids (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	2079	124	555	380	2028	2257	2396	2605
TotDisSolids (mg/L)	OK620920-05-0050G	Sand Creek	20	1	3055	123	551	1235	2984	3153	3293	4120
TotDisSolids (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	2410.3	93.9	419.8	709	2370.3	2496.5	2574.3	2787
TotDisSolids (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	2163	121	580	365	1895	2396	2529	2641
TotDisSolids (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	1123.1	77	344.5	358	968.8	1165.5	1344	1812
TotDisSolids (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	861	108	470	189	549	774	1145	2284
TotDisSolids (mg/L)	OK621000-04-0010D	Deer Creek	20	1	775.8	60.6	270.8	271	550.5	795.5	1009.5	1244
TotDisSolids (mg/L)	OK621000-05-0010D	Pond Creek	20	1	737	64.1	286.6	243	474.3	816.5	990.8	1073
TotDisSolids (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	832.4	71.2	266.3	455	575.8	840.5	1102.5	1185
TotDisSolids (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	2961	259	1160	1029	2115	2714	3555	5978
TotDisSolids (mg/L)	OK621010-01-0090R	Clay Creek	19	2	5863	1041	4538	308	2173	4258	10263	15297
TotDisSolids (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	2960	136	609	1190	2590	3196	3366	3712
TotDisSolids (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	2636.7	70.9	317.2	1624	2522.3	2697.5	2802.3	3054
TotDisSolids (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	523	19.8	88.7	349	474.3	538	584	681
TotDisSolids (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	789.6	47.1	210.8	335	663.8	810.5	958	1177
TotDisSolids (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	1520	107	479	226	1164	1560	1944	2105
TotDisSolids (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	592	37	161.1	257	488	619	710	920
TotDisSolids (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	443.1	21.4	95.7	243	385.3	465.5	503.8	614
TotDisSolids (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	2049	182	814	404	1422	2264	2845	3130
TotDisSolids (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	279.4	24.6	109.8	144	206	237.5	375	544
TotDisSolids (mg/L)	OK621200-02-0020C	Doga Creek	19	1	237.7	16	69.8	146	165	227	289	406
TotDisSolids (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	359.5	24.2	108.4	162	271.3	369.5	452	513
TotDisSolids (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	518.8	53.9	241.2	227	333.3	455	664	1194
TotDisSolids (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	703.7	66.5	297.3	303	496	567	960.3	1346
TotDisSolids (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	269	16.9	75.5	117	217	286	320	374
TotDisSolids (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	214.8	9.66	43.18	105	192.25	206	239.5	292
TotDisSolids (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	516.8	51.1	228.5	219	352	446	713.8	919
TotDisSolids (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	626.1	53.4	238.7	256	469.8	613.5	744.5	1057
TotDisSolids (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	241.2	11.7	52.3	166	200	237	270.8	342
TotDisSolids (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	346.8	25.5	108.3	121	285.5	329.5	459	495
TotDisSolids (mg/L)	OK720500-01-0070D	Bent Creek	20	1	1876.9	93.8	419.7	669	1669.5	2024.5	2181.5	2307
TotDisSolids (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	629.1	20.8	92.9	513	572.5	623	659.5	932
TotDisSolids (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	976.7	18.1	76.6	854	917.3	982.5	1043.3	1114
TotDisSolids (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	1042.3	62.9	243.4	245	1024	1102	1182	1226
TotDisSolids (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	404.9	11.4	50.8	222	392	409.5	441.3	451
TotDisSolids (mg/L)	OK720500-02-0100D	Spring Creek	19	1	353.79	7.57	32.98	304	327	356	385	405

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotDisSolids (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	523.9	11.8	51.5	389	507	537	559	578
TotDisSolids (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	542	27.7	123.9	56	547	584	594.8	616
TotDisSolids (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	602.8	10.4	46.7	514	551.8	620	641.8	676
TotDisSolids (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	920.8	73.4	328.1	7.4	786	838.5	1242	1484
TotDisSolids (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	1615.3	76.1	340.3	1357	1418.5	1537	1629.8	2847
TotDisSolids (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	728.4	39.5	172.1	565	621	655	772	1137
TotDisSolids (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	588.5	12.5	57.2	434	554.5	603	622.5	698
TotDisSolids (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	2206	197	558	1764	1771	1990	2762	3188
TotDisSolids (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	1525	147	657	549	1138	1428	1916	3230
TotHardness (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	197.7	18.3	81.9	64.1	157.9	194.3	235.7	435.2
TotHardness (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	169.1	10.7	48	70.5	142.9	167.2	202.4	275.1
TotHardness (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	287.5	58.9	269.7	84.9	194.4	243.6	273.4	1435.2
TotHardness (mg/L)	OK620900-02-0050H	Council Creek	20	1	207.1	11.6	52	128.5	162.5	202.8	244.2	315.5
TotHardness (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	289.8	12.8	57.3	198.5	245.2	297.3	336.9	401.8
TotHardness (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	282.8	17.2	76.8	144.7	226	266.3	355.3	407.2
TotHardness (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	181.7	10.1	45.2	93	154.8	184.2	209.4	264.6
TotHardness (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	222.6	16	71.8	127.2	156.2	221.3	266.4	352.5
TotHardness (mg/L)	OK620910-02-0040C	Cooper Creek	20	2	568.6	35.7	159.7	321.2	432.2	555.2	683.8	857.2
TotHardness (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	1416.8	41.6	181.3	1090.7	1268.5	1378.2	1593.6	1723.2
TotHardness (mg/L)	OK620910-02-0250C	Deep Creek	20	2	870.3	89.3	399.4	377.5	511.1	815.5	1256.5	1579
TotHardness (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	387.5	13.1	58.7	290.9	355.8	385.1	418.7	512.9
TotHardness (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	355.5	17.7	79.2	238.4	288.3	364.8	435.4	469.2
TotHardness (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	407.1	17.2	76.9	255.1	364	427.8	470	511.8
TotHardness (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	272.4	20.4	91.2	151.4	166.4	282.3	343.4	410.3
TotHardness (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	314.2	10.5	46.9	230.9	265.3	312.3	358.4	380.5
TotHardness (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	746.9	51.9	232	264.1	542.1	762.7	967.2	1088.9
TotHardness (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	407.14	9.55	42.72	325.6	382.83	402.45	442.45	485.9
TotHardness (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	610.6	60	268.2	271.8	380.3	518.5	817	1096.3
TotHardness (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	313.7	20.4	91.1	87.2	255.3	347	378.9	417.7
TotHardness (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	338.6	16.9	75.7	201.6	292.5	337.4	383.8	525.2
TotHardness (mg/L)	OK620920-01-0130G	Griever Creek	20	1	1797.7	65.2	291.7	1346.8	1623.1	1778.5	1984.4	2337.8
TotHardness (mg/L)	OK620920-01-0180F	Main Creek	20	1	1842.1	76.4	341.7	708.4	1778.5	1858.9	1912.9	2580.3
TotHardness (mg/L)	OK620920-02-0080D	Long Creek	20	1	1495	128	571	673	1084	1280	2036	2800
TotHardness (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	565.5	38.1	161.6	103.2	464.9	587.1	696.3	814
TotHardness (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	1039.8	82.2	385.8	199.7	800.8	973.1	1413.3	1672.6
TotHardness (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	1479.3	82.8	370.3	587.4	1387.8	1582.1	1737.5	2037
TotHardness (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	1277.1	76.4	341.8	220.2	1221.9	1347.6	1467.2	1617.8
TotHardness (mg/L)	OK620920-05-0050G	Sand Creek	20	1	1950.1	84.3	377	915.9	1795.2	1998	2189	2541.1
TotHardness (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	454.26	7.61	34.02	376.9	442.93	455	461.93	560.5

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotHardness (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	453.4	16.9	80.9	140	454.4	465.8	481.2	610.6
TotHardness (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	404.1	27.3	122.2	50.7	329.4	429.1	476.3	619.8
TotHardness (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	486.3	44.5	194.1	116.8	324.3	481	663.7	746.8
TotHardness (mg/L)	OK621000-04-0010D	Deer Creek	20	1	393.1	26.2	117.3	148.7	308.5	402.5	490.3	585.7
TotHardness (mg/L)	OK621000-05-0010D	Pond Creek	20	1	298	30.4	136	33	229.3	348.7	411.6	458.3
TotHardness (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	352.3	26.5	99.1	218.4	259.1	360.4	437.8	504.7
TotHardness (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	507.4	27.9	124.8	158.3	444.8	515.7	574.3	743.2
TotHardness (mg/L)	OK621010-01-0090R	Clay Creek	19	2	1136.3	96.2	419.4	152.8	1067	1244.7	1404.3	1689.7
TotHardness (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	1957	110	493	743	1634	2108	2295	2545
TotHardness (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	1855.7	58	259.2	1051.4	1797.9	1862.1	2004.3	2263.8
TotHardness (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	287.9	11.7	52.3	181.7	245.4	308	325.7	362.4
TotHardness (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	485.9	25.6	114.4	237.4	418.7	485.8	573.9	667.8
TotHardness (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	969.2	72.1	322.4	108.5	745.6	1000.7	1245	1387.3
TotHardness (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	325.6	20.4	89	105.2	236.2	349.4	375.4	434
TotHardness (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	264.1	18.1	81	90.8	223.5	294.5	333.2	359
TotHardness (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	1187	105	469	201	876	1309	1613	1742
TotHardness (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	163.9	12.4	55.7	90.5	112.9	156.4	206.7	280.6
TotHardness (mg/L)	OK621200-02-0020C	Doga Creek	19	1	164.4	12.9	56.4	101.2	105.6	154	205.8	285
TotHardness (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	175.1	13.4	60	91	115.5	183.3	233	271
TotHardness (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	232.8	22.3	99.6	96.3	154.3	217.2	309.1	465.7
TotHardness (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	292	25.5	114.2	108.8	203.9	258.8	399.8	528.2
TotHardness (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	191.9	13.6	60.9	63.2	149.4	211.6	232	270.2
TotHardness (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	182.77	8.13	36.37	72.7	165.48	181	212.33	241
TotHardness (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	227.9	26.7	119.5	76.6	116	210.3	342.5	420.4
TotHardness (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	272	22.4	100.3	123.4	181.5	277.4	353.3	441.8
TotHardness (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	194.88	9.43	42.19	125	159.43	186.8	236.6	260
TotHardness (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	230.3	16	68	103.3	176.4	235	290.1	332.1
TotHardness (mg/L)	OK720500-01-0070D	Bent Creek	20	1	1354.4	53	236.8	777.6	1170.3	1419.8	1514.6	1859.5
TotHardness (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	380.07	6.9	30.84	307.3	361.88	382.8	406.48	422.6
TotHardness (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	479.5	10.8	45.9	408.7	453.6	471	498.8	618.4
TotHardness (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	492.4	29.7	115.1	109.6	476.2	536.5	552.6	574.6
TotHardness (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	232.88	7.89	35.27	110.4	227.8	242.3	250.3	273.9
TotHardness (mg/L)	OK720500-02-0100D	Spring Creek	19	1	245.06	6.06	26.43	187.3	232.8	253.2	266.3	276.1
TotHardness (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	278.59	6.24	27.21	222	257.8	285.9	294.1	326.7
TotHardness (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	291.3	14.2	63.7	53.9	282	309.9	323.7	343.2
TotHardness (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	243.1	9.61	43	133.8	223.55	258	277.54	293
TotHardness (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	476.4	37.4	167.4	341.3	360	385.3	648.3	854.3
TotHardness (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	484.1	30.6	136.8	0.6	467	500.2	523.6	773.9
TotHardness (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	347.1	26.9	117.4	249.7	277.4	294	331.7	658.7

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotHardness (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	300.15	6.89	31.55	211.2	287.45	306.4	324.1	344.3
TotHardness (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	895.8	95.9	271.4	646.9	698	802.5	1167.7	1358.5
TotHardness (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	688.6	61.6	275.6	290	427.1	689.7	869.6	1309.6
TotOrthoPhos (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	0.0152	0.00434	0.01942	0.005	0.005	0.011	0.0165	0.093
TotOrthoPhos (mg/L)	OK620900-01-0290D	Eucler Creek	20	1	0.3337	0.0791	0.354	0.024	0.053	0.149	0.5793	1.282
TotOrthoPhos (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	0.01867	0.0038	0.0174	0.005	0.0055	0.016	0.0235	0.078
TotOrthoPhos (mg/L)	OK620900-02-0050H	Council Creek	20	1	0.01485	0.00211	0.00944	0.005	0.00575	0.0125	0.01975	0.035
TotOrthoPhos (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	0.02595	0.00405	0.01813	0.005	0.01275	0.0205	0.04	0.062
TotOrthoPhos (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	19	2	0.1081	0.0673	0.2933	0.005	0.015	0.03	0.077	1.311
TotOrthoPhos (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	19	2	1.25	0.171	0.747	0.184	0.574	1.434	1.857	2.565
TotOrthoPhos (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	0.1261	0.0291	0.1302	0.019	0.0478	0.087	0.159	0.571
TotOrthoPhos (mg/L)	OK620910-02-0040C	Cooper Creek	19	3	0.0652	0.0177	0.077	0.005	0.013	0.037	0.098	0.31
TotOrthoPhos (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	0.02089	0.00643	0.02805	0.005	0.005	0.011	0.024	0.115
TotOrthoPhos (mg/L)	OK620910-02-0250C	Deep Creek	19	3	0.0332	0.0104	0.0453	0.005	0.005	0.015	0.047	0.147
TotOrthoPhos (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	19	2	0.0461	0.016	0.0697	0.005	0.01	0.016	0.045	0.244
TotOrthoPhos (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	0.2164	0.0226	0.1011	0.033	0.1263	0.231	0.3033	0.377
TotOrthoPhos (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	0.3981	0.0658	0.2942	0.04	0.183	0.3445	0.5088	1.116
TotOrthoPhos (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	19	2	0.1048	0.0196	0.0856	0.005	0.03	0.078	0.165	0.302
TotOrthoPhos (mg/L)	OK620910-04-0010D	Cottonwood Creek	19	2	1.165	0.12	0.524	0.009	1.029	1.16	1.567	2.116
TotOrthoPhos (mg/L)	OK620910-05-0010J	Kingfisher Creek	19	2	0.04226	0.00922	0.04019	0.005	0.017	0.026	0.06	0.163
TotOrthoPhos (mg/L)	OK620910-05-0030C	Uncle John's Creek	19	3	0.0974	0.0147	0.064	0.008	0.032	0.111	0.157	0.193
TotOrthoPhos (mg/L)	OK620910-05-0080D	Dead Indian Creek	19	3	0.1307	0.0265	0.1155	0.005	0.036	0.085	0.22	0.438
TotOrthoPhos (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	19	3	0.1831	0.0452	0.1971	0.022	0.053	0.104	0.236	0.719
TotOrthoPhos (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	19	2	0.2034	0.0283	0.1234	0.025	0.079	0.202	0.254	0.43
TotOrthoPhos (mg/L)	OK620920-01-0130G	Griever Creek	19	2	0.0487	0.0334	0.1457	0.005	0.005	0.007	0.025	0.647
TotOrthoPhos (mg/L)	OK620920-01-0180F	Main Creek	20	1	0.03295	0.00924	0.04134	0.005	0.00525	0.0185	0.04125	0.156
TotOrthoPhos (mg/L)	OK620920-02-0080D	Long Creek	20	1	0.01505	0.00387	0.01729	0.005	0.005	0.0065	0.01625	0.064
TotOrthoPhos (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	0.0427	0.0143	0.0606	0.005	0.0078	0.0155	0.0685	0.221
TotOrthoPhos (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	20	4	0.03375	0.00881	0.0394	0.005	0.006	0.017	0.04825	0.121
TotOrthoPhos (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	19	2	0.02258	0.00708	0.03087	0.005	0.005	0.007	0.028	0.113
TotOrthoPhos (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	19	3	0.0337	0.0184	0.0801	0.005	0.005	0.008	0.021	0.356
TotOrthoPhos (mg/L)	OK620920-05-0050G	Sand Creek	20	1	0.038	0.0116	0.0519	0.005	0.005	0.0195	0.0415	0.226
TotOrthoPhos (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	0.3149	0.0484	0.2165	0.005	0.1148	0.3295	0.489	0.75
TotOrthoPhos (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	0.033	0.0131	0.0628	0.005	0.005	0.011	0.0305	0.288
TotOrthoPhos (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	0.1566	0.0284	0.1272	0.005	0.0315	0.153	0.247	0.397
TotOrthoPhos (mg/L)	OK621000-03-0010C	Bois d'Arc	19	1	0.0992	0.0205	0.0893	0.005	0.014	0.106	0.136	0.307
TotOrthoPhos (mg/L)	OK621000-04-0010D	Deer Creek	19	2	0.0699	0.012	0.0522	0.005	0.021	0.063	0.107	0.184
TotOrthoPhos (mg/L)	OK621000-05-0010D	Pond Creek	20	1	0.1671	0.0321	0.1437	0.005	0.053	0.124	0.2483	0.52
TotOrthoPhos (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	0.1053	0.0225	0.0843	0.011	0.0343	0.083	0.16	0.275

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotOrthoPhos (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	0.0548	0.0185	0.0829	0.005	0.0125	0.033	0.0658	0.385
TotOrthoPhos (mg/L)	OK621010-01-0090R	Clay Creek	18	3	0.0605	0.0205	0.0868	0.005	0.0118	0.026	0.0695	0.278
TotOrthoPhos (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	0.0341	0.0167	0.0746	0.005	0.005	0.009	0.0245	0.337
TotOrthoPhos (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	0.0702	0.0617	0.2759	0.005	0.005	0.006	0.0128	1.242
TotOrthoPhos (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	0.0819	0.0162	0.0726	0.01	0.0328	0.0565	0.0995	0.285
TotOrthoPhos (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	0.0743	0.0158	0.0708	0.015	0.0335	0.057	0.081	0.31
TotOrthoPhos (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	0.0754	0.0199	0.0888	0.005	0.0168	0.0545	0.091	0.317
TotOrthoPhos (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	0.1065	0.02	0.0873	0.005	0.019	0.105	0.186	0.272
TotOrthoPhos (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	0.0965	0.018	0.0805	0.005	0.0205	0.0965	0.1318	0.299
TotOrthoPhos (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	0.0818	0.0121	0.054	0.005	0.0385	0.085	0.1135	0.193
TotOrthoPhos (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	0.02345	0.00316	0.01411	0.005	0.01375	0.021	0.0315	0.06
TotOrthoPhos (mg/L)	OK621200-02-0020C	Doga Creek	19	1	0.03363	0.00576	0.0251	0.005	0.01	0.026	0.05	0.082
TotOrthoPhos (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	0.1187	0.0148	0.0664	0.005	0.0828	0.111	0.1365	0.281
TotOrthoPhos (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	0.1589	0.0315	0.1411	0.034	0.072	0.1285	0.1983	0.693
TotOrthoPhos (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	18	5	0.2733	0.0561	0.2381	0.058	0.116	0.216	0.3618	1.062
TotOrthoPhos (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	0.0248	0.00595	0.02662	0.005	0.014	0.0175	0.02575	0.128
TotOrthoPhos (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	0.02445	0.0087	0.0389	0.005	0.01	0.012	0.028	0.185
TotOrthoPhos (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	0.1812	0.0202	0.0905	0.025	0.1123	0.1735	0.2538	0.35
TotOrthoPhos (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	19	2	0.1608	0.0202	0.088	0.013	0.098	0.174	0.225	0.315
TotOrthoPhos (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	0.0233	0.00533	0.02383	0.005	0.00825	0.0165	0.03075	0.108
TotOrthoPhos (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	0.1222	0.0227	0.0965	0.009	0.0288	0.1185	0.1823	0.326
TotOrthoPhos (mg/L)	OK720500-01-0070D	Bent Creek	20	1	0.0816	0.0127	0.0567	0.018	0.037	0.0735	0.0995	0.229
TotOrthoPhos (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	0.05365	0.00967	0.04324	0.005	0.01875	0.0485	0.0735	0.165
TotOrthoPhos (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	0.01256	0.00285	0.01208	0.005	0.005	0.0055	0.01725	0.047
TotOrthoPhos (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	0.02167	0.00833	0.03227	0.005	0.005	0.005	0.02	0.121
TotOrthoPhos (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	0.0126	0.00305	0.01365	0.005	0.005	0.009	0.014	0.066
TotOrthoPhos (mg/L)	OK720500-02-0100D	Spring Creek	19	1	0.00863	0.00176	0.00767	0.005	0.005	0.005	0.008	0.034
TotOrthoPhos (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	0.01821	0.0037	0.01611	0.005	0.005	0.008	0.033	0.056
TotOrthoPhos (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	0.0599	0.033	0.1474	0.005	0.0053	0.016	0.059	0.676
TotOrthoPhos (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	0.0097	0.00125	0.0056	0.005	0.005	0.008	0.01425	0.025
TotOrthoPhos (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	0.01765	0.00948	0.04242	0.005	0.005	0.006	0.011	0.197
TotOrthoPhos (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	0.0072	0.00101	0.0045	0.005	0.005	0.005	0.007	0.02
TotOrthoPhos (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	0.01979	0.0032	0.01393	0.005	0.005	0.018	0.034	0.046
TotOrthoPhos (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	20	2	0.0152	0.00295	0.01321	0.005	0.0055	0.012	0.019	0.058
TotOrthoPhos (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	0.0165	0.00662	0.01872	0.005	0.005	0.0085	0.0255	0.058
TotOrthoPhos (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	0.01535	0.00225	0.01008	0.005	0.00525	0.013	0.02225	0.038
TotPhosphorus (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	0.07395	0.00977	0.04367	0.014	0.033	0.079	0.09825	0.187
TotPhosphorus (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	0.4393	0.0771	0.3447	0.07	0.1793	0.27	0.6965	1.32
TotPhosphorus (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	0.06838	0.00876	0.04015	0.008	0.0355	0.062	0.094	0.161

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotPhosphorus (mg/L)	OK620900-02-0050H	Council Creek	20	1	0.06895	0.00739	0.03306	0.005	0.042	0.0785	0.09075	0.126
TotPhosphorus (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	0.0776	0.00766	0.03427	0.009	0.049	0.0865	0.106	0.129
TotPhosphorus (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	19	2	0.1314	0.0169	0.0735	0.008	0.083	0.125	0.148	0.331
TotPhosphorus (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	19	2	1.429	0.187	0.813	0.299	0.669	1.643	1.906	2.629
TotPhosphorus (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	0.1822	0.0191	0.0853	0.064	0.1138	0.1595	0.2255	0.382
TotPhosphorus (mg/L)	OK620910-02-0040C	Cooper Creek	19	3	0.1447	0.0191	0.0833	0.031	0.092	0.138	0.197	0.395
TotPhosphorus (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	0.0658	0.0116	0.0505	0.005	0.025	0.052	0.085	0.173
TotPhosphorus (mg/L)	OK620910-02-0250C	Deep Creek	19	3	0.0934	0.0135	0.0589	0.005	0.063	0.076	0.133	0.245
TotPhosphorus (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	19	2	0.0938	0.0177	0.0772	0.017	0.046	0.069	0.109	0.293
TotPhosphorus (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	0.3388	0.0229	0.1026	0.187	0.2593	0.322	0.43	0.547
TotPhosphorus (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	0.5451	0.0592	0.2647	0.196	0.3728	0.454	0.6765	1.183
TotPhosphorus (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	19	2	0.1876	0.0213	0.093	0.008	0.105	0.202	0.281	0.319
TotPhosphorus (mg/L)	OK620910-04-0010D	Cottonwood Creek	19	2	1.3821	0.0999	0.4355	0.528	1.152	1.387	1.594	2.585
TotPhosphorus (mg/L)	OK620910-05-0010J	Kingfisher Creek	19	2	0.1026	0.0137	0.0599	0.013	0.065	0.09	0.144	0.252
TotPhosphorus (mg/L)	OK620910-05-0030C	Uncle John's Creek	19	3	0.1625	0.0175	0.0764	0.037	0.086	0.164	0.209	0.322
TotPhosphorus (mg/L)	OK620910-05-0080D	Dead Indian Creek	19	3	0.2151	0.0321	0.1398	0.048	0.108	0.187	0.304	0.556
TotPhosphorus (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	19	3	0.2951	0.0535	0.2333	0.041	0.124	0.229	0.327	0.949
TotPhosphorus (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	19	2	0.2884	0.0301	0.1313	0.063	0.187	0.262	0.392	0.506
TotPhosphorus (mg/L)	OK620920-01-0130G	Griever Creek	19	2	0.1353	0.057	0.2483	0.005	0.027	0.052	0.089	0.884
TotPhosphorus (mg/L)	OK620920-01-0180F	Main Creek	20	1	0.1728	0.0882	0.3944	0.005	0.0548	0.063	0.105	1.815
TotPhosphorus (mg/L)	OK620920-02-0080D	Long Creek	20	1	0.0807	0.0291	0.1302	0.005	0.0228	0.057	0.0663	0.613
TotPhosphorus (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	0.1042	0.0204	0.0867	0.005	0.061	0.083	0.1085	0.334
TotPhosphorus (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	20	4	0.1358	0.0456	0.2037	0.005	0.058	0.074	0.1305	0.963
TotPhosphorus (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	19	2	0.1138	0.0547	0.2384	0.005	0.025	0.054	0.109	1.08
TotPhosphorus (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	19	3	0.1131	0.0493	0.2148	0.005	0.023	0.068	0.108	0.984
TotPhosphorus (mg/L)	OK620920-05-0050G	Sand Creek	20	1	0.0837	0.0114	0.0509	0.005	0.0465	0.0825	0.1155	0.188
TotPhosphorus (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	0.4354	0.0405	0.1813	0.134	0.3118	0.453	0.5418	0.824
TotPhosphorus (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	0.0828	0.0163	0.078	0.005	0.029	0.068	0.103	0.316
TotPhosphorus (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	0.2411	0.0347	0.1553	0.025	0.1113	0.2185	0.3723	0.515
TotPhosphorus (mg/L)	OK621000-03-0010C	Bois d' Arc	19	1	0.1933	0.0321	0.14	0.013	0.066	0.208	0.231	0.554
TotPhosphorus (mg/L)	OK621000-04-0010D	Deer Creek	19	2	0.1584	0.0204	0.0889	0.023	0.089	0.152	0.205	0.387
TotPhosphorus (mg/L)	OK621000-05-0010D	Pond Creek	20	1	0.2834	0.0549	0.2456	0.024	0.1355	0.2	0.3898	1.081
TotPhosphorus (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	0.1983	0.0351	0.1313	0.074	0.114	0.1515	0.2385	0.532
TotPhosphorus (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	0.2042	0.0251	0.1123	0.03	0.125	0.197	0.2668	0.446
TotPhosphorus (mg/L)	OK621010-01-0090R	Clay Creek	18	3	0.1578	0.0297	0.1261	0.027	0.0568	0.1275	0.2048	0.494
TotPhosphorus (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	0.1187	0.0373	0.1668	0.005	0.0398	0.0725	0.104	0.675
TotPhosphorus (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	0.1044	0.0679	0.3038	0.005	0.0078	0.044	0.0583	1.391
TotPhosphorus (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	0.1437	0.0209	0.0934	0.032	0.0948	0.111	0.164	0.358
TotPhosphorus (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	0.1387	0.0165	0.0738	0.042	0.0853	0.132	0.1633	0.386

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotPhosphorus (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	0.1626	0.0255	0.1139	0.019	0.0943	0.136	0.1758	0.42
TotPhosphorus (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	0.2196	0.0397	0.173	0.027	0.09	0.206	0.266	0.796
TotPhosphorus (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	0.205	0.0348	0.1557	0.025	0.0955	0.175	0.2238	0.683
TotPhosphorus (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	0.1769	0.029	0.1296	0.011	0.087	0.1315	0.2405	0.592
TotPhosphorus (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	0.098	0.00879	0.0393	0.019	0.0655	0.0975	0.1275	0.164
TotPhosphorus (mg/L)	OK621200-02-0020C	Doga Creek	19	1	0.0962	0.0106	0.0461	0.011	0.076	0.092	0.141	0.156
TotPhosphorus (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	0.2256	0.0161	0.0721	0.045	0.1848	0.245	0.274	0.328
TotPhosphorus (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	0.2661	0.0334	0.1495	0.058	0.172	0.245	0.311	0.776
TotPhosphorus (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	18	5	0.3819	0.0624	0.2649	0.129	0.2128	0.3235	0.487	1.264
TotPhosphorus (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	0.0932	0.0149	0.0665	0.016	0.0513	0.087	0.1135	0.318
TotPhosphorus (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	0.0874	0.0181	0.0809	0.006	0.0455	0.079	0.096	0.404
TotPhosphorus (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	0.2982	0.0259	0.1157	0.096	0.2168	0.28	0.4058	0.48
TotPhosphorus (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	19	2	0.2786	0.0281	0.1226	0.024	0.182	0.287	0.362	0.485
TotPhosphorus (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	0.0949	0.0101	0.045	0.014	0.069	0.084	0.1198	0.204
TotPhosphorus (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	0.1918	0.0227	0.0962	0.056	0.086	0.1985	0.2875	0.359
TotPhosphorus (mg/L)	OK720500-01-0070D	Bent Creek	20	1	0.149	0.0184	0.0821	0.046	0.1008	0.1355	0.1775	0.378
TotPhosphorus (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	0.1183	0.0171	0.0765	0.013	0.0765	0.0945	0.16	0.36
TotPhosphorus (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	0.05061	0.00718	0.03045	0.005	0.02575	0.052	0.06975	0.114
TotPhosphorus (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	0.0691	0.0189	0.0734	0.005	0.015	0.061	0.087	0.25
TotPhosphorus (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	0.0605	0.0101	0.045	0.005	0.0325	0.064	0.074	0.213
TotPhosphorus (mg/L)	OK720500-02-0100D	Spring Creek	19	1	0.04932	0.00813	0.03542	0.005	0.02	0.05	0.07	0.136
TotPhosphorus (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	0.0709	0.011	0.048	0.005	0.051	0.055	0.091	0.178
TotPhosphorus (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	0.1454	0.0708	0.3168	0.005	0.0425	0.0685	0.116	1.479
TotPhosphorus (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	0.05635	0.00739	0.03303	0.005	0.0285	0.066	0.086	0.117
TotPhosphorus (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	0.04785	0.0047	0.02103	0.005	0.032	0.051	0.05975	0.09
TotPhosphorus (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	0.0459	0.00581	0.026	0.005	0.02225	0.0485	0.065	0.085
TotPhosphorus (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	0.081	0.0108	0.047	0.005	0.041	0.072	0.129	0.159
TotPhosphorus (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	20	2	0.08405	0.00935	0.04181	0.014	0.06225	0.085	0.11175	0.166
TotPhosphorus (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	0.0808	0.0187	0.053	0.032	0.0463	0.068	0.0953	0.2
TotPhosphorus (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	0.0777	0.00943	0.04218	0.005	0.04125	0.0825	0.11325	0.148
TotSusSolids (mg/L)	OK620900-01-0180J	Lagoon Creek	20	1	19.95	3.92	17.52	10	10	11.5	21.5	74
TotSusSolids (mg/L)	OK620900-01-0290D	Euchee Creek	20	1	29.85	5.95	26.61	10	10.25	21.5	38	121
TotSusSolids (mg/L)	OK620900-02-0020D	Salt Creek: Payne Co.	21	1	18.48	3.18	14.58	10	10	14	22.5	77
TotSusSolids (mg/L)	OK620900-02-0050H	Council Creek	20	1	12.05	0.905	4.045	10	10	10	12.75	24
TotSusSolids (mg/L)	OK620900-03-0080C	Dugout Creek	20	1	14.8	1.66	7.45	10	10	10.5	21.5	32
TotSusSolids (mg/L)	OK620900-03-0230C	Beaver Creek: Logan Co.	20	1	34.55	7.7	34.45	10	10	24.5	49	156
TotSusSolids (mg/L)	OK620900-04-0040C	Stillwater Creek: Lower	20	1	40.4	6.68	29.89	10	17.25	39	52.75	140
TotSusSolids (mg/L)	OK620900-04-0070T	Stillwater Creek: Upper	20	1	32.75	3.98	17.78	10	18.75	29.5	43	70
TotSusSolids (mg/L)	OK620910-02-0040C	Cooper Creek	20	2	46.4	8.06	36.06	10	15	34.5	75.25	119

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotSusSolids (mg/L)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	19	2	17.47	2.71	11.8	10	10	13	23	57
TotSusSolids (mg/L)	OK620910-02-0250C	Deep Creek	20	2	27.15	4.58	20.48	10	10	18	40.5	73
TotSusSolids (mg/L)	OK620910-02-0310C	Indian Creek: Major Co.	20	1	13.95	1.88	8.42	10	10	10	16.25	44
TotSusSolids (mg/L)	OK620910-03-0010F	Skeleton Creek: Lower	20	1	59.8	10.5	47.1	10	19.5	60.5	82.5	216
TotSusSolids (mg/L)	OK620910-03-0010S	Skeleton Creek: Upper	20	1	98.4	37	165.5	10	23.5	76	95.8	783
TotSusSolids (mg/L)	OK620910-03-0040C	Otter Creek: Logan Co.	20	1	40.2	10.1	45.2	10	10	24	55.5	205
TotSusSolids (mg/L)	OK620910-04-0010D	Cottonwood Creek	20	1	52	11.2	50	10	30	36	66.3	241
TotSusSolids (mg/L)	OK620910-05-0010J	Kingfisher Creek	20	1	41.9	8.31	37.16	10	12.5	23.5	64.5	124
TotSusSolids (mg/L)	OK620910-05-0030C	Uncle John's Creek	20	2	13.65	1.42	6.34	10	10	10.5	13	30
TotSusSolids (mg/L)	OK620910-05-0080D	Dead Indian Creek	20	2	24.6	3.98	17.79	10	10.25	18	35.25	71
TotSusSolids (mg/L)	OK620910-06-0010B	Turkey Creek: Lower	20	2	80	38.5	172.2	10	11	22.5	89.5	789
TotSusSolids (mg/L)	OK620910-06-0010T	Turkey Creek: Upper	20	1	43.2	9.96	44.53	10	11.75	28.5	50	163
TotSusSolids (mg/L)	OK620920-01-0130G	Griever Creek	20	1	84.1	61	272.9	10	10	14	30.3	1240
TotSusSolids (mg/L)	OK620920-01-0180F	Main Creek	20	1	64.5	19.2	86	10	15.8	46.5	67.8	391
TotSusSolids (mg/L)	OK620920-02-0080D	Long Creek	20	1	23.5	7.61	34.02	10	10	10	16.5	153
TotSusSolids (mg/L)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	50	16.3	69.4	10	17.5	27.5	40.8	286
TotSusSolids (mg/L)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	31.05	8.62	40.42	10	10	18	26.75	164
TotSusSolids (mg/L)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	23	6.2	27.71	10	10	11	27	132
TotSusSolids (mg/L)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	23.2	5.24	23.44	10	10	12.5	28.25	101
TotSusSolids (mg/L)	OK620920-05-0050G	Sand Creek	20	1	20.1	3.62	16.18	10	10	10.5	24.5	56
TotSusSolids (mg/L)	OK620930-00-0010T	Cimarron River: Beaver Co.	20	1	35.2	6.38	28.53	10	15.75	25	42.75	122
TotSusSolids (mg/L)	OK620930-00-0100G	Crooked Creek: Beaver Co.	23	1	18.28	3.06	14.69	10	10	10	21	71
TotSusSolids (mg/L)	OK621000-02-0040F	Wild Horse Creek	20	1	29.7	6.64	29.72	10	11.25	13.5	45.75	130
TotSusSolids (mg/L)	OK621000-03-0010C	Bois d' Arc	19	1	66.7	15.3	66.5	10	25	38	112	266
TotSusSolids (mg/L)	OK621000-04-0010D	Deer Creek	20	1	63.7	16.6	74.1	10	11	39	83	267
TotSusSolids (mg/L)	OK621000-05-0010D	Pond Creek	20	1	88.3	29.8	133.1	10	11	61.5	111.5	613
TotSusSolids (mg/L)	OK621000-06-0010C	Crooked Creek: Grant Co.	14	1	50.3	16.7	62.3	10	10	34	58.8	249
TotSusSolids (mg/L)	OK621010-01-0010D	Salt Fork of Arkansas River	20	1	92.8	14.7	65.7	10	38	80	132.8	241
TotSusSolids (mg/L)	OK621010-01-0090R	Clay Creek	19	2	36.8	15.5	67.7	10	10	17	34	308
TotSusSolids (mg/L)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	34	7.34	32.83	10	10	23	48.75	147
TotSusSolids (mg/L)	OK621010-01-0270C	Yellowstone Creek	20	1	113.2	97.5	436	10	10	10	20	1965
TotSusSolids (mg/L)	OK621010-02-0010D	Sandy Creek	20	1	39.3	9.05	40.47	10	11.25	20	53.75	168
TotSusSolids (mg/L)	OK621010-03-0010D	Medicine Lodge Creek	20	2	57.1	11.8	52.8	10	20.3	35.5	83.8	232
TotSusSolids (mg/L)	OK621010-03-0030C	Driftwood Creek	20	1	61.7	14	62.6	10	12.5	42	76	243
TotSusSolids (mg/L)	OK621100-00-0010B	Chickaskia River: Lower	19	2	167.4	72.1	314.2	10	20	58	120	1321
TotSusSolids (mg/L)	OK621100-00-0010M	Chickaskia Creek: Middle	20	2	119	58.4	261.3	10	12.8	41	78.5	1114
TotSusSolids (mg/L)	OK621100-00-0100G	Bitter Creek	20	1	91.1	34.8	155.4	10	26	46	98.5	713
TotSusSolids (mg/L)	OK621200-01-0400C	Gray Horse Creek	20	1	19.8	2.97	13.29	10	10	15	23.75	52
TotSusSolids (mg/L)	OK621200-02-0020C	Doga Creek	19	1	29.32	6.34	27.62	10	10	23	43	113

