

**SMALL WATERSHED ROTATING BASIN MONITORING PROGRAM  
YEAR 1: NEOSHO-GRAND AND UPPER CANADIAN BASINS**

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**FINAL REPORT**  
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## **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.

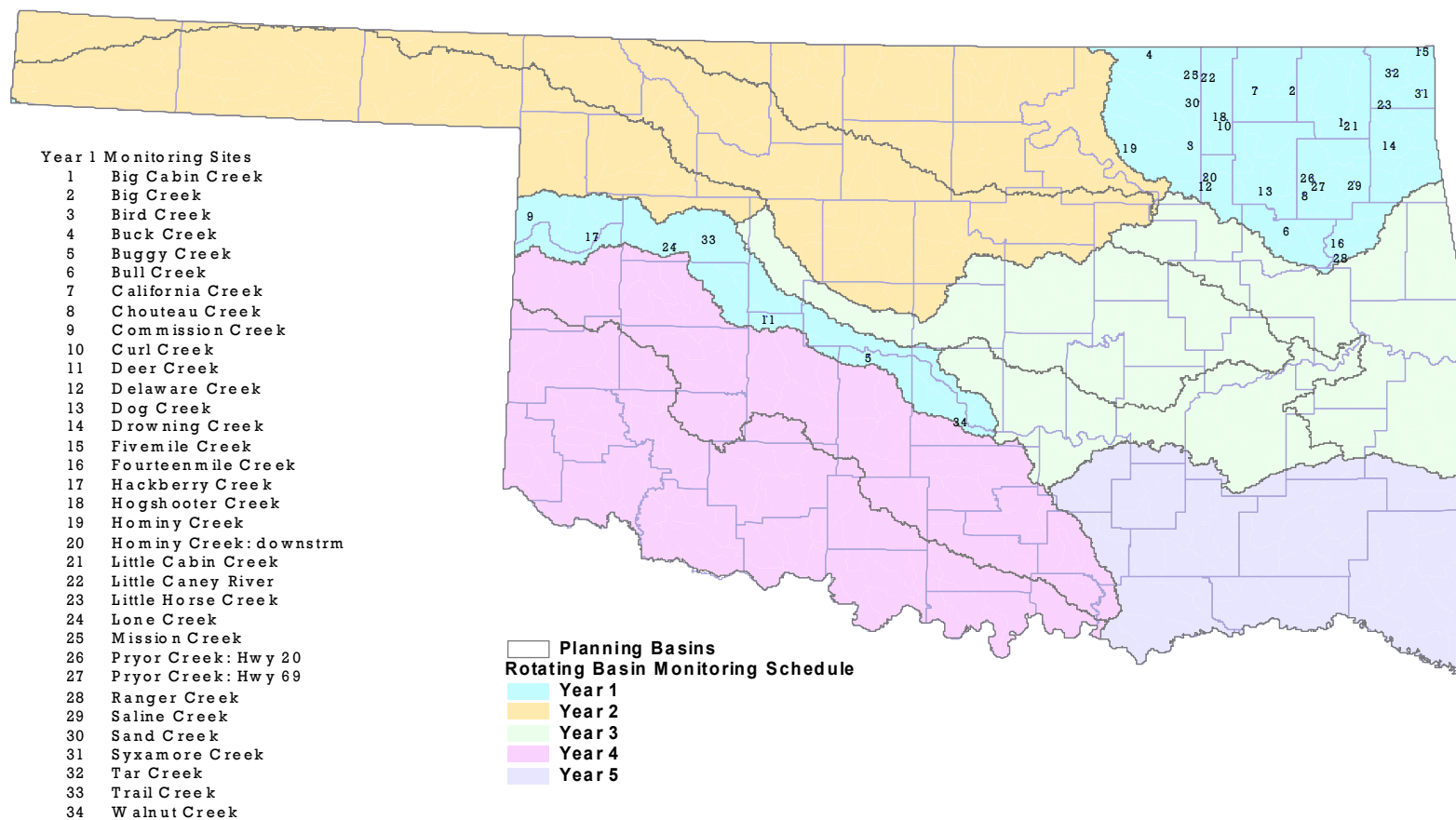


Figure 1. Monitoring Schedule and Year 1 Monitoring Sites for the Small Watershed Rotating Basin Monitoring Project.

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 first planning basins to be monitored, the Neosho-Grand and Upper Canadian 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 Neosho-Grand and Upper Canadian 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 two basins and removal of those sites which did not meet the sampling criteria, 34 sites were monitored regularly from August 2001 to July 2003 (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 Neosho-Grand Basin occur over four, level three ecoregions: Central Irregular Plains, Cross Timbers, Boston Mountains, and Ozark Highlands (Woods et al., 2005). In the Upper Canadian Basin, one site is located in the Southwestern Tablelands, while the other sites are in the Central Great Plains ecoregion. To determine general condition, rotating basin data was compared to data collected previously from streams determined to be "high quality" sites in each ecoregion (see Append. F for details).

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

SiteName	WBID	Lat	Long	Ecoregion	County
Delaware Creek	OK121300-01-0150H	36.2771	-95.9924	Central Irregular Plains	Tulsa
Bird Creek	OK121300-02-0010C	36.4852	-96.0610	Cross Timbers	Osage
Hominy Creek: downstream	OK121300-04-0010C	36.3078	-95.9740	Central Irregular Plains	Tulsa
Hominy Creek: upstream	OK121300-04-0280G	36.4810	-96.3980	Cross Timbers	Osage
Curl Creek	OK121400-01-0270G	36.6177	-95.8455	Central Irregular Plains	Washington
Hogshooter Creek	OK121400-01-0300D	36.6306	-95.8620	Central Irregular Plains	Washington
Little Caney River	OK121400-02-0140H	36.8587	-95.9579	Central Irregular Plains	Osage
Mission Creek	OK121400-02-0190B	36.8693	-96.0130	Cross Timbers	Osage
Buck Creek	OK121400-03-0170C	36.9755	-96.2947	Cross Timbers	Osage
Sand Creek	OK121400-04-0010F	36.7192	-96.0074	Cross Timbers	Osage
Bull Creek	OK121500-02-0090D	36.0298	-95.4940	Central Irregular Plains	Wagoner
Dog Creek	OK121500-02-0360D	36.2486	-95.5980	Central Irregular Plains	Rogers
California Creek	OK121510-02-0050C	36.7802	-95.6657	Central Irregular Plains	Nowata
Big Creek	OK121510-03-0010D	36.7853	-95.4634	Central Irregular Plains	Nowata
Ranger Creek	OK121600-01-0060D	35.8844	-95.2001	Boston Mountains	Cherokee
Fourteenmile Creek	OK121600-01-0100G	35.9591	-95.1825	Ozark Highlands	Cherokee
Chouteau Creek	OK121600-01-0430M	36.2192	-95.3865	Central Irregular Plains	Mayes
Saline Creek	OK121600-02-0030D	36.2820	-95.0929	Ozark Highlands	Mayes
Drowning Creek	OK121600-03-0090G	36.4749	-94.8672	Ozark Highlands	Delaware
Little Horse Creek	OK121600-03-0190A	36.6862	-94.9115	Central Irregular Plains	Ottawa
Sycamore Creek	OK121600-03-0510D	36.7685	-94.6920	Ozark Highlands	Ottawa
Tar Creek	OK121600-04-0060D	36.8748	-94.8620	Central Irregular Plains	Ottawa
Little Cabin Creek	OK121600-06-0080C	36.5975	-95.1385	Central Irregular Plains	Craig
Big Cabin Creek	OK121600-06-0220I	36.6142	-95.1617	Central Irregular Plains	Craig
Fivemile Creek	OK121600-07-0110G	36.9835	-94.6919	Ozark Highlands	Ottawa
Pryor Creek: Hwy 20	OK121610-00-0050D	36.3074	-95.3472	Central Irregular Plains	Mayes
Pryor Creek: Hwy 69	OK121610-00-0050M	36.2798	-95.3290	Central Irregular Plains	Mayes
Buggy Creek	OK520610-02-0120C	35.3343	-97.9184	Central Great Plains	Grady
Walnut Creek	OK520610-03-0010C	34.9934	-97.3580	Central Great Plains	McClain
Trail Creek: Dewey Co.	OK520620-02-0090G	35.9565	-98.8480	Central Great Plains	Dewey
Lone Creek	OK520620-03-0020C	35.9062	-99.0650	Central Great Plains	Dewey
Hackberry Creek	OK520620-04-0050D	35.9320	-99.5237	Central Great Plains	Ellis
Commission Creek	OK520620-05-0160C	36.0336	-99.9170	Southwestern Tablelands	Ellis
Deer Creek	OK520620-06-0010F	35.5365	-98.5174	Central Great Plains	Caddo

## **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 2001). Water quality chemical analyses were conducted by the Oklahoma Department of Agriculture, Food and Forestry (ODAFF) laboratory.

## **2.1 WATER QUALITY MONITORING**

Starting in August 2001, sites were monitored for physical and chemical parameters on a fixed interval schedule of ten sampling events per year (five-week intervals) through June 2003 (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 (2001). *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 H<sub>2</sub>SO<sub>4</sub>, 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 (NO<sub>3</sub>), nitrite (NO<sub>2</sub>), orthophosphate (PO<sub>4</sub>), total phosphorous (TP), total Kjeldahl nitrogen (TKN), ammonia (NH<sub>4</sub>), chloride (Cl), sulfate (SO<sub>4</sub>), total suspended solids (TSS), total dissolved solids (TDS), 5-day biochemical oxygen demand (BOD<sub>5</sub>), 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 2001 and 2002, 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 2001). 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 2001 and 2002, 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 (2001). 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). 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 insectivores	>45%	20-45%	<20%
Proportion 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 2001 and 2002 according to procedures outlined in the OCC SOP (2001). 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 seven 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 **ratio Ephemeroptera, Plecoptera, and Trichoptera (EPT) to EPT plus Chironomini** is a further isolation of EPT relative abundance corrected for Chironomini. Chironomini are a tribe of the Dipteran family Chironomidae or midges. Members of this tribe are pollution tolerant, and they can build up to high numbers as animals that prey on them begin to disappear due to the effects of pollution (Plafkin et al., 1989).

(4) 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).

(5) 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).

(6) **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).

(7) 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 42 points. For taxa richness, EPT taxa richness, and EPT/EPT + Chironomini, 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/EPT + Chironomini**	>75%	50-75%	25-50%	<25%
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 1 Monitoring Sites.**

Site Name	WBID	DO (mg/l)	Temp (°C)	Turbidity (NTU)	Alkalinity (CaCO <sub>3</sub> )	Conductivity (uS/cm)	pH (SU)	Discharge (cfs)
Delaware Creek	OK121300-01-0150H	5.92	16.45	36.74	77	837.0	7.92	0.86
Bird Creek	OK121300-02-0010C	8.41	16.98	70.00	65	300.3	7.40	21.94
Hominy Creek: Downstream	OK121300-04-0010C	8.61	15.91	32.40	54	300.4	7.58	82.16
Hominy Creek: Upstream	OK121300-04-0280G	9.82	17.99	38.20	110	1189.0	7.86	2.26
Curl Creek	OK121400-01-0270G	6.73	15.80	37.95	95	418.3	7.44	1.40
Hogshooter Creek	OK121400-01-0300D	5.78	15.97	39.10	130	454.8	7.54	1.99
Little Caney River	OK121400-02-0140H	9.12	16.80	72.35	91	328.9	7.75	9.72
Mission Creek	OK121400-02-0190B	6.57	16.56	63.60	93	262.1	7.16	0.23
Buck Creek	OK121400-03-0170C	8.79	17.94	30.30	132	357.3	7.64	1.21
Sand Creek	OK121400-04-0010F	7.80	16.21	22.60	93	442.2	7.31	5.96
Bull Creek	OK121500-02-0090D	5.48	15.32	55.03	73	327.4	8.35	0.85
Dog Creek	OK121500-02-0360D	5.54	14.34	17.43	90	427.2	8.13	12.71
California Creek	OK121510-02-0050C	5.99	15.82	48.50	99	418.4	8.06	0.34
Big Creek	OK121510-03-0010D	7.36	16.28	21.08	111	336.5	8.01	2.94
Ranger Creek	OK121600-01-0060D	8.73	16.27	8.93	111	413.0	7.69	3.51
Fourteenmile Creek	OK121600-01-0100G	9.81	17.14	5.05	69	190.7	7.68	15.03
Chouteau Creek	OK121600-01-0430M	4.99	15.53	43.40	75	255.0	8.09	0.53
Saline Creek	OK121600-02-0030D	10.21	17.32	1.00	98	230.6	7.72	31.16
Drowning Creek	OK121600-03-0090G	9.65	15.82	1.42	107	353.0	7.51	4.63
Little Horse Creek	OK121600-03-0190A	7.32	15.03	14.59	93	359.3	6.99	0.93
Sycamore Creek	OK121600-03-0510D	10.77	16.00	16.80	105	265.4	7.70	18.17
Tar Creek	OK121600-04-0060D	9.19	15.10	16.63	88	1294.0	7.35	7.17
Little Cabin Creek	OK121600-06-0080C	5.87	14.63	44.10	73	348.8	7.91	4.04
Big Cabin Creek	OK121600-06-0220I	7.28	15.84	25.22	89	640.6	8.08	5.24
Fivemile Creek	OK121600-07-0110G	10.38	15.79	0.80	107	397.0	7.94	12.17
Pryor Creek: Hwy 20	OK121610-00-0050D	5.66	15.36	40.59	71	456.8	7.96	0.44
Pryor Creek: Hwy 69	OK121610-00-0050M	6.45	15.21	28.64	66	436.0	8.08	2.28
Buggy Creek	OK520610-02-0120C	9.88	19.20	62.50	264	1309.1	8.12	9.31
Walnut Creek	OK520610-03-0010C	9.44	15.86	56.30	336	685.6	8.13	18.96
Trail Creek	OK520620-02-0090G	10.03	16.47	12.83	160	2562.2	8.04	3.74
Lone Creek	OK520620-03-0020C	9.55	18.93	7.47	166	2690.0	8.11	1.55
Hackberry Creek	OK520620-04-0050D	10.44	13.03	11.35	253	2519.0	8.11	3.46
Commission Creek	OK520620-05-0160C	9.99	14.83	15.28	235	819.4	8.30	6.15
Deer Creek	OK520620-06-0010F	9.76	19.66	39.70	167	1200.0	8.19	38.62

**Table 7. Low dissolved oxygen values (DO<5.0 mg/l).**

% Samples under 5.0 mg/l	SiteName	WBID	SAMPLEID	Date	DO (mg/l)
42%	Delaware Creek	OK121300-01-0150H	24376	22-Oct-01	3.65
			25616	05-Aug-02	4.86
			25869	16-Sep-02	4.22
			25995	14-Oct-02	3.68
			26132	18-Nov-02	2.40
			26273	16-Dec-02	3.04
			27560	12-May-03	4.83
			27748	16-Jun-03	4.08
5%	Bird Creek	OK121300-02-0010C	25813	10-Sep-02	4.52
15%	Curl Creek	OK121400-01-0270G	24228	17-Sep-01	4.24
			24364	22-Oct-01	2.85
			26665	27-Jan-03	0.00
44%	Hogshooter Creek	OK121400-01-0300D	23913	13-Aug-01	0.65
			24229	17-Sep-01	3.11
			24365	22-Oct-01	3.85
			24491	03-Dec-01	2.46
			25811	09-Sep-02	1.85
			25982	14-Oct-02	4.02
			26119	18-Nov-02	0.70
			26262	16-Dec-02	2.57
20%	Mission Creek	OK121400-02-0190B	24233	18-Sep-01	4.73
			25815	10-Sep-02	4.50
			26123	19-Nov-02	0.50
			26266	17-Dec-02	3.81
10%	Sand Creek	OK121400-04-0010F	25318	09-Jul-02	4.59
			25814	10-Sep-02	3.73
45%	Bull Creek	OK121500-02-0090D	23925	14-Aug-01	1.83
			24377	23-Oct-01	4.51
			25327	09-Jul-02	3.01
			25617	06-Aug-02	2.41
			25870	17-Sep-02	2.33
			25996	15-Oct-02	4.46
			26133	19-Nov-02	4.97
			27561	13-May-03	4.02
53%	Dog Creek	OK121500-02-0360D	27749	17-Jun-03	4.71
			23926	14-Aug-01	3.83
			23997	21-Aug-01	1.74
			24378	23-Oct-01	4.97
			25328	09-Jul-02	4.98
			25618	06-Aug-02	1.76
			25871	17-Sep-02	1.11
			25997	15-Oct-02	2.22
40%	California Creek	OK121510-02-0050C	26134	19-Nov-02	4.79
			27562	13-May-03	4.43
			23923	13-Aug-01	3.96
			24239	17-Sep-01	4.29
			24375	22-Oct-01	3.01
			24672	07-Jan-02	4.59
			25325	08-Jul-02	2.37
			25868	16-Sep-02	4.01
25%	Big Creek	OK121510-03-0010D	26272	16-Dec-02	3.10
			27747	16-Jun-03	4.75
			23922	13-Aug-01	4.11
			24238	17-Sep-01	4.13
			25867	16-Sep-02	3.22
			27558	12-May-03	4.59
15%	Ranger Creek	OK121600-01-0060D	27746	16-Jun-03	4.67
			23935	14-Aug-01	3.75

	Ranger Creek, cont.		25310	09-Jul-02	4.14
			25627	06-Aug-02	4.72
50%	Chouteau Creek	OK121600-01-0430M	23929	14-Aug-01	4.88
	Chouteau Creek, cont.		24244	18-Sep-01	4.01
			24381	23-Oct-01	4.01
			25621	06-Aug-02	3.88
			25874	17-Sep-02	1.41
			26000	15-Oct-02	4.44
			26137	19-Nov-02	1.98
			26277	17-Dec-02	4.39
			27565	13-May-03	2.31
			27752	17-Jun-03	3.36
5%	Drowning Creek	OK121600-03-0090G	24249	17-Sep-01	4.83
20%	Little Horse Creek	OK121600-03-0190A	23930	13-Aug-01	2.89
			25305	08-Jul-02	3.76
			25622	05-Aug-02	2.83
			25854	09-Sep-02	3.02
50%	Little Cabin Creek	OK121600-06-0080C	23921	13-Aug-01	3.46
			24237	17-Sep-01	3.81
			24373	22-Oct-01	4.98
			25225	28-May-02	4.46
			25613	05-Aug-02	4.26
			25866	16-Sep-02	3.94
			26129	18-Nov-02	2.30
			26270	16-Dec-02	1.15
			27557	12-May-03	3.44
			27745	16-Jun-03	3.15
25%	Big Cabin Creek	OK121600-06-0220I	24236	17-Sep-01	4.11
			25865	16-Sep-02	4.64
			26269	16-Dec-02	4.89
			27556	12-May-03	4.22
			27744	16-Jun-03	4.05
42%	Pryor Creek: Hwy 20	OK121610-00-0050D	23927	14-Aug-01	2.74
			24242	18-Sep-01	4.91
			25329	09-Jul-02	4.18
			25872	17-Sep-02	2.31
			25998	15-Oct-02	3.02
			26135	19-Nov-02	2.99
			27563	13-May-03	3.02
			27750	17-Jun-03	4.88
28%	Pryor Creek: Hwy 69	OK121610-00-0050M	24243	18-Sep-01	2.98
			24380	23-Oct-01	4.59
			25330	09-Jul-02	4.85
			25620	06-Aug-02	2.78
			25873	17-Sep-02	4.13
5%	Walnut Creek	OK520610-03-0010C	23942	14-Aug-01	4.72

**Table 8. Mean Chemical Water Quality Values for Year 1 Monitoring Sites.**

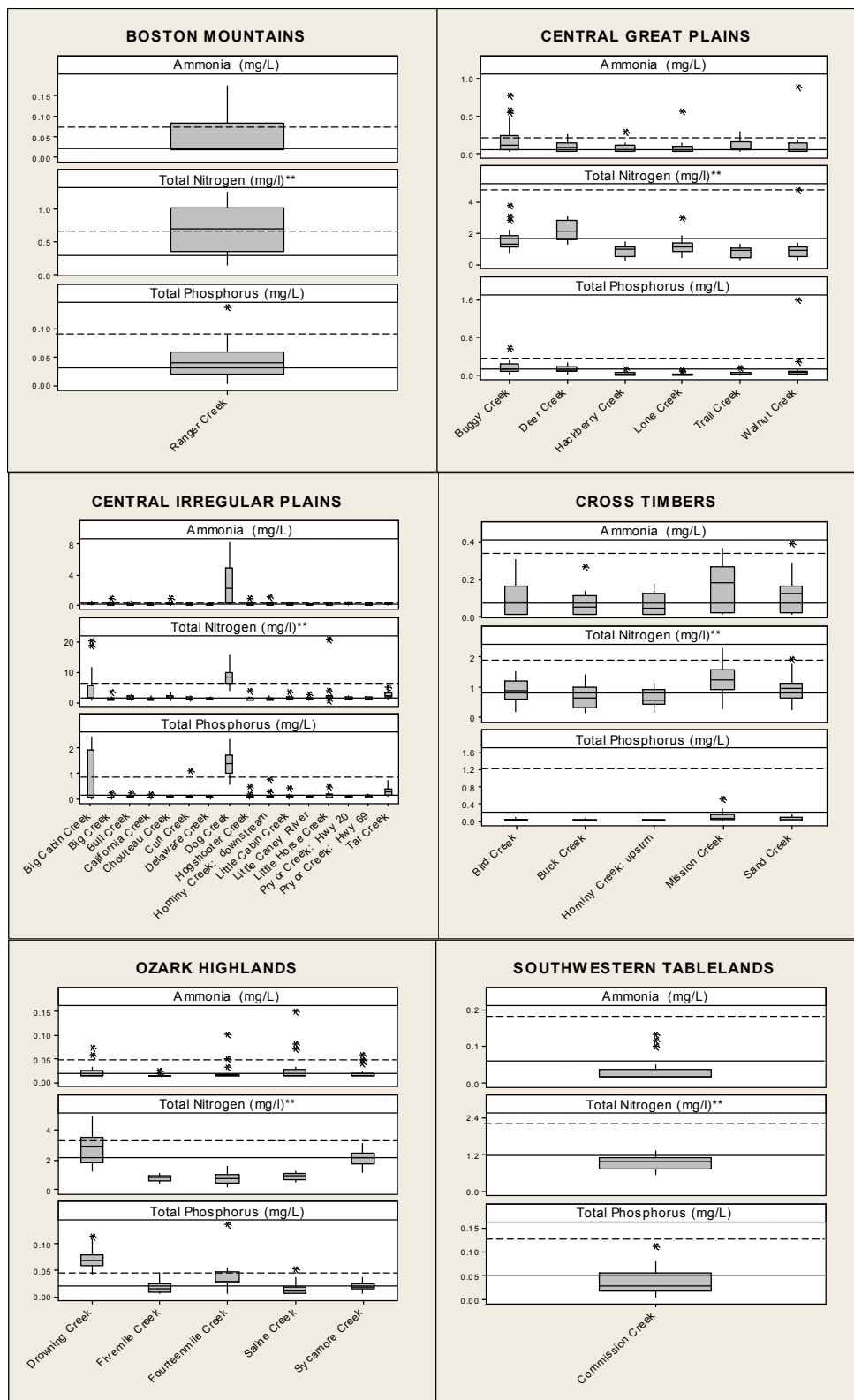
Site Name	WBID	Chloride (mg/l)	Sulfate (mg/l)	Ammonia (mg/l)	Nitrate (mg/l)	Nitrite (mg/l)	TKN (mg/l)	Ortho-Phosphate (mg/l)	Total Phosphorous (mg/l)	TSS (mg/l)	TDS (mg/l)	Hardness (mg/l as CaCO3)
Delaware Creek	OK121300-01-0150H	201.10	23.480	0.1096	0.4089	0.0105	0.5190	0.0162	0.0596	33.68	497.10	191.90
Bird Creek	OK121300-02-0010C	29.66	13.930	0.1196	0.3942	0.0347	0.5760	0.0225	0.0497	13.79	171.85	106.09
Hominy Creek: Downstream	OK121300-04-0010C	37.42	13.924	0.1884	0.5580	0.0105	0.4061	0.0391	0.1180	28.45	162.75	97.66
Hominy Creek: Upstream	OK121300-04-0280G	280.20	26.960	0.0773	0.2860	0.0110	0.4130	0.0153	0.0429	13.60	694.50	309.90
Curl Creek	OK121400-01-0270G	40.54	27.770	0.1497	0.3320	0.0360	0.6693	0.0272	0.1357	32.65	222.10	130.96
Hogshooter Creek	OK121400-01-0300D	35.85	19.840	0.1312	0.3778	0.0800	0.5010	0.0344	0.0928	18.72	245.80	182.98
Little Caney River	OK121400-02-0140H	28.23	19.130	0.0938	0.5080	0.0280	0.5317	0.0378	0.0782	38.00	199.60	127.42
Mission Creek	OK121400-02-0190B	13.47	17.230	0.1508	0.4040	0.0590	0.7147	0.0465	0.1170	48.20	168.80	121.70
Buck Creek	OK121400-03-0170C	7.96	18.440	0.0704	0.3235	0.0600	0.3509	0.0178	0.0447	35.70	208.30	167.97
Sand Creek	OK121400-04-0010F	53.47	23.650	0.1047	0.3360	0.0155	0.5377	0.0213	0.0597	21.90	239.90	149.34
Bull Creek	OK121500-02-0090D	19.16	65.450	0.2728	0.5620	0.0600	0.9810	0.0347	0.1118	26.20	220.10	121.74
Dog Creek	OK121500-02-0360D	40.89	48.830	2.4420	3.5750	0.3520	3.5980	1.0090	1.2300	13.06	281.50	132.63
California Creek	OK121510-02-0050C	44.96	150.000	0.1546	0.3720	0.0405	0.5198	0.0158	0.0527	36.30	255.80	176.20
Big Creek	OK121510-03-0010D	7.19	114.900	0.1422	0.3695	0.0680	0.5470	0.0168	0.0566	15.60	215.17	178.02
Ranger Creek	OK121600-01-0060D	4.76	16.600	0.0661	0.4215	0.0455	0.3062	0.0275	0.0556	13.35	162.57	133.87
Fourteenmile Creek	OK121600-01-0100G	5.64	8.619	0.0368	0.5825	0.0155	0.2121	0.0215	0.0466	14.00	104.15	82.59
Chouteau Creek	OK121600-01-0430M	10.92	37.790	0.2154	0.6437	0.0668	0.8520	0.0362	0.1121	29.11	170.70	93.31
Saline Creek	OK121600-02-0030D	8.27	5.881	0.0302	0.7145	0.0145	0.1138	0.0068	0.0149	9.55	133.25	108.42
Drowning Creek	OK121600-03-0090G	25.40	17.720	0.0227	2.5040	0.0375	0.1370	0.0531	0.0716	9.75	206.60	142.97
Little Horse Creek	OK121600-03-0190A	18.71	27.860	0.1808	1.2700	0.6220	0.6890	0.1123	0.1609	13.30	203.50	144.20
Sycamore Creek	OK121600-03-0510D	8.50	5.686	0.0208	1.8720	0.0395	0.1407	0.0096	0.0220	9.85	154.38	125.71
Tar Creek	OK121600-04-0060D	37.05	633.300	0.1811	1.6350	0.0160	0.6266	0.2539	0.3255	18.45	1126.40	749.00
Little Cabin Creek	OK121600-06-0080C	10.33	62.000	0.1611	0.6225	0.0855	0.7069	0.0468	0.1061	42.50	209.90	127.97
Big Cabin Creek	OK121600-06-0220I	19.24	243.400	0.1753	3.0200	0.0230	0.6147	0.4410	0.5120	18.95	526.70	353.90
Fivemile Creek	OK121600-07-0110G	6.66	7.158	0.0157	0.5890	0.0125	0.1124	0.0096	0.0169	9.65	154.23	138.51
Pryor Creek: Hwy 20	OK121610-00-0050D	82.60	31.330	0.1971	0.5679	0.0363	0.8117	0.0479	0.1028	29.05	298.60	110.46
Pryor Creek: Hwy 69	OK121610-00-0050M	70.80	38.710	0.1828	0.5150	0.0133	0.7426	0.0338	0.0995	26.00	286.60	118.10
Buggy Creek	OK520610-02-0120C	39.00	431.600	0.1895	0.9250	0.0105	0.6460	0.1085	0.1605	40.40	1004.10	548.20
Walnut Creek	OK520610-03-0010C	25.59	42.330	0.1483	0.5600	0.0470	0.6350	0.1259	0.2171	73.20	396.50	318.10
Trail Creek	OK520620-02-0090G	25.18	1530.600	0.0845	0.4130	0.0105	0.3083	0.0316	0.0511	28.85	2503.60	1715.70
Lone Creek	OK520620-03-0020C	38.15	1619.000	0.1012	0.7095	0.0125	0.6360	0.0506	0.1001	31.30	2501.00	1755.40
Hackberry Creek	OK520620-04-0050D	72.55	1247.000	0.0689	0.3183	0.0106	0.4792	0.0174	0.0344	17.17	2249.00	1457.60
Commission Creek	OK520620-05-0160C	102.98	30.260	0.0367	0.6360	0.0105	0.3265	0.0133	0.0373	27.05	482.03	232.60
Deer Creek	OK520620-06-0010F	117.00	456.900	0.1092	1.6660	0.0415	0.5177	0.0930	0.1536	60.00	893.70	615.50