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
TotSusSolids (mg/L)	OK621200-03-0010D	Black Bear Creek: Lower	20	1	62.7	14.1	63.2	10	16.3	34	95	231
TotSusSolids (mg/L)	OK621200-03-0010M	Black Bear Creek (downstream)	20	3	68.2	13.6	61	10	14.3	58	110.8	232
TotSusSolids (mg/L)	OK621200-03-0010W	Black Bear Creek (upstream)	20	3	47	9.95	44.52	10	18	26	60.5	147
TotSusSolids (mg/L)	OK621200-04-0010F	Salt Creek: Lower	20	2	38.1	17.1	76.4	10	10	19	32	358
TotSusSolids (mg/L)	OK621200-04-0010P	Salt Creek: Upper	20	1	48.6	27.8	124.3	10	12	15	25.3	571
TotSusSolids (mg/L)	OK621200-05-0010K	Red Rock Creek	20	1	86.5	14.5	64.8	10	29.5	70	119	210
TotSusSolids (mg/L)	OK621200-05-0160G	Red Rock Creek: Upper	20	1	72.5	14	62.7	10	18.5	51	111.5	212
TotSusSolids (mg/L)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	28.8	9.64	43.09	10	10	19.5	27	207
TotSusSolids (mg/L)	OK621210-00-0270C	Chilocco Creek	18	1	49.8	10.5	44.6	10	13	35.5	71.3	170
TotSusSolids (mg/L)	OK720500-01-0070D	Bent Creek	20	1	27.6	7.71	34.46	10	10	19	29.5	164
TotSusSolids (mg/L)	OK720500-01-0150G	Persimmon Creek	20	1	33.75	4.7	21.01	10	18.25	26.5	48.5	89
TotSusSolids (mg/L)	OK720500-01-0200D	Indian Creek: Woodward Co.	18	1	13.833	0.978	4.148	10	10	13	17	23
TotSusSolids (mg/L)	OK720500-02-0050B	Otter Creek: Harper Co.	15	1	34.8	17.7	68.4	10	10	10	10	249
TotSusSolids (mg/L)	OK720500-02-0070G	Clear Creek: Harper Co.	20	1	19.45	3.3	14.78	10	10	11	23	69
TotSusSolids (mg/L)	OK720500-02-0100D	Spring Creek	19	1	13.63	2.43	10.58	10	10	10	12	55
TotSusSolids (mg/L)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	28	7.69	33.52	10	10	11	37	144
TotSusSolids (mg/L)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	20	1	118.3	96.8	433	10	10	10.5	38	1956
TotSusSolids (mg/L)	OK720500-02-0250F	Duck Pond Creek	20	2	11.05	0.69	3.086	10	10	10	10	23
TotSusSolids (mg/L)	OK720500-02-0300F	Clear Creek: Beaver Co.	20	1	12.05	0.969	4.334	10	10	10	11.5	26
TotSusSolids (mg/L)	OK720500-02-0500G	Palo Duro Creek	20	1	10.1	0.1	0.447	10	10	10	10	12
TotSusSolids (mg/L)	OK720500-03-0010C	Wolf Creek: Lower	19	1	33.58	6.2	27.02	10	10	30	44	113
TotSusSolids (mg/L)	OK720500-03-0010G	Wolf Creek: Upper	21	1	36.24	5.3	24.28	10	21	28	47	115
TotSusSolids (mg/L)	OK720900-00-0100D	Cold Springs Creek	8	1	12	1.73	4.9	10	10	10	11.5	24
TotSusSolids (mg/L)	OK720900-00-0180C	Cimarron River: Cimarron Co.	20	2	15.75	1.79	7.99	10	10	10	20.75	36
Turb (NTU)	OK620900-01-0180J	Lagoon Creek	21	0	37.6	11.8	54	3.5	9.6	19.5	39.8	205
Turb (NTU)	OK620900-01-0290D	Eucheec Creek	21	0	50.1	12.8	58.7	9.7	17.5	32.4	60.7	279
Turb (NTU)	OK620900-02-0020D	Salt Creek: Payne Co.	22	0	28.35	9.35	43.85	6.06	10.18	15.6	25.15	212
Turb (NTU)	OK620900-02-0050H	Council Creek	21	0	18.41	3.34	15.31	4.48	6.47	12.9	23.75	63.7
Turb (NTU)	OK620900-03-0080C	Dugout Creek	21	0	48.3	18.4	84.5	5.2	8.9	18	65.6	392
Turb (NTU)	OK620900-03-0230C	Beaver Creek: Logan Co.	21	0	49.5	13.5	62.1	8.7	14.9	29.9	61.6	295
Turb (NTU)	OK620900-04-0040C	Stillwater Creek: Lower	21	0	77.7	24.5	112.1	15.4	21.4	46.7	70.7	517
Turb (NTU)	OK620900-04-0070T	Stillwater Creek: Upper	21	0	46.53	4.91	22.5	9.35	29.15	44.3	64.8	84.1
Turb (NTU)	OK620910-02-0040C	Cooper Creek	21	1	45.93	9.34	42.79	4.9	12.5	32	61.1	146
Turb (NTU)	OK620910-02-0100D	Salt Creek: Kingfisher Co.	20	1	10.09	2.64	11.81	1.28	2.46	5.23	10.5	48.4
Turb (NTU)	OK620910-02-0250C	Deep Creek	20	2	61.6	32.5	145.4	2.9	7.8	25.3	41.5	665
Turb (NTU)	OK620910-02-0310C	Indian Creek: Major Co.	21	0	7.6	3.11	14.27	1.12	2.11	2.59	3.49	57.9
Turb (NTU)	OK620910-03-0010F	Skeleton Creek: Lower	21	0	69.4	10.2	46.9	9.8	27.4	71.7	86.2	204
Turb (NTU)	OK620910-03-0010S	Skeleton Creek: Upper	21	0	103.4	40.6	186.1	9.7	31.9	66.5	92.6	900
Turb (NTU)	OK620910-03-0040C	Otter Creek: Logan Co.	21	0	51.2	11.7	53.4	5.3	10.5	34.6	84.1	205

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Turb (NTU)	OK620910-04-0010D	Cottonwood Creek	21	0	66.2	20.5	93.7	6.7	21.2	36.5	69.1	343
Turb (NTU)	OK620910-05-0010J	Kingfisher Creek	21	0	50.6	16.3	74.9	8.4	11.6	23	74.6	348
Turb (NTU)	OK620910-05-0030C	Uncle John's Creek	21	1	10.37	2.33	10.67	0.79	2.31	4.89	14.55	39.4
Turb (NTU)	OK620910-05-0080D	Dead Indian Creek	21	1	24.5	4.32	19.8	4.19	13.3	17.5	31	74.4
Turb (NTU)	OK620910-06-0010B	Turkey Creek: Lower	21	1	108.2	55.4	254	3.1	10.7	18.7	48.8	1000
Turb (NTU)	OK620910-06-0010T	Turkey Creek: Upper	21	0	38.6	11.6	53.2	3.6	8.2	19.6	33.8	196
Turb (NTU)	OK620920-01-0130G	Griever Creek	18	3	34.4	17.5	74.3	2.1	3.7	9.9	29.6	319
Turb (NTU)	OK620920-01-0180F	Main Creek	20	1	65.4	27.2	121.5	4.7	16.4	32.4	55	555
Turb (NTU)	OK620920-02-0080D	Long Creek	20	1	20.68	8.25	36.89	2.29	4.09	8.8	14.9	159
Turb (NTU)	OK620920-04-0010C	Eagle Chief Creek: Lower	18	1	43.9	18.3	77.6	4.6	10.6	17.7	30.2	324
Turb (NTU)	OK620920-04-0010G	Eagle Chief Creek: Woods Co.	22	2	33.88	9.07	42.52	5.7	12.18	18.3	34.43	163
Turb (NTU)	OK620920-05-0010G	Buffalo Creek: Lower	20	1	12.08	3.51	15.69	2.13	3.43	8.4	10.95	73.4
Turb (NTU)	OK620920-05-0010P	Buffalo Creek: Upper	20	2	8.73	2.13	9.5	1.3	3.09	4.93	11.08	33.7
Turb (NTU)	OK620920-05-0050G	Sand Creek	21	0	12.93	2.56	11.72	2.77	6.78	9.9	14.2	52.6
Turb (NTU)	OK620930-00-0010T	Cimarron River: Beaver Co.	21	0	19.92	2.53	11.58	9.26	11.65	15.8	22.9	55.7
Turb (NTU)	OK620930-00-0100G	Crooked Creek: Beaver Co.	24	0	40.5	28.7	140.4	1.1	2.1	8.5	15.2	695
Turb (NTU)	OK621000-02-0040F	Wild Horse Creek	20	1	42.8	15.6	69.9	4.1	13.3	18.6	43.1	320
Turb (NTU)	OK621000-03-0010C	Bois d'Arc	20	0	71.5	23.4	104.5	2.2	17.7	41.5	72.5	467
Turb (NTU)	OK621000-04-0010D	Deer Creek	21	0	76	22.5	102.9	2.9	18.6	41	88.9	420
Turb (NTU)	OK621000-05-0010D	Pond Creek	20	1	182.1	58.7	262.6	4.8	25.3	72.1	199	1000
Turb (NTU)	OK621000-06-0010C	Crooked Creek: Grant Co.	15	0	93.8	31.8	123.2	3.1	14.9	40.8	214	429
Turb (NTU)	OK621010-01-0010D	Salt Fork of Arkansas River	21	0	164.9	30.6	140.2	26.4	62.1	125	243	591
Turb (NTU)	OK621010-01-0090R	Clay Creek	20	1	78.7	46.1	206.3	2.6	6.2	8.4	16.5	836
Turb (NTU)	OK621010-01-0230G	Turkey Creek: Woods Co.	20	1	57.1	16.7	74.5	4.6	9.4	19.5	74.7	221
Turb (NTU)	OK621010-01-0270C	Yellowstone Creek	21	0	82.9	50.1	229.5	2.4	4.3	8.5	32.4	1000
Turb (NTU)	OK621010-02-0010D	Sandy Creek	21	0	44.6	13.3	61.1	6.2	10.1	19	39.4	216
Turb (NTU)	OK621010-03-0010D	Medicine Lodge Creek	21	1	75	26.5	121.3	2.9	24.7	35.9	64.6	514
Turb (NTU)	OK621010-03-0030C	Driftwood Creek	20	1	69.2	19.4	86.9	9.1	21.1	38.3	75.4	384
Turb (NTU)	OK621100-00-0010B	Chickaskia River: Lower	21	0	144.7	52.6	241.1	4.9	16.8	55	142.5	1000
Turb (NTU)	OK621100-00-0010M	Chickaskia Creek: Middle	22	0	144.5	58.2	273	5.1	20.7	41.3	108.7	1000
Turb (NTU)	OK621100-00-0100G	Bitter Creek	21	0	108.6	48	219.9	3.8	20.4	50.6	74.2	1000
Turb (NTU)	OK621200-01-0400C	Gray Horse Creek	21	0	35	4.31	19.74	10.6	20.05	31.2	46.5	84.2
Turb (NTU)	OK621200-02-0020C	Doga Creek	20	0	44.77	6.48	28.99	7.29	19.95	39.55	60	116
Turb (NTU)	OK621200-03-0010D	Black Bear Creek: Lower	21	0	125.8	28.1	128.7	2.1	38.1	89.7	180	529
Turb (NTU)	OK621200-03-0010M	Black Bear Creek (downstream)	22	1	121.3	24.4	114.5	9.7	49.2	91.9	144	489
Turb (NTU)	OK621200-03-0010W	Black Bear Creek (upstream)	23	0	58.1	12.5	59.9	6.3	16.1	36	93.6	249
Turb (NTU)	OK621200-04-0010F	Salt Creek: Lower	21	1	37.56	7.94	36.38	3.29	12.65	29.5	53.7	165
Turb (NTU)	OK621200-04-0010P	Salt Creek: Upper	21	0	48.4	16.2	74.3	10.5	15.8	21.5	26.1	306
Turb (NTU)	OK621200-05-0010K	Red Rock Creek	21	0	203.2	39.6	181.5	23.3	52.4	148	325	670

Appendix A.3. Descriptive statistics by site for water quality parameters.

Variable	WBID	Site Name	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Turb (NTU)	OK621200-05-0160G	Red Rock Creek: Upper	21	0	152.7	30.4	139.1	11.8	33.9	106	227.5	495
Turb (NTU)	OK621210-00-0050L	Beaver Creek: Osage Co.	20	1	44.6	13.9	62	7.2	12.1	25	44.7	254
Turb (NTU)	OK621210-00-0270C	Chilocco Creek	19	0	63.5	16	69.5	2.9	14.3	38.3	112	225
Turb (NTU)	OK720500-01-0070D	Bent Creek	21	0	10.67	3.93	18	0.87	3.17	5.36	9.06	82.6
Turb (NTU)	OK720500-01-0150G	Persimmon Creek	21	0	26.99	5.54	25.4	5.37	10.7	18.4	34.35	122
Turb (NTU)	OK720500-01-0200D	Indian Creek: Woodward Co.	19	0	6.957	0.842	3.671	1.54	3.83	6.14	11.2	13.1
Turb (NTU)	OK720500-02-0050B	Otter Creek: Harper Co.	16	0	92.2	53.3	213.3	1.3	2.1	3.9	14.2	786
Turb (NTU)	OK720500-02-0070G	Clear Creek: Harper Co.	21	0	15.57	7.26	33.28	2.55	3.58	5.45	13.35	158
Turb (NTU)	OK720500-02-0100D	Spring Creek	19	1	3.88	1.72	7.52	0.33	0.69	1.28	2.39	32.5
Turb (NTU)	OK720500-02-0130C	Kiowa Creek: Harper Co.	19	1	24.29	8.55	37.25	4.86	6.22	8.02	20.2	142
Turb (NTU)	OK720500-02-0130K	Kiowa Creek: Beaver Co.	21	0	61.9	47	215.3	4.2	6.2	9.4	25.5	1000
Turb (NTU)	OK720500-02-0250F	Duck Pond Creek	21	1	5.931	0.689	3.158	1.81	3.49	4.87	8.565	12.3
Turb (NTU)	OK720500-02-0300F	Clear Creek: Beaver Co.	21	0	4.84	1.11	5.08	0.53	1.77	3.74	5.52	21.5
Turb (NTU)	OK720500-02-0500G	Palo Duro Creek	21	0	3.16	1.06	4.86	0.5	0.61	1.45	2.54	20.9
Turb (NTU)	OK720500-03-0010C	Wolf Creek: Lower	19	1	32.91	5.48	23.9	4.58	11	25	53.1	79.6
Turb (NTU)	OK720500-03-0010G	Wolf Creek: Upper	22	0	25.89	6.37	29.87	5.86	8.87	16.75	25.83	134
Turb (NTU)	OK720900-00-0100D	Cold Springs Creek	9	0	42.6	32.1	96.3	3	7.2	9.4	19.3	299
Turb (NTU)	OK720900-00-0180C	Cimarron River: Cimarron Co.	21	1	16.6	2.28	10.45	1.52	8.38	12.8	27.7	35.5

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	21	Cyprinidae	Carps and minnows	Campostoma anomalum	Central stoneroller	2.2	2				X	
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	45	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	11	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	29	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	7	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	1	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	6	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	10	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	17	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	7	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	54	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Lagoon Creek	OK620900-01-0180J	25467	11-Jun-02	1	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	1	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	479	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	6	Cyprinidae	Carps and minnows	Notropis buchanani	Ghost shiner	2.6	2.6	X				
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	2	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	45	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	25	Catostomidae	Suckers	Cariodes carpio	River carsucker	3.5	3.5		X			
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	4	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	50	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	4	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	45	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	1	Centrarchidae	Sunfishes	Lepomis microlophus	Redear sunfish	3	2.87	X				
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	5	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	1	Centrarchidae	Sunfishes	Pomoxis nigromaculatus	Black crappie	3.2	2.8			X		
Euchee Creek	OK620900-01-0290D	25468	12-Jun-02	2	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	1	Lepisosteidae	Gars	Lepisosteus oculatus	Spotted gar	3.5	2.7			X		
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	2	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	1	Cyprinidae	Carps and minnows	Campostoma anomalum	Central stoneroller	2.2	2				X	
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	25	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	1	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	6	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	1	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	2	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	3	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	51	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	7	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	15	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	8	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	16	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	3	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Salt Creek: Payne Co.	OK620900-02-0020D	25557	30-Jul-02	1	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Council Creek	OK620900-02-0050H	25466	10-Jun-02	6	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2					X
Council Creek	OK620900-02-0050H	25466	10-Jun-02	112	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Council Creek	OK620900-02-0050H	25466	10-Jun-02	23	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Council Creek	OK620900-02-0050H	25466	10-Jun-02	7	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Council Creek	OK620900-02-0050H	25466	10-Jun-02	6	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Council Creek	OK620900-02-0050H	25466	10-Jun-02	8	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Council Creek	OK620900-02-0050H	25466	10-Jun-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Council Creek	OK620900-02-0050H	25466	10-Jun-02	1	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Council Creek	OK620900-02-0050H	25466	10-Jun-02	1	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Council Creek	OK620900-02-0050H	25466	10-Jun-02	12	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Council Creek	OK620900-02-0050H	25466	10-Jun-02	11	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Council Creek	OK620900-02-0050H	25466	10-Jun-02	8	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Council Creek	OK620900-02-0050H	25466	10-Jun-02	36	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Council Creek	OK620900-02-0050H	25466	10-Jun-02	3	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	7	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	4	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2					X
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	795	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	4	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	5	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	6	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	63	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	1	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	1	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	26	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	8	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	3	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	13	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	10	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Dugout Creek	OK620900-03-0080C	25469	18-Jun-02	2	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	2	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	8	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	32	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	8	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	34	Cyprinidae	Carps and minnows	Notropis buchanani	Ghost shiner	2.6	2.6	X				
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	38	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	5	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	2	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	5	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	2	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	144	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	21	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Beaver Creek: Logan Co.	OK620900-03-0230C	25545	29-Jul-02	3	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	22	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	1	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	56	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	59	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	56	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	4	Cyprinidae	Carps and minnows	Notropis buchanani	Ghost shiner	2.6	2.6	X				
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	33	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	3	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	1	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	4	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	1	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	1	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	7	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	7	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	25	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	2	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Stillwater Creek: Lower	OK620900-04-0040C	28041	28-Jul-03	1	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	1	Lepisosteidae	Gars	Lepisosteus platostomus	Shortnose gar	3.8	3.3			X		
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	1	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	79	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	3	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	2	Cyprinidae	Carps and minnows	Notemigonus crysoleucas	Golden shiner	3.8	3.8		X			
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	1	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	31	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	1	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	12	Ictaluridae	Catfishes	Ameiurus melas	Black bullhead catfish	4	4	X				X
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	6	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	1	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	59	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	27	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	24	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	54	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	7	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Stillwater Creek: Upper	OK620900-04-0070T	25559	30-Jul-02	2	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	740	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	4	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	148	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	40	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	47	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	3	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	162	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	13	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	2	Ictaluridae	Catfishes	Ameiurus melas	Black bullhead catfish	4	4	X				X
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	4	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	17	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	9	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	3	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Cooper Creek	OK620910-02-0040C	25649	12-Jun-02	14	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	2	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	134	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2					X
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	1	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	28	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	29	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	3	Cyprinidae	Carps and minnows	Notropis bairdi	Red River shiner	3.2	2.8	X				
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	1	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	241	Cyprinodontidae	Pupfishes	Cyprinodon rubrofluvialtilis	Red River pupfish	2.6	2	X				
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	561	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	84	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	1	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Salt Creek: Kingfisher Co.	OK620910-02-0100D	25660	16-Aug-02	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	689	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	235	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	301	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	31	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	14	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	15	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	109	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	4	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	4	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	1	Cyprinodontidae	Pupfishes	Cyprinodon rubrofluvialis	Red River pupfish	2.6	2	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	51	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	11	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	5	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	12	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	4	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	18	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Deep Creek	OK620910-02-0250C	25470	19-Jun-02	51	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	9	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	68	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	247	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	11	Cyprinidae	Carps and minnows	Notropis bairdi	Red River shiner	3.2	2.8	X				
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	100	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	1	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	4	Cyprinodontidae	Pupfishes	Cyprinodon rubrofluvialis	Red River pupfish	2.6	2	X				
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	51	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	8	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Indian Creek: Major Co.	OK620910-02-0310C	25653	27-Jun-02	2	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	2	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	164	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	140	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	8	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	106	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	11	Cyprinidae	Carps and minnows	Notropis buchani	Ghost shiner	2.6	2.6	X				
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	7	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	15	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	1	Ictaluridae	Catfishes	Pygodictis olivaris	Flathead catfish	3.3	3			X		
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	18	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	1	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	2	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	11	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	3	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Skeleton Creek: Lower	OK620910-03-0010F	27977	29-Jul-03	1	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	1	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			

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Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	300	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	26	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	98	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	40	Cyprinidae	Carps and minnows	Notropis buchmanii	Ghost shiner	2.6	2.6	X				
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	1	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	78	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	1	Catostomidae	Suckers	Carpiodes carpio	River carpsucker	3.5	3.5		X			
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	15	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	3	Ictaluridae	Catfishes	Pyloodictis olivaris	Flathead catfish	3.3	3			X		
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	16	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	8	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	5	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Skeleton Creek: Upper	OK620910-03-0010S	25662	12-Sep-02	3	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	2	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	13	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	541	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	2	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	24	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	2	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	52	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	1	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	161	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	1	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	3	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	13	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	22	Ictaluridae	Catfishes	Pyloodictis olivaris	Flathead catfish	3.3	3			X		
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	43	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	2	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	97	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	56	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	5	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Otter Creek: Logan Co.	OK620910-03-0040C	25558	30-Jul-02	1	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	8	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	103	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	21	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3					X

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	26	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	51	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	2	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	4	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	1	Ictaluridae	Catfishes	Pyiodictis olivaris	Flathead catfish	3.3	3			X		
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	1	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	5	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Cottonwood Creek	OK620910-04-0010D	25544	29-Jul-02	1	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	3	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	550	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	12	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	12	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	8	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	2	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	48	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	4	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	1	Ictaluridae	Catfishes	Pyiodictis olivaris	Flathead catfish	3.3	3			X		
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	9	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	15	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Kingfisher Creek	OK620910-05-0010J	25648	12-Jun-02	1	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	506	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	136	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	13	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	400	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	1	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	22	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	1	Ictaluridae	Catfishes	Pyiodictis olivaris	Flathead catfish	3.3	3			X		
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	44	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	8	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	2	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Uncle John's Creek	OK620910-05-0030C	25647	11-Jun-02	1	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	838	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	422	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	68	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	12	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	174	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	3	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	3	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	1	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	22	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	10	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	79	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Dead Indian Creek	OK620910-05-0080D	25646	11-Jun-02	2	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	15	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	120	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	6	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	55	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	4	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	2	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	120	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	29	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	24	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	17	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	3	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Turkey Creek: Lower	OK620910-06-0010B	25650	26-Jun-02	3	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	2	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	499	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	510	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	15	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	10	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	137	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	2	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	1	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	8	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	5	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	2	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	2	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	23	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Turkey Creek: Upper	OK620910-06-0010T	25651	26-Jun-02	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	184	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	9	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	76	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	29	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	14	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	11	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				

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Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	19	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	1	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	32	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Griever Creek	OK620920-01-0130G	25581	21-Jun-02	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Main Creek	OK620920-01-0180F	25580	21-Jun-02	8	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2					X
Main Creek	OK620920-01-0180F	25580	21-Jun-02	37	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Main Creek	OK620920-01-0180F	25580	21-Jun-02	10	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3					X
Main Creek	OK620920-01-0180F	25580	21-Jun-02	19	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Main Creek	OK620920-01-0180F	25580	21-Jun-02	13	Cyprinidae	Carps and minnows	Notropis bairdi	Red River shiner	3.2	2.8	X				
Main Creek	OK620920-01-0180F	25580	21-Jun-02	48	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Main Creek	OK620920-01-0180F	25580	21-Jun-02	5	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Main Creek	OK620920-01-0180F	25580	21-Jun-02	54	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Main Creek	OK620920-01-0180F	25580	21-Jun-02	9	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Main Creek	OK620920-01-0180F	25580	21-Jun-02	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	47	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2					X
Long Creek	OK620920-02-0080D	25579	20-Jun-02	59	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Long Creek	OK620920-02-0080D	25579	20-Jun-02	11	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3					X
Long Creek	OK620920-02-0080D	25579	20-Jun-02	10	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	44	Cyprinidae	Carps and minnows	Notropis bairdi	Red River shiner	3.2	2.8	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	128	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	5	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	121	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	1	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Long Creek	OK620920-02-0080D	25579	20-Jun-02	6	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Long Creek	OK620920-02-0080D	25579	20-Jun-02	7	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	258	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	29	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	14	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	1	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	18	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	3	Catostomidae	Suckers	Carpiodes carpio	River carsucker	3.5	3.5		X			
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	1	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	2	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	19	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	2	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	47	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Eagle Chief Creek: Lower	OK620920-04-0010C	25652	27-Jun-02	1	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	2	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	156	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	3	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	45	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	205	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	23	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	24	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	6	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	32	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	1	Ictaluridae	Catfishes	Pyloodictis olivaris	Flathead catfish	3.3	3			X		
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	12	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	5	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	2	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25659	08-Aug-02	2	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	1	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	132	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	13	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	17	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	78	Cyprinidae	Carps and minnows	Notropis bairdi	Red River shiner	3.2	2.8	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	204	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	5	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	6	Catostomidae	Suckers	Cariodes carpio	River carsucker	3.5	3.5		X			
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	24	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	7	Cyprinodontidae	Pupfishes	Cyprinodon rubrofluviatilis	Red River pupfish	2.6	2	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	83	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	7	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	8	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Buffalo Creek: Lower	OK620920-05-0010G	25577	19-Jun-02	1	Centrarchidae	Sunfishes	Pomoxis nigromaculatus	Black crappie	3.2	2.8			X		
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	4	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	160	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	3	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	1	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	10	Cyprinidae	Carps and minnows	Notropis bairdi	Red River shiner	3.2	2.8	X				
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	209	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	1	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	2	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	218	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Buffalo Creek: Upper	OK620920-05-0010P	25576	19-Jun-02	16	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Sand Creek	OK620920-05-0050G	25575	19-Jun-02	15	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Sand Creek	OK620920-05-0050G	25575	19-Jun-02	44	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Sand Creek	OK620920-05-0050G	25575	19-Jun-02	2	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Sand Creek	OK620920-05-0050G	25575	19-Jun-02	1	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Sand Creek	OK620920-05-0050G	25575	19-Jun-02	129	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Sand Creek	OK620920-05-0050G	25575	19-Jun-02	5	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Sand Creek	OK620920-05-0050G	25575	19-Jun-02	6	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	513	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	17	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	47	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	189	Cyprinidae	Carps and minnows	Notropis bairdi	Red River shiner	3.2	2.8	X				
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	457	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	32	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	154	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	9	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	1	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Cimarron River: Beaver Co.	OK620930-00-0010T	25567	05-Jun-02	1	Percidae	Perches	Etheostoma cragini	Arkansas darter	2.2	1.4	X				
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	4	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	20	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	72	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	2	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	5	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	457	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	53	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Crooked Creek: Beaver Co.	OK620930-00-0100G	25568	05-Jun-02	3	Percidae	Perches	Etheostoma cragini	Arkansas darter	2.2	1.4	X				
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	46	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	8	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	2	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	4	Cyprinidae	Carps and minnows	Pimephales notatus	Bluntnose minnow	3	2.7		X			
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	26	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	1	Ictaluridae	Catfishes	Ameiurus melas	Black bullhead catfish	4	4	X				X
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	4	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	40	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Wild Horse Creek	OK621000-02-0040F	25655	07-Aug-02	77	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Bois d'Arc	OK621000-03-0010C	31204	21-Oct-04	2	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Bois d'Arc	OK621000-03-0010C	31204	21-Oct-04	1	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Bois d'Arc	OK621000-03-0010C	31204	21-Oct-04	15	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Bois d'Arc	OK621000-03-0010C	31204	21-Oct-04	2	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Bois d'Arc	OK621000-03-0010C	31204	21-Oct-04	13	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Bois d'Arc	OK621000-03-0010C	31204	21-Oct-04	18	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Bois d'Arc	OK621000-03-0010C	31204	21-Oct-04	1	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	2	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	3	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	665	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	17	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	110	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	163	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	101	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	7	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	2	Catostomidae	Suckers	Moxostoma	Redhorse sucker	2.1	2	X				
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	7	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	14	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	2	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	195	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	49	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	6	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	10	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	1	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Deer Creek	OK621000-04-0010D	25393	22-Jul-02	10	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	3	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	2	Lepisosteidae	Gars	Lepisosteus platostomus	Shortnose gar	3.8	3.3			X		
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	6	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	7	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	160	Cyprinidae	Carps and minnows	Notropis buchanani	Ghost shiner	2.6	2.6	X				
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	2	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	1	Ictaluridae	Catfishes	Pyloodictis olivaris	Flathead catfish	3.3	3			X		
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	11	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	22	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	17	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Pond Creek	OK621000-05-0010D	25654	07-Aug-02	1	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	3	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	3	Lepisosteidae	Gars	Lepisosteus platostomus	Shortnose gar	3.8	3.3			X		
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	1	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	92	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	1	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	15	Cyprinidae	Carps and minnows	Notropis buechanani	Ghost shiner	2.6	2.6	X				
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	15	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	7	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	12	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	22	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	2	Catostomidae	Suckers	Carpodes carpio	River carpsucker	3.5	3.5		X			
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	1	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	49	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	9	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	18	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Crooked Creek: Grant Co.	OK621000-06-0010C	25656	08-Aug-02	3	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Salt Fork of Arkansas River	OK621010-01-0010D	25471	25-Jun-02	1	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Salt Fork of Arkansas River	OK621010-01-0010D	25471	25-Jun-02	363	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Salt Fork of Arkansas River	OK621010-01-0010D	25471	25-Jun-02	5	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Salt Fork of Arkansas River	OK621010-01-0010D	25471	25-Jun-02	1	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Salt Fork of Arkansas River	OK621010-01-0010D	25471	25-Jun-02	3	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Salt Fork of Arkansas River	OK621010-01-0010D	25471	25-Jun-02	1	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Salt Fork of Arkansas River	OK621010-01-0010D	25471	25-Jun-02	1	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	18	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	4	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	7	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	45	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	29	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	214	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	12	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Clay Creek	OK621010-01-0090R	25472	25-Jun-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	6	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	93	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	6	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3				X	
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	65	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	7	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	8	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	1	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	41	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Turkey Creek: Woods Co.	OK621010-01-0230G	25476	27-Jun-02	2	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	70	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2					X
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	254	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	52	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3					X
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	452	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	14	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	2	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	129	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	4	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	53	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Yellowstone Creek	OK621010-01-0270C	25473	26-Jun-02	9	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	361	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	2	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	131	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	149	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	78	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	2	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Sandy Creek	OK621010-02-0010D	25657	08-Aug-02	9	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	573	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	2	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	2	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3					X
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	38	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	103	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	2	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	2	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	9	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Medicine Lodge Creek	OK621010-03-0010D	25475	26-Jun-02	56	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	2	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	375	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	3	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	12	Cyprinidae	Carps and minnows	Hybognathus placitus	Plains minnow	3.6	3					X
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	4	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	239	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	11	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				

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Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	30	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	7	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	1	Ictaluridae	Catfishes	Ameiurus melas	Black bullhead catfish	4	4	X				X
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	17	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	75	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	9	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	2	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	7	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	13	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Driftwood Creek	OK621010-03-0030C	25474	26-Jun-02	1	Centrarchidae	Sunfishes	Lepomis microlophus	Redear sunfish	3	2.87	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	41	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	8	Lepisosteidae	Gars	Lepisosteus platostomus	Shortnose gar	3.8	3.3			X		
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	174	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	12	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	62	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	13	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	17	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	16	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	7	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	1	Catostomidae	Suckers	Ictiobus cyprinellus	Largemouth buffalo	3.2	3	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	1	Catostomidae	Suckers	Moxostoma erythrum	Golden redbreast	2.3	2	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	1	Ictaluridae	Catfishes	Ictalurus furcatus	Blue catfish	3.4	3.2	X		X		
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	2	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	1	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	5	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	1	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Chickaskia River: Lower	OK621100-00-0010B	31203	20-Oct-04	3	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Chickaskia Creek: Middle	OK621100-00-0010M	25522	23-Jul-02	5	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Chickaskia Creek: Middle	OK621100-00-0010M	25522	23-Jul-02	900	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Chickaskia Creek: Middle	OK621100-00-0010M	25522	23-Jul-02	1	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Chickaskia Creek: Middle	OK621100-00-0010M	25522	23-Jul-02	3	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Chickaskia Creek: Middle	OK621100-00-0010M	25522	23-Jul-02	528	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Chickaskia Creek: Middle	OK621100-00-0010M	25522	23-Jul-02	7	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	4	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	8	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	268	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	1	Cyprinidae	Carps and minnows	Notemigonus crysoleucas	Golden shiner	3.8	3.8		X			

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Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	4	Cyprinidae	Carps and minnows	Notropis buchanani	Ghost shiner	2.6	2.6	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	21	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	17	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	4	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	103	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	9	Catostomidae	Suckers	Carpiodes carpio	River carpsucker	3.5	3.5		X			
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	33	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	1	Ictaluridae	Catfishes	Ictalurus furcatus	Blue catfish	3.4	3.2	X		X		
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	103	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	9	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	10	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	10	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Chickaskia Creek: Middle	OK621100-00-0010M	28056	13-Aug-03	3	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	1	Lepisosteidae	Gars	Lepisosteus oculatus	Spotted gar	3.5	2.7			X		
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	2	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	181	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	22	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	6	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	1	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	2	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	1	Ictaluridae	Catfishes	Noturus nocturnus	Freckled madtom	2.5	1.8	X				
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	115	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Bitter Creek	OK621100-00-0100G	25521	23-Jul-02	28	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	42	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	28	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	1	Cyprinidae	Carps and minnows	Notemigonus crysoleucas	Golden shiner	3.8	3.8		X			
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	16	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	6	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	5	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	2	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	36	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	39	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	2	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	19	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	3	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	22	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	10	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	4	Percidae	Perches	Etheostoma spectabile	Orangethroat darter	2.4	2	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	1	Percidae	Perches	Percina copelandi	Channel darter	1.8	1.7	X				
Gray Horse Creek	OK621200-01-0400C	25477	03-Jul-02	1	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	1	Lepisosteidae	Gars	Lepisosteus oculatus	Spotted gar	3.5	2.7			X		
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	2	Lepisosteidae	Gars	Lepisosteus platostomus	Shortnose gar	3.8	3.3			X		
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	11	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	11	Cyprinidae	Carps and minnows	Campostoma anomalum	Central stoneroller	2.2	2				X	
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	34	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	4	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	19	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	4	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	46	Cyprinidae	Carps and minnows	Pimephales notatus	Bluntnose minnow	3	2.7		X			
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	18	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	11	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	3	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	4	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	1	Fundulidae	Topminnows	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	83	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	53	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	56	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	27	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	33	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	110	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	5	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	26	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Doga Creek	OK621200-02-0020C	25661	30-Aug-02	2	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	1	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	176	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	8	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	4	Cyprinidae	Carps and minnows	Notropis buchanani	Ghost shiner	2.6	2.6	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	7	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	33	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	1	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	24	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	7	Ictaluridae	Catfishes	Noturus nocturnus	Freckled madtom	2.5	1.8	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	42	Ictaluridae	Catfishes	Pyloodictis olivaris	Flathead catfish	3.3	3			X		
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	31	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	1	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	2	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	2	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	44	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Black Bear Creek: Pawnee Co.	OK621200-03-0010D	28055	06-Aug-03	37	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	10	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	90	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	13	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	18	Cyprinidae	Carps and minnows	Notropis buchanani	Ghost shiner	2.6	2.6	X				
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	1	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	10	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	3	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	5	Ictaluridae	Catfishes	Pyloodictis olivaris	Flathead catfish	3.3	3			X		
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	9	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	4	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	2	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	1	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Black Bear Creek (downstream)	OK621200-03-0010M	27669	24-Jun-03	2	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	4	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	909	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	1	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	9	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	89	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	1	Ictaluridae	Catfishes	Noturus nocturnus	Freckled madtom	2.5	1.8	X				
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	8	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	4	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	4	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Black Bear Creek (upstream)	OK621200-03-0010W	27668	05-Jun-03	1	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	1	Lepisosteidae	Gars	Lepisosteus platostomus	Shortnose gar	3.8	3.3			X		
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	7	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	18	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	174	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			

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Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	33	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	47	Cyprinidae	Carps and minnows	Notropis buchani	Ghost shiner	2.6	2.6	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	13	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	52	Cyprinidae	Carps and minnows	Pimephales notatus	Bluntnose minnow	3	2.7		X			
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	67	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	15	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	2	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	14	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	14	Ictaluridae	Catfishes	Pyloodictis olivaris	Flathead catfish	3.3	3			X		
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	15	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	73	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	5	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	10	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	47	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	38	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	2	Centrarchidae	Sunfishes	Lepomis microlophus	Redear sunfish	3	2.87	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	5	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	3	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	1	Centrarchidae	Sunfishes	Pomoxis nigromaculatus	Black crappie	3.2	2.8			X		
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	3	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	2	Percidae	Perches	Percina copelandi	Channel darter	1.8	1.7	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	9	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Salt Creek: Lower	OK621200-04-0010F	25663	18-Sep-02	2	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	2	Lepisosteidae	Gars	Lepisosteus oculatus	Spotted gar	3.5	2.7			X		
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	5	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	6	Cyprinidae	Carps and minnows	Campostoma anomalum	Central stoneroller	2.2	2				X	
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	2	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	2	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	18	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	22	Cyprinidae	Carps and minnows	Pimephales notatus	Bluntnose minnow	3	2.7		X			
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	1	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	6	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	1	Cyprinidae	Carps and minnows	Platygobio gracilis	Flathead chub	2.3	1.7	X				X
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	1	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	1	Catostomidae	Suckers	Ictiobus niger	Black buffalo	3	3	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	2	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	30	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	15	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	47	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	23	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	37	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	5	Centrarchidae	Sunfishes	Micropterus punctulatus	Spotted bass	2.3	2.5			X		
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	7	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	2	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	2	Percidae	Perches	Etheostoma spectabile	Orangethroat darter	2.4	2	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	6	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Salt Creek: Upper	OK621200-04-0010P	28057	14-Aug-03	1	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	1	Lepisosteidae	Gars	Lepisosteus osseus	Longnose gar	4	3.7			X		
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	31	Cyprinidae	Carp and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	31	Cyprinidae	Carp and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	5	Cyprinidae	Carp and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	7	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	29	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	6	Ictaluridae	Catfishes	Pyiodictis olivaris	Flathead catfish	3.3	3			X		
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	32	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	60	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	2	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	4	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	10	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Red Rock Creek	OK621200-05-0010K	28058	15-Aug-03	7	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	257	Cyprinidae	Carp and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	5	Cyprinidae	Carp and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	4	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	39	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	61	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	10	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	1	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	2	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Red Rock Creek: Upper	OK621200-05-0160G	27667	03-Jun-03	5	Percidae	Perches	Percina phoxocephala	Slenderhead darter	2.2	1.8	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	21	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	41	Cyprinidae	Carp and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	7	Cyprinidae	Carp and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	4	Cyprinidae	Carp and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	6	Cyprinidae	Carp and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	5	Catostomidae	Suckers	Carpoides carpio	River carpsucker	3.5	3.5		X			
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	17	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	2	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	1	Ictaluridae	Catfishes	Pylodictis olivaris	Flathead catfish	3.3	3			X		
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	7	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	5	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	11	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	5	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	2	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	2	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	4	Percidae	Perches	Etheostoma spectabile	Orangethroat darter	2.4	2	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	1	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Beaver Creek: Osage Co.	OK621210-00-0050L	28449	30-Oct-03	3	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	11	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	56	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	10	Cyprinidae	Carps and minnows	Notropis atherinoides	Emerald shiner	3.2	3.2	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	12	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	8	Catostomidae	Suckers	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3		X	X		X
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	25	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	4	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	2	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	28	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	8	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	43	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	16	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	4	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	1	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	3	Percidae	Perches	Etheostoma spectabile	Orangethroat darter	2.4	2	X				
Chilocco Creek	OK621210-00-0270C	28448	30-Oct-03	1	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Bent Creek	OK720500-01-0070D	25658	08-Aug-02	26	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Bent Creek	OK720500-01-0070D	25658	08-Aug-02	85	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Bent Creek	OK720500-01-0070D	25658	08-Aug-02	2	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Bent Creek	OK720500-01-0070D	25658	08-Aug-02	1	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Bent Creek	OK720500-01-0070D	25658	08-Aug-02	35	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Bent Creek	OK720500-01-0070D	25658	08-Aug-02	33	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	1	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	151	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	59	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	18	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	34	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			

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Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	3	Ictaluridae	Catfishes	Ameiurus melas	Black bullhead catfish	4	4	X				X
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	10	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	20	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	26	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	37	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	10	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	3	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	1	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Persimmon Creek	OK720500-01-0150G	25573	18-Jun-02	2	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	89	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	13	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	7	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	3	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	4	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	2	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	1	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Indian Creek: Woodward Co.	OK720500-01-0200D	25574	18-Jun-02	5	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Otter Creek: Harper Co.	OK720500-02-0050B	25571	06-Jun-02	105	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Otter Creek: Harper Co.	OK720500-02-0050B	25571	06-Jun-02	33	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Otter Creek: Harper Co.	OK720500-02-0050B	25571	06-Jun-02	23	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Otter Creek: Harper Co.	OK720500-02-0050B	25571	06-Jun-02	16	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Otter Creek: Harper Co.	OK720500-02-0050B	25571	06-Jun-02	104	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Otter Creek: Harper Co.	OK720500-02-0050B	25571	06-Jun-02	19	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	69	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	22	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	28	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	5	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	2	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	28	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	17	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	43	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	82	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Clear Creek: Harper Co.	OK720500-02-0070G	25572	06-Jul-02	21	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Spring Creek	OK720500-02-0100D	25561	03-Jun-02	5	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Spring Creek	OK720500-02-0100D	25561	03-Jun-02	79	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Spring Creek	OK720500-02-0100D	25561	03-Jun-02	8	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Spring Creek	OK720500-02-0100D	25561	03-Jun-02	148	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Spring Creek	OK720500-02-0100D	25561	03-Jun-02	74	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	196	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	2	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	55	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	7	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	87	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	16	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	184	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	25	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Kiowa Creek: Harper Co.	OK720500-02-0130C	25570	06-Jun-02	3	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	274	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	7	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	183	Cyprinidae	Carps and minnows	Notropis stramineus	Sand shiner	2.7	2.5	X				
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	94	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	11	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	1	Ictaluridae	Catfishes	Ameiurus melas	Black bullhead catfish	4	4	X				X
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	9	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	2	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	3	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	35	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	4	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	7	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	68	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Kiowa Creek: Beaver Co.	OK720500-02-0130K	25569	06-Jun-02	12	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Duck Pond Creek	OK720500-02-0250F	25562	03-Jun-02	1	Lepisosteidae	Gars	Lepisosteus oculatus	Spotted gar	3.5	2.7			X		
Duck Pond Creek	OK720500-02-0250F	25562	03-Jun-02	10	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Duck Pond Creek	OK720500-02-0250F	25562	03-Jun-02	6	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Duck Pond Creek	OK720500-02-0250F	25562	03-Jun-02	95	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Duck Pond Creek	OK720500-02-0250F	25562	03-Jun-02	867	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Duck Pond Creek	OK720500-02-0250F	25562	03-Jun-02	32	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Duck Pond Creek	OK720500-02-0250F	25562	03-Jun-02	5	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	2	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	5	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	21	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	1	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	3	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	40	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	9	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Clear Creek: Beaver Co.	OK720500-02-0300F	25566	05-Jun-02	16	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Palo Duro Creek	OK720500-02-0500G	25565	04-Jun-02	8	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Palo Duro Creek	OK720500-02-0500G	25565	04-Jun-02	1	Cyprinidae	Carps and minnows	Pimephales promelas	Fathead minnow	3.7	3.5		X			
Palo Duro Creek	OK720500-02-0500G	25565	04-Jun-02	130	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	13	Lepisosteidae	Gars	Lepisosteus oculatus	Spotted gar	3.5	2.7			X		
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	5	Clupeidae	Shads and herrings	Dorosoma cepedianum	Gizzard shad	3.3	3.5		X			
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	122	Clupeidae	Shads and herrings	Dorosoma petenense	Threadfin shad	2.3	2.8		X			
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	154	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	1	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	5	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	36	Cyprinidae	Carps and minnows	Pimephales vigilax	Bullhead minnow	3.6	3.4		X			
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	1	Catostomidae	Suckers	Cariodes carpio	River carpsucker	3.5	3.5		X			
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	2	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	14	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	1	Atherinidae	Silversides	Labidesthes sicculus	Brook silverside	2.7	2	X				
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	15	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	1	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	2	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	38	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Wolf Creek: Lower	OK720500-03-0010C	25582	03-Jul-02	17	Centrarchidae	Sunfishes	Pomoxis annularis	White crappie	3.4	3.2			X		
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	67	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	16	Cyprinidae	Carps and minnows	Cyprinus carpio	Common carp	4	3.8		X			
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	1	Cyprinidae	Carps and minnows	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X				
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	1	Ictaluridae	Catfishes	Ameiurus melas	Black bullhead catfish	4	4	X				X
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	2	Ictaluridae	Catfishes	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X				X
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	10	Ictaluridae	Catfishes	Ictalurus punctatus	Channel catfish	3.2	3.3			X		X
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	27	Poeciliidae	Livebearers	Gambusia affinis	Mosquitofish	4	4	X				
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	1	Percichthyidae	Temperate basses	Morone chrysops	White bass	3.3	3			X		
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	31	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	1	Centrarchidae	Sunfishes	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X				
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	16	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	63	Centrarchidae	Sunfishes	Lepomis megalotis	Longear sunfish	3.3	3	X				
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	24	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	4	Percidae	Perches	Percina caprodes	Logperch	2.3	2.3	X				
Wolf Creek: Upper	OK720500-03-0010G	25578	20-Jun-02	2	Sciaenidae	Drums	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X				X
Cold Springs Creek	OK720900-00-0100D	25564	04-Jun-02	5	Fundulidae	Topminnows	Fundulus zebrinus	Plains killifish	3.3	3.2	X				
Cold Springs Creek	OK720900-00-0100D	25564	04-Jun-02	1	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X
Cimarron River: Cimarron Co.	OK720900-00-0180C	25563	04-Jun-02	4	Salmonidae	Trouts	Oncorhynchus mykiss	Rainbow trout	1.2	1.2	X		X		
Cimarron River: Cimarron Co.	OK720900-00-0180C	25563	04-Jun-02	3	Cyprinidae	Carps and minnows	Camptostoma anomalum	Central stoneroller	2.2	2				X	
Cimarron River: Cimarron Co.	OK720900-00-0180C	25563	04-Jun-02	13	Cyprinidae	Carps and minnows	Cyprinella lutrensis	Red shiner	4	3.7		X			
Cimarron River: Cimarron Co.	OK720900-00-0180C	25563	04-Jun-02	108	Centrarchidae	Sunfishes	Lepomis cyanellus	Green sunfish	4	4	X				X

Appendix B. Fish collection data.

Site Name	WBID	SAMPLEID	Date	Total # Specimens	Family	FamCom	Species	VernName	WQMean	HabMean	Insectivore	Omnivore	Piscivore	Herbivore	Generalist
Cimarron River: Cimarron Co.	OK720900-00-0180C	25563	04-Jun-02	229	Centrarchidae	Sunfishes	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X				
Cimarron River: Cimarron Co.	OK720900-00-0180C	25563	04-Jun-02	5	Centrarchidae	Sunfishes	Micropterus salmoides	Largemouth bass	3.2	3.2			X		

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	52	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	39	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	14	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	11	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	8	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocaenia
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	5	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	1	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	1	181.30	Arthropoda	Insecta	Odonata	Corduliidae	Epithea
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Lagoon Creek	OK620900-01-0180J	25462	2/6/2002	25	14	65	1	218.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Isoperla
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	27	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	23	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	23	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	9	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	8	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	5	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	1	122.70	Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	50	4	100	1	281.25	Nematomorpha				
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	43	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	30	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	12	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	2	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Lagoon Creek	OK620900-01-0180J	25483	7/15/2002	100	18	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	51	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	22	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	17	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocaenia
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	8	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	7	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychidae	Isonychia
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	2	122.70	Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	1	17.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Slavina
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Lagoon Creek	OK620900-01-0180J	26582	1/14/2003	13	7	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	46	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	21	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	7	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	1	174.00	Arthropoda	Insecta	Odonata	Aeshnidae	Nasiaeschna
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	100	28	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	9999	5	100	110	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	9999	5	100	20	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	9999	5	100	9	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	9999	5	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	9999	5	100	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Euchee Creek	OK620900-01-0290D	25463	2/18/2002	9999	5	100	1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	128	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	3	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
woody	Euchee Creek	OK620900-01-0290D	25482	7/15/2002	75	6	100	1	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	58	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	20	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	14	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	1	17.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Slavina
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	1	81.00	Arthropoda	Insecta	Coleoptera	Psephenidae	Psephenus
woody	Euchee Creek	OK620900-01-0290D	26585	1/14/2003	100	28	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	37	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	35	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	6	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	5	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	4	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	4	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	2	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	2	218.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Isoperla
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	1	9.00	Annelida	Oligochaeta	Haplotaxida	Lumbricidae	
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	25461	2/6/2002	50	8	70	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
No flow.	Salt Creek: Payne Co.	OK620900-02-0020D	26583	1/14/2003										
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	49	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	15	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	10	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	2	122.70	Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	2	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	1	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	1	170.00	Arthropoda	Insecta	Megaloptera	Sialidae	Sialis
riffle	Salt Creek: Payne Co.	OK620900-02-0020D	28028	7/14/2003	50	20	100	1	213.00	Arthropoda	Insecta	Plecoptera	Perlidae	Neoperla
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	48	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	27	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium

Appendix C. Macroinvertebrate collection data.

Sample type	Site name	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	11	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	8	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	6	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	5	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	4	218.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Isoperla
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	2	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	1	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Council Creek	OK620900-02-0050H	25459	2/6/2002	50	20	100	1	262.00	Mollusca	Gastropoda	Basommatophora	Ancyliidae	Ferrissia
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	41	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	23	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	10	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	6	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	1	9.00	Annelida	Oligochaeta	Haplotaxida	Lumbricidae	
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
woody	Council Creek	OK620900-02-0050H	25459	2/6/2002	100	28	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
No flow.	Council Creek	OK620900-02-0050H	26584	1/14/2003										
No flow.	Council Creek	OK620900-02-0050H	27798	7/7/2003										
veg	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	25	9	50	70	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	25	9	50	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	25	9	50	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	25	9	50	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	25	9	50	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	25	9	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	25	9	50	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	50	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	27	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	2	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	1	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Dugout Creek	OK620900-03-0080C	25149	2/4/2002	100	19	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	60	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	26	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	16	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	5	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	3	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	3	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	2	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	2	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	2	247.00	Arthropoda	Insecta	Trichoptera	Philopotamidae	Chimarra
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	50	10	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	29	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	27	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	17	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	15	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	10	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	10	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	4	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	4	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	2	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Dugout Creek	OK620900-03-0080C	25496	7/18/2002	100	21	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	100	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	17	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	5	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	1	17.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Slavina
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Dugout Creek	OK620900-03-0080C	26721	1/30/2003	25	8	100	1	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
riffle	Dugout Creek	OK620900-03-0080C	28026	7/14/2003	50	12	100	108	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Dugout Creek	OK620900-03-0080C	28026	7/14/2003	50	12	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	49	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	37	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	34	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	18	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	16	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	13	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	9	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	5	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	4	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	3	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	2	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	1	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	13	7	80	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	20	90.00	Arthropoda	Insecta	Chironomida	Chironomidae	Chironomini
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	20	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	9	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	9	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	7	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	3	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	3	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	2	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	2	281.50	Nemertea	Enopla	Hoplonemertea	Tetrastemmatidae	Prostoma
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	25148	2/4/2002	50	12	75	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	43	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	7	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	5	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	4	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	3	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	2	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	25356	8/20/2002	25	16	75	1	130.10	Arthropoda	Insecta	Ephemeroptera	Caenidae	Brachycercus
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	67	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	18	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	7	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	3	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	75	18	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	64	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	1	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	1	120.00	Arthropoda	Insecta	Diptera	Tipulidae	Tipula
veg	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	28	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	21	100	73	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	21	100	43	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	21	100	1	9.00	Annelida	Oligochaeta	Haplotaxida	Lumbricidae	
woody	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	21	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Beaver Creek: Logan Co.	OK620900-03-0230C	26763	2/10/2003	100	21	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	20	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	15	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	11	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	8	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	8	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	8	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	5	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	3	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	2	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
riffle	Beaver Creek: Logan Co.	OK620900-03-0230C	27928	7/3/2003	50	17	100	1	164.00	Arthropoda	Insecta	Lepidoptera	Pyrilidae	Petrophila
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	27	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	27	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	24	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	15	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	10	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	10	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	8	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	1	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	50	11	90	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	100	14	100	52	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	100	14	100	32	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	100	14	100	12	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	100	14	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	100	14	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	100	14	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Stillwater Creek: Lower	OK620900-04-0040C	25460	2/6/2002	100	14	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	35	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	29	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	12	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	5	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	4	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	3	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	6	6	60	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
woody	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	13	7	100	65	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	13	7	100	34	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	13	7	100	20	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	13	7	100	11	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	13	7	100	11	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	13	7	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Stillwater Creek: Lower	OK620900-04-0040C	25495	7/18/2002	13	7	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	38	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	30	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	13	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	4	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	25	6	80	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	34	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	17	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	11	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	4	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	1	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Stillwater Creek: Lower	OK620900-04-0040C	28038	7/15/2003	13	15	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	26	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	23	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	12	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	9	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	9	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	5	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	5	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	2	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
rifle	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	25	21	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	55	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	12	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	11	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	7	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	7	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	5	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	3	128.80	Arthropoda	Insecta	Ephemeroptera	Baetidae	Procloeon
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	3	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Stillwater Creek: Lower	OK620900-04-0040C	30777	8/3/2004	100	11	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	86	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	29	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	8	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	7	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	1	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	1	122.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Stillwater Creek: Upper	OK620900-04-0070T	25355	7/16/2002	100	10	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	25	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	11	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	9	12.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Chaetogaster
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	9	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	7	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	5	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	3	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	2	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	2	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	88.05	Arthropoda	Insecta	Diptera	Ceratopogonidae	Palpomyia
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	18	100	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	25	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	24	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	17	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	8	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	7	12.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Chaetogaster
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	7	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	3	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	2	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	1	258.05	Coelenterata	Hydrozoa	Hydroida	Hydridae	Hydra
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	1	17.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Slavina
woody	Stillwater Creek: Upper	OK620900-04-0070T	26768	2/11/2003	100	14	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	12	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	10	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	3	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	2	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	2	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Stillwater Creek: Upper	OK620900-04-0070T	27932	7/18/2003	25	21	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	9	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	7	174.00	Arthropoda	Insecta	Odonata	Aeshnidae	Nasiaeschna
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	2	99.65	Arthropoda	Insecta	Diptera	Ephydriidae	Hydrellia
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	2	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	31.10	Arthropoda	Crustacea	Decapoda	Cambaridae	Cambarus
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	87.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	128.80	Arthropoda	Insecta	Ephemeroptera	Baetidae	Procloeon
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	180.10	Arthropoda	Insecta	Odonata	Coenagrionidae	Ischnura
veg	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	28	100	1	269.50	Mollusca	Gastropoda	Basommatophora	Planorbidae	Helisoma
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	43	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	19	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	12	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	2	88.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	Forcipomyia
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	1	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Stillwater Creek: Upper	OK620900-04-0070T	30778	8/3/2004	100	18	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	62	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	15	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	11	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	9	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	9	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	5	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Cooper Creek	OK620910-02-0040C	25133	1/28/2002	13	5	100	1	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
woody	Cooper Creek	OK620910-02-0040C	25371	7/16/2002	50	12	100	81	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Cooper Creek	OK620910-02-0040C	25371	7/16/2002	50	12	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Cooper Creek	OK620910-02-0040C	25371	7/16/2002	50	12	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Cooper Creek	OK620910-02-0040C	25371	7/16/2002	50	12	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Cooper Creek	OK620910-02-0040C	25371	7/16/2002	50	12	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Cooper Creek	OK620910-02-0040C	25371	7/16/2002	50	12	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Cooper Creek	OK620910-02-0040C	26754	2/4/2003	50	15	100	41	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Cooper Creek	OK620910-02-0040C	26754	2/4/2003	50	15	100	6	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Cooper Creek	OK620910-02-0040C	26754	2/4/2003	50	15	100	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Cooper Creek	OK620910-02-0040C	26754	2/4/2003	50	15	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Cooper Creek	OK620910-02-0040C	26754	2/4/2003	50	15	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Cooper Creek	OK620910-02-0040C	26754	2/4/2003	50	15	100	2	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Cooper Creek	OK620910-02-0040C	26754	2/4/2003	50	15	100	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	70	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	3	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	1	87.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Cooper Creek	OK620910-02-0040C	27923	7/2/2003	50	14	100	1	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
riffle	Salt Creek: Kingfisher	OK620910-02-0100D	25183	1/28/2002	50	11	25	62	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Salt Creek: Kingfisher	OK620910-02-0100D	25183	1/28/2002	50	11	25	33	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Salt Creek: Kingfisher	OK620910-02-0100D	25183	1/28/2002	50	11	25	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25183	1/28/2002	100	28	50	18	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25183	1/28/2002	100	28	50	2	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25183	1/28/2002	100	28	50	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	5	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	4	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	1	107.80	Arthropoda	Insecta	Diptera	Stratiomyidae	Nemotelus
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
veg	Salt Creek: Kingfisher	OK620910-02-0100D	25372	7/17/2002	50	6	60	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Salt Creek: Kingfisher	OK620910-02-0100D	26752	2/3/2003	50	12	100	84	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Salt Creek: Kingfisher	OK620910-02-0100D	26752	2/3/2003	50	12	100	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Salt Creek: Kingfisher	OK620910-02-0100D	26752	2/3/2003	50	12	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Salt Creek: Kingfisher	OK620910-02-0100D	26752	2/3/2003	50	12	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Salt Creek: Kingfisher	OK620910-02-0100D	27937	7/24/2003	50	18	100	4	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Salt Creek: Kingfisher	OK620910-02-0100D	27937	7/24/2003	50	18	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Salt Creek: Kingfisher	OK620910-02-0100D	27937	7/24/2003	50	18	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Salt Creek: Kingfisher	OK620910-02-0100D	27937	7/24/2003	50	18	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Salt Creek: Kingfisher	OK620910-02-0100D	27937	7/24/2003	50	18	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Deep Creek	OK620910-02-0250C	25184	1/28/2002	25	8	75	187	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Deep Creek	OK620910-02-0250C	25184	1/28/2002	25	8	75	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Deep Creek	OK620910-02-0250C	25184	1/28/2002	25	8	75	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Deep Creek	OK620910-02-0250C	25184	1/28/2002	25	8	75	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Deep Creek	OK620910-02-0250C	25184	1/28/2002	25	8	75	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Deep Creek	OK620910-02-0250C	25184	1/28/2002	25	8	75	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Deep Creek	OK620910-02-0250C	25184	1/28/2002	25	8	75	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyralidae	
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	122	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	2	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	1	99.65	Arthropoda	Insecta	Diptera	Ephydriidae	Hydrellia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyrilidae	
veg	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	7	70	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
woody	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	4	100	107	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	4	100	12	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	4	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Deep Creek	OK620910-02-0250C	25184	1/28/2002	50	4	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	3	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	2	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Deep Creek	OK620910-02-0250C	25373	7/17/2002	25	7	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	38	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	23	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	2	12.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Chaetogaster
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	2	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	1	99.65	Arthropoda	Insecta	Diptera	Ephydriidae	Hydrellia
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Deep Creek	OK620910-02-0250C	26751	2/3/2003	25	14	100	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	61	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	3	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	3	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloeodes
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	2	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Deep Creek	OK620910-02-0250C	27936	7/24/2003	25	10	100	1	262.00	Mollusca	Gastropoda	Basommatophora	Ancyliidae	Ferrissia
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	96	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	18	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	8	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	3	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	2	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	8	60	1	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	7	100	127	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	7	100	15	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	7	100	12	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	7	100	5	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	7	100	4	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	7	100	3	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Indian Creek: Major Co.	OK620910-02-0310C	25185	1/28/2002	50	7	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	29	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	17	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	15	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	13	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	10	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	9	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	9	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	7	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Indian Creek: Major Co.	OK620910-02-0310C	25374	7/17/2002	25	4	50	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
veg	Indian Creek: Major Co.	OK620910-02-0310C	26750	2/3/2003	50	12	100	71	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Indian Creek: Major Co.	OK620910-02-0310C	26750	2/3/2003	50	12	100	13	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Indian Creek: Major Co.	OK620910-02-0310C	26750	2/3/2003	50	12	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Indian Creek: Major Co.	OK620910-02-0310C	26750	2/3/2003	50	12	100	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Indian Creek: Major Co.	OK620910-02-0310C	26750	2/3/2003	50	12	100	1	192.85	Arthropoda	Insecta	Odonata	Libellulidae	Miathyria
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	9	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	8	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	7	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	5	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	4	88.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	Forcipomyia
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	192.00	Arthropoda	Insecta	Odonata	Libellulidae	
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Indian Creek: Major Co.	OK620910-02-0310C	27935	7/24/2003	25	8	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	43	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	34	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	33	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	29	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	14	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	12	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	8	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	8	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	6	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	6	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	5	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	2	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	1	120.00	Arthropoda	Insecta	Diptera	Tipulidae	Tipula
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	25	6	50	1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	83	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	7	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	5	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	3	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	2	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Skeleton Creek: Lower	OK620910-03-0010F	25147	2/4/2002	50	15	80	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	56	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	23	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	20	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	7	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	5	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	3	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Skeleton Creek: Lower	OK620910-03-0010F	25479	7/8/2002	100	1	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	35	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	31	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	8	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	4	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	26762	2/10/2003	100	28	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Skeleton Creek: Upper	OK620910-03-0010F	26762	2/10/2003	100	28	100	6	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Skeleton Creek: Upper	OK620910-03-0010F	26762	2/10/2003	100	28	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	64	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	11	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	8	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	5	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	5	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	5	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	2	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	2	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	1	8.50	Annelida	Oligochaeta	Haplotaxida	Glossoscolecidae	Sparganophilus
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	1	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Skeleton Creek: Lower	OK620910-03-0010F	27927	7/3/2003	50	7	100	1	195.00	Arthropoda	Insecta	Odonata	Macromiinae	Macromia
woody	Skeleton Creek: Upper	OK620910-03-0010S	25137	1/28/2002	25	17	100	83	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Skeleton Creek: Upper	OK620910-03-0010S	25137	1/28/2002	25	17	100	40	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Skeleton Creek: Upper	OK620910-03-0010S	25137	1/28/2002	25	17	100	6	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Skeleton Creek: Upper	OK620910-03-0010S	25137	1/28/2002	25	17	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Skeleton Creek: Upper	OK620910-03-0010S	25137	1/28/2002	25	17	100	5	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Skeleton Creek: Upper	OK620910-03-0010S	25137	1/28/2002	25	17	100	2	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Skeleton Creek: Upper	OK620910-03-0010S	25137	1/28/2002	25	17	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	69	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	29	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	10	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	8	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	5	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	3	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
veg	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	6	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	78	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	24	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	13	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	2	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	1	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
woody	Skeleton Creek: Upper	OK620910-03-0010S	25481	7/8/2002	50	8	100	1	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
woody	Skeleton Creek: Upper	OK620910-03-0010S	26760	2/10/2003	100	28	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Skeleton Creek: Upper	OK620910-03-0010S	26760	2/10/2003	100	28	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	43	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	23	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	10	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	6	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	5	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Skeleton Creek: Upper	OK620910-03-0010S	27925	7/3/2003	50	13	100	1	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	159	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	19	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	9	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	7	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	13	5	30	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	92	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	28	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	8	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	5	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25138	1/28/2002	25	9	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	84	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	17	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	11	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	7	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	3	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	3	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	2	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	1	9.00	Annelida	Oligochaeta	Haplotaxida	Lumbricidae	
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	10	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	57	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	49	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	10	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	10	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	9	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	6	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	2	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Otter Creek: Logan Co.	OK620910-03-0040C	25480	7/8/2002	25	6	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	25	8	100	94	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	25	8	100	9	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	25	8	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	25	8	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	75	15	100	86	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	75	15	100	24	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	75	15	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	75	15	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	75	15	100	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	75	15	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Otter Creek: Logan Co.	OK620910-03-0040C	26761	2/10/2003	75	15	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	99	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	7	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	7	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	5	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	4	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	1	170.00	Arthropoda	Insecta	Megaloptera	Sialidae	Sialis
riffle	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	7	100	1	247.00	Arthropoda	Insecta	Trichoptera	Philopotamidae	Chimarra
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	47	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	19	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	16	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Trichopogon
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	5	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Otter Creek: Logan Co.	OK620910-03-0040C	27926	7/3/2003	50	10	100	1	128.80	Arthropoda	Insecta	Ephemeroptera	Baetidae	Proclleon
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	38	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	3	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	2	117.00	Arthropoda	Insecta	Diptera	Tipulidae	Hexatoma
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	1	30.00	Arthropoda	Crustacea	Decapoda	Astacidae	
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	28	50	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	31	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	15	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	13	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	7	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	6	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	5	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	4	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyrilidae	
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Cottonwood Creek	OK620910-04-0010D	25150	2/4/2002	100	25	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	40	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	14	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	7	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	6	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	2	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Cottonwood Creek	OK620910-04-0010D	25478	7/8/2002	50	10	90	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	88	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	1	252.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Polycentropus
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	1	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
woody	Cottonwood Creek	OK620910-04-0010D	26764	2/10/2003	100	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	22	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	21	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	17	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	13	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	1	88.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	Forcipomyia
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paraclaoedes
woody	Cottonwood Creek	OK620910-04-0010D	27929	7/18/2003	100	7	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	91	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	65	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	27	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	8	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	3	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	1	23.20	Arthropoda	Acari	Arcarina	Hygrobatidae	Atractides
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	5	80	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	4	100	133	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	4	100	14	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	4	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	4	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	4	100	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Kingfisher Creek	OK620910-05-0010J	25134	1/28/2002	6	4	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		55	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		23	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		18	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		4	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		3	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		2	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	4		1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		47	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		20	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		17	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		5	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		3	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		3	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		3	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		1	87.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		1	88.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	Forcipomyia
woody	Kingfisher Creek	OK620910-05-0010J	25368	7/16/2002	25	7		1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	17	100	88	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	17	100	41	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	17	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	17	100	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	17	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	17	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	13	100	94	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	13	100	29	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	13	100	1	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
woody	Kingfisher Creek	OK620910-05-0010J	26755	2/4/2003	50	13	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	33	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	19	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	13	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	13	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	11	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	8	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	6	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloeodes
riffle	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	13	5	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	20	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	20	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	16	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	7	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	7	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	5	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	3	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Kingfisher Creek	OK620910-05-0010J	27922	7/2/2003	50	13	100	1	235.50	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Ochrotrichia
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	139	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	96	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	22	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	18	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	15	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	10	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	9	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	3	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	2	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	5	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	34	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	19	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	9	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	6	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	3	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	25	14	100	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	112	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	46	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	5	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	3	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Uncle John's Creek	OK620910-05-0030C	25135	1/28/2002	13	15	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	36	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	32	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	5	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	3	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	2	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
woody	Uncle John's Creek	OK620910-05-0030C	25369	7/16/2002	50	17	50	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
veg	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	75	14	100	62	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	75	14	100	31	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	75	14	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	75	14	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	75	14	100	1	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	72	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	38	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	10	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	1	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Uncle John's Creek	OK620910-05-0030C	26757	2/4/2003	50	11	100	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	20	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	10	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	9	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	6	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	235.60	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Oxyethira
veg	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	54	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	13	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	122.70	Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna
woody	Uncle John's Creek	OK620910-05-0030C	27920	7/2/2003	25	6	100	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	99	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	42	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	7	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	7	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Dead Indian Creek	OK620910-05-0080D	25136	1/28/2002	25	8	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	38	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	36	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	14	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	10	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	6	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	5	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
rifle	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	6	5	100	1	281.50	Nemertea	Enopla	Hoplonemertea	Tetrastemmatidae	Prostoma
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	61	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	17	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	11	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	6	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	6	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	3	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	3	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	2	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	1	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	1	137.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Dead Indian Creek	OK620910-05-0080D	25367	7/16/2002	25	5	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	88	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	37	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	5	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	4	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
rifle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	10	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	12	100	75	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	12	100	25	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	12	100	4	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	12	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Dead Indian Creek	OK620910-05-0080D	26756	2/4/2003	50	12	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	46	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	16	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	12	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	6	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	4	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	4	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	2	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	5	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	22	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	17	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	13	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	13	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	5	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	3	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	2	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	11	75	1	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	24	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	19	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	9	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	4	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	4	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	3	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	2	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	2	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	1	1.50	Annelida	Branchiobdellida			
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	1	30.00	Arthropoda	Crustacea	Decapoda	Astacidae	
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Dead Indian Creek	OK620910-05-0080D	27921	7/2/2003	25	16	100	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloeodes
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	81	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	1	9.00	Annelida	Oligochaeta	Haplotaxida	Lumbricidae	
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	24	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	46	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	29	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	10	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	4	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cymellus
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	1	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
woody	Turkey Creek: Lower	OK620910-06-0010B	25132	1/28/2002	13	8	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	61	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	24	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	4	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	3	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	2	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Artrichopogon
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Turkey Creek: Lower	OK620910-06-0010B	25370	7/16/2002	25	9	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Turkey Creek: Lower	OK620910-06-0010B	26753	2/4/2003	50	11	100	56	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Turkey Creek: Lower	OK620910-06-0010B	26753	2/4/2003	50	11	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Turkey Creek: Lower	OK620910-06-0010B	26753	2/4/2003	50	11	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Turkey Creek: Lower	OK620910-06-0010B	26753	2/4/2003	50	11	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Turkey Creek: Lower	OK620910-06-0010B	26753	2/4/2003	50	11	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	23	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	16	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	12	128.80	Arthropoda	Insecta	Ephemeroptera	Baetidae	Proclaeon
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	1	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Turkey Creek: Lower	OK620910-06-0010B	27924	7/2/2003	50	14	100	1	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	39	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	33	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	30	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	16	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	14	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	12	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	7	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	5	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	4	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	9	90	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	104	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	21	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	11	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	6	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	2	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Turkey Creek: Upper	OK620910-06-0010T	25186	1/28/2002	50	6	100	1	91.00	Arthropoda	Insecta	Diptera	Chironomidae	Diamesinae
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		26	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		24	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		20	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		17	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		10	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		1	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		1	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Turkey Creek: Upper	OK620910-06-0010T	25376	7/17/2002	75	10		1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	84	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	21	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	7	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	4	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	50	6	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	25	12	100	33	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	25	12	100	5	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	25	12	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	25	12	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	25	12	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Turkey Creek: Upper	OK620910-06-0010T	26748	2/3/2003	25	12	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Turkey Creek: Upper	OK620910-06-0010T	27933	7/24/2003	50	7	100	5	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Turkey Creek: Upper	OK620910-06-0010T	27933	7/24/2003	50	7	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Turkey Creek: Upper	OK620910-06-0010T	27933	7/24/2003	50	7	100	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Turkey Creek: Upper	OK620910-06-0010T	27933	7/24/2003	50	7	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Turkey Creek: Upper	OK620910-06-0010T	27933	7/24/2003	50	7	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Turkey Creek: Upper	OK620910-06-0010T	27933	7/24/2003	50	7	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Turkey Creek: Upper	OK620910-06-0010T	27933	7/24/2003	50	7	100	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	41	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	40	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	18	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	8	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	6	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	6	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	3	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
rifle	Griever Creek	OK620920-01-0130G	25188	1/28/2002	25	5	75	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	58	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	28	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	25	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	10	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyalidae	
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Griever Creek	OK620920-01-0130G	25188	1/28/2002	50	10	60	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	97	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	9	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	3	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini

Appendix C. Macroinvertebrate collection data.

Sample type	Site name	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Griever Creek	OK620920-01-0130G	25341	8/5/2002	25	10	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Griever Creek	OK620920-01-0130G	26688	1/13/2003	25	5	100	112	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Griever Creek	OK620920-01-0130G	26688	1/13/2003	25	5	100	22	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Griever Creek	OK620920-01-0130G	26688	1/13/2003	25	5	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Griever Creek	OK620920-01-0130G	26688	1/13/2003	25	5	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	23	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	15	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	8	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	6	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	2	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	1	192.50	Arthropoda	Insecta	Odonata	Libellulidae	Brechmorhoga
riffle	Griever Creek	OK620920-01-0130G	28004	7/18/2003	25	15	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	50	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	18	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	7	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	3	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	3	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	3	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	3	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	2	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
veg	Main Creek	OK620920-01-0180F	25189	1/28/2002	50	5	75	1	235.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Ithytrichia
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	22	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	14	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	10	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	7	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	6	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	5	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	3	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche

Appendix C. Macroinvertebrate collection data.

Sample type	Site name	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	1	195.00	Arthropoda	Insecta	Odonata	Macromiinae	Macromia
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Main Creek	OK620920-01-0180F	25342	8/5/2002	100	12	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Main Creek	OK620920-01-0180F	26687	1/13/2003	25	7	50	116	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Main Creek	OK620920-01-0180F	26687	1/13/2003	25	7	50	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Main Creek	OK620920-01-0180F	26687	1/13/2003	25	7	50	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Main Creek	OK620920-01-0180F	26687	1/13/2003	25	7	50	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Main Creek	OK620920-01-0180F	26687	1/13/2003	25	7	50	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Main Creek	OK620920-01-0180F	26687	1/13/2003	25	7	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Main Creek	OK620920-01-0180F	26687	1/13/2003	25	7	50	1	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	17	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	13	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	12	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	11	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	5	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	2	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	1	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
veg	Main Creek	OK620920-01-0180F	28003	7/18/2003	100	10	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	63	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	19	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	12	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	9	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	7	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	5	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	4	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	2	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	1	117.00	Arthropoda	Insecta	Diptera	Tipulidae	Hexatoma
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	14	60	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	19	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	15	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	8	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	8	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	7	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	7	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	6	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	6	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	4	19.00	Annelida	Oligochaeta	Haplotaenida	Tubificidae	Limnodrilus
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Long Creek	OK620920-02-0080D	25441	1/29/2002	100	10	60	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	62	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	30	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	7	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	1	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Long Creek	OK620920-02-0080D	25593	8/2/2002	25	12	75	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	69	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	22	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	21	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	3	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	3	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	18	75	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	61	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	24	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	20	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	14	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	5	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	1	136.10	Arthropoda	Insecta	Ephemeroptera	Ephemeridae	Hexagenia
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Long Creek	OK620920-02-0080D	26709	1/21/2003	50	13	90	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	49	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	13	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	11	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	3	195.00	Arthropoda	Insecta	Odonata	Macromiinae	Macromia
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	1	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
rifle	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	1	281.50	Nemertea	Enopla	Hoploneurtea	Tetrastemmatidae	Prostoma
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	18	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	17	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	9	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	8	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	6	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	5	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Long Creek	OK620920-02-0080D	28002	7/18/2003	50	12	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	132	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	29	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	12	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	6	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	3	161.00	Arthropoda	Insecta	Lepidoptera	Pyalidae	

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	2	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	2	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	2	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	1	18.10	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Aulodrilus
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	1	136.10	Arthropoda	Insecta	Ephemeroptera	Ephemeridae	Hexagenia
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	25	8	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	65	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	17	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	15	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	10	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	10	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	87.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	99.00	Arthropoda	Insecta	Diptera	Empididae	Hemerodromia
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cynnellus
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25187	1/28/2002	50	11	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	32	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	13	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	9	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	8	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	6	130.10	Arthropoda	Insecta	Ephemeroptera	Caenidae	Brachycercus
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	3	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	3	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	3	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	2	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	1	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	25375	7/17/2002	75	12	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	26749	2/3/2003	100	7	100	87	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	26749	2/3/2003	100	7	100	34	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	26749	2/3/2003	100	7	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	26749	2/3/2003	100	7	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	22	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	14	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	13	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	11	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloecodes
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	3	128.80	Arthropoda	Insecta	Ephemeroptera	Baetidae	Proclaeon
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Eagle Chief Creek: Lower	OK620920-04-0010C	27934	7/24/2003	50	8	100	1	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	29	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	21	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	9	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	6	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	2	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloecodes
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychidae	Isonychia
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	25384	7/19/2002	50	17	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27712	2/11/2003	50	7	100	113	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27712	2/11/2003	50	7	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27712	2/11/2003	50	7	100	1	10.00	Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	
veg	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27712	2/11/2003	100	7	100	89	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27712	2/11/2003	100	7	100	8	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27712	2/11/2003	100	7	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	21	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	13	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	6	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	6	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	2	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	1	101.00	Arthropoda	Insecta	Diptera	Psychodidae	Pericoma
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Eagle Chief Creek: Woods Co.	OK620920-04-0010G	27997	7/17/2003	25	11	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	51	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	24	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	19	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	8	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	7	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	5	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	3	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	3	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
riffle	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	10	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	71	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	26	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	20	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	5	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyralidae	
veg	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	50	8	50	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	93	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	31	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	31	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	17	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	2	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	2	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	2	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Buffalo Creek: Lower	OK620920-05-0010G	25182	1/23/2002	25	9	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	27	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	20	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	12	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	6	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	6	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	3	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	2	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	2	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	1	170.00	Arthropoda	Insecta	Megaloptera	Sialidae	Sialis
veg	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	7	75	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	35	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	12	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	9	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	8	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	7	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	6	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	5	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	4	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	3	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	3	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	2	192.97	Arthropoda	Insecta	Odonata	Libellulidae	Platthemis
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Chumatopsyche
woody	Buffalo Creek: Lower	OK620920-05-0010G	25591	8/2/2002	50	2	80	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	101	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	26	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	6	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	50	8	66	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	44	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	20	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	11	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	7	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	25	10	75	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
woody	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	100	21	100	90	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	100	21	100	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	100	21	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	100	21	100	2	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
woody	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	100	21	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	100	21	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Buffalo Creek: Lower	OK620920-05-0010G	26677	1/30/2003	100	21	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	17	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	17	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	2	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	2	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	2	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	1	31.10	Arthropoda	Crustacea	Decapoda	Cambaridae	Cambarus
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	50	28	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	100	28	100	10	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	100	28	100	6	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	100	28	100	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	100	28	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	100	28	100	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Buffalo Creek: Lower	OK620920-05-0010G	28001	7/18/2003	100	28	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	48	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	27	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	27	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	18	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	8	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	3	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	2	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	2	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	13	50	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	61	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	31	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	22	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	12	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	5	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcyloepus
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	9	100	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	39	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	30	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	22	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	6	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	4	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcyloepus
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	2	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Buffalo Creek: Upper	OK620920-05-0010P	25440	1/29/2002	50	11	100	1	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	52	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	44	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	11	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	4	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	3	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	1	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	8	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	93	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	4	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Buffalo Creek: Upper	OK620920-05-0010P	25592	8/2/2002	50	4	66	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	6	100	93	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	6	100	7	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	6	100	5	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	6	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	6	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	6	100	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	6	100	1	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	4	50	103	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	4	50	8	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	4	50	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	4	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	25	4	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	50	7	100	91	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	50	7	100	9	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	50	7	100	8	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	50	7	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	50	7	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	50	7	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Buffalo Creek: Upper	OK620920-05-0010P	26676	1/30/2003	50	7	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	22	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	6	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	50	7	100	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	10	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	9	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	7	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	7	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	3	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Buffalo Creek: Upper	OK620920-05-0010P	27999	7/19/2003	25	17	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Sand Creek	OK620920-05-0050G	25439	1/29/2002	50	13	75	45	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Sand Creek	OK620920-05-0050G	25439	1/29/2002	50	13	75	40	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
woody	Sand Creek	OK620920-05-0050G	25439	1/29/2002	50	13	75	20	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Sand Creek	OK620920-05-0050G	25439	1/29/2002	50	13	75	5	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Sand Creek	OK620920-05-0050G	25439	1/29/2002	50	13	75	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Sand Creek	OK620920-05-0050G	25439	1/29/2002	50	13	75	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Sand Creek	OK620920-05-0050G	25439	1/29/2002	50	13	75	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Sand Creek	OK620920-05-0050G	25551	7/29/2002	25	4	33	108	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Sand Creek	OK620920-05-0050G	25551	7/29/2002	25	4	33	10	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Sand Creek	OK620920-05-0050G	25551	7/29/2002	25	4	33	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Sand Creek	OK620920-05-0050G	25551	7/29/2002	25	4	33	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Sand Creek	OK620920-05-0050G	25551	7/29/2002	25	4	33	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Sand Creek	OK620920-05-0050G	26675	1/30/2003	50	7	75	92	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Sand Creek	OK620920-05-0050G	26675	1/30/2003	50	7	75	4	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Sand Creek	OK620920-05-0050G	26675	1/30/2003	50	7	75	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Sand Creek	OK620920-05-0050G	26675	1/30/2003	50	7	75	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Sand Creek	OK620920-05-0050G	26675	1/30/2003	50	7	75	1	116.50	Arthropoda	Insecta	Diptera	Tipulidae	Helius
veg	Sand Creek	OK620920-05-0050G	26675	1/30/2003	50	7	75	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Sand Creek	OK620920-05-0050G	26675	1/30/2003	50	7	75	1	252.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Polycentropus
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	112	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	15	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	9	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	7	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Cimarron River	OK620930-00-0010T	25433	1/29/2002	13	4	50	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	119	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	4	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	2	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	170.00	Arthropoda	Insecta	Megaloptera	Sialidae	Sialis
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Cimarron River	OK620930-00-0010T	25512	7/22/2002	25	4	70	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	50	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	35	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	23	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	1	120.00	Arthropoda	Insecta	Diptera	Tipulidae	Tipula
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Cimarron River	OK620930-00-0010T	26699	1/14/2003	25	6	50	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	51	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	4	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Cimarron River	OK620930-00-0010T	27826	7/14/2003	13	8	100	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	47	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	5	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	5	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	3	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Crooked Creek	OK620930-00-0100G	25379	7/18/2002	25	5	100	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	27	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	21	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	16	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	12	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	11	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	4	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	2	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	2	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	1	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	1	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progompus
veg	Crooked Creek	OK620930-00-0100G	25511	7/22/2002	50	11	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	93	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	9	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	6	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	1	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Crooked Creek	OK620930-00-0100G	26700	1/14/2003	25	7	66	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
riffle	Crooked Creek	OK620930-00-0100G	26630	1/21/2003	25	10	100	90	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Crooked Creek	OK620930-00-0100G	26630	1/21/2003	25	10	100	70	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Crooked Creek	OK620930-00-0100G	26630	1/21/2003	25	10	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Crooked Creek	OK620930-00-0100G	26630	1/21/2003	25	10	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	30	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	24	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	10	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	9	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	6	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progompus
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	3	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	3	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	2	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	1	192.50	Arthropoda	Insecta	Odonata	Libellulidae	Brechmorhoga
riffle	Crooked Creek	OK620930-00-0100G	27827	7/14/2003	50	13	75	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	100	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	13	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	1	23.00	Arthropoda	Acari	Acarina		
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	1	18.10	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Aulodrilus
woody	Wild Horse Creek	OK621000-02-0040F	25378	7/18/2002	50	10	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
No flow.	Wild Horse Creek	OK621000-02-0040F	26629	1/21/2003										
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	28	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	16	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	13	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	9	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	6	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	3	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	2	23.00	Arthropoda	Acari	Acarina		
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	235.60	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Oxyethira
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
woody	Wild Horse Creek	OK621000-02-0040F	27990	7/17/2003	50	26	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	63	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	14	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	12	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	12	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	12	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	5	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	4	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Bois d'Arc Creek	OK621000-03-0010C	25444	2/4/2002	25	4	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	39	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	30	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	27	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	18	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	12	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	11	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	11	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	10	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	6	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	5	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	2	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	2	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Bois d'Arc Creek	OK621000-03-0010C	25507	7/18/2002	100	7	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	103	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	32	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	29	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	10	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	10	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	6	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	2	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
rifle	Bois d'Arc Creek	OK621000-03-0010C	26601	1/14/2003	100	15	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	8	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	1	18.30	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Ilyodrilus
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	1	136.10	Arthropoda	Insecta	Ephemeroptera	Ephemeridae	Hexagenia
veg	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	28	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	43	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	37	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	7	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	5	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	2	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Deer Creek	OK621000-04-0010D	25140	1/29/2002	100	19	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	33	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	31	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	21	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	12	117.00	Arthropoda	Insecta	Diptera	Tipulidae	Hexatoma
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	8	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	8	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	7	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	5	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	4	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	3	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	2	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	2	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	2	247.00	Arthropoda	Insecta	Trichoptera	Philopotamidae	Chimarra
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Deer Creek	OK621000-04-0010D	25508	7/18/2002	100	7	100	1	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
No flow.	Deer Creek	OK621000-04-0010D	26603	1/14/2003										
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	29	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	18	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	10	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	9	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	4	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	2	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Deer Creek	OK621000-04-0010D	27787	7/8/2003	25	10	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	65	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	41	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	5	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	3	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	1	17.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Slavina
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Pond Creek	OK621000-05-0010D	25141	1/29/2002	50	10	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	66	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	4	11.50	Annelida	Oligochaeta	Haplotaxida	Naididae	Bratislavia
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	3	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
woody	Pond Creek	OK621000-05-0010D	25377	7/18/2002	50	5	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
No flow!	Pond Creek	OK621000-05-0010D	26628	1/21/2003										
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	26	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	23	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	17	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	12	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Pond Creek	OK621000-05-0010D	27989	7/17/2003	50	15	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	79	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	33	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	10	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	3	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	3	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	3	279.00	Mollusca	Pelecypoda	Veneroidea	Sphaeriidae	Sphaerium
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	1	18.10	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Aulodrilus
rifle	Crooked Creek: Grant Co.	OK621000-06-0010C	25142	1/29/2002	3	5	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	68	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	18	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	11	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloeodes
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Crooked Creek: Grant Co.	OK621000-06-0010C	27991	7/17/2003		6	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		64	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		44	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		20	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		17	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		15	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		4	18.10	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Aulodrilus
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	50	6		1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
woody	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	25	7	100	75	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	25	7	100	18	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	25	7	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	25	7	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	25	7	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Salt Fork of Arkansas River	OK621010-01-0010D	25383	7/18/2002	25	7	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
No flow!	Salt Fork of Arkansas River	OK621010-01-0010D	26631	1/21/2003										
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	56	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	13	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	5	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	4	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia

Appendix C. Macroinvertebrate collection data.