**Table 9. Geometric Mean of Bacteria Values for Year 1 Monitoring Sites.**

Site Name	WBID	<i>Enterococcus</i>	<i>E. coli</i>
Delaware Creek	OK121300-01-0150H	74.943	48.661
Bird Creek	OK121300-02-0010C	40.617	67.507
Hominy Creek: downstream	OK121300-04-0010C	53.186	79.147
Hominy Creek: upstream	OK121300-04-0280G	42.651	62.239
Curl Creek	OK121400-01-0270G	132.74	167.74
Hogshooter Creek	OK121400-01-0300D	126.54	102.13
Little Caney River	OK121400-02-0140H	79.837	49.421
Mission Creek	OK121400-02-0190B	89.137	94.625
Buck Creek	OK121400-03-0170C	46.101	44.472
Sand Creek	OK121400-04-0010F	97.508	118.23
Bull Creek	OK121500-02-0090D	389.8	202.93
Dog Creek	OK121500-02-0360D	224.44	187.62
California Creek	OK121510-02-0050C	73.089	60.593
Big Creek	OK121510-03-0010D	143.36	72.951
Ranger Creek	OK121600-01-0060D	70.607	75.56
Fourteenmile Creek	OK121600-01-0100G	121.85	82.568
Chouteau Creek	OK121600-01-0430M	173.16	114.11
Saline Creek	OK121600-02-0030D	17.567	24.225
Drowning Creek	OK121600-03-0090G	39.236	33.17
Little Horse Creek	OK121600-03-0190A	55.743	121.98
Sycamore Creek	OK121600-03-0510D	26.448	39.195
Tar Creek	OK121600-04-0060D	518.91	190.4
Little Cabin Creek	OK121600-06-0080C	185	134.08
Big Cabin Creek	OK121600-06-0220I	432.83	95.774
Fivemile Creek	OK121600-07-0110G	17.134	26.204
Pryor Creek: HWY 20	OK121610-00-0050D	93.193	141.64
Pryor Creek: HWY 69	OK121610-00-0050M	164.29	93.914
Buggy Creek	OK520610-02-0120C	193.37	188.97
Walnut Creek	OK520610-03-0010C	189.14	210.76
Trail Creek	OK520620-02-0090G	191.38	183.01
Lone Creek	OK520620-03-0020C	388.75	202.04
Hackberry Creek	OK520620-04-0050D	227.87	174.13
Commission Creek	OK520620-05-0160C	86.131	113.75
Deer Creek	OK520620-06-0010F	92.459	51.41

In order to account for natural regional differences in water quality, data from each monitoring site was compared to the mean of high quality sites for the respective ecoregion. Figure 2 shows interquartile range plots for each site for three important indicators of pollution: ammonia, total nitrogen, 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 for high quality site parameters. Most streams did not show levels of ammonia, total nitrogen, or total phosphorous outside of the 95% confidence interval relative to the high quality sites. However, Ranger Creek (Boston Mountains ecoregion) had a mean total nitrogen value above the high quality range. Dog Creek (Central Irregular Plains ecoregion) had much higher ammonia, nitrogen, and phosphorous than the mean reference site range, and it exceeded the chronic ammonia toxicity values in 7 out of 17 samples (App. A.1), which is of particular concern. Big Cabin Creek and Tar Creek, also in the Central Irregular Plains ecoregion, had higher levels of both phosphorous and nitrogen than the reference streams, but none of the means were outside the reference range. Drowning Creek, in the Ozark Highlands ecoregion, had higher phosphorous and nitrogen than the reference values, although only the phosphorous value was outside the high quality range.



**Figure 2. Selected 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).**



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 eight 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. Statistically significant differences ( $p < 0.05$ ) between the means of each parameter in past projects and the means collected during this project are indicated by p-values in bold and with asterisks. There were no significant differences in discharge or temperature between the past and present projects. Nitrogen was the parameter that exhibited the most differences, increasing significantly over time at six of the eight sites compared (soluble N [excluding soluble organic N] and nitrate/nitrite). Chloride increased significantly at three sites, while sulfate increased at one site (Drowning Creek). California Creek had significantly decreased sulfate in the rotating basin project relative to a previous project, Fivemile Creek had significantly less ammonia, and Trail Creek had significantly less total phosphorous. Chouteau Creek had only one significant change, while Dog Creek had significant changes in eight of the fourteen parameters shown in Table 10.

**Table 10. Comparison of water quality data from previous projects to the Rotating Basin Year 1 project (2001-2003).**

Parameter	SiteName	WBID	Date of Collection	N	Mean	Standard Deviation	p value
Alkalinity	Dog Creek	OK121500-02-0360D	2001-2003	14	92.500	29.120	0.269
			1999-2001	17	82.060	22.460	
	California Creek	OK121510-02-0050C	2001-2003	14	100.240	34.270	0.456
			1999-2001	14	110.060	38.170	
	Chouteau Creek	OK121600-01-0430M	2001-2003	14	81.210	18.060	0.525
			1999-2001	15	71.800	51.750	
	Drowning Creek	OK121600-03-0090G	2001-2003	19	106.950	19.240	0.987
			1999-2001	18	107.060	21.150	
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	106.550	16.620	0.066
			1999-2001	19	116.530	16.230	
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	95.790	30.030	0.313
			1999-2001	18	106.390	32.940	
Saline Creek	OK121600-02-0030D	2001-2003	20	98.250	19.380	***0.042	
		1999-2001	18	85.610	17.250		
Trail Creek	OK520620-02-0090G	2001-2003	19	159.950	18.320	0.180	
		2000-2001	12	142.250	51.620		
Conductivity	Dog Creek	OK121500-02-0360D	2001-2003	13	449.900	120.100	0.293
			1999-2001	17	402.700	118.800	
	California Creek	OK121510-02-0050C	2001-2003	17	426.000	153.700	0.255
			1999-2001	15	482.000	112.600	
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	263.390	94.450	0.937
			1999-2001	17	260.760	90.260	
	Drowning Creek	OK121600-03-0090G	2001-2003	20	353.030	93.570	***0.024
			1999-2001	17	286.710	73.240	
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	397.000	462.000	0.216
			1999-2001	19	263.100	42.500	
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	370.900	138.400	***0.023
			1999-2001	18	281.600	81.300	
Saline Creek	OK121600-02-0030D	2001-2003	20	230.580	18.020	***0.002	
		1999-2001	19	186.700	54.280		
Trail Creek	OK520620-02-0090G	2001-2003	19	2573.200	232.900	***0.010	
		2000-2001	12	1923.400	999.700		
pH	Dog Creek	OK121500-02-0360D	2001-2003	13	8.108	0.825	***0.004
			1999-2001	12	7.325	0.193	
	California Creek	OK121510-02-0050C	2001-2003	17	8.017	0.700	0.146
			1999-2001	11	7.633	0.593	
	Chouteau Creek	OK121600-01-0430M	2001-2003	14	7.969	0.916	0.075
			1999-2001	14	7.478	0.378	
	Drowning Creek	OK121600-03-0090G	2001-2003	17	7.511	0.367	0.439
			1999-2001	16	7.603	0.301	
Fivemile Creek	OK121600-07-0110G	2001-2003	18	7.944	0.483	0.277	
		1999-2001	17	8.096	0.304		
Little Horse Creek	OK121600-03-0190A	2001-2003	16	7.000	0.424	***0.000	
		1999-2001	15	7.749	0.512		

Parameter	SiteName	WBID	Date of Collection	N	Mean	Standard Deviation	p value
pH, cont.	Saline Creek	OK121600-02-0030D	2001-2003	18	7.715	0.353	0.412
			1999-2001	17	7.809	0.312	
	Trail Creek	OK520620-02-0090G	2001-2003	18	8.049	0.160	0.238
			2000-2001	12	8.117	0.132	
Ammonia	Dog Creek	OK121500-02-0360D	2001-2003	14	2.921	2.828	*** <b>0.012</b>
			1999-2001	17	0.713	1.707	
	California Creek	OK121510-02-0050C	2001-2003	16	0.176	0.118	*** <b>0.000</b>
			1999-2001	14	0.044	0.014	
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	0.204	0.239	0.764
			1999-2001	16	0.241	0.408	
	Drowning Creek	OK121600-03-0090G	2001-2003	20	0.023	0.016	0.097
			1999-2001	18	0.033	0.020	
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	0.016	0.002	*** <b>0.000</b>
			1999-2001	19	0.038	0.018	
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	0.184	0.137	*** <b>0.003</b>
			1999-2001	18	0.070	0.067	
	Saline Creek	OK121600-02-0030D	2001-2003	20	0.030	0.034	0.410
			1999-2001	19	0.038	0.019	
Trail Creek	OK520620-02-0090G	2001-2003	19	0.082	0.071	0.247	
		2000-2001	12	0.056	0.027		
Nitrate/Nitrite	Dog Creek	OK121500-02-0360D	2001-2003	14	4.319	3.077	*** <b>0.034</b>
			1999-2001	17	2.401	1.613	
	California Creek	OK121510-02-0050C	2001-2003	17	0.382	0.305	*** <b>0.001</b>
			1999-2001	15	0.073	0.108	
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	0.701	0.344	0.105
			1999-2001	17	0.461	0.454	
	Drowning Creek	OK121600-03-0090G	2001-2003	20	2.541	1.043	*** <b>0.006</b>
			1999-2001	17	1.801	1.025	
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	0.602	0.200	*** <b>0.000</b>
			1999-2001	19	0.238	0.277	
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	1.952	4.565	0.176
			1999-2001	18	0.452	0.605	
	Saline Creek	OK121600-02-0030D	2001-2003	20	0.729	0.195	*** <b>0.003</b>
			1999-2001	19	0.519	0.217	
Trail Creek	OK520620-02-0090G	2001-2003	19	0.414	0.271	*** <b>0.034</b>	
		2000-2001	12	0.221	0.161		
TKN	Dog Creek	OK121500-02-0360D	2001-2003	14	4.141	3.049	*** <b>0.031</b>
			1999-2001	14	1.820	2.264	
	California Creek	OK121510-02-0050C	2001-2003	16	0.537	0.234	0.322
			1999-2001	15	0.461	0.178	
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	0.776	0.373	0.124
			1999-2001	17	1.350	1.361	
	Drowning Creek	OK121600-03-0090G	2001-2003	20	0.137	0.038	0.328
			1999-2001	18	0.163	0.109	
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	0.112	0.007	0.712
			1999-2001	19	0.107	0.060	

Parameter	SiteName	WBID	Date of Collection	N	Mean	Standard Deviation	p value
TKN, cont.	Little Horse Creek	OK121600-03-0190A	2001-2003	19	0.691	0.376	0.674
			1999-2001	18	0.751	0.479	
	Saline Creek	OK121600-02-0030D	2001-2003	20	0.114	0.008	0.362
			1999-2001	19	0.101	0.064	
	Trail Creek	OK520620-02-0090G	2001-2003	19	0.304	0.159	0.735
2000-2001			9	0.324	0.124		
Available N	Dog Creek	OK121500-02-0360D	2001-2003	14	7.240	3.471	*** <b>0.000</b>
			1999-2001	17	3.114	1.889	
	California Creek	OK121510-02-0050C	2001-2003	17	0.548	0.367	*** <b>0.001</b>
			1999-2001	14	0.161	0.106	
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	0.906	0.492	0.392
			1999-2001	16	0.728	0.631	
	Drowning Creek	OK121600-03-0090G	2001-2003	20	2.564	1.044	*** <b>0.033</b>
			1999-2001	18	1.825	1.003	
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	0.617	0.200	*** <b>0.024</b>
			1999-2001	19	0.451	0.239	
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	2.135	4.534	0.144
			1999-2001	18	0.522	0.620	
	Saline Creek	OK121600-02-0030D	2001-2003	20	0.759	0.206	*** <b>0.005</b>
			1999-2001	19	0.556	0.223	
	Trail Creek	OK520620-02-0090G	2001-2003	19	0.495	0.312	*** <b>0.033</b>
2000-2001			12	0.277	0.161		
Total N	Dog Creek	OK121500-02-0360D	2001-2003	14	8.460	3.612	*** <b>0.001</b>
			1999-2001	14	2.338	2.338	
	California Creek	OK121510-02-0050C	2001-2003	17	0.888	0.476	*** <b>0.028</b>
			1999-2001	15	0.574	0.239	
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	1.477	0.605	0.467
			1999-2001	17	1.811	1.660	
	Drowning Creek	OK121600-03-0090G	2001-2003	20	2.678	1.032	*** <b>0.032</b>
			1999-2001	18	1.955	0.956	
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	0.714	0.202	*** <b>0.007</b>
			1999-2001	19	0.521	0.220	
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	2.643	4.448	0.187
			1999-2001	18	1.203	0.893	
	Saline Creek	OK121600-02-0030D	2001-2003	20	0.843	0.197	*** <b>0.002</b>
			1999-2001	19	0.619	0.226	
	Trail Creek	OK520620-02-0090G	2001-2003	19	0.717	0.317	0.240
2000-2001			9	0.569	0.279		
Total OrthoPhosphate	Dog Creek	OK121500-02-0360D	2001-2003	13	1.152	0.459	0.835
			1999-2001	17	1.091	0.964	
	California Creek	OK121510-02-0050C	2001-2003	15	0.017	0.019	0.844
			1999-2001	14	0.015	0.022	
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	0.026	0.017	0.655
			1999-2001	16	0.030	0.032	
	Drowning Creek	OK121600-03-0090G	2001-2003	19	0.053	0.017	0.076
1999-2001			18	0.042	0.019		

Parameter	SiteName	WBID	Date of Collection	N	Mean	Standard Deviation	p value	
Total Orthophosphate, cont.	Fivemile Creek	OK121600-07-0110G	2001-2003	18	0.010	0.006	0.968	
			1999-2001	19	0.010	0.005		
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	0.107	0.107	0.911	
			1999-2001	18	0.102	0.135		
		Saline Creek	OK121600-02-0030D	2001-2003	20	0.007	0.003	0.757
				1999-2001	19	0.007	0.003	
	Trail Creek	OK520620-02-0090G	2001-2003	18	0.029	0.016	*** <b>0.020</b>	
			2000-2001	12	0.016	0.011		
Total Phosphorous	Dog Creek	OK121500-02-0360D	2001-2003	13	1.405	0.500	0.850	
			1999-2001	16	1.479	1.331		
	California Creek	OK121510-02-0050C	2001-2003	15	0.046	0.041	0.136	
			1999-2001	15	0.085	0.090		
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	0.089	0.031	0.165	
			1999-2001	17	0.131	0.109		
	Drowning Creek	OK121600-03-0090G	2001-2003	19	0.072	0.019	0.169	
			1999-2001	18	0.063	0.020		
		Fivemile Creek	OK121600-07-0110G	2001-2003	18	0.017	0.011	0.125
				1999-2001	19	0.026	0.023	
		Little Horse Creek	OK121600-03-0190A	2001-2003	19	0.152	0.115	0.437
				1999-2001	18	0.190	0.174	
		Saline Creek	OK121600-02-0030D	2001-2003	20	0.015	0.013	0.572
				1999-2001	19	0.017	0.009	
	Trail Creek	OK520620-02-0090G	2001-2003	18	0.045	0.027	*** <b>0.039</b>	
			2000-2001	12	0.073	0.046		
Chloride	Dog Creek	OK121500-02-0360D	2001-2003	14	44.680	12.950	*** <b>0.042</b>	
			1999-2001	17	31.490	19.980		
	California Creek	OK121510-02-0050C	2001-2003	17	49.750	44.870	0.842	
			1999-2001	15	47.170	22.390		
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	12.110	10.656	0.639	
			1999-2001	17	10.488	8.706		
	Drowning Creek	OK121600-03-0090G	2001-2003	20	25.400	10.948	*** <b>0.002</b>	
			1999-2001	18	15.456	6.544		
		Fivemile Creek	OK121600-07-0110G	2001-2003	20	6.640	1.675	0.259
				1999-2001	19	6.121	1.241	
		Little Horse Creek	OK121600-03-0190A	2001-2003	19	19.470	12.700	0.234
				1999-2001	18	15.290	7.440	
		Saline Creek	OK121600-02-0030D	2001-2003	20	8.271	1.852	*** <b>0.003</b>
				1999-2001	19	6.295	2.055	
	Trail Creek	OK520620-02-0090G	2001-2003	19	25.564	2.177	0.524	
			2000-2001	12	23.751	9.954		
Sulfate	Dog Creek	OK121500-02-0360D	2001-2003	14	48.740	14.200	0.370	
			1999-2001	17	52.880	11.110		
	California Creek	OK121510-02-0050C	2001-2003	17	26.970	11.480	*** <b>0.049</b>	
			1999-2001	15	38.600	19.910		
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	34.570	19.830	0.206	
			1999-2001	17	44.690	23.880		

Parameter	SiteName	WBID	Date of Collection	N	Mean	Standard Deviation	p value	
Sulfate, cont.	Drowning Creek	OK121600-03-0090G	2001-2003	20	17.718	7.649	*** <b>0.000</b>	
			1999-2001	18	9.043	1.068		
	Fivemile Creek	OK121600-07-0110G	2001-2003	20	7.158	1.457	0.290	
			1999-2001	19	6.548	2.053		
	Little Horse Creek	OK121600-03-0190A	2001-2003	19	28.970	33.930	0.206	
			1999-2001	18	17.720	15.340		
	Saline Creek	OK121600-02-0030D	2001-2003	20	5.881	0.724	0.679	
			1999-2001	19	5.728	1.455		
	Trail Creek	OK520620-02-0090G	2001-2003	19	1540.300	386.100	0.640	
			2000-2001	12	1608.900	405.600		
	Total Hardness	Dog Creek	OK121500-02-0360D	2001-2003	14	136.710	16.380	*** <b>0.003</b>
				1999-2001	17	115.880	18.760	
California Creek		OK121510-02-0050C	2001-2003	17	182.070	63.220	0.773	
			1999-2001	15	176.330	45.110		
Chouteau Creek		OK121600-01-0430M	2001-2003	15	96.830	20.600	0.394	
			1999-2001	16	89.280	27.350		
Drowning Creek		OK121600-03-0090G	2001-2003	20	142.970	30.280	0.120	
			1999-2001	18	127.770	28.260		
Fivemile Creek		OK121600-07-0110G	2001-2003	20	138.510	16.500	0.230	
			1999-2001	19	132.320	15.080		
Little Horse Creek		OK121600-03-0190A	2001-2003	19	148.920	55.200	0.247	
			1999-2001	18	131.420	31.370		
Saline Creek		OK121600-02-0030D	2001-2003	20	108.420	8.320	*** <b>0.001</b>	
			1999-2001	18	96.240	11.420		
Trail Creek		OK520620-02-0090G	2001-2003	19	1722.900	125.800	0.185	
			2000-2001	12	1813.500	245.800		
Turbidity		Dog Creek	OK121500-02-0360D	2001-2003	14	14.851	6.956	0.151
				1999-2001	17	18.576	7.035	
	California Creek	OK121510-02-0050C	2001-2003	17	27.590	30.350	0.960	
			1999-2001	15	28.350	53.330		
	Chouteau Creek	OK121600-01-0430M	2001-2003	15	28.250	14.760	0.207	
			1999-2001	17	39.610	31.090		
	Drowning Creek	OK121600-03-0090G	2001-2003	19	1.419	0.532	*** <b>0.029</b>	
			1999-2001	17	2.602	2.165		
	Fivemile Creek	OK121600-07-0110G	2001-2003	19	0.800	0.660	0.824	
			1999-2001	19	0.758	0.449		
	Little Horse Creek	OK121600-03-0190A	2001-2003	18	12.790	10.490	0.630	
			1999-2001	18	15.340	19.630		
	Saline Creek	OK121600-02-0030D	2001-2003	19	1.001	0.609	0.053	
			1999-2001	19	1.504	0.911		
	Trail Creek	OK520620-02-0090G	2001-2003	19	8.879	9.248	0.380	
			2000-2001	12	12.047	10.252		