Sample type	Site name	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	4	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Salt Fork of Arkansas River	OK621010-01-0010D	27992	7/17/2003	50	16	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Clay Creek	OK621010-01-0090R	25445	2/4/2002	50	7	100	33	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Clay Creek	OK621010-01-0090R	25445	2/4/2002	50	7	100	29	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Clay Creek	OK621010-01-0090R	25445	2/4/2002	50	7	100	4	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Clay Creek	OK621010-01-0090R	25445	2/4/2002	50	7	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Clay Creek	OK621010-01-0090R	25445	2/4/2002	50	7	100	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
woody	Clay Creek	OK621010-01-0090R	25445	2/4/2002	50	7	100	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	41	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	19	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	14	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	14	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	4	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	1	107.80	Arthropoda	Insecta	Diptera	Stratiomyidae	Nemotelus
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	1	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	West Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	4	65	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	42	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	17	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	14	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	6	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	6	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	3	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	2	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Clay Creek	OK621010-01-0090R	25380	7/18/2002	50	5	80	1	99.65	Arthropoda	Insecta	Diptera	Ephydriidae	Hydrellia
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	13	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	12	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	8	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	5	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	2	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Clay Creek	OK621010-01-0090R	27996	7/17/2003	100	9	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	25340	8/5/2002	100	28	80	9	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	25340	8/5/2002	100	28	80	6	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	25340	8/5/2002	100	28	80	5	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	25340	8/5/2002	100	28	80	4	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	25340	8/5/2002	100	28	80	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	25340	8/5/2002	100	28	80	2	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	25340	8/5/2002	100	28	80	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	50	5	100	118	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	50	5	100	23	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	50	5	100	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
riffle	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	50	5	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	100	6	100	101	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	100	6	100	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	100	6	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	100	6	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Turkey Creek: Woods Co.	OK621010-01-0230G	27711	2/11/2003	100	6	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	2	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	1	87.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	1	170.00	Arthropoda	Insecta	Megaloptera	Sialidae	Sialis
woody	Turkey Creek: Woods Co.	OK621010-01-0230G	27998	7/17/2003	50	28	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	48	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	32	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	25	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	6	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	2	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Yellowstone Creek	OK621010-01-0270C	25447	2/5/2002	25	5	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	90	30	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	75	25	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	75	9	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	75	8	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	90	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	75	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	75	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	90	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Yellowstone Creek	OK621010-01-0270C	25385	7/19/2002	50	9	75	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Yellowstone Creek	OK621010-01-0270C	26636	1/22/2003	25	8	100	97	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
riffle	Yellowstone Creek	OK621010-01-0270C	26636	1/22/2003	25	8	100	48	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Yellowstone Creek	OK621010-01-0270C	26636	1/22/2003	25	8	100	4	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Yellowstone Creek	OK621010-01-0270C	26636	1/22/2003	25	8	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Yellowstone Creek	OK621010-01-0270C	26636	1/22/2003	25	8	100	1	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	16	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	8	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	6	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Yellowstone Creek	OK621010-01-0270C	27840	7/14/2003	50	20	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	16	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	15	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloecodes
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	12	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	5	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	5	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	4	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	3	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	3	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	2	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	1	173.40	Arthropoda	Insecta	Odonata	Aeshnidae	Boyeria
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	1	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	1	99.00	Arthropoda	Insecta	Diptera	Empididae	Hemerodromia
woody	Sandy Creek	OK621010-02-0010D	25382	7/18/2002	50	8	80	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	21	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	16	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	8	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	4	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	2	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	2	57.00	Arthropoda	Insecta	Coleoptera	Elmidae	Macronychus
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Sandy Creek	OK621010-02-0010D	27993	7/17/2003	50	28	100	1	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	13	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	12	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	9	218.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Isoperla
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	3	220.50	Arthropoda	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Medicine Lodge Creek	OK621010-03-0010D	27579	2/4/2002	100	28	100	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	37	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	35	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	12	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	12	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	4	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	3	99.00	Arthropoda	Insecta	Diptera	Empididae	Hemerodromia
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcyloepus
woody	Medicine Lodge Creek	OK621010-03-0010D	25381	7/18/2002	50	7	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Medicine Lodge River	OK621010-03-0010D	27709	2/11/2003	100	7	100	101	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Medicine Lodge River	OK621010-03-0010D	27709	2/11/2003	100	7	100	5	218.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Isoperla
riffle	Medicine Lodge River	OK621010-03-0010D	27709	2/11/2003	100	7	100	2	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	28	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	11	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	7	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	2	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Medicine Lodge Creek	OK621010-03-0010D	27995	7/17/2003	100	28	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	50	12	100	87	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	50	12	100	5	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	50	12	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	50	12	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	50	12	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	50	12	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
veg	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	50	12	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	66	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	8	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	6	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	5	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Driftwood Creek	OK621010-03-0030C	25446	2/4/2002	100	11	100	1	99.65	Arthropoda	Insecta	Diptera	Ephydriidae	Hydrellia
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	34	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	9	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	7	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	3	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	99.50	Arthropoda	Insecta	Diptera	Ephydriidae	
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Driftwood Creek	OK621010-03-0030C	25339	8/5/2002	50	7	80	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
riffle	Driftwood Creek	OK621010-03-0030C	27710	2/11/2003	50	5	100	105	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Driftwood Creek	OK621010-03-0030C	27710	2/11/2003	50	5	100	29	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Driftwood Creek	OK621010-03-0030C	27710	2/11/2003	50	5	100	12	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Driftwood Creek	OK621010-03-0030C	27710	2/11/2003	50	5	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Driftwood Creek	OK621010-03-0030C	27710	2/11/2003	50	5	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Driftwood Creek	OK621010-03-0030C	27710	2/11/2003	50	5	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	17	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	16	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	13	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	9	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	6	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	6	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	4	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Driftwood Creek	OK621010-03-0030C	27994	7/17/2003	75	28	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
No flow.	Chickaskia River: Lower	OK621100-00-0010B	27786	7/8/2003										
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	20	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	16	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	14	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	3	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	3	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Chickaskia River: Middle	OK621100-00-0010M	25143	1/29/2002	50	27	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	68	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	59	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	12	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	5	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	5	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	3	95.00	Arthropoda	Insecta	Diptera	Hydropsychidae	Tanytarsini
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Chickaskia Creek: Middle	OK621100-00-0010M	25143	1/29/2002	50	19	100	1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
No flow.	Bitter Creek	OK621100-00-0100G	27788	7/8/2003										
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	44	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	31	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	16	198.00	Arthropoda	Insecta	Plecoptera	Capniidae	Allocapnia
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	5	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	4	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	3	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	2	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	1	258.05	Coelenterata	Hydrozoa	Hydroida	Hydridae	Hydra
riffle	Gray Horse Creek	OK621200-01-0400C	25448	2/6/2002	25	7	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	42	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	27	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	8	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	7	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	6	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	5	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	1	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Gray Horse Creek	OK621200-01-0400C	25505	7/17/2002	100	8	100	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
No flow.	Doga Creek	OK621200-02-0020C	27781	7/7/2003										
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	28	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	21	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	11	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	10	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	8	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	4	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	3	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	2	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25465	2/18/2002	13	5	50	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	78	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	16	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	14	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	10	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	8	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	7	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	4	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	1	247.00	Arthropoda	Insecta	Trichoptera	Philopotamidae	Chimarra
riffle	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	13	7	50	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	41	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	33	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	31	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	6	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	2	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	2	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Black Bear Creek: Lower	OK621200-03-0010D	25493	7/18/2002	50	7	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	50	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	28	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	7	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	7	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	3	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	3	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	3	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	2	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	27705	2/5/2003	25	6	80	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	86	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	29	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	13	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	8	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	2	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Black Bear Creek: Lower	OK621200-03-0010D	26770	2/12/2003	50	8	66	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	85	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	18	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	7	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	5	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	2	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	2	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	164.00	Arthropoda	Insecta	Lepidoptera	Pyralidae	Petrophila
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
rifle	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	13	6	75	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	36	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	20	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	8	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	7	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	5	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Black Bear Creek: Lower	OK621200-03-0010D	28037	7/15/2003	25	7	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	40	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	21	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	19	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	15	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	10	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	8	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	1	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	6	6	50	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	25	13	100	49	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	25	13	100	31	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	25	13	100	14	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	25	13	100	6	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	25	13	100	5	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	25	13	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25464	2/18/2002	25	13	100	1	99.65	Arthropoda	Insecta	Diptera	Ephydriidae	Hydrellia
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	84	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	32	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	15	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	9	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	7	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	5	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	4	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	3	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	2	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	6	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	40	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	21	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	15	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	12	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	8	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	7	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	2	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	1	230.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Potamyia
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Black Bear Creek (downstream)	OK621200-03-0010M	25494	7/18/2002	25	9	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	38	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	26	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	20	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	13	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	4	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	2	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27704	2/5/2003	25	5	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	61	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	52	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	6	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	5	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	25	14	66	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	50	28	100	18	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	50	28	100	10	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	50	28	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	50	28	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Black Bear Creek (downstream)	OK621200-03-0010M	26769	2/12/2003	50	28	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	79	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	24	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	12	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	5	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	3	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	3	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	3	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	2	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	13	7	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	29	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	10	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	8	128.80	Arthropoda	Insecta	Ephemeroptera	Baetidae	Procladius
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	6	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	3	31.10	Arthropoda	Crustacea	Decapoda	Cambaridae	Cambarus
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	2	180.10	Arthropoda	Insecta	Odonata	Coenagrionidae	Ischnura
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	2	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Black Bear Creek (downstream)	OK621200-03-0010M	27981	7/10/2003	100	28	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	53	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	17	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	14	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	13	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	8	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	2	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
woody	Black Bear Creek (upstream)	OK621200-03-0010W	25354	7/16/2002	50	4	100	1	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	20	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	12	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	3	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	37	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	30	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	4	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	1	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek (upstream)	OK621200-03-0010W	26767	2/11/2003	50	28	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	40	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	21	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	14	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	11	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	6	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	2	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	13	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	59	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	21	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	3	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	1	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Black Bear Creek (upstream)	OK621200-03-0010W	27979	7/10/2003	13	8	100	1	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	84	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	26	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	9	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	5	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	5	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	2	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
rifle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Salt Creek: Lower	OK621200-04-0010F	25449	2/6/2002	25	6	100	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	54	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	19	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	19	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	9	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	7	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	3	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	1	122.70	Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Salt Creek: Lower	OK621200-04-0010F	25506	7/17/2002	50	5	100	1	247.00	Arthropoda	Insecta	Trichoptera	Philopotamidae	Chimarra
No flow.	Salt Creek: Lower	OK621200-04-0010F	26610	1/15/2003										
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	55	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	38	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	17	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	10	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	3	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	3	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	2	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	2	247.00	Arthropoda	Insecta	Trichoptera	Philopotamidae	Chimarra
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Salt Creek: Lower	OK621200-04-0010F	27782	7/7/2003	50	7	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	44	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	26	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	21	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	4	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	3	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	2	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Red Rock Creek	OK621200-05-0010K	25352	7/16/2002	50	10	100	1	250.00	Arthropoda	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	39	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	21	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	17	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	12	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	4	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	3	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	8	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	20	100	55	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	20	100	32	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	20	100	5	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	20	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Red Rock Creek	OK621200-05-0010K	26765	2/11/2003	50	20	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	64	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	24	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	7	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	6	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	4	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	1	146.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
riffle	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	50	8	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	23	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	19	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	15	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	7	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	6	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	6	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	2	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Red Rock Creek	OK621200-05-0010K	27930	7/18/2003	25	9	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	155	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	66	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	17	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	17	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	12	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	4	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	3	9.00	Annelida	Oligochaeta	Haplotaxida	Lumbricidae	
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	50	9	50	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	22	90	72	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	22	90	55	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	22	90	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	22	90	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	22	90	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	22	90	2	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	22	90	1	220.50	Arthropoda	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
woody	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	28	100	83	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	28	100	38	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Red Rock Creek: Upper	OK621200-05-0160G	25146	2/4/2002	100	28	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	113	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	50	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	6	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	3	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	2	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25450	2/7/2002	50	7	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	64	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	31	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	16	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	6	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	1	31.10	Arthropoda	Crustacea	Decapoda	Cambaridae	Cambarus
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	25	6	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	63	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	33	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	19	123.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	4	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	4	139.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	3	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Red Rock Creek: Upper	OK621200-05-0160G	25353	7/16/2002	100	9	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	47	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	17	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	13	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	7	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	3	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	25	8	50	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
woody	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	50	15	100	54	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	50	15	100	35	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	50	15	100	20	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	50	15	100	8	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	50	15	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Red Rock Creek: Upper	OK621200-05-0160G	26766	2/11/2003	50	15	100	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	36	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	26	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	24	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	10	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	9	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	4	141.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenacron
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	1	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
woody	Red Rock Creek: Upper	OK621200-05-0160G	27931	7/18/2003	50	16	100	1	16.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Pristina
veg	Bent Creek	OK720500-01-0070D	25179	1/22/2002	50	5	80	123	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Bent Creek	OK720500-01-0070D	25179	1/22/2002	50	5	80	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Bent Creek	OK720500-01-0070D	25179	1/22/2002	50	5	80	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Bent Creek	OK720500-01-0070D	25179	1/22/2002	50	5	80	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Bent Creek	OK720500-01-0070D	25179	1/22/2002	50	5	80	1	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Bent Creek	OK720500-01-0070D	25179	1/22/2002	50	5	80	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	98	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	16	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	11	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	10	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	5	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta

Appendix C. Macroinvertebrate collection data.

Sample type	Site name	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	2	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Bent Creek	OK720500-01-0070D	25179	1/22/2002	25	6	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychidae	Isonychia
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	35	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	14	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	11	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	6	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	6	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	4	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	4	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	2	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	2	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
woody	Bent Creek	OK720500-01-0070D	25556	7/30/2002	100	12	80	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	100	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	23	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	10	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	6	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	7	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	8	75	92	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	8	75	14	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	8	75	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	8	75	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
woody	Bent Creek	OK720500-01-0070D	26686	1/13/2003	50	8	75	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	32	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche

Appendix C. Macroinvertebrate collection data.

Sample type	Site name	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	25	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	10	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	7	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Hyssella
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Bent Creek	OK720500-01-0070D	27984	7/10/2003	25	16	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	19	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	18	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	11	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	9	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	9	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	9	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	5	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	4	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	4	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	4	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	3	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	2	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
riffle	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	80	1	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	81	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	11	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	7	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	2	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyalidae	
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	1	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	8	75	1	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	74	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	6	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	5	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	4	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	4	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	3	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Persimmon Creek	OK720500-01-0150G	25180	1/22/2002	50	10	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	45	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	12	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	10	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	9	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	5	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	5	192.50	Arthropoda	Insecta	Odonata	Libellulidae	Brechmorhoga
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	4	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	4	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	3	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	1	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
riffle	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	25	8	80	1	281.50	Nemertea	Enopla	Hoploneurata	Tetrastemmatidae	Prostoma
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	27	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	15	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	15	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	10	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	8	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	5	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	5	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	4	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	3	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	3	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	3	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	2	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paraclaoedes
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	2	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	1	173.40	Arthropoda	Insecta	Odonata	Aeshnidae	Boyeria
veg	Persimmon Creek	OK720500-01-0150G	25590	8/1/2002	50	6	75	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	63	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	5	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	5	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	4	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	4	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	1	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
riffle	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	25	10	50	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	81	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	6	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	4	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	2	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	2	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	2	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	1	23.00	Arthropoda	Acarina			
veg	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	100	11	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	77	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	7	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	3	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	3	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	1	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	1	87.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	
woody	Persimmon Creek	OK720500-01-0150G	26672	1/30/2003	50	14	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	28	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	15	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	8	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	6	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	6	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	5	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	2	137.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	2	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	31.10	Arthropoda	Crustacea	Decapoda	Cambaridae	Cambarus
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
rifle	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	13	14	50	1	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	20	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	8	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	7	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	6	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	6	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	6	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	3	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	2	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	2	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	1	184.00	Arthropoda	Insecta	Odonata	Gomphidae	
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Persimmon Creek	OK720500-01-0150G	27985	7/10/2003	25	9	100	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	79	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	23	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	5	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	4	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	3	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	2	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	9	100	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	73	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	8	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	7	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	5	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	4	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	4	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychidae	Isonychia
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	3	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	2	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	50	6	50	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	59	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	18	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	7	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychidae	Isonychia
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	7	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	5	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	25181	1/22/2002	25	6	100	1	217.00	Arthropoda	Insecta	Plecoptera	Perlidae	Hydroperla
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	89	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	18	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	5	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	2	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
rifle	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	25	11	100	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	32	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	17	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	13	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	11	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	3	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	3	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	3	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	3	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	2	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	2	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyrilidae	
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	25554	7/30/2002	50	11	80	1	234.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	26716	1/22/2003	50	7	75	104	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	26716	1/22/2003	50	7	75	33	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	26716	1/22/2003	50	7	75	6	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	26716	1/22/2003	50	7	75	2	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlستا
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	26716	1/22/2003	50	7	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Indian Creek: Woodward Co.	OK720500-01-0200D	26716	1/22/2003	50	7	75	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	19	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	16	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	9	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	7	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	6	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	5	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	1	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
woody	Indian Creek: Woodward Co.	OK720500-01-0200D	27986	7/10/2003	75	19	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	14	50	114	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	14	50	12	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	14	50	11	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	14	50	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	14	50	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	14	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	83	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	17	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	13	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	1	9.00	Annelida	Oligochaeta	Haplotaxida	Lumbricidae	
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	1	4.10	Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	1	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
woody	Otter Creek: Harper Co.	OK720500-02-0050B	25438	1/29/2002	100	13	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	43	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	7	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	4	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	3	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	2	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	2	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	30.00	Arthropoda	Crustacea	Decapoda	Astacidae	
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	172.50	Arthropoda	Insecta	Odonata	Aeshnidae	Anax
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	192.97	Arthropoda	Insecta	Odonata	Libellulidae	Platthemis
veg	Otter Creek: Harper Co.	OK720500-02-0050B	25589	8/1/2002	50	7	80	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
veg	Otter Creek: Harper Co.	OK720500-02-0050B	26689	1/13/2003	50	7	80	109	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Otter Creek: Harper Co.	OK720500-02-0050B	26689	1/13/2003	50	7	80	19	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Otter Creek: Harper Co.	OK720500-02-0050B	26689	1/13/2003	50	7	80	14	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Otter Creek: Harper Co.	OK720500-02-0050B	26689	1/13/2003	50	7	80	5	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Otter Creek: Harper Co.	OK720500-02-0050B	26689	1/13/2003	50	7	80	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Otter Creek: Harper Co.	OK720500-02-0050B	26689	1/13/2003	50	7	80	1	243.00	Arthropoda	Insecta	Trichoptera	Limnephilidae	Limnephilus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	59	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	18	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	12	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	2	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	2	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	1	109.50	Arthropoda	Insecta	Diptera	Stratiomyidae	Stratiomys
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25437	1/29/2002	50	8	75	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	29	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	20	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	8	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	6	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	6	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	4	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	3	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	2	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	1	31.10	Arthropoda	Crustacea	Decapoda	Cambaridae	Cambarus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	1	87.00	Arthropoda	Insecta	Diptera	Ceratopogonidae	
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	1	184.10	Arthropoda	Insecta	Odonata	Gomphidae	Argomphus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Clear Creek: Harper Co.	OK720500-02-0070G	25588	8/1/2002	50	7	50	1	235.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Ithytrichia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	37	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	17	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	15	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	6	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	4	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	4	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	3	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	2	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	1	192.00	Arthropoda	Insecta	Odonata	Libellulidae	
veg	Clear Creek: Harper Co.	OK720500-02-0070G	26690	1/13/2003	50	7	50	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	21	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	9	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	6	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	6	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	4	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	4	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	3	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	2	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Clear Creek: Harper Co.	OK720500-02-0070G	27830	7/15/2003	50	20	50	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	29	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	19	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	17	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	14	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	8	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	1	161.50	Arthropoda	Insecta	Lepidoptera	Pyalidae	Acentria
veg	Spring Creek	OK720500-02-0100D	25436	1/29/2002	50	6	60	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	22	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	7	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	6	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	5	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	2	137.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
woody	Spring Creek	OK720500-02-0100D	25436	1/29/2002	100	9	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	75	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	19	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	4	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	1	30.00	Arthropoda	Crustacea	Decapoda	Astacidae	
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyalidae	
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	1	170.00	Arthropoda	Insecta	Megaloptera	Sialidae	Sialis
veg	Spring Creek	OK720500-02-0100D	25587	8/1/2002	25	10	66	1	192.00	Arthropoda	Insecta	Odonata	Libellulidae	
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	33	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	29	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	6	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Spring Creek	OK720500-02-0100D	26706	1/15/2003	50	9	75	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	34	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	15	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	11	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	8	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	4	278.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Pisidium
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	3	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	3	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	2	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	1	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyrilidae	
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	1	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Spring Creek	OK720500-02-0100D	27833	7/15/2003	25	8	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	84	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	38	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	30	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	6	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	5	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	4	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	3	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	100	28	100	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	67	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	13	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	4	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	3	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	143.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	161.00	Arthropoda	Insecta	Lepidoptera	Pyralidae	
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	50	5	75	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	73	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	9	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	7	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	7	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	3	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	1	84.50	Arthropoda	Insecta	Diptera	Anthomyiidae	Limnophora
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
woody	Kiowa Creek: Harper Co.	OK720500-02-0130C	25435	1/29/2002	75	7	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	66	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	25	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	11	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	9	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	9	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	5	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	3	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	3	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	2	14.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Nais
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	2	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	2	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	1	13.00	Annelida	Oligochaeta	Haplotaxida	Naididae	Dero
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	25	5	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	22	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	20	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	18	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	16	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	12	136.10	Arthropoda	Insecta	Ephemeroptera	Ephemeridae	Hexagenia
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	7	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	7	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	6	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	6	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	5	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	4	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	4	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	3	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	3	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	3	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalu
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	1	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	25586	8/1/2002	50	10	66	1	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	75	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	12	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	10	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	6	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	5	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	2	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	2	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	15	75	1	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	17	50	80	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	17	50	9	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	17	50	7	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	17	50	3	145.00	Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae	Leptophlebia
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	17	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	17	50	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Harper Co.	OK720500-02-0130C	26705	1/15/2003	50	17	50	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	80	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	15	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	9	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	7	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	5	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	1	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Kiowa Creek: Harper Co.	OK720500-02-0130C	27828	7/14/2003	50	10	80	1	192.50	Arthropoda	Insecta	Odonata	Libellulidae	Brechmorhoga

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	22	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	22	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	15	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	14	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	13	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	9	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	5	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	1	86.00	Arthropoda	Insecta	Diptera	Athericidae	Atherix
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	50	13	80	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	51	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	22	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	16	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	12	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	3	214.00	Arthropoda	Insecta	Plecoptera	Perlidae	Perlesta
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	2	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	2	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	1	161.50	Arthropoda	Insecta	Lepidoptera	Pyalidae	Acentria
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25178	1/15/2002	25	9	75	1	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	36	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	32	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	23	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	5	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	5	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	4	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	3	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	2	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
rifle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	4	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	27	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	14	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	14	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	11	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	11	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	9	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	3	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	2	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	2	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	2	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	2	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychidae	Isonychia
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	2	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	1	30.00	Arthropoda	Crustacea	Decapoda	Astacidae	
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	1	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	1	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	25518	7/23/2002	25	5	50	1	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	93	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	17	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	7	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	3	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	2	191.00	Arthropoda	Insecta	Odonata	Gomphidae	Progomphus
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	1	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	6	50	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	66	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	15	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	12	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	5	231.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Smicridea
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	3	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanypodinae
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	1	23.05	Arthropoda	Acari	Arcarina	Areneuridae	Arenerus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	26691	1/13/2003	25	9	50	1	217.00	Arthropoda	Insecta	Plecoptera	Perlodidae	Hydroperla
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	39	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	36	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	25	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	7	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	3	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	2	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	6	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	13	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	9	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	7	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	6	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	5	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	3	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	2	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	2	238.00	Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	1	120.00	Arthropoda	Insecta	Diptera	Tipulidae	Tipula
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	1	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Kiowa Creek: Beaver Co.	OK720500-02-0130K	27831	7/15/2003	25	12	75	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	37	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	16	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	14	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	11	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	9	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	6	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	3	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	2	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
veg	Duck Pond Creek	OK720500-02-0250F	25434	1/29/2002	50	7	100	1	281.50	Nemertea	Enopla	Hoplonemertea	Tetrastemmatidae	Prostoma
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	44	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	18	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	17	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	14	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	10	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	9	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	4	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	3	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	2	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	2	181.30	Arthropoda	Insecta	Odonata	Corduliidae	Epitheca
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	1	192.85	Arthropoda	Insecta	Odonata	Libellulidae	Miathyria
veg	Duck Pond Creek	OK720500-02-0250F	25517	7/23/2002	25	6	60	1	192.99	Arthropoda	Insecta	Odonata	Libellulidae	Tramea
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	37	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	30	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	27	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	10	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	8	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	6	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	5	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	1	91.00	Arthropoda	Insecta	Diptera	Chironomidae	Diamesinae
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Duck Pond Creek	OK720500-02-0250F	26704	1/15/2003	50	13	66	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	48	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	20	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	14	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	13	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	13	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	4	269.00	Mollusca	Gastropoda	Basommatophora	Planorbidae	Gyraulus
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	4	278.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Pisidium
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	3	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	3	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	2	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	1	4.10	Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	1	279.00	Mollusca	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
veg	Duck Pond Creek	OK720500-02-0250F	27832	7/15/2003	25	9	100	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	5	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	1	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	1	117.00	Arthropoda	Insecta	Diptera	Tipulidae	Hexatoma
riffle	Clear Creek	OK720500-02-0300F	25174	1/13/2002	100	28	100	1	180.10	Arthropoda	Insecta	Odonata	Coenagrionidae	Ischnura
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	71	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	26	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	9	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	8	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	8	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	2	117.00	Arthropoda	Insecta	Diptera	Tipulidae	Hexatoma
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	2	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Clear Creek	OK720500-02-0300F	25174	1/13/2002	50	11	75	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia

Appendix C. Macroinvertebrate collection data.

Sample type	Site name	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Clear Creek	OK720500-02-0300F	25516	7/23/2002	50	7	50	70	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
riffle	Clear Creek	OK720500-02-0300F	25516	7/23/2002	50	7	50	40	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Clear Creek	OK720500-02-0300F	25516	7/23/2002	50	7	50	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Clear Creek	OK720500-02-0300F	25516	7/23/2002	50	7	50	5	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
riffle	Clear Creek	OK720500-02-0300F	25516	7/23/2002	50	7	50	2	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Clear Creek	OK720500-02-0300F	25516	7/23/2002	50	7	50	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
riffle	Clear Creek	OK720500-02-0300F	25516	7/23/2002	50	7	50	1	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	84	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	8	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	4	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	3	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	1	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Clear Creek	OK720500-02-0300F	26698	1/14/2003	13	7	75	1	93.00	Arthropoda	Insecta	Diptera	Chironomidae	Pseudochironomi
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	32	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyaella
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	15	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	3	263.50	Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	2	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	2	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	1	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Clear Creek	OK720500-02-0300F	27825	7/14/2003	50	16	100	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Palo Duro Creek	OK720500-02-0500G	25177	1/14/2002	50	10	75	93	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Palo Duro Creek	OK720500-02-0500G	25177	1/14/2002	50	10	75	18	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Palo Duro Creek	OK720500-02-0500G	25177	1/14/2002	50	10	75	2	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Palo Duro Creek	OK720500-02-0500G	25177	1/14/2002	50	10	75	2	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Palo Duro Creek	OK720500-02-0500G	25177	1/14/2002	50	10	75	2	117.50	Arthropoda	Insecta	Diptera	Tipulidae	Limnophila
veg	Palo Duro Creek	OK720500-02-0500G	25177	1/14/2002	50	10	75	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Palo Duro Creek	OK720500-02-0500G	26697	1/14/2003	25	9	75	105	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Palo Duro Creek	OK720500-02-0500G	26697	1/14/2003	25	9	75	14	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Palo Duro Creek	OK720500-02-0500G	26697	1/14/2003	25	9	75	2	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Palo Duro Creek	OK720500-02-0500G	26697	1/14/2003	25	9	75	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Palo Duro Creek	OK720500-02-0500G	26697	1/14/2003	25	9	75	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Palo Duro Creek	OK720500-02-0500G	26697	1/14/2003	25	9	75	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	51	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	30	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	29	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	19	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	7	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	3	18.20	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	2	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	1	14.00	Annelida	Oligochaeta	Haplotaaxida	Naididae	Nais
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	1	186.00	Arthropoda	Insecta	Odonata	Gomphidae	Erpetogomphus
riffle	Wolf Creek: Lower	OK720500-03-0010C	25442	1/30/2002	13	6	75	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	135	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	14	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	6	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	6	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	1	117.00	Arthropoda	Insecta	Diptera	Tipulidae	Hexatoma
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	1	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Wolf Creek: Lower	OK720500-03-0010C	25552	7/30/2002	13	4	50	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	64	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	39	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	4	275.00	Mollusca	Pelecypoda	Veneroida	Corbiculidae	Corbicula
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	3	19.00	Annelida	Oligochaeta	Haplotaaxida	Tubificidae	Limnodrilus
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	3	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	13	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	6	100	120	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	6	100	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	50	6	100	1	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	25	10	100	85	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
woody	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	25	10	100	28	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	25	10	100	6	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	25	10	100	1	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
woody	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	25	10	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Wolf Creek: Lower	OK720500-03-0010C	26674	1/30/2003	25	10	100	1	115.70	Arthropoda	Insecta	Diptera	Tipulidae	Geranomyia
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	32	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	19	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	15	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	13	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	7	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	6	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	4	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paracloedes
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	1	3.70	Annelida	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
riffle	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	13	10	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	28	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	19	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	8	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	5	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	3	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	3	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	2	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthocladiinae
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	1	30.00	Arthropoda	Crustacea	Decapoda	Astacidae	
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	1	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	1	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Wolf Creek: Lower	OK720500-03-0010C	27988	7/10/2003	100	14	100	1	228.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	14	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	10	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	7	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paraclioedes
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	7	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	7	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	6	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	5	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	5	124.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Callibaetis
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	3	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	2	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	2	110.50	Arthropoda	Insecta	Diptera	Tabanidae	Chrysops
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	45.00	Arthropoda	Insecta	Coleoptera	Dryopidae	Helichus
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	54.00	Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	87.75	Arthropoda	Insecta	Diptera	Ceratopogonidae	Dasyhelea
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	107.80	Arthropoda	Insecta	Diptera	Stratiomyidae	Nemotelus
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	120.00	Arthropoda	Insecta	Diptera	Tipulidae	Tipula
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	173.40	Arthropoda	Insecta	Odonata	Aeshnidae	Boyeria
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	187.00	Arthropoda	Insecta	Odonata	Gomphidae	Gomphus
veg	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	50	14	50	1	235.00	Arthropoda	Insecta	Trichoptera	Hydroptilidae	Ithytrichia
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	23	128.00	Arthropoda	Insecta	Ephemeroptera	Baetidae	Paraclioedes
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	23	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	7	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	6	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	5	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	4	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	4	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalus
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	3	60.00	Arthropoda	Insecta	Coleoptera	Elmidae	Stenelmis
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	3	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini

Appendix C. Macroinvertebrate collection data.

Sample type	Sitename	Wbid	SAMPLEID	Date	PercSampPick	NumbSqrPick	PercSampCol	Number	RefNum	BugPhylum	BugClass	BugOrder	BugFamily	BugGenus
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	2	94.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytopodinae
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	2	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	2	285.50	Platyhelminthes	Turbellaria	Tricladida	Planariidae	Dugesia
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	87.50	Arthropoda	Insecta	Diptera	Ceratopogonidae	Atrichopogon
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	88.06	Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	111.00	Arthropoda	Insecta	Diptera	Tabanidae	Tabanus
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	130.10	Arthropoda	Insecta	Ephemeroptera	Caenidae	Brachycercus
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	142.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Stenonema
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Wolf Creek: Upper	OK720500-03-0010G	25553	7/30/2002	100	8	75	1	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	25	6	70	118	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
veg	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	25	6	70	36	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
veg	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	25	6	70	3	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	25	6	70	1	95.00	Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsini
woody	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	50	7	100	88	92.00	Arthropoda	Insecta	Diptera	Chironomidae	Orthoclaadiinae
woody	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	50	7	100	30	104.00	Arthropoda	Insecta	Diptera	Simuliidae	Simulium
woody	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	50	7	100	12	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	50	7	100	5	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
woody	Wolf Creek: Upper	OK720500-03-0010G	26673	1/30/2003	50	7	100	1	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	36	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	15	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	8	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	8	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	4	28.00	Arthropoda	Crustacea	Amphipoda	Talitridae	Hyalella
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	4	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	3	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	2	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	2	127.50	Arthropoda	Insecta	Ephemeroptera	Baetidae	Labiobaetis
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	1	19.00	Annelida	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
veg	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	50	20	100	1	58.00	Arthropoda	Insecta	Coleoptera	Elmidae	Microcylloepus
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	48	229.00	Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	11	142.40	Arthropoda	Insecta	Ephemeroptera	Isonychiidae	Isonychia
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	6	138.00	Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	5	151.00	Arthropoda	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	4	177.00	Arthropoda	Insecta	Odonata	Calopterygidae	Hetaerina
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	2	179.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Argia
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	1	55.00	Arthropoda	Insecta	Coleoptera	Elmidae	Heterelmis
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	1	167.00	Arthropoda	Insecta	Megaloptera	Corydalidae	Corydalis
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	1	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
woody	Wolf Creek: Upper	OK720500-03-0010G	27987	7/10/2003	75	27	100	1	90.00	Arthropoda	Insecta	Diptera	Chironomidae	Chironomini
veg	Cimarron River	OK720900-00-0180C	25513	7/22/2002	50	8	100	31	180.00	Arthropoda	Insecta	Odonata	Coenagrionidae	Enallagma
veg	Cimarron River	OK720900-00-0180C	25513	7/22/2002	50	8	100	25	131.00	Arthropoda	Insecta	Ephemeroptera	Caenidae	Caenis
veg	Cimarron River	OK720900-00-0180C	25513	7/22/2002	50	8	100	11	267.00	Mollusca	Gastropoda	Basommatophora	Physidae	Physella

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK620900030080	Dugout Creek	13.58	river	not attaining	XXX							413	140
OK620900030080	Dugout Creek	13.58	river	not attaining	XXX							413	156
OK620900030080	Dugout Creek	13.58	river	not enough information						XXX		385	
OK620900030080	Dugout Creek	13.58	river	not enough information				XXX				302	
OK620900030080	Dugout Creek	13.58	river	not enough information					XXX			302, 462	
OK620900030080	Dugout Creek	13.58	river	not enough information	XXX							441	
OK620900030080	Dugout Creek	13.58	river	not enough information	XXX							322	
OK620900030080	Dugout Creek	13.58	river	not enough information						XXX		399	
OK620900030080	Dugout Creek	13.58	river	not enough information						XXX		138	
OK620900030080	Dugout Creek	13.58	river	not enough information		XXX						215	
OK620900030080	Dugout Creek	13.58	river	not enough information	XXX							317	
OK620900030080	Dugout Creek	13.58	river	not enough information				XXX				317	
OK620900030080	Dugout Creek	13.58	river	not enough information					XXX			317	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	attaining	XXX							91	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information						XXX		385	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information				XXX				302	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information					XXX			302, 462	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information	XXX							441	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information	XXX							322	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information						XXX		399	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information						XXX		138	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information		XXX						217	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information		XXX						215	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information	XXX							317	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information				XXX				317	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information					XXX			317	
OK620900030230	Beaver Creek: Logan Co.	12.64	river	not enough information	XXX							413	
OK620900040040	Stillwater Creek (Lower)	3.53	river	attaining	XXX							91	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining				XXX				302	140
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining				XXX				302	84
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining				XXX				302	85
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining				XXX				302	85
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining				XXX				302	92
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						217	140
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						215	140
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						217	84
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						215	84
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						217	85
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						215	85

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						217	85
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						215	85
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						217	92
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						215	92
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						217	156
OK620900040040	Stillwater Creek (Lower)	3.53	river	not attaining		XXX						215	156
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information						XXX		385	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information					XXX			302, 462	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information	XXX							441	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information	XXX							322	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information						XXX		399	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information						XXX		138	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information	XXX							317	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information				XXX				317	
OK620900040040	Stillwater Creek (Lower)	3.53	river	not enough information	XXX							413	
OK620900040070	Stillwater Creek (Upper)	22.59	river	attaining	XXX							91	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining	XXX							322	140
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining	XXX							322	92
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining	XXX							322	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining	XXX							322	156
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining		XXX						217	140
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining		XXX						217	92
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining		XXX						217	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining		XXX						217	156
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining	XXX							413	140
OK620900040070	Stillwater Creek (Upper)	22.59	river	not attaining	XXX							413	156
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information						XXX		385	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information				XXX				302	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information					XXX			302, 462	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information	XXX							441	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information						XXX		399	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information						XXX		138	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information		XXX						215	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information	XXX							317	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information				XXX				317	
OK620900040070	Stillwater Creek (Upper)	22.59	river	not enough information					XXX			317	
OK620910020040	Cooper Creek	40.46	river	attaining	XXX							91	
OK620910020040	Cooper Creek	40.46	river	not enough information						XXX		385	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK620910020040	Cooper Creek	40.46	river	not enough information				XXX				302	
OK620910020040	Cooper Creek	40.46	river	not enough information					XXX			302, 462	
OK620910020040	Cooper Creek	40.46	river	not enough information	XXX							441	
OK620910020040	Cooper Creek	40.46	river	not enough information	XXX							322	
OK620910020040	Cooper Creek	40.46	river	not enough information						XXX		399	
OK620910020040	Cooper Creek	40.46	river	not enough information						XXX		138	
OK620910020040	Cooper Creek	40.46	river	not enough information		XXX						217	
OK620910020040	Cooper Creek	40.46	river	not enough information		XXX						215	
OK620910020040	Cooper Creek	40.46	river	not enough information	XXX							317	
OK620910020040	Cooper Creek	40.46	river	not enough information				XXX				317	
OK620910020040	Cooper Creek	40.46	river	not enough information					XXX			317	
OK620910020040	Cooper Creek	40.46	river	not enough information	XXX							413	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	attaining	XXX							91	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not attaining						XXX		385	140
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not attaining						XXX		385	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information					XXX			302, 462	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information	XXX							441	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information	XXX							322	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information						XXX		399	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information						XXX		138	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information			XXX					217	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information			XXX					215	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information	XXX							317	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information					XXX			317	
OK620910020100	Salt Creek: Kingfisher Co.	30.35	river	not enough information	XXX							413	
OK620910020250	Deep Creek	25.54	river	attaining	XXX							91	
OK620910020250	Deep Creek	25.54	river	not attaining		XXX						217	140
OK620910020250	Deep Creek	25.54	river	not attaining		XXX						217	92
OK620910020250	Deep Creek	25.54	river	not attaining		XXX						217	156
OK620910020250	Deep Creek	25.54	river	not enough information						XXX		385	
OK620910020250	Deep Creek	25.54	river	not enough information				XXX				302	
OK620910020250	Deep Creek	25.54	river	not enough information					XXX			302, 462	
OK620910020250	Deep Creek	25.54	river	not enough information	XXX							441	
OK620910020250	Deep Creek	25.54	river	not enough information	XXX							322	
OK620910020250	Deep Creek	25.54	river	not enough information						XXX		399	
OK620910020250	Deep Creek	25.54	river	not enough information						XXX		138	
OK620910020250	Deep Creek	25.54	river	not enough information		XXX						215	
OK620910020250	Deep Creek	25.54	river	not enough information	XXX							317	
OK620910020250	Deep Creek	25.54	river	not enough information				XXX				317	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK620910020250	Deep Creek	25.54	river	not enough information					XXX			317	
OK620910020250	Deep Creek	25.54	river	not enough information	XXX							413	
OK620910020310	Indian Creek: Major Co.	16.71	river	attaining	XXX							91	
OK620910020310	Indian Creek: Major Co.	16.71	river	not attaining		XXX						217	140
OK620910020310	Indian Creek: Major Co.	16.71	river	not attaining		XXX						217	85
OK620910020310	Indian Creek: Major Co.	16.71	river	not attaining		XXX						217	156
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information						XXX		385	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information				XXX				302	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information					XXX			302, 462	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information	XXX							441	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information	XXX							322	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information						XXX		399	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information						XXX		138	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information		XXX						215	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information	XXX							317	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information				XXX				317	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information					XXX			317	
OK620910020310	Indian Creek: Major Co.	16.71	river	not enough information	XXX							413	
OK620910030010	Skeleton Creek	33.69	river	attaining	XXX							91	
OK620910030010	Skeleton Creek	33.69	river	attaining						XXX		385	
OK620910030010	Skeleton Creek	33.69	river	attaining				XXX				302	
OK620910030010	Skeleton Creek	33.69	river	attaining					XXX			302, 462	
OK620910030010	Skeleton Creek	33.69	river	attaining	XXX							441	
OK620910030010	Skeleton Creek	33.69	river	attaining	XXX							322	
OK620910030010	Skeleton Creek	33.69	river	attaining						XXX		399	
OK620910030010	Skeleton Creek	33.69	river	attaining						XXX		138	
OK620910030010	Skeleton Creek	33.69	river	attaining	XXX							317	
OK620910030010	Skeleton Creek	33.69	river	attaining				XXX				317	
OK620910030010	Skeleton Creek	33.69	river	attaining					XXX			317	
OK620910030010	Skeleton Creek	33.69	river	not enough information		XXX						217	
OK620910030010	Skeleton Creek	33.69	river	not enough information		XXX						215	
OK620910030010	Skeleton Creek	33.69	river	not enough information	XXX							413	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining	XXX							91	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining						XXX		385	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining				XXX				302	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining					XXX			302, 462	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining	XXX							441	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining	XXX							322	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining						XXX		138	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining				XXX				400	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining	XXX							317	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining				XXX				317	
OK620910030040	Otter Creek: Logan Co.	30.08	river	attaining					XXX			317	
OK620910030040	Otter Creek: Logan Co.	30.08	river	not attaining		XXX						215	140
OK620910030040	Otter Creek: Logan Co.	30.08	river	not attaining		XXX						215	85
OK620910030040	Otter Creek: Logan Co.	30.08	river	not attaining		XXX						215	92
OK620910030040	Otter Creek: Logan Co.	30.08	river	not attaining		XXX						215	156
OK620910030040	Otter Creek: Logan Co.	30.08	river	not attaining	XXX							413	140
OK620910030040	Otter Creek: Logan Co.	30.08	river	not attaining	XXX							413	156
OK620910030040	Otter Creek: Logan Co.	30.08	river	not enough information						XXX		399	
OK620910030040	Otter Creek: Logan Co.	30.08	river	not enough information		XXX						400	
OK620910030040	Otter Creek: Logan Co.	30.08	river	not enough information		XXX						217	
OK620910040010	Cottonwood Creek	22.004	river	attaining	XXX							91	
OK620910040010	Cottonwood Creek	22.004	river	attaining						XXX		385	
OK620910040010	Cottonwood Creek	22.004	river	attaining				XXX				302	
OK620910040010	Cottonwood Creek	22.004	river	attaining					XXX			302, 462	
OK620910040010	Cottonwood Creek	22.004	river	attaining	XXX							441	
OK620910040010	Cottonwood Creek	22.004	river	attaining	XXX							322	
OK620910040010	Cottonwood Creek	22.004	river	attaining						XXX		138	
OK620910040010	Cottonwood Creek	22.004	river	attaining				XXX				400	
OK620910040010	Cottonwood Creek	22.004	river	attaining	XXX							317	
OK620910040010	Cottonwood Creek	22.004	river	attaining				XXX				317	
OK620910040010	Cottonwood Creek	22.004	river	attaining					XXX			317	
OK620910040010	Cottonwood Creek	22.004	river	attaining	XXX							413	
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						217	140
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						215	140
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						217	85
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						215	85
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						217	84
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						215	84
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						217	85
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						215	85
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						217	68
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						215	68
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						217	156
OK620910040010	Cottonwood Creek	22.004	river	not attaining		XXX						215	156
OK620910040010	Cottonwood Creek	22.004	river	not enough information						XXX		399	
OK620910040010	Cottonwood Creek	22.004	river	not enough information		XXX						400	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK620920020080	Long Creek	22.07	river	attaining	XXX							91	
OK620920020080	Long Creek	22.07	river	not attaining		XXX						217	140
OK620920020080	Long Creek	22.07	river	not attaining		XXX						215	140
OK620920020080	Long Creek	22.07	river	not attaining		XXX						217	156
OK620920020080	Long Creek	22.07	river	not attaining		XXX						215	156
OK620920020080	Long Creek	22.07	river	not enough information						XXX		385	
OK620920020080	Long Creek	22.07	river	not enough information				XXX				302	
OK620920020080	Long Creek	22.07	river	not enough information					XXX			302, 462	
OK620920020080	Long Creek	22.07	river	not enough information	XXX							441	
OK620920020080	Long Creek	22.07	river	not enough information	XXX							322	
OK620920020080	Long Creek	22.07	river	not enough information						XXX		399	
OK620920020080	Long Creek	22.07	river	not enough information						XXX		138	
OK620920020080	Long Creek	22.07	river	not enough information	XXX							317	
OK620920020080	Long Creek	22.07	river	not enough information				XXX				317	
OK620920020080	Long Creek	22.07	river	not enough information					XXX			317	
OK620920020080	Long Creek	22.07	river	not enough information	XXX							413	
OK620920040010	Eagle Chief Creek	73.97	river	attaining	XXX							91	
OK620920040010	Eagle Chief Creek	73.97	river	attaining						XXX		385	
OK620920040010	Eagle Chief Creek	73.97	river	attaining				XXX				302	
OK620920040010	Eagle Chief Creek	73.97	river	attaining					XXX			302, 462	
OK620920040010	Eagle Chief Creek	73.97	river	attaining	XXX							441	
OK620920040010	Eagle Chief Creek	73.97	river	attaining	XXX							322	
OK620920040010	Eagle Chief Creek	73.97	river	attaining						XXX		399	
OK620920040010	Eagle Chief Creek	73.97	river	attaining						XXX		138	
OK620920040010	Eagle Chief Creek	73.97	river	attaining	XXX							317	
OK620920040010	Eagle Chief Creek	73.97	river	attaining				XXX				317	
OK620920040010	Eagle Chief Creek	73.97	river	attaining					XXX			317	
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						217	140
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						215	140
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						217	85
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						215	85
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						217	85
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						215	85
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						217	68
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						215	68
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						217	
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						215	
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						217	92
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						215	92

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						217	156
OK620920040010	Eagle Chief Creek	73.97	river	not attaining		XXX						215	156
OK620920040010	Eagle Chief Creek	73.97	river	not enough information	XXX							413	
OK620920050010	Buffalo Creek	49.48	river	attaining	XXX							91	
OK620920050010	Buffalo Creek	49.48	river	attaining					XXX			385	
OK620920050010	Buffalo Creek	49.48	river	attaining				XXX				302	
OK620920050010	Buffalo Creek	49.48	river	attaining					XXX			302, 462	
OK620920050010	Buffalo Creek	49.48	river	attaining	XXX							441	
OK620920050010	Buffalo Creek	49.48	river	attaining	XXX							322	
OK620920050010	Buffalo Creek	49.48	river	attaining						XXX		399	
OK620920050010	Buffalo Creek	49.48	river	attaining					XXX			138	
OK620920050010	Buffalo Creek	49.48	river	attaining				XXX				400	
OK620920050010	Buffalo Creek	49.48	river	attaining	XXX							317	
OK620920050010	Buffalo Creek	49.48	river	attaining				XXX				317	
OK620920050010	Buffalo Creek	49.48	river	attaining					XXX			317	
OK620920050010	Buffalo Creek	49.48	river	attaining	XXX							413	
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						217	140
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						215	140
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						217	85
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						215	85
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						217	
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						215	
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						217	92
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						215	92
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						217	156
OK620920050010	Buffalo Creek	49.48	river	not attaining		XXX						215	156
OK620920050010	Buffalo Creek	49.48	river	not enough information		XXX						400	
OK620920050050	Sand Creek	26.03	river	attaining	XXX							91	
OK620920050050	Sand Creek	26.03	river	not attaining		XXX						215	140
OK620920050050	Sand Creek	26.03	river	not attaining		XXX						215	92
OK620920050050	Sand Creek	26.03	river	not attaining		XXX						215	156
OK620920050050	Sand Creek	26.03	river	not enough information						XXX		385	
OK620920050050	Sand Creek	26.03	river	not enough information				XXX				302	
OK620920050050	Sand Creek	26.03	river	not enough information					XXX			302, 462	
OK620920050050	Sand Creek	26.03	river	not enough information	XXX							441	
OK620920050050	Sand Creek	26.03	river	not enough information	XXX							322	
OK620920050050	Sand Creek	26.03	river	not enough information						XXX		399	
OK620920050050	Sand Creek	26.03	river	not enough information						XXX		138	
OK620920050050	Sand Creek	26.03	river	not enough information		XXX						217	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						217	140
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						215	140
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						217	84
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						215	84
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						217	85
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						215	85
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						217	92
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						215	92
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						217	156
OK621000020040	Wildhorse Creek	24.66	river	not attaining		XXX						215	156
OK621000020040	Wildhorse Creek	24.66	river	not enough information						XXX		385	
OK621000020040	Wildhorse Creek	24.66	river	not enough information					XXX			302, 462	
OK621000020040	Wildhorse Creek	24.66	river	not enough information	XXX							441	
OK621000020040	Wildhorse Creek	24.66	river	not enough information	XXX							322	
OK621000020040	Wildhorse Creek	24.66	river	not enough information						XXX		399	
OK621000020040	Wildhorse Creek	24.66	river	not enough information						XXX		138	
OK621000020040	Wildhorse Creek	24.66	river	not enough information	XXX							317	
OK621000020040	Wildhorse Creek	24.66	river	not enough information					XXX			317	
OK621000020040	Wildhorse Creek	24.66	river	not enough information	XXX					XXX		413	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining	XXX							91	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining						XXX		385	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining				XXX				302	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining					XXX			302, 462	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining	XXX							441	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining	XXX							322	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining						XXX		138	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining				XXX				400	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining	XXX							317	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining				XXX				317	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining					XXX			317	
OK621000030010	Bois d'Arc Creek	36.71	river	attaining	XXX							413	
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						400	140
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						217	140
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						215	140
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						400	84
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						217	84
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						215	84
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						400	85
OK621000030010	Bois d'Arc Creek	36.71	river	not attaining		XXX						217	85

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK621000050010	Pond Creek	60.22	river	not enough information				XXX				317	
OK621000050010	Pond Creek	60.22	river	not enough information					XXX			317	
OK621000050010	Pond Creek	60.22	river	not enough information	XXX							413	
OK621010010090	Clay Creek	8.55	river	attaining	XXX							91	
OK621010010090	Clay Creek	8.55	river	not attaining		XXX						217	140
OK621010010090	Clay Creek	8.55	river	not attaining		XXX						215	140
OK621010010090	Clay Creek	8.55	river	not attaining		XXX						217	92
OK621010010090	Clay Creek	8.55	river	not attaining		XXX						215	92
OK621010010090	Clay Creek	8.55	river	not attaining		XXX						217	156
OK621010010090	Clay Creek	8.55	river	not attaining		XXX						215	156
OK621010010090	Clay Creek	8.55	river	not enough information						XXX		385	
OK621010010090	Clay Creek	8.55	river	not enough information					XXX			302, 462	
OK621010010090	Clay Creek	8.55	river	not enough information	XXX							441	
OK621010010090	Clay Creek	8.55	river	not enough information	XXX							322	
OK621010010090	Clay Creek	8.55	river	not enough information						XXX		399	
OK621010010090	Clay Creek	8.55	river	not enough information						XXX		138	
OK621010010090	Clay Creek	8.55	river	not enough information	XXX							317	
OK621010010090	Clay Creek	8.55	river	not enough information					XXX			317	
OK621010010090	Clay Creek	8.55	river	not enough information	XXX							413	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining	XXX							91	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining				XXX				302	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining					XXX			302, 462	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining	XXX							441	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining						XXX		138	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining				XXX				400	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining	XXX							317	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining				XXX				317	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining					XXX			317	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	attaining	XXX							413	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining						XXX		385	140
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining	XXX							322	140
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining	XXX							322	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining	XXX							322	92
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining	XXX							322	156
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining						XXX		399	140
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining		XXX						217	140
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining		XXX						215	140
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining		XXX						217	
OK621010010230	Turkey Creek: Woods Co.	25.36	river	not attaining		XXX						215	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK621010030030	Driftwood Creek	38.79	river	not enough information	XXX							322	
OK621010030030	Driftwood Creek	38.79	river	not enough information						XXX		399	
OK621010030030	Driftwood Creek	38.79	river	not enough information						XXX		138	
OK621010030030	Driftwood Creek	38.79	river	not enough information	XXX							317	
OK621010030030	Driftwood Creek	38.79	river	not enough information				XXX				317	
OK621010030030	Driftwood Creek	38.79	river	not enough information					XXX			317	
OK621010030030	Driftwood Creek	38.79	river	not enough information	XXX							413	
OK621100000010	Chickaskia River	5.387	river	attaining	XXX							91	
OK621100000010	Chickaskia River	5.387	river	attaining						XXX		385	
OK621100000010	Chickaskia River	5.387	river	attaining				XXX				302	
OK621100000010	Chickaskia River	5.387	river	attaining					XXX			302, 462	
OK621100000010	Chickaskia River	5.387	river	attaining	XXX							441	
OK621100000010	Chickaskia River	5.387	river	attaining	XXX							322	
OK621100000010	Chickaskia River	5.387	river	attaining						XXX		399	
OK621100000010	Chickaskia River	5.387	river	attaining						XXX		138	
OK621100000010	Chickaskia River	5.387	river	attaining	XXX							317	
OK621100000010	Chickaskia River	5.387	river	attaining				XXX				317	
OK621100000010	Chickaskia River	5.387	river	attaining					XXX			317	
OK621100000010	Chickaskia River	5.387	river	not attaining		XXX						217	140
OK621100000010	Chickaskia River	5.387	river	not attaining		XXX						217	84
OK621100000010	Chickaskia River	5.387	river	not attaining		XXX						217	85
OK621100000010	Chickaskia River	5.387	river	not attaining		XXX						217	156
OK621100000010	Chickaskia River	5.387	river	not enough information		XXX						215	
OK621100000010	Chickaskia River	5.387	river	not enough information	XXX							413	
OK621100000100	Bitter Creek	23.34	river	attaining	XXX							91	
OK621100000100	Bitter Creek	23.34	river	attaining				XXX				302	
OK621100000100	Bitter Creek	23.34	river	attaining					XXX			302, 462	
OK621100000100	Bitter Creek	23.34	river	attaining	XXX							441	
OK621100000100	Bitter Creek	23.34	river	attaining	XXX							322	
OK621100000100	Bitter Creek	23.34	river	attaining				XXX				400	
OK621100000100	Bitter Creek	23.34	river	attaining	XXX							317	
OK621100000100	Bitter Creek	23.34	river	attaining				XXX				317	
OK621100000100	Bitter Creek	23.34	river	attaining					XXX			317	
OK621100000100	Bitter Creek	23.34	river	attaining	XXX							413	
OK621100000100	Bitter Creek	23.34	river	not attaining						XXX		385	140
OK621100000100	Bitter Creek	23.34	river	not attaining						XXX		138	140
OK621100000100	Bitter Creek	23.34	river	not attaining		XXX						217	140
OK621100000100	Bitter Creek	23.34	river	not attaining		XXX						215	140
OK621100000100	Bitter Creek	23.34	river	not attaining		XXX						217	92

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK621210000270	Chilocco Creek	16.08	river	not enough information						XXX		399	
OK621210000270	Chilocco Creek	16.08	river	not enough information						XXX		138	
OK621210000270	Chilocco Creek	16.08	river	not enough information	XXX							317	
OK621210000270	Chilocco Creek	16.08	river	not enough information					XXX			317	
OK621210000270	Chilocco Creek	16.08	river	not enough information	XXX							413	
OK720500010070	Bent Creek	20.06	river	attaining	XXX							91	
OK720500010070	Bent Creek	20.06	river	not attaining						XXX		385	140
OK720500010070	Bent Creek	20.06	river	not attaining		XXX						217	140
OK720500010070	Bent Creek	20.06	river	not attaining		XXX						215	140
OK720500010070	Bent Creek	20.06	river	not attaining		XXX						217	92
OK720500010070	Bent Creek	20.06	river	not attaining		XXX						215	92
OK720500010070	Bent Creek	20.06	river	not attaining		XXX						217	156
OK720500010070	Bent Creek	20.06	river	not attaining		XXX						215	156
OK720500010070	Bent Creek	20.06	river	not enough information				XXX				302	
OK720500010070	Bent Creek	20.06	river	not enough information					XXX			302, 462	
OK720500010070	Bent Creek	20.06	river	not enough information	XXX							441	
OK720500010070	Bent Creek	20.06	river	not enough information	XXX							322	
OK720500010070	Bent Creek	20.06	river	not enough information						XXX		399	
OK720500010070	Bent Creek	20.06	river	not enough information						XXX		138	
OK720500010070	Bent Creek	20.06	river	not enough information	XXX							317	
OK720500010070	Bent Creek	20.06	river	not enough information				XXX				317	
OK720500010070	Bent Creek	20.06	river	not enough information					XXX			317	
OK720500010070	Bent Creek	20.06	river	not enough information	XXX							413	
OK720500010150	Persimmon Creek	13.45	river	attaining	XXX							91	
OK720500010150	Persimmon Creek	13.45	river	attaining						XXX		385	
OK720500010150	Persimmon Creek	13.45	river	attaining				XXX				302	
OK720500010150	Persimmon Creek	13.45	river	attaining					XXX			302, 462	
OK720500010150	Persimmon Creek	13.45	river	attaining	XXX							441	
OK720500010150	Persimmon Creek	13.45	river	attaining	XXX							322	
OK720500010150	Persimmon Creek	13.45	river	attaining						XXX		138	
OK720500010150	Persimmon Creek	13.45	river	attaining				XXX				400	
OK720500010150	Persimmon Creek	13.45	river	attaining	XXX							317	
OK720500010150	Persimmon Creek	13.45	river	attaining				XXX				317	
OK720500010150	Persimmon Creek	13.45	river	attaining					XXX			317	
OK720500010150	Persimmon Creek	13.45	river	attaining	XXX							413	
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						400	140
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						217	140
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						215	140
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						400	92

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						217	92
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						215	92
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						400	85
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						217	85
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						215	85
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						400	156
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						217	156
OK720500010150	Persimmon Creek	13.45	river	not attaining		XXX						215	156
OK720500010150	Persimmon Creek	13.45	river	not enough information						XXX		399	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	attaining	XXX							91	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information						XXX		385	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information				XXX				302	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information					XXX			302, 462	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information	XXX							441	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information	XXX							322	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information						XXX		399	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information						XXX		138	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information		XXX						217	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information		XXX						215	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information	XXX							317	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information				XXX				317	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information					XXX			317	
OK720500010200	Indian Creek: Woodward Co.	17.03	river	not enough information	XXX							413	
OK720500020050	Otter Creek: Harper Co.	13.55	river	attaining	XXX							91	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not attaining		XXX						217	140
OK720500020050	Otter Creek: Harper Co.	13.55	river	not attaining		XXX						215	140
OK720500020050	Otter Creek: Harper Co.	13.55	river	not attaining		XXX						217	92
OK720500020050	Otter Creek: Harper Co.	13.55	river	not attaining		XXX						215	92
OK720500020050	Otter Creek: Harper Co.	13.55	river	not attaining		XXX						217	156
OK720500020050	Otter Creek: Harper Co.	13.55	river	not attaining		XXX						215	156
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information						XXX		385	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information				XXX				302	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information					XXX			302, 462	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information	XXX							441	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information	XXX							322	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information						XXX		399	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information						XXX		138	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information	XXX							317	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information				XXX				317	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information					XXX			317	
OK720500020050	Otter Creek: Harper Co.	13.55	river	not enough information	XXX							413	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining	XXX							91	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining						XXX		385	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining				XXX				302	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining					XXX			302, 462	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining	XXX							441	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining	XXX							322	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining						XXX		138	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining				XXX				400	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining	XXX							317	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining				XXX				317	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining					XXX			317	
OK720500020070	Clear Creek: Harper Co.	29.74	river	attaining	XXX							413	
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						400	140
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						217	140
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						215	140
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						400	92
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						217	92
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						215	92
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						400	156
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						217	156
OK720500020070	Clear Creek: Harper Co.	29.74	river	not attaining		XXX						215	156
OK720500020070	Clear Creek: Harper Co.	29.74	river	not enough information						XXX		399	
OK720500020100	Spring Creek	6.68	river	attaining	XXX							91	
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						217	140
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						215	140
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						217	92
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						215	92
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						217	
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						215	
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						217	156
OK720500020100	Spring Creek	6.68	river	not attaining		XXX						215	156
OK720500020100	Spring Creek	6.68	river	not enough information						XXX		385	
OK720500020100	Spring Creek	6.68	river	not enough information					XXX			302, 462	
OK720500020100	Spring Creek	6.68	river	not enough information	XXX							441	
OK720500020100	Spring Creek	6.68	river	not enough information	XXX							322	
OK720500020100	Spring Creek	6.68	river	not enough information						XXX		399	
OK720500020100	Spring Creek	6.68	river	not enough information						XXX		138	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK720500020100	Spring Creek	6.68	river	not enough information	XXX							317	
OK720500020100	Spring Creek	6.68	river	not enough information					XXX			317	
OK720500020100	Spring Creek	6.68	river	not enough information	XXX							413	
OK720500020130	Kiowa Creek	34.56	river	attaining	XXX							91	
OK720500020130	Kiowa Creek	34.56	river	attaining						XXX		385	
OK720500020130	Kiowa Creek	34.56	river	attaining				XXX				302	
OK720500020130	Kiowa Creek	34.56	river	attaining					XXX			302, 462	
OK720500020130	Kiowa Creek	34.56	river	attaining	XXX							441	
OK720500020130	Kiowa Creek	34.56	river	attaining	XXX							322	
OK720500020130	Kiowa Creek	34.56	river	attaining						XXX		399	
OK720500020130	Kiowa Creek	34.56	river	attaining						XXX		138	
OK720500020130	Kiowa Creek	34.56	river	attaining				XXX				400	
OK720500020130	Kiowa Creek	34.56	river	attaining	XXX							317	
OK720500020130	Kiowa Creek	34.56	river	attaining				XXX				317	
OK720500020130	Kiowa Creek	34.56	river	attaining	XXX							317	
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						400	140
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						217	140
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						215	140
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						400	
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						217	
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						215	
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						400	156
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						217	156
OK720500020130	Kiowa Creek	34.56	river	not attaining		XXX						215	156
OK720500020250	Duck Pond Creek	40.61	river	attaining	XXX							91	
OK720500020250	Duck Pond Creek	40.61	river	not attaining		XXX						217	140
OK720500020250	Duck Pond Creek	40.61	river	not attaining		XXX						215	140
OK720500020250	Duck Pond Creek	40.61	river	not attaining		XXX						217	92
OK720500020250	Duck Pond Creek	40.61	river	not attaining		XXX						215	92
OK720500020250	Duck Pond Creek	40.61	river	not attaining		XXX						217	156
OK720500020250	Duck Pond Creek	40.61	river	not attaining		XXX						215	156
OK720500020250	Duck Pond Creek	40.61	river	not enough information						XXX		385	
OK720500020250	Duck Pond Creek	40.61	river	not enough information				XXX				302	
OK720500020250	Duck Pond Creek	40.61	river	not enough information					XXX			302, 462	
OK720500020250	Duck Pond Creek	40.61	river	not enough information	XXX							441	
OK720500020250	Duck Pond Creek	40.61	river	not enough information	XXX							322	
OK720500020250	Duck Pond Creek	40.61	river	not enough information						XXX		399	
OK720500020250	Duck Pond Creek	40.61	river	not enough information						XXX		138	

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK720500020500	Palo Duro Creek	20.24	river	not attaining	XXX							322	140
OK720500020500	Palo Duro Creek	20.24	river	not attaining	XXX							322	
OK720500020500	Palo Duro Creek	20.24	river	not attaining	XXX							322	92
OK720500020500	Palo Duro Creek	20.24	river	not attaining	XXX							322	156
OK720500020500	Palo Duro Creek	20.24	river	not attaining						XXX		138	140
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						400	140
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						217	140
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						215	140
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						400	
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						217	
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						215	
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						400	92
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						217	92
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						215	92
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						400	156
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						217	156
OK720500020500	Palo Duro Creek	20.24	river	not attaining		XXX						215	156
OK720500020500	Palo Duro Creek	20.24	river	not enough information						XXX		399	
OK720500030010	Wolf Creek	52.07	river	attaining	XXX							91	
OK720500030010	Wolf Creek	52.07	river	attaining						XXX		385	
OK720500030010	Wolf Creek	52.07	river	attaining				XXX				302	
OK720500030010	Wolf Creek	52.07	river	attaining					XXX			302, 462	
OK720500030010	Wolf Creek	52.07	river	attaining	XXX							441	
OK720500030010	Wolf Creek	52.07	river	attaining	XXX							322	
OK720500030010	Wolf Creek	52.07	river	attaining						XXX		399	
OK720500030010	Wolf Creek	52.07	river	attaining						XXX		138	
OK720500030010	Wolf Creek	52.07	river	attaining				XXX			XXX	400	
OK720500030010	Wolf Creek	52.07	river	attaining	XXX							317	
OK720500030010	Wolf Creek	52.07	river	attaining				XXX				317	
OK720500030010	Wolf Creek	52.07	river	attaining					XXX			317	
OK720500030010	Wolf Creek	52.07	river	attaining	XXX							413	
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						217	140
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						215	140
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						217	85
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						215	85
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						217	
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						215	
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						217	92
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						215	92

Appendix D.1. OCC assessment results for beneficial use support.

OKWBID	SEGNAME	SEGSIZE	SEGTYPE	ATTAINMENT	WARM WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/ PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	SWS-SENSITIVE WATER SUP.	CAUSE	SOURCE
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						217	156
OK720500030010	Wolf Creek	52.07	river	not attaining		XXX						215	156
OK720500030010	Wolf Creek	52.07	river	not enough information		XXX						400	
OK720900000100	Cold Springs Creek	33.31	river	not attaining	XXX							322	140
OK720900000100	Cold Springs Creek	33.31	river	not attaining	XXX							322	156
OK720900000100	Cold Springs Creek	33.31	river	not enough information	XXX							91	
OK720900000100	Cold Springs Creek	33.31	river	not enough information						XXX		385	
OK720900000100	Cold Springs Creek	33.31	river	not enough information				XXX				302	
OK720900000100	Cold Springs Creek	33.31	river	not enough information					XXX			302, 462	
OK720900000100	Cold Springs Creek	33.31	river	not enough information	XXX							441	
OK720900000100	Cold Springs Creek	33.31	river	not enough information						XXX		399	
OK720900000100	Cold Springs Creek	33.31	river	not enough information						XXX		138	
OK720900000100	Cold Springs Creek	33.31	river	not enough information		XXX						217	
OK720900000100	Cold Springs Creek	33.31	river	not enough information		XXX						215	
OK720900000100	Cold Springs Creek	33.31	river	not enough information	XXX							317	
OK720900000100	Cold Springs Creek	33.31	river	not enough information				XXX				317	
OK720900000100	Cold Springs Creek	33.31	river	not enough information					XXX			317	
OK720900000100	Cold Springs Creek	33.31	river	not enough information	XXX							413	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining	XXX							91	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining						XXX		385	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining				XXX				302	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining					XXX			302, 462	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining	XXX							441	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining						XXX		138	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining				XXX				400	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining	XXX							317	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining				XXX				317	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining					XXX			317	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	attaining	XXX							413	
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining	XXX							322	140
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining	XXX							322	156
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining		XXX						400	140
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining		XXX						217	140
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining		XXX						215	140
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining		XXX						400	156
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining		XXX						217	156
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not attaining		XXX						215	156
OK720900000180	Cimarron River: Cimarron Co.	19.24	river	not enough information						XXX		399	

Appendix D.2. Key for beneficial use support codes and cause and source codes.