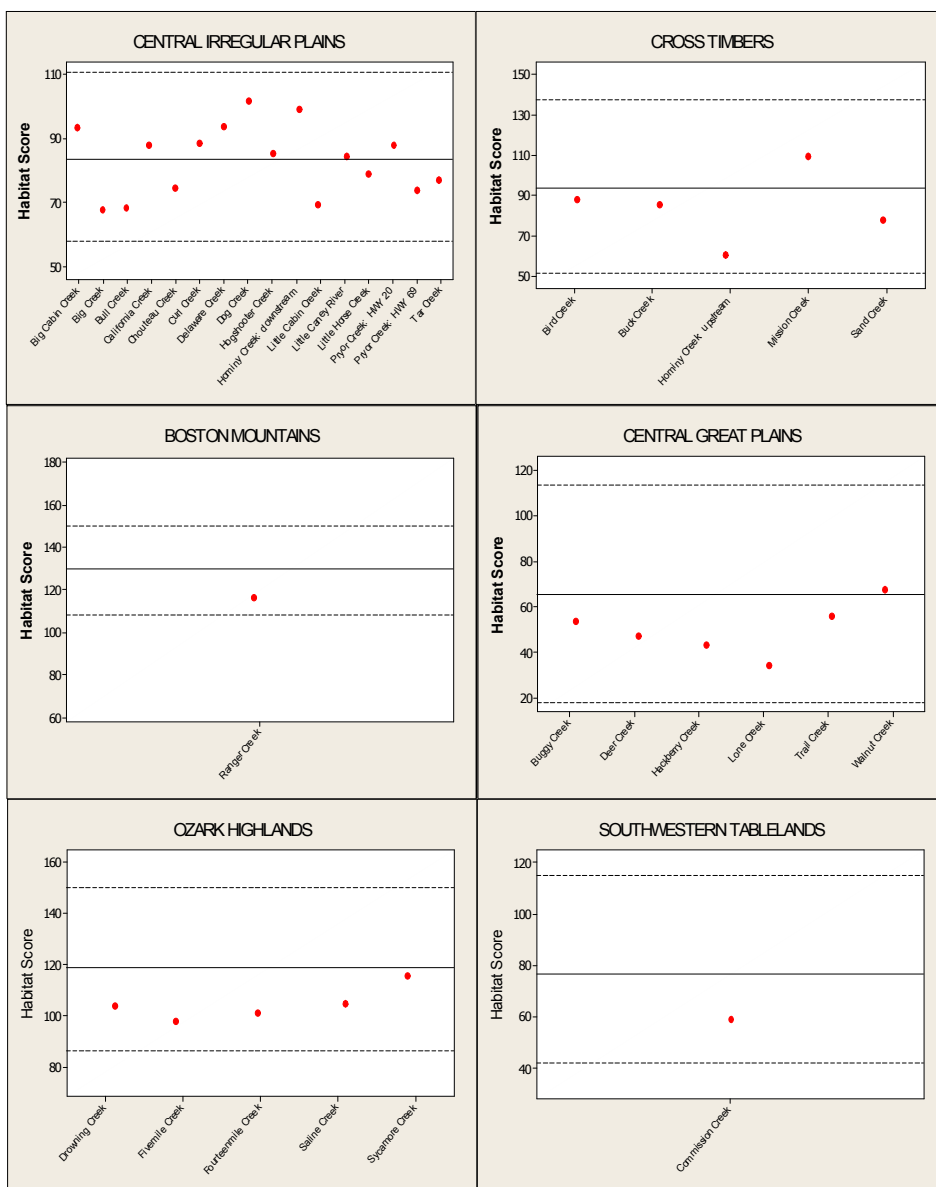
## 3.2 BIOLOGICAL MONITORING

### 3.2.1 Habitat Assessment

Total habitat scores for each site and computed metric scores are listed below (Table 11). The raw habitat data can be found in Appendix B. Sites were compared relative to the mean habitat score of high quality sites in the respective ecoregion, as shown in Figure 3. The highest habitat score possible is 180, which represents the best possible habitat. The one site that was assessed in the Boston Mountains had the highest habitat score of all the sites, while the Ozark Highlands had the highest mean habitat score. In general, the sites in the Central Great Plains ecoregion had the worst habitat. The single Southwest Tablelands site had one of the lowest habitat scores, and the Central Irregular Plains and Cross Timbers had approximately equal mean habitat scores. No habitat scores fell outside of the high quality site range for the appropriate ecoregion.

**Table 11. Habitat assessment values for monitoring sites in the Rotating Basin Project Year 1.**

SiteName	WBID	Instream Cover	Pool Bottom Substrate	Pool Variability	Canopy Cover Shading	Presence of Rocky Runs or Riffles	Flow	Channel Alteration	Channel Sinuosity	Bank Stability	Bank Vegetative Stability	Streamside Cover	Total Habitat Score
Delaware Creek	OK121300-01-0150H	12.3	4.4	18.1	11.9	2.2	0.1	15.1	7.3	10	3.7	8.8	93.9
Bird Creek	OK121300-02-0010C	2.2	1.6	14.6	8.7	0	19.1	16.5	0.8	10	5	9.6	88.1
Hominy Creek: Downstream	OK121300-04-0010C	14.1	0.4	0	13.9	7.5	20	16.5	2.4	10	4.4	9.9	99.1
Hominy Creek: Upstream	OK121300-04-0280G	7.6	12.1	1.2	4.9	7.5	0.8	4.2	0.8	7.1	4.7	9.5	60.4
Curl Creek	OK121400-01-0270G	2.6	9.9	20	17.3	0	0	16.5	2.7	7.2	2.8	9.6	88.6
Hogshooter Creek	OK121400-01-0300D	0.2	14.4	15	15.7	0	0	16.5	6.2	2.9	5.3	9.3	85.5
Little Caney River	OK121400-02-0140H	3.1	1.9	13.2	9.2	7.5	18.6	8.7	5.4	10	3.4	3.6	84.6
Mission Creek	OK121400-02-0190B	8.8	12.9	16.6	15.5	11.4	4.8	12.3	1.6	10	5.4	10	109.3
Buck Creek	OK121400-03-0170C	4.7	11.4	18.2	8.8	0	0	15.1	2.8	9	5.4	10	85.4
Sand Creek	OK121400-04-0010F	5.4	4.2	13.6	7.7	7.5	0.6	9.9	0.8	9.6	8.2	10	77.5
Bull Creek	OK121500-02-0090D	7.1	10.7	18.8	4	0	0	6.7	2.3	6.9	2.2	9.7	68.4
Dog Creek	OK121500-02-0360D	3.6	1.6	13.4	17.2	2.2	19.8	16.5	5.3	8.2	4.4	9.6	101.8
California Creek	OK121510-02-0050C	9.3	10.9	15.7	16.8	0	0.5	9.9	5.4	7.4	3.9	9.3	88.1
Big Creek	OK121510-03-0010D	1.6	5.2	16.1	7	0	0	16.5	0	7.5	4.4	9.5	67.8
Ranger Creek	OK121600-01-0060D	15.2	17.4	19.3	19.4	2.2	0	16.5	0.8	9.7	6.5	9.5	116.5
Fourteenmile Creek	OK121600-01-0100G	17	10.6	15.6	5.8	13.1	16.2	4.2	1.6	9	4.4	3.4	100.9
Chouteau Creek	OK121600-01-0430M	3.5	5.9	20	18.3	0	0	9.9	0	7.5	2.6	6.8	74.4
Saline Creek	OK121600-02-0030D	18	16.2	17.2	7.7	15.2	15	0.4	0	5.1	1.6	8.4	104.7
Drowning Creek	OK121600-03-0090G	16.2	13	16.3	8.8	4.1	9.2	16.5	0.8	9.7	4.8	4.4	103.8
Little Horse Creek	OK121600-03-0190A	4.6	13.2	0	19.8	0	0	16.5	2.4	9.2	7.1	6.2	79
Sycamore Creek	OK121600-03-0510D	18	17.3	17.2	8.6	15.9	15.1	0.5	1.6	9	3.7	8.7	115.6
Tar Creek	OK121600-04-0060D	7.8	2.2	2	16.2	2.2	8	16.5	0	10	6.2	6	77
Little Cabin Creek	OK121600-06-0080C	1.4	2.5	13.4	20	0	0.9	8.7	1.6	7.7	3.8	9.5	69.5
Big Cabin Creek	OK121600-06-0220I	7.5	9.8	18.7	20	4.1	0	8.7	1.1	9.9	4.1	9.6	93.5
Fivemile Creek	OK121600-07-0110G	16.6	14.1	18.7	8.3	15.2	3.6	2.3	0	10	5.6	3.6	97.9
Pryor Creek: Hwy 20	OK121610-00-0050D	7.5	3.6	19	18.9	5.9	0	13.7	1.6	6.3	2.9	8.5	87.9
Pryor Creek: Hwy 69	OK121610-00-0050M	3.1	8.3	19.1	17.6	4.1	0.2	5	0.8	7.2	2.6	6.2	73.8
Buggy Creek	OK520610-02-0120C	1.2	1.7	0	11	0	10.8	3.5	0.4	10	5	10	53.6
Walnut Creek	OK520610-03-0010C	2.3	0.7	15	4.1	0	15.3	5.8	0.8	9.7	4.4	9.6	67.7
Trail Creek	OK520620-02-0090G	2.1	0.7	9.9	8.9	0	15.3	0.5	1.1	8.6	4.1	4.6	55.8
Lone Creek	OK520620-03-0020C	1.5	1.4	0	2.1	0	0.6	0.4	0.6	10	8.8	8.7	34.1
Hackberry Creek	OK520620-04-0050D	0.8	1.4	0	17.5	0	1.3	0.4	4.7	9.3	3	5	43.4
Commission Creek	OK520620-05-0160C	2.5	0.4	0	5.6	5.9	10	16.5	0.1	6.8	6.2	5	59
Deer Creek	OK520620-06-0010F	1.4	3	0	2.1	0	20	0.7	2.3	7	1.5	9.6	47.6



**Figure 3. 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.**

### 3.2.2 Fish Collections

Table 12 presents the assessment of the Year 1 Rotating Basin sites with regard to Oklahoma state biocriteria for fish 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). Several sites had assessments of "undetermined," so all sites were further classified (see Table 13) based on the EPA's RBP guidelines described previously in Section 2.2.2. IBI scores that fell between the assessment ranges in the EPA method (Table 13) were classified in the closest scoring group. Fish metrics used to compute IBI scores are listed in Table 14. For a complete listing of fish data, including species and numbers caught, consult Appendix C.



**Table 12. IBI scores based on Oklahoma state Fish and Wildlife Propagation biocriteria. WWAC=warm water aquatic community, CWAC=cool water aquatic community, HLAC=habitat limited aquatic community.**

WBID	Sitename	FWPROP	IBI total score	FWProp Support
OK121300-01-0150H	Delaware Creek	WWAC	30	supporting
OK121300-02-0010C	Bird Creek	WWAC	28	supporting
OK121300-04-0010C	Hominy Creek: downstream	WWAC	20	not supporting
OK121300-04-0280G	Hominy Creek: upstream	WWAC	26	supporting
OK121400-01-0270G	Curl Creek	WWAC	32	supporting
OK121400-01-0300D	Hogshooter Creek	WWAC	26	undetermined
OK121400-02-0140H	Little Caney River	WWAC	20	not supporting
OK121400-02-0190B	Mission Creek	WWAC	26	supporting
OK121400-03-0170C	Buck Creek	WWAC	38	supporting
OK121400-04-0010F	Sand Creek	WWAC	34	supporting
OK121500-02-0090D	Bull Creek	WWAC	32	supporting
OK121500-02-0360D	Dog Creek	WWAC	32	supporting
OK121510-02-0050C	California Creek	WWAC	32	supporting
OK121510-03-0010D	Big Creek	WWAC	34	supporting
OK121600-01-0060D	Ranger Creek	WWAC	32	supporting
OK121600-01-0100G	Fourteenmile Creek	CWAC	36	undetermined
OK121600-01-0430M	Chouteau Creek	WWAC	28	undetermined
OK121600-02-0030D	Saline Creek	CWAC	34	undetermined
OK121600-03-0090G	Drowning Creek	CWAC	32	undetermined
OK121600-03-0190A	Little Horse Creek	WWAC	36	supporting
OK121600-03-0510D	Sycamore Creek	CWAC	36	undetermined
OK121600-04-0060D	Tar Creek	HLAC	22	undetermined
OK121600-06-0080C	Little Cabin Creek	WWAC	26	undetermined
OK121600-06-0220I	Big Cabin Creek	WWAC	34	supporting
OK121600-07-0110G	Fivemile Creek	CWAC	36	undetermined
OK121610-00-0050D	Pryor Creek: Hwy 20	WWAC	30	supporting
OK121610-00-0050M	Pryor Creek: Hwy 69	WWAC	32	supporting
OK520610-02-0120C	Buggy Creek	WWAC	18	not supporting
OK520610-03-0010C	Walnut Creek	WWAC	20	undetermined
OK520620-02-0090G	Trail Creek	HLAC	16	not supporting
OK520620-03-0020C	Lone Creek	WWAC	22	supporting
OK520620-04-0050D	Hackberry Creek	WWAC	20	undetermined
OK520620-05-0160C	Commission Creek	WWAC	24	supporting
OK520620-06-0010F	Deer Creek	WWAC	22	supporting

**Table 13. IBI score summary based on EPA's RBP protocol.**

Site Name	WBID	Ecoregion	IBI Score	Percent Reference	Score Interpretation
Delaware Creek	OK121300-01-0150H	CentrIrregPlains	40	1.00	excellent
Bird Creek	OK121300-02-0010C	CrossTimbers	38	0.90	good
Hominy Creek:downstream	OK121300-04-0010C	CentrIrregPlains	20	0.50	poor
Hominy Creek: upstream	OK121300-04-0280G	CrossTimbers	32	0.76	fair
Curl Creek	OK121400-01-0270G	CentrIrregPlains	34	0.85	good
Hogshooter Creek	OK121400-01-0300D	CentrIrregPlains	24	0.60	poor
Little Caney River	OK121400-02-0140H	CentrIrregPlains	22	0.55	poor
Mission Creek	OK121400-02-0190B	CrossTimbers	36	0.86	good
Buck Creek	OK121400-03-0170C	CrossTimbers	42	1.00	excellent
Sand Creek	OK121400-04-0010F	CrossTimbers	38	0.90	good
Bull Creek	OK121500-02-0090D	CentrIrregPlains	38	0.95	excellent
Dog Creek	OK121500-02-0360D	CentrIrregPlains	40	1.00	excellent
California Creek	OK121510-02-0050C	CentrIrregPlains	36	0.90	good
Big Creek	OK121510-03-0010D	CentrIrregPlains	40	1.00	excellent
Ranger Creek	OK121600-01-0060D	BostonMtns	32	0.70	fair
Fourteenmile Creek	OK121600-01-0100G	OzarkHighlands	44	0.96	excellent
Chouteau Creek	OK121600-01-0430M	CentrIrregPlains	34	0.85	good
Saline Creek	OK121600-02-0030D	OzarkHighlands	44	0.96	excellent
Drowning Creek	OK121600-03-0090G	OzarkHighlands	32	0.70	fair
Little Horse Creek	OK121600-03-0190A	CentrIrregPlains	44	1.10	excellent
Sycamore Creek	OK121600-03-0510D	OzarkHighlands	48	1.04	excellent
Tar Creek	OK121600-04-0060D	CentrIrregPlains	26	0.65	fair
Little Cabin Creek	OK121600-06-0080C	CentrIrregPlains	40	1.00	excellent
Big Cabin Creek	OK121600-06-0220I	CentrIrregPlains	42	1.05	excellent
Fivemile Creek	OK121600-07-0110G	OzarkHighlands	46	1.00	excellent
Pryor Creek: Hwy 20	OK121610-00-0050D	CentrIrregPlains	38	0.95	excellent
Pryor Creek: Hwy 69	OK121610-00-0050M	CentrIrregPlains	40	1.00	excellent
Buggy Creek	OK520610-02-0120C	CentrGreatPlains	28	0.70	fair
Walnut Creek	OK520610-03-0010C	CentrGreatPlains	28	0.70	fair
Trail Creek	OK520620-02-0090G	CentrGreatPlains	24	0.60	poor
Lone Creek	OK520620-03-0020C	CentrGreatPlains	30	0.75	fair
Hackberry Creek	OK520620-04-0050D	CentrGreatPlains	26	0.65	fair
Commission Creek	OK520620-05-0160C	SWTablelands	31	0.82	good
Deer Creek	OK520620-06-0010F	CentrGreatPlains	26	0.65	fair

**Table 14. Fish metrics for calculation of IBI scores for Rotating Basin Year 1 monitoring sites.**

SiteName	WBID	Ecoregion	Total Individuals	Total Species	Number Darter Spp.	Number Sunfish Spp.	Number Round Bodied Suckers	Number Intolerant Species	Proportion Tolerant Individuals	Proportion Omnivorous Individuals	Proportion Insectivorous Cyprinid Individuals	Proportion Top Carnivore Individuals
Delaware Creek	OK121300-01-0150H	CIP	260	25	2	8	1	2	49.23	16.54	3.08	9.62
Bird Creek	OK121300-02-0010C	CT	2134	23	4	6	1	2	83.08	54.36	0.75	21.37
Hominy Creek: downstream	OK121300-04-0010C	CIP	157	14	0	4	0	1	82.80	71.97	0.64	6.37
Hominy Creek: upstream	OK121300-04-0280G	CT	802	18	2	6	0	1	70.95	51.87	0.62	1.62
Curl Creek	OK121400-01-0270G	CIP	216	25	4	9	0	2	67.59	23.61	4.17	8.33
Hogshooter Creek	OK121400-01-0300D	CIP	210	12	1	4	0	3	68.57	51.43	1.90	4.76
Little Caney River	OK121400-02-0140H	CIP	174	17	0	3	0	1	71.26	68.39	0.57	17.82
Mission Creek	OK121400-02-0190B	CT	765	25	2	8	1	1	63.66	50.85	3.01	3.27
Buck Creek	OK121400-03-0170C	CT	666	28	4	6	2	4	23.72	19.97	9.91	4.20
Sand Creek	OK121400-04-0010F	CT	378	21	2	7	1	2	40.21	25.13	15.08	3.70
Bull Creek	OK121500-02-0090D	CIP	1830	24	2	8	1	2	26.01	21.97	0.00	4.21
Dog Creek	OK121500-02-0360D	CIP	538	26	3	7	1	2	86.43	33.27	0.00	27.32
California Creek	OK121510-02-0050C	CIP	970	24	3	6	1	2	40.10	23.92	1.96	0.41
Big Creek	OK121510-03-0010D	CIP	905	29	2	7	3	3	27.29	19.23	3.54	3.20
Ranger Creek	OK121600-01-0060D	BM	647	17	2	6	0	3	32.77	1.08	13.29	16.23
Fourteenmile Creek	OK121600-01-0100G	OH	2043	31	6	8	5	16	9.93	0.39	35.66	0.65
Chouteau Creek	OK121600-01-0430M	CIP	361	23	0	8	1	1	42.94	11.08	2.49	11.91
Saline Creek	OK121600-02-0030D	OH	1095	21	5	6	2	12	0.73	0.00	29.04	0.46
Drowning Creek	OK121600-03-0090G	OH	438	14	3	6	0	3	25.57	0.00	0.00	7.53
Little Horse Creek	OK121600-03-0190A	CIP	428	22	4	5	0	10	9.58	0.47	47.20	4.21
Sycamore Creek	OK121600-03-0510D	OH	1261	26	4	8	2	13	5.55	0.00	51.63	4.68
Tar Creek	OK121600-04-0060D	CIP	160	16	0	5	0	0	73.75	14.38	8.75	9.38
Little Cabin Creek	OK121600-06-0080C	CIP	1083	25	3	8	1	3	82.55	25.58	5.45	26.13
Big Cabin Creek	OK121600-06-0220I	CIP	425	24	5	7	1	3	48.94	14.59	12.24	5.65
Fivemile Creek	OK121600-07-0110G	OH	1557	24	3	6	2	9	12.65	0.90	38.86	7.19
Pryor Creek: Hwy 20	OK121610-00-0050D	CIP	501	27	2	7	1	3	59.28	35.93	6.19	3.99
Pryor Creek: Hwy 69	OK121610-00-0050M	CIP	560	25	4	7	1	3	71.79	38.04	4.11	5.89
Buggy Creek	OK520610-02-0120C	CGP	948	13	0	3	0	1	84.92	74.26	15.08	3.59
Walnut Creek	OK520610-03-0010C	CGP	2268	20	0	6	0	1	90.39	81.26	12.17	2.29
Trail Creek	OK520620-02-0090G	CGP	845	12	0	2	0	1	93.37	90.53	6.63	0.36
Lone Creek	OK520620-03-0020C	CGP	861	14	0	3	0	2	75.61	38.79	24.27	0.58
Hackberry Creek	OK520620-04-0050D	CGP	265	6	0	1	0	1	75.85	31.70	47.92	1.89
Commission Creek	OK520620-05-0160C	SWT	117	10	0	4	0	1	57.26	19.66	42.74	18.80
Deer Creek	OK520620-06-0010F	CGP	3453	22	0	6	0	2	89.83	76.66	19.49	0.84

There was good consensus between the IBI scores that resulted from the two different assessment methods. Sites which were “excellent,” “good,” or “fair” in the EPA scoring were “supporting” under the state biocriteria scoring method with one exception (Buggy Creek was “fair” and “nonsupporting”). Sites which were “poor” in the EPA assessment were “nonsupporting” under the state biocriteria. The EPA methodology allowed assessment of streams which were lacking definite support assignment under the state biocriteria. Any streams with IBI scores equal to or better than the high quality streams will be examined further for possible inclusion into the high quality sites list.

Figure 4 shows the value of several important biological metrics for each site (indicated by a red 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.

In the Central Great Plains (CGP) ecoregion, Deer Creek had the highest number of total species, sunfish species, and intolerant species. Walnut Creek had a high number of total species and sunfish species relative to the high quality means, and Lone Creek exceeded the mean value of intolerant species and was approximately equal to the high quality sites for the other parameters. No darter species were collected at any monitoring site in this region.

In the Central Irregular Plains (CIP) ecoregion, Hogshooter Creek had the lowest number of total species, while Big Creek had the highest number of species. Both values were outside of the reference range. Hominy Creek, Little Caney River, and Tar Creek had a significantly lower number of total species than the high quality site data. No darters were found at Chouteau Creek, Hominy Creek, Little Caney River, or Tar Creek, and no intolerant fish species were found at the Tar Creek site. Little Caney River had the fewest number of sunfish species and only one intolerant species. Both the Chouteau Creek and Hominy Creek sites had only one intolerant fish species as well.

In the Cross Timbers (CT) ecoregion, Buck Creek exhibited a significantly high number of total darter species and intolerant species relative to the average high quality site. Bird Creek also had a significantly high number of darter species, and Mission Creek had a high number of sunfish species.

Fourteen-Mile Creek, in the Ozark Highlands (OH) ecoregion, was found to have higher values than the mean high quality site values for all parameters. Drowning Creek had the lowest number of total species and intolerant species of the monitoring sites in this region. Fivemile Creek also had a significantly lower number of intolerant species than the high quality sites.

Ranger Creek, the only monitoring site in the Boston Mountains (BM) ecoregion, exhibited very low numbers of total species, number of darter species, and number of intolerant species relative to the reference sites. Commission Creek, in the Southwestern Tablelands (SWT) ecoregion, had approximately equal values to the high quality sites for the parameters.

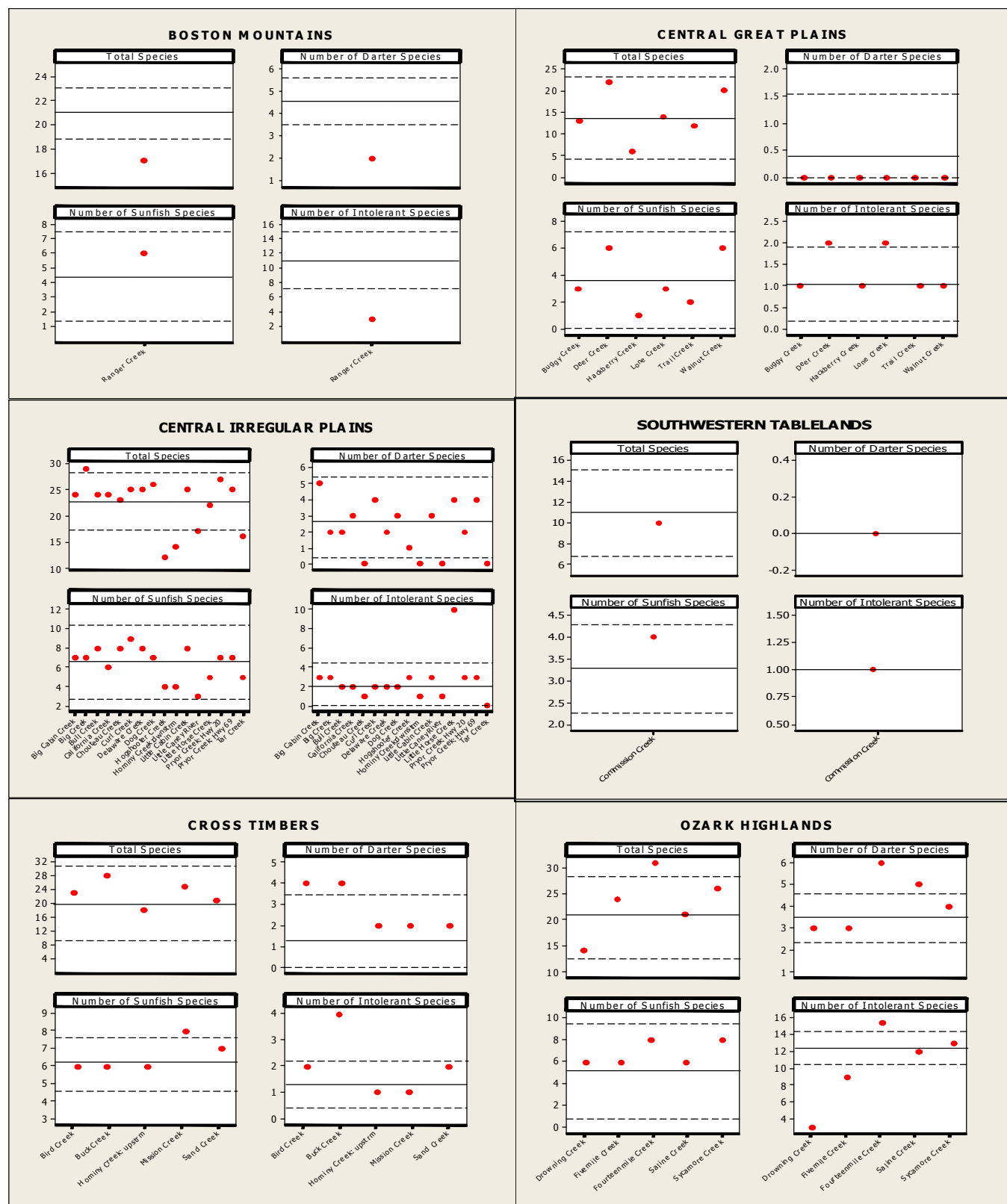


Figure 4. Selected fish metrics for each site by ecoregion. Solid lines indicate the mean value of high quality sites in each ecoregion; dashed lines represent +/- two standard deviations.

Table 15 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 eight 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 (EPA's RBP 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 California Creek, Saline Creek, and Fivemile Creek remained in approximately the same condition (good, excellent, and excellent, respectively). Dog Creek and Little Horse Creek exhibited improved conditions with regard to the fish community. Particularly notable is the improvement of Little Horse Creek from "fair" in 1995 to "excellent" in 2001. Biological conditions in Chouteau Creek, Drowning Creek, and Trail Creek were worse in 2001 than in the previous collections. The fish community in Trail Creek had changed quite significantly in eight years, from "good" to "poor."