USE ID	DESCRIPTION
124	Aesthetic
125	Agriculture
130	Cool Water Aquatic Community
131	Habitat Limited Aquatic Community
133	Warm Water Aquatic Community
137	Primary Body Contact Recreation
138	Public and Private Water Supply
139	Secondary Body Contact Recreation
1005	Sensitive Water Supply
IMPAIRMENT ID	
91	Ammonia (unionized)--toxin
138	Chloride
153	Chlorpyrifos
215	Enterococcus
217	Escherichia coli
230	Fishes bioassessments (streams)
302	Nitrates
317	Oil and grease
322	Oxygen, dissolved
385	Sulfates
398	Total coliform
399	Total dissolved solids
400	Total fecal coliform
413	Turbidity
441	pH
462	Total phosphorous
SOURCE ID	
68	Land application of wastewater biosolids (non-ag)
84	Municipal (urbanized high density area)
85	Municipal point source discharges
92	On-site treatment systems (septic systems and similar decentralized systems)
100	Permitted runoff from confined animal feeding operations (CAFOs)
102	Petroleum / natural gas activities (Legacy)
140	Source unknown
155	Natural sources
156	Agriculture

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (µS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	
East Roaring Ck	OK310810-02-0180P	CGP	06-Jul-98	15450	10.07	4.11	323	25	986	7.96												1
East Roaring Ck	OK310810-02-0180P	CGP	21-Aug-98	11911	7.92	17.9	326	25.5	890	8.4												0.3
East Roaring Ck	OK310810-02-0180P	CGP	18-Feb-99	14679	12.39	10.4	247	12.3	778													1.25
East Roaring Ck	OK310810-02-0180P	CGP	27-Aug-99	14680	7.74	10	300	27.3	841	7.86												0.22
Rush Ck	OK310810-05-0010H	CGP	31-Jul-00	18969	9.14	1.17	305	35.3	1170	8.23	0.05		0.05	126	0.26		638	0.005	0.005	6	4.66	
Rush Ck	OK310810-05-0010H	CGP	05-Sep-00	21334	6.86	0.95	359	33.6	3.4	8.58	0.05		0.05	15.1	0.33		578	0.007	0.017	1	0.95	
Rush Ck	OK310810-05-0010H	CGP	09-Oct-00	21742	9.87	0.69	421	15.1	2.77	8.38	0.05		0.05	174	0.14		716	0.005	0.026	1	2.39	
Rush Ck	OK310810-05-0010H	CGP	13-Nov-00	21951	10.74	72.3	196	8.2	731	8.29	0.05		0.25	91.3	0.47		330	0.061	0.141	84	49.57	
Rush Ck	OK310810-05-0010H	CGP	18-Dec-00	22090	13.37	43.3	255	4.2	489	8.36	0.05		0.17	106	0.35		503	0.006	0.092	43	43.21	
Rush Ck	OK310810-05-0010H	CGP	31-Jan-01	22417	12.49	198	220	6.9	515	8	0.05		0.27	91.3	0.77		319	0.098	0.143	235	132.26	
Rush Ck	OK310810-05-0010H	CGP	05-Mar-01	22642	10.91	56.8	267	12.4	1069	8.36	0.05		0.23	122	0.54		421	0.044	0.131	80	104.78	
Rush Ck	OK310810-05-0010H	CGP	09-Apr-01	22849	10.69	16.9	301	26.1	1062	7.95	0.05		0.05	151			487	0.006	0.037	34	59.85	
Rush Ck	OK310810-05-0010H	CGP	14-May-01	22938	8.75	28.7	297	29.4	1316	7.92	0.05		0.12	156			516	0.027	0.109	18	40.85	
Rush Ck	OK310810-05-0010H	CGP	18-Jun-01	23065	8.7	8.3	198	30.7	936	8.02	0.05		0.05	157			446	0.014	0.033	13	28.56	
Rush Ck	OK310810-05-0010H	CGP	25-Jun-01	23109	8.66	7.17	343	25	1352	7.95											20	
Rush Ck	OK310810-05-0010H	CGP	23-Jul-01	23294	9.5	3.35	301	34.4	1150	8.05	0.015		0.57	112	0.45		402.3			1	6.38	
Rush Ck	OK310810-05-0010H	CGP	27-Aug-01	24023	10.03	1.85	319	32.3	1154	8.14	0.118		0.64	231.5	0.437		470.7	0.006	0.005	5	8.01	
Rush Ck	OK310810-05-0010H	CGP	01-Oct-01	24337	9.97	0.85	357	19.1	1260		0.055		0.02	212.3	0.244		633.5	0.005	0.005	10	0.33	
Rush Ck	OK310810-05-0010H	CGP	05-Nov-01	24432	10.53	2.98	349	19.2	2050	8.01	0.063		0.45	186.5	0.31		608.3	0.007	0.024	10	11.4	
Rush Ck	OK310810-05-0010H	CGP	17-Dec-01	24586	10.99	308	218	9.2	1414	7.76	0.204		0.83	107.15	1.11		374.3	0.102	0.218	179	54.98	
Rush Ck	OK310810-05-0010H	CGP	22-Jan-02	24760	15.16	6.25	313	8.3	2128	6.4	0.094		0.47	186.4	0.354		619.4	0.005	0.029	10	13.54	
Rush Ck	OK310810-05-0010H	CGP	25-Feb-02	24893	11.89	6.87	290	8.9		8.31	0.119		0.02	164.4	0.356		559.5	0.005	0.031	13	15.18	
Rush Ck	OK310810-05-0010H	CGP	01-Apr-02	25045	11.22	5.03	285	20.2	1176	8.27	0.041		0.02	161.8	0.299		518.7	0.009	0.025	10	24.79	
Tahoe Ck	OK311300-03-0070G	CGP	17-Aug-93	12067	6.1			24.8	901	7.57												
Tahoe Ck	OK311300-03-0070G	CGP	16-Jul-98	15477	5.94	1.27	298	26.5		7												0.01
Tahoe Ck	OK311300-03-0070G	CGP	23-May-00	18578	9.81	2.49	199	24	499	8.23	0.05		0.377	32	0.12		250	0.005	0.024	1	2.08	
Tahoe Ck	OK311300-03-0070G	CGP	27-Jun-00	18787	8	28.4	267	21.6		8.28	0.005		0.325	4.62	0.34		250	0.035	0.098	32	60.12	
Tahoe Ck	OK311300-03-0070G	CGP	05-Jul-00	18797	9.59	4.55	87	27	471	8.21												14.33
Tahoe Ck	OK311300-03-0070G	CGP	01-Aug-00	18979	11.15	3.23		27.7	487.3	8.25	0.05		0.09	25.4	0.05		163	0.005	0.005	4	0.78	
Tahoe Ck	OK311300-03-0070G	CGP	14-Nov-00	21975	11.23	1.99	239	9.4	678	8.26	0.05		1.84	19.4	0.13		271	0.017	0.021	1	20.06	
Tahoe Ck	OK311300-03-0070G	CGP	19-Dec-00	22102	13.27	0.99	250	5.2	460	8.3	0.05		2.62	35.4	0.28		308	0.005	0.014	1	5.51	
Tahoe Ck	OK311300-03-0070G	CGP	30-Jan-01	22447	10.92	16.5	207	8.9	444.2	8.27	0.05		2.14	15.3	0.34		234	0.02	0.049	36	50.88	
Tahoe Ck	OK311300-03-0070G	CGP	06-Mar-01	22659	11.88	2.68	233	11.8	914	8.05	0.05		2.53	38.4	0.2		274	0.007	0.009	1	15.49	
Tahoe Ck	OK311300-03-0070G	CGP	10-Apr-01	22858	11.17	1.23	206	20.9	895	7.89	0.05		2.26	61.9			286	0.005	0.009	8	6.32	
Tahoe Ck	OK311300-03-0070G	CGP	15-May-01	22957	11.53	1.41	189	26.9	950	7.74	0.05		0.94	65			283	0.007	0.008	5	2.33	
Tahoe Ck	OK311300-03-0070G	CGP	19-Jun-01	23071	11.28	2.27	208	28.2	752	7.83	0.05		1.2	54.7			232	0.006	0.022	5	2.88	
Tahoe Ck	OK311300-03-0070G	CGP	24-Jul-01	23300	11.03	7.72	149	33.5	743	8.14			0.51	130.5			237.5	0.067	0.084	4	0.1	
Tahoe Ck	OK311300-03-0070G	CGP	28-Aug-01	24029	8.44	61.2	159	29.8	679	8.16	0.282		0.59	119.3	0.786		229.5	0.027	0.101	38	0	
Tahoe Ck	OK311300-03-0070G	CGP	02-Oct-01	24343	8.56	13.4	151	18.9	979	8.25	0.015		0.51	220.9	0.474		299.2	0.005	0.035	13	0.1	
Tahoe Ck	OK311300-03-0070G	CGP	06-Nov-01	24438	7.07	7.59	239	16.7	1497	7.78	0.08		0.45	218.4	0.559		372.8	0.019	0.069	10	0	

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Tahoe Ck	OK311300-03-0070G	CGP	18-Dec-01	24592	11.88	1.69	276	4.5	1583	8.04	0.025		1.4	159.5	0.297		349.6	0.005	0.005	10	0.125
Tahoe Ck	OK311300-03-0070G	CGP	23-Jan-02	24766	10.95	7.4	264	7.2	1151	5.81	0.028		1.62	140.3	0.297		398.2	0.005	0.019	10	0.17
Tahoe Ck	OK311300-03-0070G	CGP	26-Feb-02	24899	12.44	0.89	251	3.7	1418	8.32	0.063		1.1	138.8	0.212		249.3	0.005	0.006	10	0.25
Tahoe Ck	OK311300-03-0070G	CGP	02-Apr-02	25051	11.58	4.54	197	16.5	975	8.27	0.176		0.69	133.6	0.353		306.7	0.005	0.005	12	0.14
Turkey Ck	OK311510-02-0060G	CGP	13-Jun-98	15563	11.07	7.57	228	24.3	1002	8.03											3
Turkey Ck	OK311510-02-0060G	CGP	23-May-00	18590	9.37	11.6	270	21.7	2083	8	0.05		3.083	840	0.29		1000	0.094	0.152	37	4.47
Turkey Ck	OK311510-02-0060G	CGP	27-Jun-00	18791	7.51	128	180	20.6	1764	7.81	0.131		1.287	630	1.08		845	0.165	0.434	134	16.19
Turkey Ck	OK311510-02-0060G	CGP	07-Jul-00	19094	8.66	9.99	258	22.1	2186												6
Turkey Ck	OK311510-02-0060G	CGP	01-Aug-00	19102	8.42	5.95	252	19	1864	7.96	0.05		3.25	383	0.32		692	0.055	0.066	10	3.68
Turkey Ck	OK311510-02-0060G	CGP	06-Sep-00	21659	16.69	3.36	270	22.3	1373	8.16	0.05		2.81	31.9	0.27		545	0.025	0.059	1	2.03
Turkey Ck	OK311510-02-0060G	CGP	10-Oct-00	21768	9.09	4.5	101	8.7	1221	8.21	0.05		4.57	240	0.48		561	0.039	0.06	1	1.39
Turkey Ck	OK311510-02-0060G	CGP	14-Nov-00	21967	8.19	4.09	101	4.7	1384	7.74	0.05		3.36	357	0.33		909	0.034	0.051	1	2.86
Turkey Ck	OK311510-02-0060G	CGP	19-Dec-00	22143	10.63	5.13	263	3	1615	7.88	0.05		4.15	359	0.37		780	0.017	0.046	1	3.55
Turkey Ck	OK311510-02-0060G	CGP	30-Jan-01	22416	14.61	1.71	220	8.2		8.29	0.05		3.37	746	0.43		998	0.015	0.047	12	3.71
Turkey Ck	OK311510-02-0060G	CGP	06-Mar-01	22655	13.13	4.11	246	14.2	1800	8.23	0.05		0.05	690	0.26		950	0.052	0.074	20	4.93
Turkey Ck	OK311510-02-0060G	CGP	10-Apr-01	22820	7.84	5.04	130	18	1491	7.87	0.05		2.35	682			9445	0.017	0.082	42	3.76
Turkey Ck	OK311510-02-0060G	CGP	14-May-01	22945	7.69	20.8	172	25.4	856	7.94	0.06		2.1	457			63	0.183	0.27	34	6.93
Turkey Ck	OK311510-02-0060G	CGP	18-Jun-01	23090	8.94	6.8	222	29.5	1851	7.17	0.05		3.02	888			2307	0.064	0.104	8	4.39
Turkey Ck	OK311510-02-0060G	CGP	23-Jul-01	23306	11.97	4.79	190	32.3	1122	8.23	0.015		3.37	385	0.74		522.4	0.041	0.082	27	2.01
Turkey Ck	OK311510-02-0060G	CGP	28-Aug-01	24018	14.88	4.64	164	24.9	1110	8.42	0.067		3.09	333.2	0.624		503.2	0.032	0.076	1	2.23
Turkey Ck	OK311510-02-0060G	CGP	02-Oct-01	24332		2.35	214	22.2	1098	8.24	0.112		4.04	342.3	0.346		534.7	0.006	0.016	10	0.42
Turkey Ck	OK311510-02-0060G	CGP	06-Nov-01	24462	7.71	6.92	179	17.3	1022	7.42	0.108		2.84	335.3	0.374		588.8	0.043	0.047	10	1.86
Turkey Ck	OK311510-02-0060G	CGP	18-Dec-01	24616	13.48	4.74	254	7	900	7.52	0.11		3.62	404.8	0.258		614.7	0.033	0.047	10	2.82
Turkey Ck	OK311510-02-0060G	CGP	23-Jan-02	24779	11.46	1.14	242	6.6	1435	8.16	0.031		4.05	495.1	0.329		803.5	0.007	0.007	10	3
Turkey Ck	OK311510-02-0060G	CGP	25-Feb-02	24881	16.75	1.11	192	9.8	1448	8.2	0.062		3.04	554.7	0.496		768.7	0.007	0.029	10	2.93
Turkey Ck	OK311510-02-0060G	CGP	02-Apr-02	25029	15.38	1.98	212	12.8	1540	8	0.105		2.34	605.5	0.484		760.8	0.024	0.03	10	3.28
Otter Ck	OK620910-03-0040G	CGP	31-Jul-98	15339	4.78	19.7	248	26.5	744	7.74											0.1
Otter Ck	OK620910-03-0040G	CGP	11-Sep-98	15408	0.46	5.78	240	21.2	865	7.14											0.2
Otter Ck	OK620910-03-0040G	CGP	15-May-00	18602	6.93	41.1	266	20.2	613	8.02	0.01		0.483	48.4	0.96		270	0.111	0.195	40	14.43
Otter Ck	OK620910-03-0040G	CGP	19-Jun-00	18726	7.27	126	138	21	412.6	7.85	0.045		0.288	16.1	1.35		164	0.243	0.656	88	43.39
Otter Ck	OK620910-03-0040G	CGP	06-Jul-00	21706	6.39			27.6	201.4	7.84											15.94
Otter Ck	OK620910-03-0040G	CGP	24-Jul-00	19088	6.81	381	128	23	356.2	7.65	0.21		0.05	74.2	1.41		99.5	0.166	0.251	304	32.24
Otter Ck	OK620910-03-0040G	CGP	28-Aug-00	21627	5.48	8.53	329	25.9	810		0.05		0.05	52.9	0.39		421	0.052	0.105	10	0.89
Otter Ck	OK620910-03-0040G	CGP	02-Oct-00	21723	7.99	14.6	287	20.3	1034	8.2	0.05		0.05	45.4	0.3		431	0.038	0.055	34	0.13
Otter Ck	OK620910-03-0040G	CGP	06-Nov-00	21926	7.22	1000		13.9	252.4	8.01	0.45		0.31	135	2.89		197	0.3	0.351	1650	2.5
Otter Ck	OK620910-03-0040G	CGP	11-Dec-00	22064	14.55	8.93	318	2.3	546	8.53	0.05		0.2	84.7	0.48		463	0.044	0.108	2	4.17
Otter Ck	OK620910-03-0040G	CGP	22-Jan-01	22182	14.55	10.2	243	1.7	1234	8.29	0.11		2.63	110	0.93		342	0.084	0.115	1	4.5
Otter Ck	OK620910-03-0040G	CGP	27-Feb-01	22610	10.51	519	153	8.7		8.03	0.23		1.34	156	1.27		178	0.44	0.48	324	51.36
Otter Ck	OK620910-03-0040G	CGP	02-Apr-01	22738	12.06	7.41	326	12	1333	8.4	0.05		0.34	125			393	0.006	0.07	1	12.31
Otter Ck	OK620910-03-0040G	CGP	07-May-01	22900	6.78	38.1	309	21.7	1041	8.43	0.07		0.18	99.2			379	0.085	0.145	46	10.01

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (µS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Otter Ck	OK620910-03-0040G	CGP	11-Jun-01	23045	7.77	12.4	227	27.8	922	8.23	0.05		0.05	75			303	0.048	0.109	9	3.79
Otter Ck	OK620910-03-0040G	CGP	16-Jul-01	23214	6.55	2.03	288	27.3	1047	8.33	0.029		0.39	78.25	0.7		294.81	0.123	0.154	9	0.97
Otter Ck	OK620910-03-0040G	CGP	20-Aug-01	23979	6.4	40.8	233	27.3	827	8.74	0.235		0.52	46.9	0.9		208.9	0.105	0.172	36	0.04
Otter Ck	OK620910-03-0040G	CGP	24-Sep-01	24289	9.3	117	114	22.2	426.3	8.26	0.24		3.21	34.2	1.669		136.4	0.236	0.284	38	0.83
Otter Ck	OK620910-03-0040G	CGP	30-Oct-01	24408	7.65	14	232	17.1	809	7.83	0.135		0.02	43.05	0.647		341.7	0.064	0.105	10	0.36
Otter Ck	OK620910-03-0040G	CGP	10-Dec-01	24570	11	6.54	275	4.3	1088	7.63	0.14		0.6	79.16	0.425		401.3	0.005	0.098	10	0.82
Otter Ck	OK620910-03-0040G	CGP	14-Jan-02	24725	14.07	22.9	301	3.3	1105	6.11	0.201		0.76	90.32	0.786		388.4	0.04	0.12	28	1.06
Otter Ck	OK620910-03-0040G	CGP	20-Feb-02	24853	11.23	41.4	272	9	908	8.14	0.148		0.89	62.33	0.795		318	0.136	0.139	26	2.25
Otter Ck	OK620910-03-0040G	CGP	26-Mar-02	25006	13.2	28.3	320	10.1	1035	8.41	0.108		0.02	79.5	0.715		376.3	0.095	0.168	19	1.2
Turkey Ck: Middle	OK620910-06-0010M	CGP	04-Nov-97	6968	11.11	5.95	401	11.6	1720	8.47	0.05		3.712	125	0.39		440	0.151	0.18	7.5	29.77
Turkey Ck: Middle	OK620910-06-0010M	CGP	02-Dec-97	6969	10.5	6.83	356	8.2	1522	8.27	0.005		2.522	117	0.43		400	0.11	0.146	7	34.5
Turkey Ck: Middle	OK620910-06-0010M	CGP	13-Jan-98	6970	12.84	36.6	380	0.9	2070	8.14	0.107		3.033	135	0.56		420	0.159	0.23	39.8	68
Turkey Ck: Middle	OK620910-06-0010M	CGP	10-Feb-98	6971	12.28	23.9	360	6.8	1856	8.23	0.066		3.943	121	0.532		420	0.132	0.193	34	62.35
Turkey Ck: Middle	OK620910-06-0010M	CGP	03-Mar-98	6972	13.17	7.42	340	6.6	1754	8.52											
Turkey Ck: Middle	OK620910-06-0010M	CGP	17-Mar-98	6973	12.15	854	48	6.1	132.3	7.52	0.52		0.702	2	3.13		52	0.2	0.72	754	
Turkey Ck: Middle	OK620910-06-0010M	CGP	14-Apr-98	6974	9.58	29.3	400	18.1	1563	8.21	0.05		2.732	110	0.72		191	0.128	0.215	42.7	71.64
Turkey Ck: Middle	OK620910-06-0010M	CGP	19-May-98	6975	7.73	73.5	262	23.6	1035	8.19	0.05		2.154	86.9	1.12		290	0.252	0.4	117	51.73
Turkey Ck: Middle	OK620910-06-0010M	CGP	16-Jun-98	6976	11.12	16.5	320	25.6	1650	8.5	0.022		1.959	133	0.6		360	0.133	0.236	34	20.09
Turkey Ck: Middle	OK620910-06-0010M	CGP	08-Jul-98	6977	5.8	1666	148	25.1	745	7.75	0.117		1.949	59.5	4.42		180	0.24	1.804	1208	68.53
Turkey Ck: Middle	OK620910-06-0010M	CGP	22-Jul-98	6978	9.89	4.42	271	29.3	1752	8.5	0.057		0.931	140	0.49		300	0.222	0.279	7.5	6.65
Turkey Ck: Middle	OK620910-06-0010M	CGP	28-Jul-98	6979	14.26	3.34	296	33.1	2160	8.75											
Turkey Ck: Middle	OK620910-06-0010M	CGP	30-Jul-98	12080	12.3	7.98	277	35.3	2080	8.95											5.07
Turkey Ck: Middle	OK620910-06-0010M	CGP	11-Aug-98	6980	11.05	5.48	323	27.7	2480	8.47											
Turkey Ck: Middle	OK620910-06-0010M	CGP	18-Aug-98	6981	8.25	18.5	275	28.6	1690	8.18	0.16		2.27	126	0.86		270	0.442	0.78	24.5	4.82
Turkey Ck: Middle	OK620910-06-0010M	CGP	26-Aug-98	6982	6.34	10.4	290	25.2	2120	8.16											
Turkey Ck: Middle	OK620910-06-0010M	CGP	29-Sep-98	14897	7.44	41.4	223	25.6	1302	7.96	0.121		1.41	99.7	0.87		240	0.4	0.41	49.7	6.15
Turkey Ck: Middle	OK620910-06-0010M	CGP	26-Oct-98	14898	9.36	54	267	17.3	1336		0.03		1.898	109	0.61		284	0.248	0.334	46.7	17.51
Turkey Ck: Middle	OK620910-06-0010M	CGP	28-Jul-99	13168	8.44	9.79	334	26.3	1783	8.16	0.055		0.336	158	0.97		330	0.097	0.25	49.5	32.33
Traders Ck	OK620920-02-0170G	CGP	23-May-00	18624	8.51	13.1	177	24	5160	7.89	0.053		0.245	1820	0.37		1970	0.005	0.04	24	5.58
Traders Ck	OK620920-02-0170G	CGP	27-Jun-00	18763	6.82	40	151	21.3	2330	7.73	0.044		0.136	826	0.59		930	0.018	0.139	46	35.24
Traders Ck	OK620920-02-0170G	CGP	01-Aug-00	19169	8.18	14.4	193	23.5	4.6	8.05	0.05		0.3	1067	0.28		1633	0.005	0.016	18	4.05
Traders Ck	OK620920-02-0170G	CGP	08-Aug-00	19113	7.59	25.9	169	23.8	1454	7.99											3.4
Traders Ck	OK620920-02-0170G	CGP	06-Sep-00	21662	8.4	8.91	142	24.1	4.62	7.9	0.05		0.16	1610	0.32		2442	0.007	0.042	20	0.87
Traders Ck	OK620920-02-0170G	CGP	10-Oct-00	21757	10.57	8.36	168	13.1	4508	8.2	0.05		0.65	2900	0.23		2423	0.005	0.023	1	1.62
Traders Ck	OK620920-02-0170G	CGP	13-Nov-00	21965	11.16	6.41	197	7.8	2953	8.11	0.05		0.58	1377	0.18		2440	0.007	0.021	19	12.36
Traders Ck	OK620920-02-0170G	CGP	18-Dec-00	22084	13	4.59	200	4.9	2590	8.15	0.05		0.73	962	0.23		1843	0.005	0.025	14	7.93
Traders Ck	OK620920-02-0170G	CGP	29-Jan-01	22402	12.52	9.36	210	3.9	3440	8.22	0.05		0.51	1165	0.43		1445	0.01	0.036	28	16.1
Traders Ck	OK620920-02-0170G	CGP	05-Mar-01	22636	10.6	10.8	205	11.5	3037	8.05	0.05		0.48	1484	0.32		1684	0.009	0.033	24	13.67
Traders Ck	OK620920-02-0170G	CGP	09-Apr-01	22837	10.18	14	180	22.3	4164	8.06	0.05		0.31	1513			1924	0.006	0.037	42	12.48
Traders Ck	OK620920-02-0170G	CGP	15-May-01	22972	6.39	38.5	201	20.9	3948	7.83	0.05		0.22	1531			1896	0.005	0.063	58	6.76

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (µS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Traders Ck	OK620920-02-0170G	CGP	18-Jun-01	23077	8.13	18	147	29.1	4433	7.96	0.05		0.15	1784			1449	0.01	0.058	27	6.02
Traders Ck	OK620920-02-0170G	CGP	23-Jul-01	23283	7.71	6.67	122	35	4832	7.97	0.015		0.49	1843.5	0.52		1860.4	0.016	0.015	11	1.7
Traders Ck	OK620920-02-0170G	CGP	27-Aug-01	24000	7.77	4.08	140	28.4	4642	8.03	0.082		0.49	1864.3	0.477		2013.8	0.016	0.044	15	0.92
Traders Ck	OK620920-02-0170G	CGP	01-Oct-01	24313	9.62	2.33	165	16.5	3785	8.03	0.015		0.62	1707	0.353		2073.9	0.005	0.005	10	0.88
Traders Ck	OK620920-02-0170G	CGP	05-Nov-01	24444	10.41	1.48	143	19.2	4792	8.14	0.102		0.74	1717	0.29		1992.6	0.005	0.005	10	1.36
Traders Ck	OK620920-02-0170G	CGP	17-Dec-01	24596	12.32	2.63	179	4.1	1969	8.1	0.11		1.25	1651.5	0.314		1978.9	0.007	0.016	10	1.32
Traders Ck	OK620920-02-0170G	CGP	23-Jan-02	24754	14.47	3.13	170	6	4740	8.2	0.06		1.12	1602	0.295		2058	0.005	0.013	10	1.47
Traders Ck	OK620920-02-0170G	CGP	25-Feb-02	24903	11.85	8	167	5.3	4969	8.1	0.111		0.79	1739.5	0.371		2045.1	0.017	0.025	10	1.98
Traders Ck	OK620920-02-0170G	CGP	01-Apr-02	25036	11.27	14.8	135	23.9	5140	8.11	0.048		0.6	1782	0.507		1917	0.015	0.027	25	1.57
Buffalo Ck: Lower	OK620920-05-0010G	CGP	19-Jun-98	15140	8.96	4.15	192	17.6	2.97	7.39											0.71
Buffalo Ck: Lower	OK620920-05-0010G	CGP	23-May-00	18623	7.93	19.1	174	23.1	3410	7.91	0.063		0.638	1636	0.67		1800	0.005	0.06	38	22.52
Buffalo Ck: Lower	OK620920-05-0010G	CGP	27-Jun-00	18762	7.01	106	182	22.5	2550	7.96	0.03		0.409	1083	0.98		1200	0.038	0.242	120	63.97
Buffalo Ck: Lower	OK620920-05-0010G	CGP	01-Aug-00	19167	8.48	18.4	198	22.2	3.1	8.15	0.05		0.49	1001	0.43		5009	0.005	0.015	18	13.41
Buffalo Ck: Lower	OK620920-05-0010G	CGP	08-Aug-00	19112	7.29	23	155	22.1	2880	7.98											10.11
Buffalo Ck: Lower	OK620920-05-0010G	CGP	06-Sep-00	21661	8.6	4.5	132	23.1	3.44	7.81	0.1		0.25	1700	0.42		2685	0.005	0.038	6	3.1
Buffalo Ck: Lower	OK620920-05-0010G	CGP	10-Oct-00	21756	11.65	3.09	162	11.7	3429	8.21	0.05		1	951	0.26		2644	0.005	0.006	10	5.4
Buffalo Ck: Lower	OK620920-05-0010G	CGP	13-Nov-00	21966	11.62	7.31	205	6	1660	8.28	0.05		1.07	1279	0.38		2603	0.005	0.026	22	15.66
Buffalo Ck: Lower	OK620920-05-0010G	CGP	18-Dec-00	22085	13.18	21.5	216	2.7	1695	8.24	0.05		1.56	920	0.59		1793	0.005	0.068	68	17.63
Buffalo Ck: Lower	OK620920-05-0010G	CGP	29-Jan-01	22403	12.12	17.7	192	4.9	2951	8.26	0.05		1.05	1210	0.48		1585	0.013	0.049	58	30.3
Buffalo Ck: Lower	OK620920-05-0010G	CGP	05-Mar-01	22637	10.89	18.3	233	12.5	2519	8.22	0.05		0.59	1497	0.8		1794	0.014	0.062	32	32.6
Buffalo Ck: Lower	OK620920-05-0010G	CGP	09-Apr-01	22838	9.72	19.4	186	22.9	3345	8.11	0.05		0.35	1549			1893	0.008	0.06	80	29.26
Buffalo Ck: Lower	OK620920-05-0010G	CGP	15-May-01	22970	6.28	72.1	222	20.1	2704	7.97	0.05		0.37	1445			1697	0.05	0.055	85	18.78
Buffalo Ck: Lower	OK620920-05-0010G	CGP	18-Jun-01	23078	9.59	6.18	147	31.3	3261	8.13	0.05		0.26	1756			1681	0.007	0.022	18	16.07
Buffalo Ck: Lower	OK620920-05-0010G	CGP	23-Jul-01	23284	7.57	2.88	109	36.8	3496	7.98	0.031		0.49	2055.5	0.48		2123.6	0.036	0.024	4	3.18
Buffalo Ck: Lower	OK620920-05-0010G	CGP	27-Aug-01	24001	9.41	1.03	95	32.2	3564	8.12	0.248		0.48	1949.8	0.478		2121.9	0.005	0.014	6	2.66
Buffalo Ck: Lower	OK620920-05-0010G	CGP	01-Oct-01	24314	9.21	1.84	138	19.5	2979	8.09	0.154		0.48	1608	0.428		2000.5	0.005	0.005	10	4.51
Buffalo Ck: Lower	OK620920-05-0010G	CGP	05-Nov-01	24445	11.61	5.07	150	20.7	3607	8.12	0.127		0.7	1754	0.392		2095.2	0.005	0.005	12	5.42
Buffalo Ck: Lower	OK620920-05-0010G	CGP	17-Dec-01	24597	12.41	3.29	175	5.2	3381	8.09	0.11		1.27	1681	0.259		1721.1	0.014	0.016	10	7.73
Buffalo Ck: Lower	OK620920-05-0010G	CGP	23-Jan-02	24753	12.14	3.67	179	3.2	3352	8.01	0.025		1.22	1364	0.338		1795.4	0.005	0.017	15	10.35
Buffalo Ck: Lower	OK620920-05-0010G	CGP	25-Feb-02	24904	11.24	4.29	164	5.4	3192	8.14	0.103		0.8	1509	0.447		1857.1	0.006	0.016	10	8.81
Buffalo Ck: Lower	OK620920-05-0010G	CGP	01-Apr-02	25035	9.84	4.37	153	20.2	3261	8.08	0.134		0.62	1511	0.448		1673.4	0.009	0.019	10	8.75
Buffalo Ck: Lower	OK620920-05-0010G	CGP	19-Jun-02	25577	8.14	10.5	104	32.8	3529	7.75											3.87
Buffalo Ck: Lower	OK620920-05-0010G	CGP	29-Jul-02	25549	4.43			23.4	1282	7.52	1.034	6	2.51	527.1	8.329	918	587.4	0.113	1.08	10	140.3
Buffalo Ck: Lower	OK620920-05-0010G	CGP	03-Sep-02	25771	5.53	10.5	150	28.3	2217	7.98	0.015	2	0.02	952	0.635	1821	1124.6			10	4.24
Buffalo Ck: Lower	OK620920-05-0010G	CGP	07-Oct-02	25966	8.59	17.5	117	18.3	1514	7.93	0.023	2	0.68	544.1	0.488	1060	753.6	0.078	0.112	15	22.28
Buffalo Ck: Lower	OK620920-05-0010G	CGP	12-Nov-02	26088	11.74	2.8	174	11.4	3176	8.27	0.02	2	0.13	1448.8	0.542	2638	2037	0.005	0.035	10	13.05
Buffalo Ck: Lower	OK620920-05-0010G	CGP	09-Dec-02	26241	12.35	6.45	204	4.9	3271	8.26	0.015	2	0.63	1419.02	0.349	2696	1691.6	0.005	0.005	10	15.21
Buffalo Ck: Lower	OK620920-05-0010G	CGP	21-Jan-03	26710	12.32	5.73	215	3.6	3309	8.28	0.015	2	0.89	1426.9	0.674	2659	1737	0.005	0.005	10	11.65
Buffalo Ck: Lower	OK620920-05-0010G	CGP	10-Mar-03	27246	12.06	11.1	210	8.1	3244	8.29	0.015	2	0.36	1499.4	0.662	2756	1737.7	0.005	0.013	12	17.37
Buffalo Ck: Lower	OK620920-05-0010G	CGP	24-Mar-03	27310	12.62	10.1	207	18.8	2870	8.2	0.015	3.6	0.33	1465.4	0.444	2741	1640.4	0.005	0.033	24	20.66

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Buffalo Ck: Lower	OK620920-05-0010G	CGP	05-May-03	27548	9.93	2.13	180	21.5	3288	8.06	0.015	2	0.04	1555.7	0.829	2871	1750.2	0.005	0.005	10	7.34
Buffalo Ck: Lower	OK620920-05-0010G	CGP	02-Jun-03	27632	10.67	9.98	177	26.6	2919	8.14	0.017	3.2	0.04	1484.9	0.824	2857	1802.1	0.012	0.109	16	6.48
Buffalo Ck: Lower	OK620920-05-0010G	CGP	07-Jul-03	27772	8.68	4.06	136	26.1	2826	8.06	0.015	2.3	0.09	1388.7	0.64	2395	1394.3	0.016	0.079	10	8.04
Buffalo Ck: Lower	OK620920-05-0010G	CGP	11-Aug-03	28078	6.33	23.4	130	28.9	1780	7.61	0.187	2.8	0.12	840.6	0.878	1659	977.7	0.049	0.124	30	12.19
Buffalo Ck: Lower	OK620920-05-0010G	CGP	15-Sep-03	28217	9.64	3.22	174	20	2533	8.17	0.017	2.7	0.07	1112.4	0.597	2109	1386.6	0.007	0.053	10	8.66
Buffalo Ck: Lower	OK620920-05-0010G	CGP	20-Oct-03	28386	10.52	6.82	180	18.7	2971	8.14	0.037	2	0.22	1323.3	0.11	2335	1391.2	0.01	0.025	20	7.9
Buffalo Ck: Lower	OK620920-05-0010G	CGP	01-Dec-03	28520	12.91	2.46	184	6.5	1219	8.27	0.015	2.3	0.61	1575.4	0.41	2519	1536.8	0.005	0.054	10	
Buffalo Ck: Lower	OK620920-05-0010G	CGP	05-Jan-04	29400	14.22	6.51	188	0.7	3367	8.4	0.03	3.2	0.63	1513.9	0.467	2667	1557.7	0.005	0.055	10	
Buffalo Ck: Lower	OK620920-05-0010G	CGP	09-Feb-04	29569	13.33	10.2	225	4.2	3304	8.25	0.061	2	0.98	1458.2	0.494	2568	1606.5	0.005	0.056	28	16.31
Buffalo Ck: Lower	OK620920-05-0010G	CGP	15-Mar-04	29748	10.55	22.1	219	13.8	3284	8.3	0.028	5.1	0.31	1493.7	0.658	2627	1616.7	0.028	0.105	44	28.62
Buffalo Ck: Lower	OK620920-05-0010G	CGP	26-Apr-04	30109	7.64	73.4	216	18	2547	8.15	0.063	2	0.25	1001.9	1.083	2049	1405.2	0.063	0.167	132	23.68
Buffalo Ck: Lower	OK620920-05-0010G	CGP	01-Jun-04	30330	11.67	2.72	148	24.3	3310	8.05	0.015	2	0.16	1723.8	0.54	2879	1851.7	0.008	0.047	39	4.87
Bois d'Arc Ck	OK621000-03-0010F	CGP	19-Dec-97	15751	11.31	4.97	269	4.7	1146	7.54											7.8
Bois d'Arc Ck	OK621000-03-0010F	CGP	29-Sep-98	11860	6.08	94.2	169	24.2	766	7.31											3.33
Bois d'Arc Ck	OK621000-03-0010F	CGP	16-May-00	18611	7.41	49.3	303	17.1	1052	7.81	0.033		1.79	307	0.62		510	0.095	0.247	91	13.45
Bois d'Arc Ck	OK621000-03-0010F	CGP	20-Jun-00	18748	8.3	56.5	85	23.1	426.8		0.2		0.762	45.6	2.63		130	0.099	1	755	168.65
Bois d'Arc Ck	OK621000-03-0010F	CGP	25-Jul-00	19085	5.15	582	55	22.8	363.4	7.74	0.4		0.88	102	1.5		149	0.229	0.5	196	46.51
Bois d'Arc Ck	OK621000-03-0010F	CGP	29-Aug-00	21643	6.39	17.3	238	28.5	1632		0.05		0.37	322	0.2		705	0.102	0.14	36	2.75
Bois d'Arc Ck	OK621000-03-0010F	CGP	03-Oct-00	21733	7.3	17.8	208	21.3	1565	7.91	0.05		0.56	289	0.41		687	0.068	0.151	16	2.52
Bois d'Arc Ck	OK621000-03-0010F	CGP	06-Nov-00	21854	8.22	829	63	14	134	7.01	0.41		0.37	48.6	2.24		67.4	0.225	0.95	950	129.47
Bois d'Arc Ck	OK621000-03-0010F	CGP	11-Dec-00	22131	11.79	16.9	192	2.8	1844	6.47	0.05		0.77	459	0.35		818	0.026	0.064	9	6.52
Bois d'Arc Ck	OK621000-03-0010F	CGP	22-Jan-01	22430	12.29	21.4	144	0.3	1412	7.82	0.05		2.33	314	0.48		680	0.028	0.076	1	13.03
Bois d'Arc Ck	OK621000-03-0010F	CGP	26-Feb-01	22594	6.41	1000	81	7.3	620	7.5	0.36		2.32	291	2.59		248	0.743	0.784	830	249.61
Bois d'Arc Ck	OK621000-03-0010F	CGP	02-Apr-01	22783	8.28	24.1	189	11.6	1692	7.7	0.05		1.19	408			726	0.039	0.109	28	4.51
Bois d'Arc Ck	OK621000-03-0010F	CGP	08-May-01	22921	5.36	627	132	18.3	1497	7.87	0.16		0.98	357			738	0.16	0.229	81	7.43
Bois d'Arc Ck	OK621000-03-0010F	CGP	12-Jun-01	23055	6.63	82.2	243	27.2	1258	8.04	0.05		1.01	309			571	0.111	0.177	65	13.31
Bois d'Arc Ck	OK621000-03-0010F	CGP	23-Jul-01	23315	6.06	28	135	28.9	1507	8.28	0.018		0.51	408	1.03		579.7			32	2.56
Bois d'Arc Ck	OK621000-03-0010F	CGP	20-Aug-01	23956	4.64	10.9	162	25.1	1319	8.71	0.214		0.52	348.4	0.84		533	0.084	0.107	14	1.12
Bois d'Arc Ck	OK621000-03-0010F	CGP	24-Sep-01	24296	5.11	21.7	146	20.5	1072	8.2	0.233		0.73	252.4	0.669		44.4	0.075	0.102	30	4.1
Bois d'Arc Ck	OK621000-03-0010F	CGP	29-Oct-01	24399	4.54	12.1	186	12.5	1245	8.19	0.191		0.56	410.5	0.742		675.3	0.019	0.056	10	1.68
Bois d'Arc Ck	OK621000-03-0010F	CGP	10-Dec-01	24559	9.76	12.9	201	4.5	1175	7.26	0.06		0.7	442.9	0.482		806.7	0.051	0.075	15	3.97
Bois d'Arc Ck	OK621000-03-0010F	CGP	14-Jan-02	24714	13.03	15.1	155	2.6	1254	8.03	0.015		1.31	611.6	0.439		861.6	0.005	0.025	10	4.86
Bois d'Arc Ck	OK621000-03-0010F	CGP	19-Feb-02	24858	10.99	31.5	162	9.7	1398	8.25	0.094		0.56	600.6	0.613		933.5	0.012	0.104	25	11.97
Bois d'Arc Ck	OK621000-03-0010F	CGP	25-Mar-02	25011	11.59	40.4	203	10.8	1541	9.22	0.193		0.57	620.4	0.654		860.2	0.023	0.09	40	16.15
Yellowstone Ck	OK621010-01-0270G	CGP	18-Aug-98	15210	8	12.1	169	23.5	2928	7.77											2
Yellowstone Ck	OK621010-01-0270G	CGP	23-May-00	18625	8.2	60.2	166	27.1	2730	7.9	0.03		0.29	1529	0.42		1690	0.005	0.088	70	6.92
Yellowstone Ck	OK621010-01-0270G	CGP	27-Jun-00	18764	7.67	132	143	22.5	2240	7.8	0.029		0.149	1132	0.75		1250	0.01	0.187	124	27.74
Yellowstone Ck	OK621010-01-0270G	CGP	24-Jul-00	19092	7.12	34.1	174	30	2599	7.89	0.05		0.16	962	0.32		1386	0.044	0.063	52	12.34
Yellowstone Ck	OK621010-01-0270G	CGP	28-Aug-00	21631	6.85	2.89	168	32	3460		0.05		0.12	1504	0.1		2516	0.012	0.044	10	0.9
Yellowstone Ck	OK621010-01-0270G	CGP	02-Oct-00	21727	10.54	5.58	128	26.7	300	7.82	0.05		0.12	987	0.18		2340	0.012	0.024	9	0.21

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow	
Black Bear Ck: Lower	OK621200-03-0010G	CGP	17-Jul-03	27983	4.3	36.1	155	29.7	669	7.92											2.68	
Black Bear Ck: Lower	OK621200-03-0010G	CGP	28-Jul-03	27889	5.69	22.1	168	28.4	675	8.16												
Black Bear Ck: Lower	OK621200-03-0010G	CGP	25-Aug-03	28143	4.72	20.5	182	28.3	792	7.95												0
Black Bear Ck: Lower	OK621200-03-0010G	CGP	29-Sep-03	28295	5.23	193	82	17.5	234.8	7.02												
Black Bear Ck: Lower	OK621200-03-0010G	CGP	20-Oct-03	28357	7.65	116	98	16.8	408.6	7.73												
Red Rock Ck: Upper	OK621200-05-0160G	CGP	05-Aug-02	25638	3.93	440	113	29.5	424.5	7.68	0.32	2	1.07	27.18	1.737	266	123.4	0.309	0.441	10	6.16	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	03-Sep-02	25780	6.63	316	126	28	369.2	8.03	0.282	5	1.09	17.06	1.666	287	130.1			168	0.66	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	30-Sep-02	25899	6.13	495	119	22.6	379.4	7.48	0.055	2	1.47	23.94	0.924	256	131.9	0.315	0.33	29	10.69	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	04-Nov-02	26054	10.74	201	146	8.1	831	7.74	0.017	4	2.65	68.82	0.637	523	217.3	0.23	0.272	139	60.77	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	02-Dec-02	26208	11.58	11.8	385	4.9	1802	8.03	0.017	4	0.45	186.91	0.57	1057	356.9	0.098	0.111	16	7.24	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	14-Jan-03	26593	12.89	23.1	321	3.6	725	8.06	0.015	6	1.26	167.2	0.281	963	441.8	0.043	0.103	29	12.82	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	18-Feb-03	26804	12.85	12.3	346	5.1	1954	8.39	0.015	3.4	0.37	219.9	0.11	1056	435.9	0.013	0.024	10	9.69	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	24-Mar-03	27327	8.62	262	128	15	746	7.66	0.097	3.1	1.44	61.2	1.245	469	186.7	0.225	0.29	212	130.6	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	28-Apr-03	27430	6.08	155	238	20.9	1261	8	0.061	2.2	1.01	118	0.77	731	355.3	0.113	0.276	102	24.56	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	03-Jun-03	27667	5.15	194	282	24.7	1250	8.26											6.64	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	03-Jun-03	27645	5.15	194	282	24.7	1250	8.26	0.021	4.2	0.35	104.2	1.039	749	318.3	0.15	0.36	178	6.64	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	07-Jul-03	27756	4.36	171	219	27.3	738	8	0.094	6.2	0.31	38.1	1.079	415	165.9	0.191	0.412	110	0.56	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	11-Aug-03	28067	4.21	71.3	0.58	28.3	1137	8.29	0.017	8.6	0.12	69.4	1.393	651	271.1	0.231	0.485	61	1.14	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	15-Sep-03	28226	6.98	100	325	21.5	1081	8.31	0.015	5.7	0.04	63.3	0.937	584	262.1	0.208	0.362	73	0.86	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	20-Oct-03	28375	6.02	40.1	279	16.9	971	8.19	0.028	4.4	0.04	61	0.95	550	222.8	0.132	0.253	15	0.06	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	01-Dec-03	28540	6.66	22.7	336	5.7	994	7.87	0.015	3.7	0.04	62	0.763	576	283.7	0.173	0.287	10	0.14	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	05-Jan-04	29365	9.33	48.6	350	3.4	1122	8.25	0.015	6.2	0.04	68	0.634	643	347.4	0.028	0.182	41	0.45	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	09-Feb-04	29586	16.16	60.6	214	1.9		8.11	0.151	4	1.23	102.2	1.138	689	312.5	0.177	0.286	26	17.36	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	15-Mar-04	29737	9.63	254	132	11.1	698	7.87	0.205	4.2	0.77	59.6	1.2	472	179.8	0.202	0.39	112	47.13	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	19-Apr-04	30055	6.12	27.7	286	19.7	1612	8.03	0.02	2.1	0.12	162	1.052	884	401.1	0.043	0.134	36	16.75	
Red Rock Ck: Upper	OK621200-05-0160G	CGP	01-Jun-04	30319	6.54	106	266	24.7	1188	8.1	0.015	4.4	0.28	101.6	0.65	700	296.8	0.174	0.296	72	2.37	
Persimmon Ck	OK720500-01-0150G	CGP	26-Aug-98	15128	6.23	29.5	195	31.9	1087	8.25											2	
Persimmon Ck	OK720500-01-0150G	CGP	23-May-00	21654	7.95	30	251	19.2	1005	8.14	0.053		1.136	178	0.81		440	0.065	0.142	48	10.95	
Persimmon Ck	OK720500-01-0150G	CGP	27-Jun-00	21655	7.67	175	260	21.1	803	8.17	0.104		0.449	53	1.47		330	0.189	0.484	174	42.3	
Persimmon Ck	OK720500-01-0150G	CGP	01-Aug-00	21656	8.26	29.2	268	24.9	904	8.57	0.05		1.2	123	0.39		441	0.097	0.124	20	7.48	
Persimmon Ck	OK720500-01-0150G	CGP	07-Aug-00	21657	7.43	20.3	229	27.2	8.95	8.54											5.28	
Persimmon Ck	OK720500-01-0150G	CGP	05-Sep-00	21658	6.63	12.5	131	30.9	782	8.58	0.05		0.57	150	0.24		391	0.019	0.046	18	1.03	
Persimmon Ck	OK720500-01-0150G	CGP	09-Oct-00	21747	9.81	5.12	212	13	873	8.56	0.05		1.8	110	0.4		526	0.012	0.041	17	3.55	
Persimmon Ck	OK720500-01-0150G	CGP	14-Nov-00	21979	11.61	14.8	305	3.2	601	8.55	0.05		0.84	155	0.38		501	0.092	0.127	32	18.08	
Persimmon Ck	OK720500-01-0150G	CGP	19-Dec-00	22094	14.72	16.7	300	0.4	534	8.5	0.05		1.14	110	0.57		526	0.009	0.109	28	20.13	
Persimmon Ck	OK720500-01-0150G	CGP	30-Jan-01	22405	11.49	71.5	287	1.6	929	8.46	0.05		0.56	138	1.21		387	0.087	0.23	118	55.86	
Persimmon Ck	OK720500-01-0150G	CGP	06-Mar-01	22646	10.25	22.4	289	7.5	708	8.37	0.05		0.84	181	0.53		430	0.06	0.118	32	28.9	
Persimmon Ck	OK720500-01-0150G	CGP	10-Apr-01	22861	8.29	34.2	275	17.8	1024	8.2	0.05		0.72	164			431	0.079	0.189	100	25.11	
Persimmon Ck	OK720500-01-0150G	CGP	14-May-01	22954	8.53	46.4	201	25.8	857	8.23	0.05		1	169			456	0.138	0.23	62	20.25	
Persimmon Ck	OK720500-01-0150G	CGP	19-Jun-01	23080	7.57	22.7	254	19.7	1048	8.34	0.05		1.34	165			424	0.114	0.166	29	8.37	