**Table 15. Comparison of fish data from previous projects to the Rotating Basin Year 1 project (2001-2002).**

SiteName	WBID	Total points	IBI	Condition	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
Dog Creek 1999	OK121500-02-0360D	34	0.85	good	172	19	3	5	1	2	73.84	17.44	0.00	9.88
Dog Creek 2002	OK121500-02-0360D	40	1.00	excellent	538	26	3	7	1	2	86.43	33.27	0.00	27.32
California Creek 1999	OK121510-02-0050C	32	0.80	good	322	20	4	6	0	2	51.24	29.81	0.62	1.55
California Creek 2001	OK121510-02-0050C	36	0.90	good	970	24	3	6	1	2	40.10	23.92	1.96	0.41
Chouteau Creek 1998	OK121600-01-0430M	38	0.95	excellent	278	16	1	7	1	2	70.50	10.07	1.80	23.74
Chouteau Creek 2001	OK121600-01-0430M	34	0.85	good	361	23	0	8	1	1	42.94	11.08	2.49	11.91
Saline Creek 1998	OK121600-02-0030D	42	0.91	excellent	330	14	5	1	1	10	0.30	0.00	36.67	2.12
Saline Creek 2001	OK121600-02-0030D	44	0.96	excellent	1095	21	5	6	2	12	0.73	0.00	29.04	0.46
Drowning Creek 1999	OK121600-03-0090G	36	0.78	good	279	14	2	5	0	4	28.32	0.00	22.94	35.84
Drowning Creek 2001	OK121600-03-0090G	32	0.70	fair	438	14	3	6	0	3	25.57	0.00	0.00	7.53
Little Horse Creek 1995	OK121600-03-0190A	28	0.70	fair	149	11	2	3	1	1	55.03	22.15	0.00	8.05
Little Horse Creek 1999	OK121600-03-0190A	34	0.85	good	169	14	3	5	0	1	65.09	0.59	2.37	26.63
Little Horse Creek 2001	OK121600-03-0190A	44	1.10	excellent	428	22	4	5	0	10	9.58	0.47	47.20	4.21
Fivemile Creek 1999	OK121600-07-0110G	46	1.00	excellent	513	15	3	4	2	10	9.36	0.00	39.38	5.07
Fivemile Creek 2001	OK121600-07-0110G	46	1.00	excellent	1557	24	3	6	2	9	12.65	0.90	38.86	7.19
Trail Creek 1993	OK520620-02-0090G	34	0.85	good	829	15	0	5	0	1	83.72	78.05	17.37	0.48
Trail Creek 2001	OK520620-02-0090G	24	0.60	poor	845	12	0	2	0	1	93.37	90.53	6.63	0.36

### 3.2.3 Macroinvertebrate Collections

The complete macroinvertebrate data, including species and numbers captured per site, can be found in Appendix D. Macroinvertebrates were not collected for Bull Creek, California Creek, Chouteau Creek, or Little Horse Creek due to lack of flow during the collection period each year. Table 16 presents the mean values, by season and sample type, for each metric at each site for

the two-year monitoring period. Table 17 shows the overall bioassessment scores, calculated as described in the Methods section 2.2.3, assigned to each monitoring site.

Because riffle samples were collected at most sites and generally reflect the macroinvertebrate community adequately (Plafkin et al., 1989), the macroinvertebrate community of each monitoring site was compared to the average high quality site in a particular ecoregion using the riffle data where possible (Fig. 5). Summer riffle samples, as opposed to winter samples, were used for the graphic comparison since summer represents the harshest time for macroinvertebrates, thus constituting a more conservative approach in assessing the communities. Summer macroinvertebrates were collected two times during the monitoring period for most sites. For Delaware Creek, Curl Creek, Buck Creek, Drowning Creek, Pryor Creek (Hwy 20), and Pryor Creek (Hwy 69), summer riffle samples were collected only once due to no flow at one of the sampling attempts. No summer riffle data was collected for Mission Creek, Hominy Creek (downstream), or Big Creek, so these sites are not included in Figure 5.

In the Central Great Plains ecoregion, only Deer Creek had summer riffle data, so summer woody samples were substituted in the comparison for Buggy Creek, Walnut Creek, Trail Creek, Hackberry Creek, and Deer Creek. Lone Creek had no riffle or woody samples, so it is not presented in Figure 5.

**Table 16. Macroinvertebrate data from each monitoring site, averaged per season and habitat.**

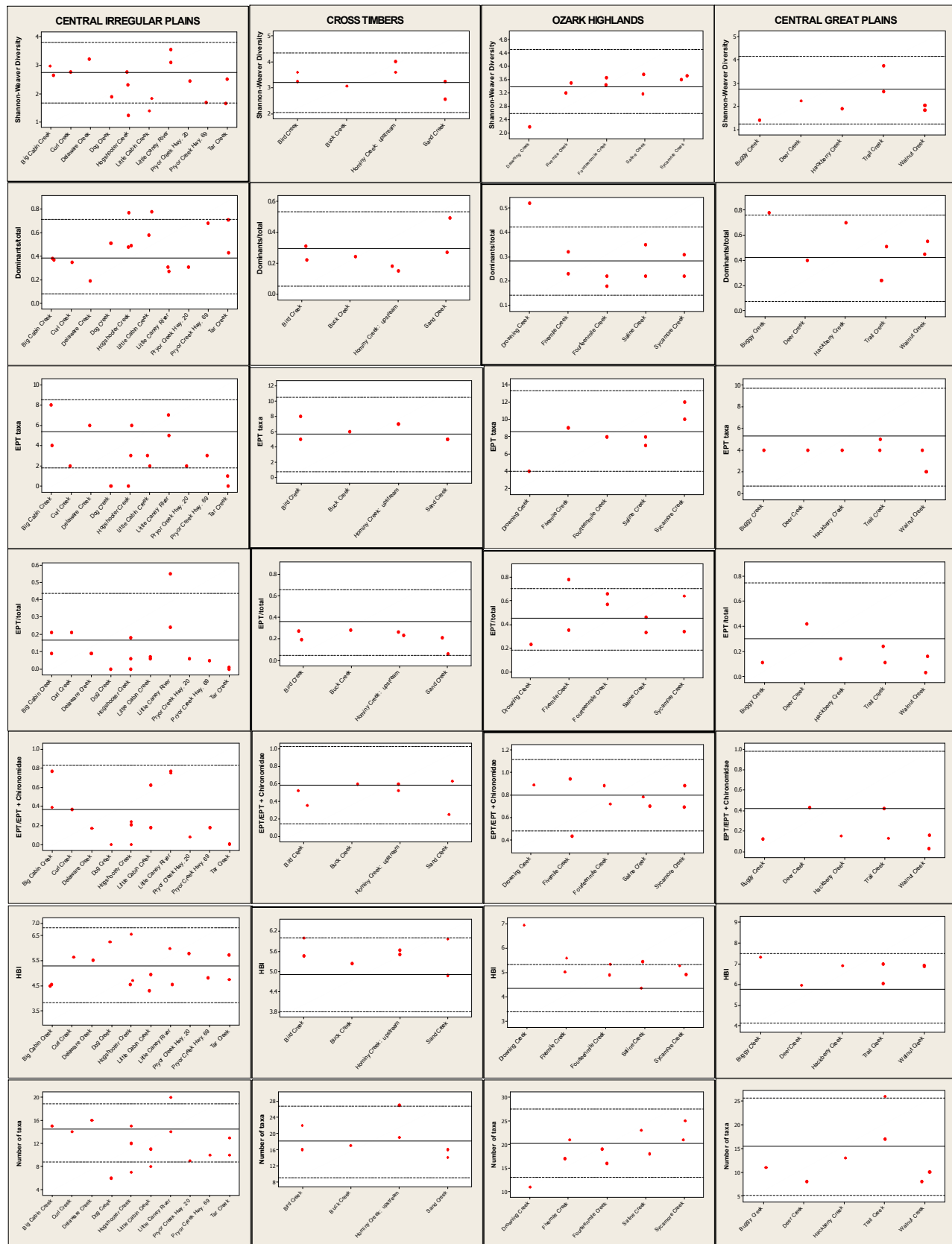
Site Name	WBID	Ecoregion	Sample Description	Number of organisms	Number of taxa	Modified Hilsenhoff biotic index	EPT/EPT + Chironomidae	EPT/total	EPT taxa	Dominants/total	Shannon-Weaver diversity index
Delaware Creek	121300-01-0150H	CIP	Sum Rif	127	16	5.52	0.17	0.09	6	0.19	3.22
	121300-01-0150H	CIP	Sum Wood	87	12	5.85	0.06	0.03	3	0.36	2.56
Bird Creek	121300-02-0010C	CT	Sum Rif	121	19	5.73	0.44	0.23	7	0.26	3.42
	121300-02-0010C	CT	Sum Veg	129	20	5.69	0.21	0.05	4	0.35	3.17
	121300-02-0010C	CT	Sum Wood	116	14	5.08	0.52	0.36	5	0.42	2.63
	121300-02-0010C	CT	Wint Rif	134	21	5.00	0.44	0.16	8	0.45	2.97
	121300-02-0010C	CT	Wint Veg	128	13	6.08	0.08	0.06	4	0.68	1.87
	121300-02-0010C	CT	Wint Wood	117	14	5.69	0.19	0.12	4	0.47	2.42
Hominy Creek: downstream	121300-04-0010C	CIP	Sum Wood	120	18	5.53	0.44	0.37	6	0.24	3.32
	121300-04-0010C	CIP	Wint Rif	108	15	5.59	0.20	0.14	4	0.43	2.61
	121300-04-0010C	CIP	Wint Wood	126	9	6.08	0.03	0.02	3	0.75	1.30
Hominy Creek: upstream	121300-04-0280G	CT	Sum Rif	139	23	5.56	0.55	0.25	7	0.17	3.80
	121300-04-0280G	CT	Sum Veg	104	24	5.56	0.33	0.19	9	0.26	3.64
	121300-04-0280G	CT	Sum Wood	28	10	5.75	0.31	0.29	4	0.29	2.94
	121300-04-0280G	CT	Wint Rif	113	22	5.50	0.45	0.21	8	0.30	3.49
	121300-04-0280G	CT	Wint Wood	125	11	6.30	0.03	0.02	3	0.68	1.80
Curl Creek	121400-01-0270G	CIP	Sum Rif	97	14	5.65	0.37	0.21	2	0.35	2.77
	121400-01-0270G	CIP	Wint Rif	96	8	5.64	0.09	0.06	2	0.61	1.68
Hogshooter Creek	121400-01-0300D	CIP	Sum Rif	102	11	5.27	0.15	0.08	3	0.58	2.11
	121400-01-0300D	CIP	Sum Wood	92	11	6.53	0.09	0.08	4	0.50	2.27
Little Caney River	121400-02-0140H	CIP	Sum Rif	96	17	5.27	0.76	0.40	6	0.29	3.33
	121400-02-0140H	CIP	Sum Veg	99	20	4.54	0.89	0.75	7	0.66	2.28
	121400-02-0140H	CIP	Sum Wood	112	15	6.05	0.26	0.22	5	0.39	2.74
	121400-02-0140H	CIP	Wint Rif	95	20	4.86	0.46	0.21	5	0.20	3.65
	121400-02-0140H	CIP	Wint Wood	126	15	5.86	0.14	0.13	6	0.44	2.80
Mission Creek	121400-02-0190B	CT	Wint Rif	126	18	5.29	0.55	0.35	4	0.23	3.38
	121400-02-0190B	CT	Wint Wood	110	9	7.11	0.00	0.00	0	0.51	2.09
Buck Creek	121400-03-0170C	CT	Sum Rif	127	17	5.24	0.59	0.28	6	0.24	3.06
	121400-03-0170C	CT	Sum Wood	124	16	5.69	0.36	0.23	6	0.33	3.03
	121400-03-0170C	CT	Wint Rif	92	18	5.34	0.55	0.39	5	0.29	3.26
Sand Creek	121400-04-0010F	CT	Sum Rif	127	15	5.43	0.44	0.13	5	0.38	2.91
	121400-04-0010F	CT	Sum Wood	132	16	6.17	0.21	0.15	5	0.44	2.47
	121400-04-0010F	CT	Wint Rif	134	18	5.07	0.24	0.04	4	0.39	2.89
	121400-04-0010F	CT	Wint Wood	115	14	7.20	0.02	0.02	2	0.55	2.36
Dog Creek	121500-02-0360D	CIP	Sum Rif	138	6	6.26	0.00	0.00	0	0.51	1.90
	121500-02-0360D	CIP	Wint Rif	107	11	7.16	0.00	0.00	0	0.24	2.91
Big Creek	121510-03-0010D	CIP	Sum Veg	96	12	5.88	0.08	0.04	3	0.31	2.66
	121510-03-0010D	CIP	Wint Veg	116	12	6.67	0.21	0.10	2	0.38	2.51
	121510-03-0010D	CIP	Wint Wood	105	13	6.82	0.16	0.09	5	0.44	2.25
Ranger Creek	121600-01-0060D	BM	Sum Rif	144	23	5.39	0.54	0.33	8	0.25	3.51
	121600-01-0060D	BM	Wint Rif	123	19	3.96	0.56	0.52	11	0.57	2.50
	121600-01-0060D	BM	Wint Veg	83	16	6.77	0.48	0.17	8	0.60	2.25
Fourteenmile Creek	121600-01-0100G	OH	Sum Rif	148	18	5.12	0.80	0.62	8	0.20	3.55
	121600-01-0100G	OH	Wint Rif	103	17	4.63	0.58	0.52	11	0.33	3.20
Saline Creek	121600-02-0030D	OH	Sum Rif	109	21	4.91	0.74	0.40	8	0.29	3.47
	121600-02-0030D	OH	Wint Rif	100	18	4.79	0.68	0.53	9	0.23	3.30
Drowning Creek	121600-03-0090G	OH	Sum Rif	103	11	6.94	0.89	0.23	4	0.52	2.19
	121600-03-0090G	OH	Wint Rif	140	13	7.23	0.71	0.11	5	0.64	1.95
Sycamore Creek	121600-03-0510D	OH	Sum Rif	124	23	5.10	0.79	0.49	11	0.27	3.66
	121600-03-0510D	OH	Wint Rif	120	15	5.79	0.85	0.57	7	0.37	2.68