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Persimmon Ck	OK720500-01-0150G	CGP	24-Jul-01	23286	7.21	23.9	233	24.2	1036	8.31	0.018		0.48	198.5	0.78		418.6	0.235	0.228	43	1.87
Persimmon Ck	OK720500-01-0150G	CGP	28-Aug-01	24003	7.58	167	176	21.1	862	8.14	0.494		0.93	172.8	1.937		305.6	0.258	0.399	173	9.7
Persimmon Ck	OK720500-01-0150G	CGP	01-Oct-01	24316	8.48	28.8	267	21.7	958	8.41	0.368		1.37	141.1	0.746		378.3	0.126	0.204	41	9.97
Persimmon Ck	OK720500-01-0150G	CGP	06-Nov-01	24447	8.78	8.7	296	14.4	973	8.08	0.141		0.92	127	0.57		389	0.039	0.077	17	12.53
Persimmon Ck	OK720500-01-0150G	CGP	17-Dec-01	24599	11.08	9.59	291	8.6	9.53	8.48	0.123		1.19	133.7	0.378		382.3	0.065	0.083	19	15.38
Persimmon Ck	OK720500-01-0150G	CGP	22-Jan-02	24751	11.49	11.1	282	8.2	948	8.45	0.074		1.16	126.3	0.42		403.2	0.041	0.077	25	17.17
Persimmon Ck	OK720500-01-0150G	CGP	25-Feb-02	24906	10.74	7.82	237	6.6	985	8.62	0.046		0.93	136.7	0.446		257.4	0.041	0.047	10	14.32
Persimmon Ck	OK720500-01-0150G	CGP	01-Apr-02	25033	11.16	7.2	254	12.9	963	8.42	0.143		1.05	143.3	0.664		380.6	0.059	0.06	17	13.75
Persimmon Ck	OK720500-01-0150G	CGP	18-Jun-02	25573	8.22	122	268	22	697	7.86											17.17
Persimmon Ck	OK720500-01-0150G	CGP	30-Jul-02	25555	6.89	28.9	202	31.7	804	8.52	0.113	2	0.89	121.8	0.641	513	328.2	0.14	0.163	15	4.64
Persimmon Ck	OK720500-01-0150G	CGP	04-Sep-02	25777	8.09	16.6	219	23.3	904	8.54	0.015	11	1.07	150.1	0.48	542	369	0.072	0.081	25	1.72
Persimmon Ck	OK720500-01-0150G	CGP	08-Oct-02	25972	8.24	52.5	247	16	996	8.22	0.102	4	1.21	166.6	0.489	624	399.7	0.165	0.36	53	26.07
Persimmon Ck	OK720500-01-0150G	CGP	13-Nov-02	26092	10.24	9.21	302	8.8	1042	8.38	0.031	2	0.73	163.2	0.367	664	383.6	0.074	0.085	19	18.18
Persimmon Ck	OK720500-01-0150G	CGP	10-Dec-02	26245	12.57	31.8	337	4	1078	8.47	0.03	2	0.57	155.66	0.277	610	406.7	0.05	0.088	44	45.78
Persimmon Ck	OK720500-01-0150G	CGP	22-Jan-03	26715	12.81	10.8	288	2.2	998	8.54	0.015	5	0.88	158.2	0.432	622	414.7	0.013	0.033	19	20.18
Persimmon Ck	OK720500-01-0150G	CGP	12-Mar-03	27250	10.51	15.8	274	11.2	970	8.41	0.015	2	0.95	162.1	0.391	634	405.8	0.023	0.048	21	20.78
Persimmon Ck	OK720500-01-0150G	CGP	25-Mar-03	27316	8.62	28.9	297	13.6	1087	8.37	0.015	3.6	0.93	174.7	0.11	717	411.4	0.005	0.013	58	22.51
Persimmon Ck	OK720500-01-0150G	CGP	06-May-03	27552	9.13	25.1	281	17	996	8.39	0.022	2.8	0.91	158.6	0.839	639	380.7	0.071	0.172	32	13
Persimmon Ck	OK720500-01-0150G	CGP	03-Jun-03	27638	8.12	42.6	256	21.2	944	8.24	0.021	2.3	1.3	146.7	0.52	643	382	0.099	0.213	50	8.24
Persimmon Ck	OK720500-01-0150G	CGP	08-Jul-03	27778	7.76	22.7	233	22.6	785	8.31	0.015	2.2	1.11	144.6	0.281	532	366.3	0.084	0.183	39	5.85
Persimmon Ck	OK720500-01-0150G	CGP	12-Aug-03	28084	7.81	8.55	212	21.3	625	7.3	0.015	2.3	1.03	135.2	0.353	571	342.8	0.021	0.099	10	2.94
Persimmon Ck	OK720500-01-0150G	CGP	16-Sep-03	28223	8.46	13.5	202	18.2	822	8.3	0.015	3.5	0.72	132.4	0.368	529	307.3	0.01	0.075	33	2.83
Persimmon Ck	OK720500-01-0150G	CGP	21-Oct-03	28392	8.92	8.22	271	14.2	834	8.31	0.023	2.6	0.51	135.9	0.24	581	366.3	0.03	0.099	89	5.09
Persimmon Ck	OK720500-01-0150G	CGP	02-Dec-03	28526	10	10.6	282	6.3	980	8.37	0.015	4.1	0.81	127.4	0.569	603	360.4	0.018	0.09	24	9.62
Persimmon Ck	OK720500-01-0150G	CGP	06-Jan-04	29406	13.41	16.3	325	0	1092	8.31	0.035	2.9	0.86	145.3	0.459	667	396.2	0.016	0.09	18	
Persimmon Ck	OK720500-01-0150G	CGP	10-Feb-04	29575	13.19	36.9	278	2.5	647	8.2	0.045	2.1	0.61	135.9	0.623	577	353.4	0.051	0.136	69	17.84
Persimmon Ck	OK720500-01-0150G	CGP	16-Mar-04	29754	10.97	42	279	8.9	1056	8.32	0.025	2.7	0.61	167.8	0.604	932	409	0.049	0.151	11	27.03
Persimmon Ck	OK720500-01-0150G	CGP	27-Apr-04	30115	8.72	18.4	293	13.6	964	8.27	0.015	2	0.52	147.5	0.537	646	395.3	0.034	0.12	28	15.83
Persimmon Ck	OK720500-01-0150G	CGP	02-Jun-04	30336	8.7	5.37	212	23	1047	8.26	0.015	2	0.66	206.9	0.28	735	422.6	0.048	0.068	18	2.14
Mission Ck	OK121400-02-0190B	CT	18-Nov-97	15469	6.73	29.5	104	4	436	7.16											0
Mission Ck	OK121400-02-0190B	CT	14-Aug-01	23917	6.02	28.4	22	27.4	144	6.6	0.26	4	0.5	7.34	1.13	71	54.8	0.041	0.231	31	1.24
Mission Ck	OK121400-02-0190B	CT	05-Sep-01	24034	2.91	30.7	48	24.8	144.2	7.11											0.96
Mission Ck	OK121400-02-0190B	CT	18-Sep-01	24233	4.73	64.8	41	22.5	144.7	6.18	0.305	2	0.58	9.6	0.957	95.5	58.4	0.01	0.08	35	0.8
Mission Ck	OK121400-02-0190B	CT	23-Oct-01	24369	5.17	16.1	72	19.6	236.4	7.01	0.229	4	0.62	12.5	0.581	109.5	109.1	0.005	0.029	10	0
Mission Ck	OK121400-02-0190B	CT	04-Dec-01	24495	6.47	3.77	121	12.2	384.4	7.2	0.364	3	0.02	11.08	0.495	220.5	193.3	0.016	0.022	10	0
Mission Ck	OK121400-02-0190B	CT	08-Jan-02	24691	9.08	6.06	162	6.4	408	6.71	0.266	9	0.56	15.86	0.682	216	182.9	0.005	0.038	10	0
Mission Ck	OK121400-02-0190B	CT	12-Feb-02	24803	11.53	20.8	90	10.1	250.2	7.71	0.17	6	0.34	12.54	0.669	139	110.9	0.047	0.066	10	0.05
Mission Ck	OK121400-02-0190B	CT	19-Mar-02	24939	7.08	10.8	93	10.9	327.1	7.93	0.125	4	0.02	15.67	0.721	178	154.2	0.01	0.033	10	0.2
Mission Ck	OK121400-02-0190B	CT	23-Apr-02	25107	8.86	15	93	23.4	324.1	7.86	0.182	5	0.55	15.77	0.674	198.5	137.5	0.016	0.041	14	0.02
Mission Ck	OK121400-02-0190B	CT	28-May-02	25235	5.3	50.8	44	21.8	173.1	6.79	0.137	2	0.76	14.66	0.218	127	64.92	0.005	0.069	22	37.82

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Mission Ck	OK121400-02-0190B	CT	09-Jul-02	25319	6.78	6.97	131	31.8	310.5	7.99	0.267	2	0.53	10.71	0.87	205	127.7	0.005	0.077	10	0
Mission Ck	OK121400-02-0190B	CT	06-Aug-02	25609	5.72	5.09	41	29.7	158.8	7.29	0.36	7	0.72	6.57	1.515	107	63.04	0.056	0.115	10	0.05
Mission Ck	OK121400-02-0190B	CT	10-Sep-02	25815	4.5	27.2	63	24.5	236	7.37	0.015	4	0.48	8.24	1.074	140	97.61	0.044	0.109	41	0
Mission Ck	OK121400-02-0190B	CT	15-Oct-02	25986	7.58	15.7	99	12.8	240.6	6.93	0.018	5	0.81	13.84	0.483	144	100.3	0.005	0.043	16	0
Mission Ck	OK121400-02-0190B	CT	19-Nov-02	26123	0.5	5.07	124	9.4	360	6.97	0.04	15	0.43	19.95	0.607	207	153.9	0.245	0.309	10	0
Mission Ck	OK121400-02-0190B	CT	17-Dec-02	26266	3.81	21.4	158	7.6	381.3	7.04	0.015	5	0.14	16.6	0.11	229	160.9	0.023	0.072	11	0.01
Mission Ck	OK121400-02-0190B	CT	28-Jan-03	26670	6.59	24.6	243	1.7		7.28	0.015	4	0.27	83.7	0.543	356	290	0.077	0.181	14	0
Mission Ck	OK121400-02-0190B	CT	04-Mar-03	27227	10.94	33.5	51	6.6	257.5	7.1	0.015	3.4	0.44	25	0.11	126	86.2	0.005	0.034	23	20.91
Mission Ck	OK121400-02-0190B	CT	08-Apr-03	27426	8.25	64.9	52	10.3	266.6	6.99	0.018	3.4	0.25	21.27	0.63	210	95.59	0.007	0.117	42	26.51
Mission Ck	OK121400-02-0190B	CT	13-May-03	27526	6.27	822	71	17.9	191.4	7.13	0.2	5.6	0.94	14.6	1.339	177	118.5	0.296	0.533	609	0.38
Mission Ck	OK121400-02-0190B	CT	17-Jun-03	27726	6.24	28.1	88	24.5	184.5	7.04	0.015	3.1	0.3	9.1	0.885	119	75.1	0.012	0.14	26	1.15
Sand Ck	OK121400-04-0010F	CT	14-Aug-01	23916	5.9	22.9	73	29.8	462	7.07	0.16	2	0.51	14.52	0.69	233	153	0.074	0.113	15	0.39
Sand Ck	OK121400-04-0010F	CT	10-Sep-01	24036	7.62	27.1	131	27.7	640	7.75											0.13
Sand Ck	OK121400-04-0010F	CT	18-Sep-01	24232	5.87		107	22.2	535	6.63	0.389	2	0.74	59.6	1.18	276	172	0.054	0.125	70	1.48
Sand Ck	OK121400-04-0010F	CT	23-Oct-01	24368	7.7	11.3	99	18.5	476.7	7.19	0.172	2	0.55	25.6	0.406	224.5	170.6	0.005	0.016	10	1.31
Sand Ck	OK121400-04-0010F	CT	04-Dec-01	24494	9.13	11.3	102	11.1	601	7.3	0.084	5	0.02	19.87	0.562	330.5	216.6	0.005	0.006	10	0.68
Sand Ck	OK121400-04-0010F	CT	08-Jan-02	24690	11.39	8.59	150	3.9	592	7.04	0.152	7	0.54	22.12	0.528	322	212.03	0.005	0.033	13	1.1
Sand Ck	OK121400-04-0010F	CT	12-Feb-02	24802	12.69	19.6	65	5	415.4	7.29	0.154	7	0.59	29.74	0.466	233	136.2	0.018	0.038	10	14.08
Sand Ck	OK121400-04-0010F	CT	19-Mar-02	24938	8.44	27.4	54	10.9	459.3	7.61	0.156	4	0.52	27.63	0.543	255	156.3	0.015	0.085	22	2.82
Sand Ck	OK121400-04-0010F	CT	23-Apr-02	25106	6.56		56	19.2	492.9	7.48	0.289	4	0.66	47.9	1.087	286.5	147.5	0.144	0.149	46	29.16
Sand Ck	OK121400-04-0010F	CT	29-May-02	25239	7.2	71.2	49	20.6	215	6.56	0.065	2	0.64	15.49	0.147	157	80.4	0.005	0.04	39	410.19
Sand Ck	OK121400-04-0010F	CT	09-Jul-02	25318	4.59	16.4	113	30.3	316.6	7.8	0.184	2	0.02	13.95	0.715	191	113.9	0.005	0.114	17	3.13
Sand Ck	OK121400-04-0010F	CT	06-Aug-02	25608	5.13	30.5	90	29.8	317.6	7.6	0.124	2	0.02	12.03	0.635	177	117.5	0.018	0.07	28	3.95
Sand Ck	OK121400-04-0010F	CT	10-Sep-02	25814	3.73	43.2	95	24.8	387.4	7.27	0.015	4	0.47	11.08	0.566	225	130.6	0.019	0.074	31	0.34
Sand Ck	OK121400-04-0010F	CT	15-Oct-02	25985	7.75	20.6	104	11.7	401.2	7.35	0.023	2	0.61	13.43	0.275	234	138.4	0.006	0.039	20	0.43
Sand Ck	OK121400-04-0010F	CT	19-Nov-02	26122	7.3	15.1	118	7.3	557	7.35	0.029	5	0.14	17.94	0.482	289	179.1	0.02	0.045	10	0.21
Sand Ck	OK121400-04-0010F	CT	17-Dec-02	26265	8.9	18.1	108	7.2	493.6	7.08	0.015	2	0.12	16.2	0.11	271	149.2	0.005	0.036	10	2.59
Sand Ck	OK121400-04-0010F	CT	27-Jan-03	26667	11.14	5.83	99	4.8	592	7.57	0.015	2	0.1	32	0.177	254	162.2	0.005	0.016	10	3.21
Sand Ck	OK121400-04-0010F	CT	04-Mar-03	27226	11.77	15.3	86	6	519	7.7	0.015	3.6	0.35	34.2	0.11	249	151.8	0.005	0.02	26	120.8
Sand Ck	OK121400-04-0010F	CT	08-Apr-03	27425	9.41	18.7	90	12.1	381.4	7.56	0.015	3.1	0.1	27.13	0.354	250	139.3	0.005	0.077	12	128.64
Sand Ck	OK121400-04-0010F	CT	13-May-03	27525	6.05	21.4	118	22.1	396.8	7.42	0.023	2	0.18	21.8	0.46	208	156.9	0.005	0.006	18	7.72
Sand Ck	OK121400-04-0010F	CT	17-Jun-03	27725	5.37	29.3	93	26.9	232.7	7.39	0.015	5.2	0.15	10.8	1.261	132	103.2	0.007	0.091	21	28.76
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	31-Jul-95	6668	7	24.5	120	29	1230	7.84			0.05	2.3	0.54		248		0.08	32.1	
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	10-Jan-96	6669	12.8	12	89	2	1005	8.36	0.003		0.55	21.5	0.19		214		0.03	13	
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	25-Jun-96	6670	6	70.1	70	32	1120	6.91	0.05		0.25	2	0.54		102		0.08	46	
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	26-Jul-96	11970	6.85	15	85	24.2	421.4	7.28											
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	11-Sep-96	11971	5.85	13.1	119	23.2	587	7.59											0.01
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	15-Oct-96	6671	9.48	61.3	81	22.1	412	8.17			0.154	15.2	0.5	298	104	0.009	0.1	27	
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	08-Jan-97	6672	11.34	9	112	4	575	7.76	0.05		0.07	25.6	0.27		222	0.002	0.03	26.5	
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	08-Apr-97	6673	8.4	74	51	14.7	301.3	7.58			0.348	17.1	0.83	269	90	0.03	0.12	37	

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	15-Jul-97	6674	7.58	11.5	106	30.3	788	8.21			0.222	1.57	0.45		174	0.003	0.031	2.01	
Little Wewoka Ck: Site # 1	OK520500-02-0090A	CT	04-Nov-97	6675	7.42	7.7	107	8	832				0.525	18.6	0.31		180	0.003	0.03	4.5	
North Buck Ck	OK121400-03-0210R	FH	16-Dec-97	15710	13.35	3.27	216	5.4	461	7.93											6.6
North Buck Ck	OK121400-03-0210R	FH	17-Dec-97	15702	14.1	3.54	196	4.3	435	8.05											10
North Buck Ck	OK121400-03-0210R	FH	25-Sep-98	11868	10.09	2.42	172	29.3	389.3	7.74											0.44
North Buck Ck	OK121400-03-0210R	FH	20-Apr-99	17216	10.16	4.45	230	18.9	491	8.39			0.055	23.3	0.06		252		0.02	2	6.97
North Buck Ck	OK121400-03-0210R	FH	18-May-99	16651	8.07	57.9	160	21	325	8.41			0.029	0.91	0.44		172	0.001	0.07	39.5	21.78
North Buck Ck	OK121400-03-0210R	FH	15-Jun-99	13197	10.16	9.15	144	27.8	410	8.39	0.009		0.057	14.7	0.16		194	0.005	0.027	5	8.83
North Buck Ck	OK121400-03-0210R	FH	13-Jul-99	13445	8.33	17.8	140	24.3	355	6.97	0.05		0.055	17.7	0.2		186	0.005	0.04	8.5	14.4
North Buck Ck	OK121400-03-0210R	FH	16-Aug-99	13327	7.61	9.61	121	27.1	495	7.61	0.017		0.134	52	0.5		158	0.004	0.051	10	0
North Buck Ck	OK121400-03-0210R	FH	28-Sep-99	13471	7.63	10.8	99	18.3	393	7.65	0.008		0.035	20.2	0.27		124	0.005	0.039	5	2.66
North Buck Ck	OK121400-03-0210R	FH	02-Nov-99	13243	8.49	19.3	121	14.3	436	7.31	0.011		0.101	60.3	0.36		220	0.004	0.014	4.5	6
North Buck Ck	OK121400-03-0210R	FH	07-Dec-99	18227	9.96	29.3	111	5.8	343		0.01		0.017	24.3	0.58		74	0.002	0.109	56.5	12.07
North Buck Ck	OK121400-03-0210R	FH	10-Jan-00	18117	11.45	7.08	161	7.8	462		0.01		0.017	28	0.1		260	0.003	0.007	1	2.85
North Buck Ck	OK121400-03-0210R	FH	15-Feb-00	18079	11.32	5.96	149	6.9	740		0.053		0.041	58.6	0.23		226	0.005	0.02	4	0.84
North Buck Ck	OK121400-03-0210R	FH	20-Mar-00	17305	11.45	16.1	177	11.5	408		0.021		0.012	30.6	0.33		206	0.002	0.033	9	
North Buck Ck	OK121400-03-0210R	FH	02-May-00	18653	7.88	15.3	217	18.9	366.9	7.85	0.01		0.013	16.5	0.76		182	0.005	0.035	10	26.14
North Buck Ck	OK121400-03-0210R	FH	06-Jun-00	21390	6.03	7.22	215	23.5	416.3	8.12	0.01		0.014	29.4	0.1		204	0.003	0.074	13	3.15
North Buck Ck	OK121400-03-0210R	FH	11-Jul-00	18816	7.05	7.36	241	30.6	481.1	8.09	0.05		0.05	13.6	0.23		207	0.005	0.02	2	4.23
North Buck Ck	OK121400-03-0210R	FH	15-Aug-00	19138	6.32	7.52	162	28	402.6		0.05		0.05	16.7	0.18		200	0.005	0.007	2	0.14
North Buck Ck	OK121400-03-0210R	FH	19-Sep-00	21497	7.27	8.76	124	21.8	292.4		0.14		0.05	15.1	0.21		156	0.005	0.028	18	0
North Buck Ck	OK121400-03-0210R	FH	24-Oct-00	21810	7.97	8.16	133	19.3	297.3	8.09	0.05		0.05	11.1	0.25		153	0.008	0.02	1	0
North Buck Ck	OK121400-03-0210R	FH	28-Nov-00	22009	12.41	1.9	184	7.3	276.8	7.78	0.05		0.24	18.4	0.05		212	0.005	0.016	1	1.71
North Buck Ck	OK121400-03-0210R	FH	09-Jan-01	22164	13.95	8.54	151	1.2	206.7	8.39	0.05		1.31	21.6	0.32		219	0.008	0.026	7	15.6
North Buck Ck	OK121400-03-0210R	FH	13-Feb-01	22494	11.72	14.3	158	5.7	387.6	8.23	0.05		0.57	19.1	0.05		196	0.017	0.017	1	51.5
North Buck Ck	OK121400-03-0210R	FH	20-Mar-01	22717	10.53	5.26	193	9.3	404.8	8.17	0.05		0.22	21.5	0.05		206	0.007	0.009	12	41.45
Salt Ck	OK620900-02-0020D	FH	15-Apr-98	15674	7.95	8.11	215	23.2	989	7.65											0.15
Salt Ck	OK620900-02-0020D	FH	23-Jul-02	25411	4	6.06	231	32.2	683		0.089	5	0.02	18.51	0.497	371	258.6	0.017	0.05	10	0.02
Salt Ck	OK620900-02-0020D	FH	30-Jul-02	25557	3.91	11.5	221	26	682	7.8											0.52
Salt Ck	OK620900-02-0020D	FH	27-Aug-02	25743	8.32	78	50	29	360.6	9.48	0.084	4	0.57	10.95	0.734	215	120.7	0.005	0.022	20	2.12
Salt Ck	OK620900-02-0020D	FH	30-Sep-02	25892	5.95	18.8	170	23.4	491.3	7.54	0.02	4	0.77	15.42	0.416	166	206.3	0.029	0.06	23	0.02
Salt Ck	OK620900-02-0020D	FH	05-Nov-02	26049	8.74	14.9	156	9.2	500	7.61	0.015	3	0.63	14.17	0.28	267	190.3	0.016	0.041	14	0.3
Salt Ck	OK620900-02-0020D	FH	02-Dec-02	26190	6.78	7.74	217	8.2	735	7.25	0.015	2	0.14	23.32	0.354	387	280.2	0.034	0.05	10	0.02
Salt Ck	OK620900-02-0020D	FH	10-Dec-02	26232	9.22	9.11	9.11	5.1	15050	8.09	0.026	2	1.99	1141.72	0.553	9357	1435.2	0.005	0.019	15	29.77
Salt Ck	OK620900-02-0020D	FH	14-Jan-03	26583	10.06	23	129	4.5	493.3	7.36	0.015	6	0.12	25.2	0.128	280	187.2	0.005	0.013	10	0
Salt Ck	OK620900-02-0020D	FH	19-Feb-03	26816	11.42	11.3	178	6.6	456	7.45	0.015	2	0.12	29.7	0.276	386	246.9	0.005	0.008	10	0
Salt Ck	OK620900-02-0020D	FH	24-Mar-03	27320	9.61	26.5	152	16.5	497.5	7.87	0.015	3.4	0.42	28.5	0.151	302	191.2	0.008	0.03	23	10.72
Salt Ck	OK620900-02-0020D	FH	28-Apr-03	27463	7.54	11.5	214	22.1	740	8.09	0.012	3.2	0.16	42.6	0.33	406	310.3	0.006	0.058	10	1.91
Salt Ck	OK620900-02-0020D	FH	02-Jun-03	27651	6.3	22.8	206	25.3	682	7.82	0.016	3.9	0.04	29.1	0.871	383	243.6	0.01	0.091	13	0.31
Salt Ck	OK620900-02-0020D	FH	08-Jul-03	27804	4.63	21.5	214	28	565	7.5	0.015	4.3	0.06	15.7	0.471	282	197.5	0.025	0.119	25	0.16

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (us/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Salt Ck	OK620900-02-0020D	FH	11-Aug-03	28088	4.88	37.9	232	27.2	580	7.6	0.017	3.8	0.08	16.1	0.28	365	250.8	0.022	0.097	26	0.01
Salt Ck	OK620900-02-0020D	FH	15-Sep-03	28236	7.03	212	79	18	234.2	7.25	0.033	2.6	0.26	11.1	0.816	157	84.9	0.078	0.161	77	6.41
Salt Ck	OK620900-02-0020D	FH	21-Oct-03	28373	6.62	16.3	141	18.7	616	7.18	0.028	3.8	0.98	27.7	0.41	317	201.4	0.045	0.1	10	0.18
Salt Ck	OK620900-02-0020D	FH	02-Dec-03	28555	9.93	10.3	181	6.9	614	7.36	0.015	3.5	0.04	30.5	0.177	329	226	0.005	0.087	17	0.51
Salt Ck	OK620900-02-0020D	FH	05-Jan-04	29375	10.48	8.23	216	6.1	1092	8.09	0.015	2.8	0.04	47.6	0.174	515	321.8	0.013	0.08	10	1.15
Salt Ck	OK620900-02-0020D	FH	09-Feb-04	29579	13.65	24.7	184	2.1	582	8.12	0.015	2.9	0.12	31.7	0.414	331	227.2	0.008	0.085	22	21.16
Salt Ck	OK620900-02-0020D	FH	15-Mar-04	29769	9.84	10.1	253	11.5	905	7.86	0.015	4.5	0.04	48.1	0.35	507	328.3	0.021	0.062	13	7.52
Salt Ck	OK620900-02-0020D	FH	19-Apr-04	30087	6.78	10.2	219	19.8	709	7.69	0.024	2.9	0.04	34.5	0.58	437	266.6	0.018	0.075	10	3.89
Salt Ck	OK620900-02-0020D	FH	07-Jun-04	30388	6.21	31.2	195	24.1	763	7.92	0.015	4	0.06	34.6	0.11	410	261.6	0.017	0.128	20	4.89
Salt Ck	OK621200-04-0010J	FH	19-Nov-97	15687	13.91	2.95	237	4.1	490	7.56											8
Salt Ck	OK621200-04-0010J	FH	19-Apr-99	17226	10.06	18.1	180	17.7	384	8.41			0.054	5.52	0.51		200		0.06	14.5	29.16
Salt Ck	OK621200-04-0010J	FH	17-May-99	16903	8.25	28.2	206	21.7	449	8.42			0.041	2	0.25		220	0.007	0.06	21.5	106.63
Salt Ck	OK621200-04-0010J	FH	14-Jun-99	13392	10.61	16.4	129	22.3	400	7.81	0.026		0.064	2	0.27		190	0.007	0.055	14	8.18
Salt Ck	OK621200-04-0010J	FH	12-Jul-99	13492	7.69	37	92	25.6	262	6.63	0.05		0.134	1	0.51		134	0.031	0.107	33	47.86
Salt Ck	OK621200-04-0010J	FH	16-Aug-99	13430	10.69	11.4	150	28.4	436	7.92	0.019		0.07	1.85	0.31		182	0.015	0.056	10	0.09
Salt Ck	OK621200-04-0010J	FH	27-Sep-99	13508	7.78	14.9	136	19.6	416	7.82	0.004		0.03	6.2	0.51		173	0.006	0.049	13.5	10.54
Salt Ck	OK621200-04-0010J	FH	01-Nov-99	13590	8.15	18.2	133	15.6	337	7.14	0.018		0.039	2.89	0.47		164	0.016	0.042	26	23.19
Salt Ck	OK621200-04-0010J	FH	06-Dec-99	18219	10.98	33	86	6.6	297		0.057		0.228	2.28	0.47		146	0.048	0.128	39	106.94
Salt Ck	OK621200-04-0010J	FH	10-Jan-00	18107	11.19	5.91	196	4.8	490		0.012		0.055	15.7	0.17		250	0.005	0.025	15	4.02
Salt Ck	OK621200-04-0010J	FH	14-Feb-00	18072	11.06	5.98	181	5.4	516		0.02		0.011	20	0.11		254	0.005	0.025	4.5	4.04
Salt Ck	OK621200-04-0010J	FH	20-Mar-00	17309	11.28	31.1	200	8.6	368		0.019		0.133	6.34	0.52		192	0.032	0.085	40	87.31
Salt Ck	OK621200-04-0010J	FH	01-May-00	18649	7.56	22.2	232	19.5	454.3	8.03	0.01		0.054	4.34	0.37		230	0.005	0.072	33	149.04
Salt Ck	OK621200-04-0010J	FH	05-Jun-00	21371	8.24	9.97	207	25.6	625	8.03	0.007		0.06	2.24	0.41		210	0.017	0.103	18	10.37
Salt Ck	OK621200-04-0010J	FH	09-Jun-00	21701	5.73	12	194	24.6	418.9	8.02											2.54
Salt Ck	OK621200-04-0010J	FH	10-Jul-00	18804	7.33	9.08	232	30.1	505	8.09	0.05		0.05	11	0.41		217	0.016	0.062	12	8.9
Salt Ck	OK621200-04-0010J	FH	14-Aug-00	19134	9.45	7.37	38	31.2	422.7	6.9	0.05		0.05	11.8	0.34		182	0.012	0.05	2	0.14
Salt Ck	OK621200-04-0010J	FH	18-Sep-00	21472	7.84	7.17	121	21.3	323.1		0.09		0.05	7.6	0.4		141	0.01	0.038	6	0
Salt Ck	OK621200-04-0010J	FH	23-Oct-00	21789	5.25	6.65	120	21.1	270.7	7.3	0.05		0.05	8.2	0.52		134	0.035	0.077	1	0
Salt Ck	OK621200-04-0010J	FH	27-Nov-00	22005	12.12	4.51	148	7.3	228.4	7.91	0.05		0.05	17.1	0.13		164	0.011	0.056	5	2.49
Salt Ck	OK621200-04-0010J	FH	08-Jan-01	22160	13.29	11.3	173	0.4	222.7	8.85	0.06		0.44	16.6	0.49		257	0.04	0.09	12	91.96
Salt Ck	OK621200-04-0010J	FH	12-Feb-01	22490	11.6	50	116	4.6	303.6	8.05	0.08		0.77	26.4	0.61		144	0.074	0.121	36	96.97
Salt Ck	OK621200-04-0010J	FH	19-Mar-01	22707	12.02	22.7	168	10.4	363.8	8.41	0.05		0.09	18.9	0.35		169	0.025	0.039	42	83.4
Commission Ck	OK520620-05-0160C	SWT	08-Aug-01	23905	8.13	40.5	215	29.3	810	8.17											1.99
Commission Ck	OK520620-05-0160C	SWT	14-Aug-01	23939	9.09	16.8	222	23.8	852	8.34	0.015	2	0.69	33.65	0.33	488	230.3	0.03	0.051	33	2.97
Commission Ck	OK520620-05-0160C	SWT	18-Sep-01	24254	8.87	23.4	226	21.7	879	8.36	0.049	2	0.76	48.2	0.563	488	287.6	0.015	0.07	44	4.23
Commission Ck	OK520620-05-0160C	SWT	23-Oct-01	24360	10.29	7.28	241	15	944	8.21	0.015	2	0.015	27.6	0.73	511.5	0.264	0.005	0.005	18	5.34
Commission Ck	OK520620-05-0160C	SWT	04-Dec-01	24471	9.83	9.82	246	12.6	8.93	8.23	0.023	8	0.88	25.92	0.202	503	276	0.008	0.027	22	7.25
Commission Ck	OK520620-05-0160C	SWT	08-Jan-02	24682	11.86	9.26	248	6.5	876	8.41	0.098	8	0.94	27.35	0.28	481.5	223.61	0.01	0.044	20	6.69
Commission Ck	OK520620-05-0160C	SWT	12-Feb-02	24809	11.64	6.52	241	5.9	789	8.45	0.015	4	0.81	27.93	0.28	473	263	0.013	0.029	16	8
Commission Ck	OK520620-05-0160C	SWT	19-Mar-02	24961	10.09	6.14	230	9.6	869	8.27	0.13	4	0.84	25.98	0.288	443.5	251.2	0.011	0.024	11	7.23

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Commission Ck	OK520620-05-0160C	SWT	23-Apr-02	25062	9.97	12.2	227	17.9	819	8.34	0.077	4	0.65	26.84	0.535	464	223.6	0.028	0.051	35	6.87
Commission Ck	OK520620-05-0160C	SWT	29-May-02	25219	8.85	26.3	228	20.9	796	8.2	0.036	2	0.7	21.31	0.17	435	218.4	0.005	0.04	10	10.38
Commission Ck	OK520620-05-0160C	SWT	09-Jul-02	25332	7.9	30.7	234	24.6	866		0.114	2	0.76	25.63	0.584	488	224.6	0.038	0.112	13	5.63
Commission Ck	OK520620-05-0160C	SWT	06-Aug-02	25633	7.93	11	220	21.4	860	8.16	0.015	3	0.76	31.28	0.319	493	241.6			25	2.21
Commission Ck	OK520620-05-0160C	SWT	10-Sep-02	25823	7.95	10.9	224	23.4	875	8.37	0.015	3	0.67	27.41	0.295	459	232.2	0.008	0.079	12	3.46
Commission Ck	OK520620-05-0160C	SWT	15-Oct-02	26003	10.58	4.79	225	12.5	918	8.35	0.015	2	0.89	29.95	0.204	499	226.7	0.005	0.019	10	5.23
Commission Ck	OK520620-05-0160C	SWT	19-Nov-02	26149	11.28	4.91	231	9.9	838	7.85	0.017	3	0.51	34.25	0.219	536	212.7	0.007	0.023	10	6.6
Commission Ck	OK520620-05-0160C	SWT	17-Dec-02	26289	11.27	6.38	258	8.1	919	8.4	0.015	2	0.53	37.7	0.231	475	277.7	0.005	0.028	10	7.44
Commission Ck	OK520620-05-0160C	SWT	27-Jan-03	26640	11.98	12.7	255	3.8	906	8.34	0.015	2	0.65	35.2	0.341	475	277.2	0.005	0.005	27	7.38
Commission Ck	OK520620-05-0160C	SWT	04-Mar-03	27206	10.48	36.2	246	9.2	874	8.34	0.022	3.4	0.75	29.9	0.11	489	255.5	0.009	0.01	62	7.06
Commission Ck	OK520620-05-0160C	SWT	08-Apr-03	27407	11.9	11	233	9.8	841	8.45	0.015	2.7	0.29	27.15	0.234	473	239.4	0.005	0.024	29	6.78
Commission Ck	OK520620-05-0160C	SWT	13-May-03	27517	9.25	24.7	231	19.9	816	8.34	0.018	2	0.4	28.9	0.345	483	234.4	0.013	0.005	61	5.02
Commission Ck	OK520620-05-0160C	SWT	17-Jun-03	27741	8.86	34.5	237	20.1	843	8.22	0.015	2	0.43	33.1	0.27	483	256.1	0.027	0.063	73	7.88
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	16-Jun-98	15214	6.59	21.6	176	25.4	879	7.01											0.1
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	16-May-00	18605	7.51	11.9	205	18.1	1042	7.86	0.01		0.552	69	0.49		320	0.021	0.064	20	6.2
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	20-Jun-00	18738	7.19	18.8	199	20.9	1005	7.95	0.046		0.681	77.1	0.35		300	0.027	0.082	34	6.09
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	25-Jul-00	21700	5.68	9.83	279	20.9	925	8.12	0.05		0.62	63.2	0.27		269	0.015	0.041	32	3.6
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	29-Aug-00	21633	7.18	4.17	198	19.4	993	7.84	0.05		0.54	71.3	0.22		347	0.013	0.033	1	0.72
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	03-Oct-00	21675	8.12	4.72	210	15	957	7.98	0.05		0.55	69.9	0.21		340	0.007	0.037	12	1.57
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	07-Nov-00	21942	9.12	18.9	233	9	701	8.05	0.09		1.25	76.3	0.42		483	0.042	0.073	28	12.28
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	12-Dec-00	22069	15.92	16.6	248	2.2	601	8.1	0.05		1.15	68.2	0.1		408	0.034	0.045	20	7.53
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	23-Jan-01	22384	7.82	6.82	214	5.3	630	8.04	0.05		1.07	62.1	0.24		326	0.02	0.043	1	8.35
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	27-Feb-01	22614	6.06	4.82	225	6.8	998	7.99	0.05		0.74	62.2	0.31		322	0.012	0.038	6	9.72
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	03-Apr-01	22822	7.99	14.8	213	13.3	1014	7.91	0.05		0.78	63.6			311	0.014	0.041	18	9.71
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	08-May-01	22915	8.27	20.3	208	14.8	1002	7.86	0.05		0.57	61.9			315	0.019	0.094	50	8.85
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	05-Jun-01	22995	7.33	37.5	187	21.9	896	7.95											6.95
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	12-Jun-01	23037	6.73	33.5	219	20	1002	7.9	0.05		0.92	71			311	0.06	0.115	50	6.83
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	17-Jul-01	23230	5.95	7.95	138	21.9	880	7.74	0.055		0.67	73.35	0.45		285.3	0.074	0.13	5	0.89
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	21-Aug-01	23971	5.6	3.75	186	20.5	1032	7.59	0.015		0.91	73.9	0.477		283.7	0.046	0.048	1	1.53
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	25-Sep-01	24266	6.62	99.5	183	15.7	811	7.78	0.424		1.06	54.2	1.07		253.2	0.159	0.198	88	6.88
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	30-Oct-01	24393	7.34	4.77	226	13.8	1019	7.8	0.237		0.84	85.6	0.257		334.8	0.012	0.033	10	3.92
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	11-Dec-01	24541	9.45	3.28	228	5.5	1074	8	0.015		1.04	79.4	0.187		332.1	0.007	0.031	10	4.76
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	15-Jan-02	24708	10.05	5.23	224	4.3	1063	8.03	0.022		1.07	77.73	0.226		327.7	0.011	0.023	10	5.91
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	20-Feb-02	24840	9.2	5.73	222	6.7	1081	7.93	0.015		0.91	76.64	0.328		392.6	0.005	0.021	10	6.37
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	26-Mar-02	24993	12.37	8.42	217	3.7	1081	8.12	0.015		0.98	73.63	0.387		352.8	0.015	0.019	10	5.49
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	06-Jun-02	25569	6.71	47.6	213	17.1	815	7.91											7.5
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	23-Jul-02	25518	7.41	14.5	188	25.7	998	7.86	0.102	2	0.76	80.97	0.357	562	277.3	0.095	0.1	17	3.51
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	27-Aug-02	25721	6.73	29.4	231	21	995	7.94	0.075	3	1.36	68.5	0.62	595	338.3	0.061	0.137	41	10.47
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	01-Oct-02	25889	7.96	12	222	20.4	1043	7.94	0.048	2	1.42	73.6	0.284	594	332.9	0.045	0.067	16	5.62
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	05-Nov-02	26082	10.46	6.05	236	8.2	8.04	10.69	0.015	5	1.54	77.26	0.393	616	329.2	0.027	0.04	10	6.64

Appendix E.1. High quality sites: raw chemical and physical water quality data.

Sitename	Wbid	Ecoregion	Date	SAMPLEID	DO (mg/L)	Turb (NTU)	Alkalinity (CaCO3)	Temp (°C)	Cond (uS/cm)	pH (SU)	Ammonia (mg/L)	CBOD5 (mg/L)	Nitrate/Nitrite (mg/L)	Sulfate (mg/L)	TKN (mg/L)	TotDisSolids (mg/L)	TotHardness (mg/L as CaCO3)	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	TotSusSolids (mg/L)	Flow
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	03-Dec-02	26225	9.95	4.19	220	6.8	1031	8.05	0.02	2	0.96	73.22	0.362	587	324.6	0.009	0.03	10	7.46
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	15-Jan-03	26703	10.7	7.31	220	4.5	1040	8.14	0.015	6	1.06	72.4	0.153	591	321.1	0.005	0.005	10	7.36
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	19-Feb-03	26789	10.21	7.36	226	7.8	1025	8.12	0.015	5.7	0.93	67.9	0.191	542	307.8	0.005	0.01	10	7.59
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	01-Apr-03	27343	12	7.52	213	12.6	1015	8.21	0.015	2	0.48	69	0.222	547	315.3	0.005	0.029	10	7.48
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	29-Apr-03	27447	8.77	9.38	232	16.2	985	7.91	0.048	2	0.64	65.5	1.013	584	343.2	0.006	0.093	11	6.99
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	10-Jun-03	27701	6.66	37.6	212	19.3	882	7.83	0.147	2.1	0.88	56	0.553	527	279.2	0.06	0.159	53	7.55
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	15-Jul-03	27831	7.49	4.22	204	23.7	1029	7.81	0.057	2.9	0.58	71.3	0.211	615	290.4	0.013	0.067	10	2.23
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	19-Aug-03	28129	6.68	12.3	199	22.5	1041	7.74	0.06	3.9	0.82	68.5	0.44	612	294.8	0.014	0.092	18	1.35
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	16-Sep-03	28252	6.96	38	171	18.7	767	7.78	0.06	2	0.71	52	0.48	399	236.6	0.06	0.135	47	6.91
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	28-Oct-03	28422	8.84	6.27	218	13.2	1002	7.97	0.025		0.7	69.4	0.111	587	225.1	0.027	0.05	10	4.94
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	09-Dec-03	28584	10.2	5.12	237	5.3	1007	8.07	0.015	2.5	0.78	64.7	0.117	550	311.8	0.006	0.064	10	
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	13-Jan-04	29434	12.19	7.37	224	6	1001	8.19	0.015	2.2	0.86	66.8	0.139	597	308	0.005	0.058	10	7.31
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	18-Feb-04	29627	12.23	6.21	219	7.6	986	8.22	0.019	2.4	0.74	64.7	0.281	547	316.8	0.018	0.07	10	7.07
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	23-Mar-04	29799	11.61	15.1	229	14.1	994	8.19	0.027	2	0.55	63.5	0.309	584	316.2	0.005	0.101	29	8.21
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	20-Apr-04	30072	8.67	1000		9.2	131	8.38	0.352	11.4	0.38	4.69	6.063	56	53.9	0.676	1.479	1956	
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	08-Jun-04	30368	7.33	21.6	204	21.7	995	7.86	0.033	2	0.63	63.7	0.45	548	304.1	0.056	0.121	78	7.85
Cimarron River: East	OK720900-00-0010G	SWT	15-May-00	18597	13.22	2.08	389	24.2	2640	8.21	0.01		0.17	1435	0.57		740	0.002	0.017	3	0.72
Cimarron River: East	OK720900-00-0010G	SWT	19-Jun-00	18735	12.38	2.04	240	24.3	2400	8.57	0.035		0.19	960	0.71		670	0.003	0.032	3	0.3
Cimarron River: East	OK720900-00-0010G	SWT	24-Jul-00	19077	9.38	4.02	245	29	1088	8.45	0.05		0.05	205	0.54		507	0.005	0.005	416	0.52
Cimarron River: East	OK720900-00-0010G	SWT	28-Aug-00	21622	13.67	11.4	222	30.7	1785	8.75	0.04		0.05	526	0.59		671	0.03	0.083	16	0.04
Cimarron River: East	OK720900-00-0010G	SWT	02-Oct-00	21672	11.1	1.49	247	18.7	2255	8.44	0.05		0.05	588	0.47		611	0.007	0.019	12	0
Cimarron River: East	OK720900-00-0010G	SWT	06-Nov-00	21922	12.92	1.89	301	10.3	1550	8.5	0.05		0.05	625	0.4		624	0.005	0.005	10	0.33
Cimarron River: East	OK720900-00-0010G	SWT	11-Dec-00	22054	12.5	1.16	414	1.5	1467	8.32	0.05		0.05	750	0.32		796	0.005	0.023	6	0.23
Cimarron River: East	OK720900-00-0010G	SWT	22-Jan-01	22376	11.62	4.91	478	4.1	1693	8.1	0.05		0.05	906	0.42		974	0.01	0.026	8	1.09
Cimarron River: East	OK720900-00-0010G	SWT	26-Feb-01	22540	12.21	4.56	384	9.2	2283	8.37	0.05		0.05	748	0.44		709	0.008	0.03	6	2.29
Cimarron River: East	OK720900-00-0010G	SWT	02-Apr-01	22793	10.77	12.1	371	17.1	2292	8.26	0.05		0.05	750			740	0.013	0.047	2	3.69
Cimarron River: East	OK720900-00-0010G	SWT	07-May-01	22907	13.2	1.85	403	19.6	2575	8.25	0.05		0.05	909			404	0.008	0.04	18	0.8
Cimarron River: East	OK720900-00-0010G	SWT	04-Jun-01	22990	8.97	32	175	26.6	864	8.17											11.54
Cimarron River: East	OK720900-00-0010G	SWT	11-Jun-01	23034	13.64	2.73	287	28.3	1475	8.37	0.05		0.05	433			450	0.009	0.024	5	3.49
Cimarron River: East	OK720900-00-0010G	SWT	16-Jul-01	23227	6.59	16.1	172	26.7	2303	7.99	0.03		0.02	882.5	0.88		549.3	0.027	0.067	1	0
Cimarron River: East	OK720900-00-0010G	SWT	20-Aug-01	23968	5.78	22.1	251	24.1	2300	8.13	0.152		0.58	845.8	0.791		452.9	0.049	0.05	2	0
Cimarron River: East	OK720900-00-0010G	SWT	24-Sep-01	24263	7.08	1.93	288	19.5	2814	8.14	0.169		0.02	1217.9	0.778		828	0.005	0.036	10	0
Cimarron River: East	OK720900-00-0010G	SWT	29-Oct-01	24390	10.22	1.38	346	10.7	2783	7.95	0.108		0.02	1031	0.875		898.7	0.005	0.005	10	0
Cimarron River: East	OK720900-00-0010G	SWT	10-Dec-01	24538	8.58	1.46	382	3.9	3189	7.92	0.117		0.02	1175.25	0.468		991.9	0.01	0.03	10	0.01
Cimarron River: East	OK720900-00-0010G	SWT	14-Jan-02	24705	8.56	5.13	274	5	2922	8.02	0.178		0.98	1384.5	0.71		1163.6	0.009	0.041	10	0.01
Cimarron River: East	OK720900-00-0010G	SWT	19-Feb-02	24837	8.99	2.56	393	6	2922	8.17	0.085		0.02	1061.3	0.453		1072.6	0.02	0.021	10	0.01
Cimarron River: East	OK720900-00-0010G	SWT	25-Mar-02	24990	10.09	2.72	392	4.9	3015	8.05	0.174		0.02	1082	0.566		938	0.005	0.021	10	0.01

Appendix E.2. High Quality Sites fish and habitat data.

Site Name	WBID	County	Level 3 Ecoregion	FISH DATA										HABITAT DATA											
				Total Number	Total Spys	Deer Spys	Round-headed Snicker Spys	Spotted Spys	Blackstart Spys	Percent Trout	Percent Sunfish	Percent Bass	Percent Catfish	Percent Top Predators	Avg Instream Cover	Avg Pool Bottom Substrate	Avg Pool Variability	Avg Canopy Cover Shading	Avg Presence of Rocky Runs or Riffles	Avg Flow	Avg Channel Alteration	Avg Channel Sinuosity	Avg Bank Stability	Avg Bank Veg. Stability	Avg Streamside Cover
East Roaring Creek	OK310810-02-0180P	Grady	CGP	325	14	1	0	5	2	0.63	0.29	0.18	0.16	2.0	2.2	9.9	17.4	2.2	1.5	15.0	2.4	4.7	2.4	6.4	66
Rush Creek	OK310810-05-0010H	Garvin	CGP	832	11	0	0	4	1	0.92	0.88	0.07	0.01	2.1	2.7	17.2	3.6	2.2	20.0	12.3	0.8	8.0	5.3	10.0	84
Tahoe Creek	OK311300-03-0070G	Caddo	CGP	416	10	1	0	4	0	0.42	0.06	0.10	0.12	7.8	9.0	12.4	16.9	6.0	17.2	7.2	1.6	9.2	4.2	6.5	98
Turkey Creek	OK311510-02-0060G	Beckham	CGP	1018	9	0	0	3	1	0.86	0.83	0.14	0.01	6.7	3.0	18.7	18.2	2.2	15.3	4.2	0.0	7.2	7.0	9.6	92
Salt Creek	OK620900-02-0020D	Payne	CGP	143	16	0	0	6	1	0.63	0.23	0.01	0.05	3.3	6.2	14.0	15.0	2.2	2.6	9.9	0.7	8.3	5.9	10.0	78
Otter Creek	OK620910-03-0040G	Logan	CGP	634	15	0	0	3	1	0.91	0.87	0.08	0.02	10.9	8.1	16.1	11.5	13.3	18.6	5.8	2.4	3.4	1.8	9.1	101
Turkey Creek: Middle	OK620910-06-0010M	Garfield	CGP	2704	13	0	0	2	1	0.64	0.53	0.38	0.00	1.1	4.9	17.2	10.1	0.0	15.0	1.8	0.6	5.7	1.5	8.9	67
Traders Creek	OK620920-02-0170G	Woodward	CGP	157	13	0	0	4	0	0.64	0.46	0.37	0.08	1.1	0.4	0.0	7.5	0.0	12.3	5.0	0.8	10.0	6.2	5.0	48
Buffalo Creek: Lower	OK620920-05-0010G	Harper	CGP	420	15	0	0	3	1	0.66	0.34	0.48	0.02	0.8	2.5	0.0	2.1	0.0	14.9	3.2	2.8	10.0	4.6	6.7	47
Bois d'Arc Creek	OK621000-03-0010F	Kay	CGP	470	18	2	1	5	2	0.87	0.37	0.10	0.02	11.2	3.6	13.4	19.9	0	12.2	11.1	1.6	4.1	0.8	10	87.9
Yellowstone Creek	OK621010-01-0270G	Woods	CGP	475	7	0	0	1	1	0.31	0.19	0.65	0.00	5.9	11.8	0.0	1.2	16.3	16.3	0.5	0.0	5.9	3.4	4.4	66
Sandy Creek	OK621010-02-0010G	Alfalfa	CGP	619	14	0	0	4	1	0.92	0.75	0.06	0.01	1.9	1.3	18.7	18.5	0.0	20.0	4.2	0.0	8.9	2.6	6.4	83
Black Bear Creek: Lower	OK621200-03-0010G	Pawnee	CGP	260	15	1	0	5	3	0.86	0.72	0.10	0.03	3.2	1.7	14.1	13.0	0.0	10.8	12.5	0.4	9.2	3.1	7.3	75
Red Rock Creek: Upper	OK621200-05-0160G	Noble	CGP	384	9	1	0	4	2	0.97	0.67	0.01	0.01	6.4	4.5	16.6	9.3	5.9	15.5	5.8	3.2	9.1	4.9	8.9	90
Persimmon Creek	OK720500-01-0150G	Woodward	CGP	214	12	0	0	3	1	0.84	0.27	0.16	0.01	2.2	0.9	0.0	15.0	0.0	17.1	5.3	1.3	6.6	2.8	8.8	60
North Buck Creek	OK121400-03-0210R	Osage	FH	809	19	3	0	5	3	0.28	0.31	0.18	0.01	16.1	16.4	13.5	6.8	4.1	2.2	3.5	3.2	7.3	3.1	9.3	86
Salt Creek	OK621200-04-0010J	Osage	FH	473	22	4	2	4	2	0.51	0.40	0.15	0.01	14.7	17.3	17.2	16.9	9.0	10.9	3.5	0.8	7.2	6.3	8.9	113
Commission Creek	OK520620-05-0160C	Ellis	SWT	117	10	0	0	4	1	0.57	0.20	0.43	0.19	2.5	0.4	0.0	5.6	5.9	10.0	15.0	0.1	6.8	6.2	5.0	58
Kiowa Creek: Beaver Co.	OK720500-02-0130K	Beaver	SWT	754	11	0	0	3	1	0.74	0.62	0.24	0.02	2.2	2.4	18.6	4.6	4.9	15.7	2.1	1.2	9.4	4.9	6.9	73
Cimarron River: East	OK720900-00-0010G	Cimarron	SWT	272	10	0	0	4	1	0.95	0.85	0.04	0.03	9.2	9.1	18.7	2.7	11.4	17.2	15.0	0.0	10.0	6.0	4.2	104

Appendix E.3. High Quality Sites macroinvertebrate data.

Sitename	Wbid	Level 3 Ecoregion	SAMPLEID	Date	Habitat	Season	TotBugs/Dd	Total Species	EPT Taxa	Ephemeroptera taxa	Plecoptera taxa	Trichoptera taxa	Insect taxa	Non-insect taxa	Percent EPT	Percent Ephemeroptera	Percent Plecoptera	Percent Trichoptera	Percent Insect taxa	Percent Non-insect taxa	Percent Chironominae, Tubificidae, Naididae	Percent dominant taxon	Shannon Diversity	Percent filterers	Percent gatherers	Percent scrapers	Percent omnivores	HBI	NCBI
East Roaring Ck	OK310810-02-0180P	CGP	20436	09/02/98	veg	Sum	81	15	2	2	0	0	12	3	0.10	0.10	0.00	0.00	0.86	0.14	0.02	0.28	2.19	0.06	0.75	0.00	0.02	6.31	5.78
East Roaring Ck	OK310810-02-0180P	CGP	14679	02/18/99	rifle	Wint	140	15	1	1	0	0	11	4	0.04	0.04	0.00	0.00	0.93	0.07	0.11	0.58	1.66	0.01	0.86	0.00	0.07	5.84	4.99
East Roaring Ck	OK310810-02-0180P	CGP	14679	02/18/99	veg	Wint	125	17	4	4	0	0	13	4	0.08	0.08	0.00	0.00	0.51	0.49	0.05	0.46	1.86	0.02	0.93	0.01	0.01	7.01	6.40
East Roaring Ck	OK310810-02-0180P	CGP	14679	02/18/99	wood	Wint	134	15	5	2	0	3	13	2	0.06	0.02	0.00	0.04	0.94	0.06	0.07	0.53	1.65	0.06	0.91	0.00	0.00	6.10	4.78
East Roaring Ck	OK310810-02-0180P	CGP	14680	08/27/99	wood	Sum	104	21	7	5	0	3	19	2	0.25	0.16	0.00	0.09	0.97	0.03	0.13	0.31	2.32	0.12	0.74	0.00	0.04	5.28	4.59
Rush Ck	OK310810-05-0010H	CGP	23331	07/25/01	rifle	Sum	121	16	4	4	0	0	15	1	0.17	0.17	0.00	0.00	0.98	0.02	0.20	0.21	2.20	0.02	0.66	0.01	0.19	5.40	5.11
Rush Ck	OK310810-05-0010H	CGP	23331	07/25/01	veg	Sum	120	18	6	4	0	3	17	1	0.34	0.31	0.00	0.03	1.00	0.00	0.14	0.44	2.00	0.02	0.76	0.04	0.03	5.59	5.46
Rush Ck	OK310810-05-0010H	CGP	23331	07/25/01	wood	Sum	127	16	5	3	0	2	16	0	0.73	0.71	0.00	0.02	1.00	0.00	0.13	0.68	1.33	0.02	0.89	0.00	0.03	4.70	5.28
Tahoe Ck	OK311300-03-0070G	CGP	21053	07/11/94	veg	Sum	111	14	5	3	0	2	13	1	0.48	0.45	0.00	0.03	0.96	0.04	0.00	0.42	1.92	0.03	0.70	0.00	0.10	4.55	4.88
Tahoe Ck	OK311300-03-0070G	CGP	22770	02/06/01	rifle	Wint	153	11	4	2	1	1	10	1	0.20	0.06	0.07	0.07	0.91	0.09	0.03	0.55	1.46	0.07	0.64	0.06	0.19	5.11	4.64
Tahoe Ck	OK311300-03-0070G	CGP	22770	02/06/01	veg	Wint	113	15	5	3	2	1	13	2	0.27	0.15	0.11	0.02	0.90	0.11	0.01	0.45	1.88	0.01	0.75	0.04	0.14	5.46	5.07
Tahoe Ck	OK311300-03-0070G	CGP	23343	07/26/01	rifle	Sum	123	15	6	4	0	2	14	1	0.45	0.29	0.00	0.16	0.97	0.03	0.16	0.40	1.95	0.20	0.48	0.03	0.23	5.27	5.40
Turkey Ck	OK311510-02-0060G	CGP	22693	02/16/01	rifle	Wint	139	17	5	2	1	2	13	4	0.06	0.04	0.01	0.01	0.96	0.04	0.07	0.51	1.70	0.02	0.88	0.02	0.01	5.77	4.79
Turkey Ck	OK311510-02-0060G	CGP	22693	02/16/01	veg	Wint	132	9	3	2	0	1	7	2	0.06	0.05	0.00	0.01	0.90	0.10	0.02	0.76	0.98	0.02	0.89	0.09	0.00	6.24	5.16
Turkey Ck	OK311510-02-0060G	CGP	22693	02/16/01	wood	Wint	102	15	4	3	0	1	13	2	0.11	0.10	0.00	0.01	0.97	0.03	0.04	0.60	1.60	0.02	0.92	0.03	0.01	5.83	4.72
Turkey Ck	OK311510-02-0060G	CGP	23262	07/19/01	rifle	Sum	109	16	6	4	0	3	15	1	0.60	0.13	0.00	0.46	0.99	0.01	0.18	0.42	2.01	0.53	0.35	0.01	0.05	5.05	5.43
Turkey Ck	OK311510-02-0060G	CGP	23262	07/19/01	veg	Sum	111	19	7	4	0	3	18	1	0.46	0.21	0.00	0.25	0.88	0.12	0.15	0.24	2.34	0.26	0.56	0.01	0.09	5.61	5.54
Turkey Ck	OK311510-02-0060G	CGP	23262	07/19/01	wood	Sum	106	16	7	4	0	4	16	0	0.40	0.14	0.00	0.25	1.00	0.00	0.31	0.38	1.98	0.24	0.68	0.00	0.00	5.64	5.25
Salt Ck	OK620900-02-0020D	CGP	25461	02/06/02	rifle	Wint	122	20	5	2	2	1	14	6	0.16	0.07	0.07	0.02	0.64	0.36	0.08	0.31	2.18	0.36	0.47	0.00	0.06	6.45	5.87
Salt Ck	OK620900-02-0020D	CGP	28028	07/14/03	rifle	Sum	99	15	8	6	1	1	13	2	0.89	0.37	0.01	0.52	0.97	0.03	0.02	0.52	1.71	0.62	0.11	0.00	0.21	4.78	5.49
Otter Ck	OK620910-03-0040G	CGP	22426	02/05/01	rifle	Wint	128	14	4	2	0	2	11	3	0.14	0.09	0.00	0.05	0.93	0.07	0.09	0.37	1.82	0.30	0.62	0.00	0.06	5.93	5.28
Otter Ck	OK620910-03-0040G	CGP	22426	02/05/01	veg	Wint	115	9	3	3	0	0	7	2	0.24	0.24	0.00	0.00	0.98	0.02	0.02	0.63	1.15	0.09	0.88	0.00	0.03	6.19	5.23
Otter Ck	OK620910-03-0040G	CGP	22426	02/05/01	wood	Wint	115	14	6	5	0	1	14	0	0.14	0.12	0.00	0.02	1.00	0.00	0.12	0.63	1.43	0.05	0.91	0.00	0.01	6.10	4.94
Otter Ck	OK620910-03-0040G	CGP	23214	07/16/01	rifle	Sum	116	17	9	6	0	4	16	1	0.81	0.26	0.00	0.54	0.98	0.02	0.05	0.39	2.04	0.58	0.34	0.00	0.01	4.22	4.95
Otter Ck	OK620910-03-0040G	CGP	23214	07/16/01	veg	Sum	107	13	3	2	0	2	11	2	0.22	0.04	0.00	0.18	0.69	0.31	0.05	0.44	1.78	0.20	0.69	0.02	0.02	6.33	6.28
Otter Ck	OK620910-03-0040G	CGP	23214	07/16/01	wood	Sum	115	16	8	5	0	3	15	1	0.30	0.07	0.00	0.23	0.99	0.01	0.22	0.35	1.99	0.22	0.69	0.01	0.02	5.83	5.54
Turkey Ck: Middle	OK620910-06-0010M	CGP	20413	01/29/98	veg	Wint	98	13	6	4	0	2	12	1	0.43	0.37	0.00	0.05	0.99	0.01	0.01	0.38	1.97	0.17	0.59	0.00	0.20	5.55	4.80
Turkey Ck: Middle	OK620910-06-0010M	CGP	20413	01/29/98	wood	Wint	128	13	7	4	0	3	12	1	0.14	0.05	0.00	0.09	0.99	0.01	0.02	0.68	1.29	0.22	0.74	0.00	0.03	5.81	4.66
Turkey Ck: Middle	OK620910-06-0010M	CGP	20945	08/07/98	wood	Sum	123	15	7	4	0	3	14	1	0.30	0.11	0.00	0.19	0.99	0.01	0.54	0.54	1.63	0.20	0.77	0.01	0.01	6.49	5.35
Traders Ck	OK620920-02-0170G	CGP	18421	02/07/00	wood	Wint	121	13	4	1	0	3	12	1	0.29	0.10	0.00	0.18	0.99	0.01	0.01	0.34	1.75	0.24	0.71	0.00	0.00	5.35	4.92
Traders Ck	OK620920-02-0170G	CGP	22459	02/06/01	veg	Wint	82	13	4	2	0	2	11	2	0.20	0.14	0.00	0.06	0.94	0.06	0.02	0.34	2.02	0.08	0.73	0.02	0.00	5.58	4.99
Traders Ck	OK620920-02-0170G	CGP	23283	07/23/01	rifle	Sum	107	20	7	4	0	3	20	0	0.38	0.25	0.00	0.13	1.00	0.00	0.00	0.26	2.50	0.04	0.39	0.00	0.08	3.38	5.39
Traders Ck	OK620920-02-0170G	CGP	23283	07/23/01	veg	Sum	107	18	6	2	0	4	16	2	0.35	0.17	0.00	0.18	0.92	0.08	0.01	0.30	2.22	0.08	0.66	0.02	0.05	5.24	5.37
Buffalo Ck: Lower	OK620920-05-0010G	CGP	23284	07/23/01	rifle	Sum	111	18	7	4	0	3	16	2	0.56	0.50	0.00	0.06	0.86	0.14	0.01	0.34	2.22	0.16	0.63	0.02	0.04	4.15	5.23
Buffalo Ck: Lower	OK620920-05-0010G	CGP	26677	01/30/03	rifle	Wint	136	11	2	1	0	1	10	1	0.03	0.01	0.00	0.01	0.98	0.02	0.02	0.55	1.43	0.19	0.70	0.00	0.00	5.52	4.96
Buffalo Ck: Lower	OK620920-05-0010G	CGP	26677	01/30/03	veg	Wint	126	10	3	1	0	2	8	2	0.12	0.05	0.00	0.07	0.97	0.03	0.01	0.64	1.19	0.08	0.83	0.01	0.00	5.92	4.70
Buffalo Ck: Lower	OK620920-05-0010G	CGP	26677	01/30/03	wood	Wint	134	10	4	2	0	2	9	1	0.07	0.03	0.00	0.05	0.98	0.02	0.02	0.71	1.01	0.15	0.82	0.01	0.00	5.92	4.70
Buffalo Ck: Lower	OK620920-05-0010G	CGP	28001	07/18/03	veg	Sum	100	17	4	2	0	2	15	2	0.42	0.29	0.00	0.14	0.88	0.12	0.05	0.24	2.25	0.07	0.69	0.02	0.06	5.55	5.66
Buffalo Ck: Lower	OK620920-05-0010G	CGP	28001	07/18/03	wood	Sum	78	12	3	2	0	1	11	1	0.37	0.23	0.00	0.14	0.87	0.13	0.08	0.32	2.01	0.15	0.67	0.00	0.00	5.57	5.72
Bois d'Arc Ck	OK621000-03-0010F	CGP	18383	02/07/00	wood	Wint	84	9	3	2	0	1	8	1	0.08	0.07	0.00	0.01	0.92	0.08	0.12	0.58	1.29	0.26	0.66	0.00	0.07	6.13	5.18
Bois d'Arc Ck	OK621000-03-0010F	CGP	22430	01/22/01	rifle	Wint	112	13	5	3	0	2	13	0	0.33	0.13	0.00	0.20	1.00	0.00	0.04	0.39	1.93	0.30	0.60	0.00	0.04	5.10	4.73
Bois d'Arc Ck	OK621000-03-0010F	CGP	23270	07/19/01	rifle	Sum	128	10	4	2	0	2	9	1	0.50	0.03	0.00	0.47	0.99	0.01	0.38	0.42	1.47	0.47	0.45	0.00	0.05	5.61	5.79
Bois d'Arc Ck	OK621000-03-0010F	CGP	23270	07/19/01	wood	Sum	105	14	7	4	0	3	13	1	0.33	0.08	0.00	0.25	0.99	0.01	0.39	0.40	1.83	0.24	0.63	0.01	0.01	6.05	5.61
Yellowstone Ck	OK621010-01-0270G	CGP	18389	03/01/00	wood	Wint	116	17	8	3	2	3	16	1	0.49	0.37	0.04	0.08	0.99	0.01	0.00	0.18	2.34	0.08	0.79	0.00	0.03	4.59	4.78
Yellowstone Ck	OK621010-01-0270G	CGP	21564	07/20/00	veg	Sum	80	13	6	3	0	3	12	1	0.13	0.09	0.00	0.04	0.99	0.01	0.15	0.29	1.94						

Appendix E.3. High Quality Sites macroinvertebrate data.

Sitename	Wbid	Level 3 Ecoregion	SAMPLEID	Date	Habitat	Season	TotBugs/Dd	Total Species	EPT Taxa	Ephemeroptera taxa	Plecoptera taxa	Trichoptera taxa	Insect taxa	Non-insect taxa	Percent EPT	Percent Ephemeroptera	Percent Plecoptera	Percent Trichoptera	Percent Insect taxa	Percent Non-insect taxa	Percent Chironomimi, Tubificidae, Naididae	Percent dominant taxon	Shannon Diversity	Percent filterers	Percent gatherers	Percent scrapers	Percent omnivores	HBI	NCBI
Yellowstone Ck	OK621010-01-0270G	CGP	23321	07/24/01	rifle	Sum	104	14	6	3	0	3	14	0	0.76	0.36	0.00	0.40	1.00	0.00	0.06	0.42	1.74	0.40	0.48	0.00	0.06	3.71	4.65
Sandy Ck	OK621010-02-0010G	CGP	18391	03/01/00	wood	Wint	124	19	7	5	1	1	16	3	0.15	0.10	0.04	0.01	0.95	0.05	0.06	0.47	2.06	0.07	0.73	0.00	0.10	5.49	5.03
Sandy Ck	OK621010-02-0010G	CGP	23319	07/23/01	wood	Sum	106	17	9	6	0	3	17	0	0.55	0.34	0.00	0.21	1.00	0.00	0.24	0.29	2.23	0.32	0.43	0.00	0.12	5.54	4.81
Black Bear Ck: Lower	OK621200-03-0010G	CGP	20909	03/01/98	wood	Wint	120	16	10	7	0	3	16	0	0.21	0.15	0.00	0.06	1.00	0.00	0.08	0.48	1.87	0.08	0.81	0.00	0.11	5.79	4.62
Black Bear Ck: Lower	OK621200-03-0010G	CGP	27982	07/10/03	wood	Sum	108	14	5	4	0	1	13	1	0.49	0.47	0.00	0.01	1.00	0.00	0.13	0.43	1.77	0.02	0.87	0.00	0.06	5.20	5.25
Black Bear Ck: Lower	OK621200-03-0010G	CGP	27982	07/10/03	rifle	Sum	125	15	4	3	0	1	12	3	0.56	0.26	0.00	0.30	0.98	0.02	0.04	0.30	1.81	0.30	0.27	0.01	0.32	4.31	5.43
Red Rock Ck: Upper	OK621200-05-0160G	CGP	25146	02/04/02	veg	Wint	159	8	2	0	1	1	7	1	0.04	0.00	0.01	0.03	0.97	0.03	0.00	0.51	1.13	0.42	0.52	0.03	0.00	5.93	5.05
Red Rock Ck: Upper	OK621200-05-0160G	CGP	25353	07/16/02	rifle	Sum	143	12	3	2	0	1	10	2	0.61	0.13	0.00	0.47	0.95	0.05	0.09	0.47	1.59	0.50	0.14	0.00	0.23	4.59	5.50
Red Rock Ck: Upper	OK621200-05-0160G	CGP	26766	02/11/03	rifle	Wint	188	12	3	1	1	1	9	2	0.11	0.02	0.02	0.07	0.97	0.03	0.02	0.55	1.38	0.53	0.37	0.00	0.07	5.73	5.04
Red Rock Ck: Upper	OK621200-05-0160G	CGP	26766	02/11/03	wood	Wint	126	5	2	1	0	1	5	0	0.12	0.09	0.00	0.03	1.00	0.00	0.03	0.55	1.07	0.51	0.40	0.00	0.09	5.82	4.89
Red Rock Ck: Upper	OK621200-05-0160G	CGP	27931	07/18/03	wood	Sum	131	11	5	3	0	2	9	2	0.47	0.24	0.00	0.23	0.98	0.02	0.39	0.38	1.69	0.24	0.66	0.01	0.07	5.82	5.62
Persimmon Ck	OK720500-01-0150G	CGP	23335	07/26/01	wood	Sum	122	15	10	6	0	4	15	0	0.40	0.19	0.00	0.21	1.00	0.00	0.01	0.54	1.61	0.27	0.65	0.00	0.03	4.32	3.99
Persimmon Ck	OK720500-01-0150G	CGP	26672	01/30/03	rifle	Wint	104	17	7	3	2	2	16	1	0.27	0.14	0.10	0.04	0.97	0.03	0.05	0.43	1.99	0.14	0.51	0.00	0.09	4.82	4.59
Persimmon Ck	OK720500-01-0150G	CGP	26672	01/30/03	veg	Wint	111	15	6	3	2	1	13	2	0.20	0.09	0.08	0.03	0.92	0.08	0.01	0.57	1.53	0.07	0.73	0.00	0.13	5.44	4.74
Persimmon Ck	OK720500-01-0150G	CGP	26672	01/30/03	wood	Wint	98	13	6	3	2	1	12	1	0.19	0.09	0.08	0.02	0.96	0.04	0.01	0.62	1.37	0.06	0.77	0.00	0.12	5.37	4.45
Persimmon Ck	OK720500-01-0150G	CGP	27985	07/10/03	rifle	Sum	113	18	7	4	0	3	16	2	0.55	0.43	0.00	0.11	0.97	0.03	0.06	0.31	2.25	0.43	0.34	0.01	0.02	5.32	4.53
Persimmon Ck	OK720500-01-0150G	CGP	27985	07/10/03	veg	Sum	112	22	7	5	0	2	18	4	0.43	0.36	0.00	0.07	0.93	0.07	0.16	0.24	2.59	0.10	0.54	0.04	0.10	5.34	5.15
North Buck Ck	OK121400-03-0210R	FH	18323	01/05/00	rifle	Wint	104	15	6	4	1	1	12	3	0.24	0.17	0.02	0.05	0.94	0.06	0.13	0.47	1.87	0.52	0.30	0.01	0.13	5.80	5.25
North Buck Ck	OK121400-03-0210R	FH	21459	07/17/00	rifle	Sum	118	19	10	6	0	5	18	1	0.41	0.13	0.00	0.28	0.99	0.01	0.22	0.22	2.43	0.33	0.50	0.00	0.07	5.60	5.04
Salt Ck	OK621200-04-0010J	FH	18318	01/04/00	rifle	Wint	113	16	8	6	2	1	14	2	0.61	0.55	0.06	0.01	0.87	0.13	0.04	0.29	2.15	0.49	0.26	0.00	0.20	5.76	4.64
Salt Ck	OK621200-04-0010J	FH	21455	07/17/00	rifle	Sum	109	15	8	5	0	3	15	1	0.71	0.42	0.00	0.29	1.00	0.00	0.05	0.34	1.97	0.62	0.12	0.00	0.13	5.12	4.21
Commission Ck	OK520620-05-0160C	SWT	23266	07/19/01	wood	Sum	101	15	6	4	0	2	14	1	0.58	0.22	0.00	0.37	0.99	0.01	0.13	0.33	2.11	0.36	0.53	0.02	0.04	4.73	3.68
Commission Ck	OK520620-05-0160C	SWT	24793	02/04/02	veg	Wint	125	20	12	5	3	4	19	1	0.45	0.25	0.15	0.06	0.98	0.02	0.00	0.46	1.98	0.20	0.55	0.02	0.17	5.05	4.35
Commission Ck	OK520620-05-0160C	SWT	25525	07/25/02	rifle	Sum	116	10	4	2	0	2	10	1	0.23	0.16	0.00	0.08	0.89	0.11	0.05	0.47	1.56	0.18	0.27	0.00	0.06	3.24	5.06
Commission Ck	OK520620-05-0160C	SWT	25525	07/25/02	veg	Sum	123	20	9	7	0	2	18	2	0.65	0.26	0.00	0.39	0.98	0.02	0.07	0.29	2.40	0.34	0.28	0.02	0.20	4.71	4.16
Commission Ck	OK520620-05-0160C	SWT	26640	01/27/03	rifle	Wint	140	11	4	1	3	1	9	2	0.11	0.00	0.10	0.01	0.98	0.02	0.01	0.77	0.98	0.02	0.78	0.00	0.03	5.13	4.47
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	18399	02/03/00	wood	Wint	108	13	7	4	1	2	12	1	0.28	0.19	0.05	0.04	0.99	0.01	0.00	0.66	1.36	0.06	0.86	0.00	0.07	5.33	4.54
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	26691	01/13/03	rifle	Wint	108	12	3	2	1	0	10	2	0.16	0.14	0.02	0.00	0.82	0.18	0.14	0.47	1.56	0.06	0.78	0.00	0.02	5.45	5.61
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	26691	01/13/03	veg	Wint	119	12	5	4	1	1	11	2	0.23	0.18	0.03	0.01	0.93	0.07	0.02	0.58	1.48	0.08	0.85	0.01	0.05	5.61	4.86
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	27831	07/15/03	rifle	Sum	133	13	4	2	0	2	12	1	0.51	0.48	0.00	0.03	0.99	0.01	0.11	0.29	1.88	0.08	0.77	0.00	0.02	4.84	4.81
Kiowa Ck: Beaver Co.	OK720500-02-0130K	SWT	27831	07/15/03	veg	Sum	102	18	7	5	0	2	15	3	0.46	0.25	0.00	0.21	0.87	0.13	0.12	0.29	2.28	0.04	0.57	0.02	0.22	5.42	5.29
Cimarron River: East	OK720900-00-0010G	SWT	18396	02/02/00	wood	Wint	117	14	4	4	0	0	11	3	0.22	0.22	0.00	0.00	0.80	0.20	0.03	0.27	2.07	0.00	0.98	0.00	0.00	6.24	6.09
Cimarron River: East	OK720900-00-0010G	SWT	19077	07/24/00	rifle	Sum	118	16	6	4	0	2	14	2	0.30	0.08	0.00	0.21	0.53	0.47	0.00	0.34	2.09	0.20	0.59	0.13	0.02	6.42	6.82
Cimarron River: East	OK720900-00-0010G	SWT	19077	07/24/00	veg	Sum	126	7	1	1	0	0	5	2	0.01	0.01	0.00	0.00	0.30	0.70	0.02	0.36	1.47	0.00	0.50	0.34	0.00	7.79	7.78
Cimarron River: East	OK720900-00-0010G	SWT	22477	02/08/01	rifle	Wint	207	12	3	2	0	2	9	3	0.23	0.17	0.00	0.06	0.94	0.06	0.03	0.48	1.51	0.50	0.45	0.02	0.00	5.81	5.41
Cimarron River: East	OK720900-00-0010G	SWT	22477	02/08/01	veg	Wint	108	12	4	3	0	2	10	2	0.17	0.12	0.00	0.05	0.72	0.28	0.00	0.42	1.77	0.19	0.68	0.03	0.00	6.62	6.17