Site Name	WBID	Ecoregion	Sample Description	Number of organisms	Number of taxa	Modified Hilsenhoff biotic index	EPT/EPT + Chironomidae	EPT/total	EPT taxa	Dominants/total	Shannon-Weaver diversity index
Tar Creek	121600-03-0510D	OH	Wint Veg	102	13	5.72	0.58	0.14	8	0.37	2.29
	121600-04-0060D	CIP	Sum Rif	136	12	5.24	0.01	0.00	1	0.57	2.08
	121600-04-0060D	CIP	Wint Rif	115	7	5.22	0.00	0.00	0	0.81	1.10
Little Cabin Creek	121600-04-0060D	CIP	Wint Veg	39	6	5.14	0.00	0.00	0	0.51	1.79
	121600-06-0080C	CIP	Sum Rif	114	10	4.62	0.40	0.07	3	0.68	1.62
Big Cabin Creek	121600-06-0080C	CIP	Wint Rif	131	10	5.55	0.14	0.11	3	0.69	1.60
	121600-06-0220I	CIP	Sum Rif	129	15	4.52	0.58	0.15	6	0.37	2.81
Fivemile Creek	121600-06-0220I	CIP	Wint Rif	138	17	5.65	0.12	0.09	4	0.58	2.37
	121600-06-0220I	CIP	Wint Veg	130	16	6.89	0.08	0.03	3	0.32	2.69
	121600-07-0110G	OH	Sum Rif	136	19	5.32	0.68	0.57	9	0.27	3.36
Pryor Creek Hwy. 20	121600-07-0110G	OH	Wint Rif	124	18	5.49	0.85	0.47	9	0.36	2.99
	121600-07-0110G	OH	Wint Veg	107	15	6.24	0.70	0.37	9	0.46	2.50
	121610-00-0050D	CIP	Sum Rif	140	9	5.79	0.08	0.06	2	0.31	2.45
Pryor Creek Hwy. 69	121610-00-0050D	CIP	Sum Wood	138	9	5.50	0.10	0.05	2	0.46	2.19
	121610-00-0050D	CIP	Wint Rif	117	13	6.56	0.02	0.01	1	0.57	2.11
	121610-00-0050M	CIP	Sum Rif	114	10	4.81	0.18	0.05	3	0.68	1.69
Buggy Creek	121610-00-0050M	CIP	Sum Wood	125	9	5.18	0.04	0.02	2	0.58	1.82
	121610-00-0050M	CIP	Wint Rif	142	19	6.24	0.09	0.04	4	0.42	2.82
	520610-02-0120C	CGP	Sum Veg	131	18	6.50	0.41	0.36	6	0.48	2.70
Walnut Creek	520610-02-0120C	CGP	Sum Wood	141	11	7.31	0.12	0.11	4	0.78	1.39
	520610-02-0120C	CGP	Wint Veg	93	12	6.23	0.05	0.04	1	0.68	1.78
	520610-02-0120C	CGP	Wint Wood	114	10	6.03	0.13	0.12	2	0.69	1.54
Trail Creek	520610-03-0010C	CGP	Sum Wood	110	9	6.88	0.10	0.09	3	0.50	1.93
	520610-03-0010C	CGP	Wint Veg	124	14	5.80	0.01	0.01	1	0.52	2.40
	520610-03-0010C	CGP	Wint Wood	115	7	6.07	0.00	0.00	1	0.84	1.00
Lone Creek	520620-02-0090G	CGP	Sum Veg	122	17	6.74	0.34	0.20	4	0.22	3.25
	520620-02-0090G	CGP	Sum Wood	106	22	6.51	0.28	0.18	5	0.38	3.19
	520620-02-0090G	CGP	Wint Veg	90	12	6.18	0.19	0.15	2	0.58	2.06
Hackberry Creek	520620-02-0090G	CGP	Wint Wood	167	9	5.90	0.10	0.06	2	0.47	2.06
	520620-03-0020C	CGP	Sum Veg	102	18	6.67	0.19	0.08	2	0.26	3.36
	520620-03-0020C	CGP	Wint Veg	118	11	6.09	0.00	0.00	1	0.80	1.19
Commission Creek	520620-04-0050D	CGP	Sum Veg	89	17	5.45	0.16	0.11	3	0.43	2.92
	520620-04-0050D	CGP	Sum Wood	115	13	6.90	0.15	0.14	4	0.70	1.89
	520620-04-0050D	CGP	Wint Rif	126	9	5.63	0.15	0.11	2	0.61	1.89
	520620-04-0050D	CGP	Wint Veg	108	12	5.80	0.11	0.10	4	0.72	1.71
	520620-04-0050D	CGP	Wint Wood	138	15	5.62	0.14	0.13	4	0.61	2.17
Deer Creek	520620-05-0160C	SWT	Sum Rif	115	10	3.24	0.81	0.23	4	0.47	2.25
	520620-05-0160C	SWT	Sum Veg	121	20	4.71	0.83	0.65	9	0.29	3.46
	520620-05-0160C	SWT	Sum Wood	101	15	4.73	0.75	0.58	6	0.33	3.04
	520620-05-0160C	SWT	Wint Rif	140	11	5.13	0.13	0.11	4	0.77	1.41
	520620-05-0160C	SWT	Wint Veg	121	20	5.05	0.48	0.45	11	0.46	2.86
Deer Creek	520620-06-0010F	CGP	Sum Rif	124	15	5.86	0.19	0.16	5	0.32	2.87
	520620-06-0010F	CGP	Sum Wood	113	8	5.95	0.43	0.42	4	0.40	2.23
	520620-06-0010F	CGP	Wint Rif	90	10	4.93	0.05	0.04	1	0.46	2.10
	520620-06-0010F	CGP	Wint Wood	172	14	5.96	0.18	0.14	2	0.53	2.35

**Table 17. Bioassessment of sites based on macroinvertebrates.**

Site Name	WBID	Ecoregion	Overall Biological Condition
Delaware Creek	121300-01-0150H	CIP	Non-impaired
Bird Creek	121300-02-0010C	CT	Non-impaired
Hominy Creek: downstream	121300-04-0010C	CIP	Non-impaired
Hominy Creek: upstream	121300-04-0280G	CT	Non-impaired
Curl Creek	121400-01-0270G	CIP	Non-impaired
Hogshooter Creek	121400-01-0300D	CIP	Slightly impaired
Little Caney River	121400-02-0140H	CIP	Non-impaired
Mission Creek	121400-02-0190B	CT	Non-impaired
Buck Creek	121400-03-0170C	CT	Non-impaired
Sand Creek	121400-04-0010F	CT	Slightly impaired
Dog Creek	121500-02-0360D	CIP	Moderately impaired
Big Creek	121510-03-0010D	CIP	Slightly impaired
Ranger Creek	121600-01-0060D	BM	Non-impaired
Fourteenmile Creek	121600-01-0100G	OH	Non-impaired
Saline Creek	121600-02-0030D	OH	Non-impaired
Drowning Creek	121600-03-0090G	OH	Moderately impaired
Sycamore Creek	121600-03-0510D	OH	Non-impaired
Tar Creek	121600-04-0060D	CIP	Moderately impaired
Little Cabin Creek	121600-06-0080C	CIP	Slightly impaired
Big Cabin Creek	121600-06-0220I	CIP	Non-impaired
Fivemile Creek	121600-07-0110G	OH	Non-impaired
Pryor Creek Hwy. 20	121610-00-0050D	CIP	Moderately impaired
Pryor Creek Hwy. 69	121610-00-0050M	CIP	Moderately impaired
Buggy Creek	520610-02-0120C	CGP	Slightly impaired
Walnut Creek	520610-03-0010C	CGP	Moderately impaired
Trail Creek	520620-02-0090G	CGP	Non-impaired
Lone Creek	520620-03-0020C	CGP	Slightly impaired
Hackberry Creek	520620-04-0050D	CGP	Slightly impaired
Commission Creek	520620-05-0160C	SWT	Non-impaired
Deer Creek	520620-06-0010F	CGP	Slightly impaired



**Figure 5. Macroinvertebrate metrics for summer riffle (CIP, CT, OH ecoregions) or summer woody (CGP ecoregion) collections 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).**

Both Ranger Creek (Boston Mountains ecoregion) and Commission Creek (Southwestern Tablelands ecoregion) were comparable to the high quality sites in their respective ecoregions, so they are not presented in Figure 5. Both of these sites had an overall assessment of non-impaired.

In the Central Irregular Plains ecoregion, six out of the twelve sites were either slightly or moderately impaired relative to the high quality sites (Table 17). Delaware, Hominy (downstream), Curl, Little Caney, and Big Cabin Creeks were non-impaired. Both Dog Creek and Hogshooter Creek (one sample) had significantly low numbers of total taxa and EPT taxa, and Hogshooter also had a very low Shannon-Weaver diversity index (one sample) (Fig. 5). Little Cabin Creek similarly had one sample which fell below the high quality site range for total number of taxa and Shannon-Weaver diversity.

In the Cross Timbers ecoregion, only Sand Creek was classified as slightly impaired; the other sites were non-impaired (Table 17). All summer riffle data fell within the high quality range (Fig. 5). Drowning Creek, in the Ozark Highlands ecoregion, was classified as moderately impaired and had metric values outside of the high quality range for most parameters (Fig. 5). All other sites in this ecoregion were non-impaired relative to the high quality sites.

With the exception of Trail Creek, all of the Central Great Plains monitoring sites were either slightly or moderately impaired (Table 17), although none of the summer woody values were outside of the high quality site ranges (Fig. 5).

### 3.3 WATERSHED ASSESSMENT

Table 18 shows the landuse upstream of each monitoring site as obtained through GIS using the 1992 NRCS National Land Cover Dataset. There was little data on the Fivemile Creek (<10%) and Sycamore Creek (<50%) watersheds, but the other sites had almost complete GIS coverage. Saline Creek had the largest watershed, with 410359.98 acres, while Commission Creek had the smallest watershed, with 15534.32 acres. Both Hominy Creek (downstream) and Bird Creek had over 7600 oil and gas wells in the watershed. In contrast, Little Horse Creek had no wells, and Fourteenmile Creek had only one.

Ten sites had national pollution discharge elimination systems (NPDES) in the watershed. NPDES's 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. Of the sites in this project, Dog Creek and Deer Creek each had 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 presents the results of these analyses. Sites with a major NPDES had significantly higher values for all parameters examined as compared to sites with minor NPDES (as indicated by  $p < 0.05$ ). Sites with only minor NPDES had significantly higher levels of total phosphorous, total orthophosphate, ammonia, and TKN than sites with no NPDES (as indicated by  $p < 0.05$ ).

Biological data (fish, bugs, *Enterococcus* and *E. coli* bacteria) and habitat scores 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 18. Watershed landuse for each Year 1 monitoring site.**

Site Name	Bare Rock/Sand/Clay	Commercial/Industrial/Transportation	Deciduous Forest	Emergent Herbaceous Wetlands	Evergreen Forest	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	# Oil and Gas	# CAFO	# NPDES	# Tot. Retention	# Active Municipal Landfills	# Land Apps.
Big Cabin Creek	0.10%	0.33%	6.43%	0.26%	0.14%	25.64%	0.24%	0.15%	0.16%	1.00%	53.83%	0.27%	9.47%	0.14%	0.17%	0.01%	0.05%	1.63%		150288.65	630					
Big Creek	<0.01%	0.02%	7.09%	0.08%	0.05%	50.51%	<0.01%	<0.01%	0.11%	0.59%	30.39%	0.01%	7.20%	0.12%	0.14%	<0.01%		1.02%	2.66%	95091.93	600					
Bird Creek	0.02%	0.17%	28.20%	0.08%	0.02%	63.96%	0.15%	0.77%	0.14%	1.65%	3.16%	<0.01%	0.22%	0.82%	0.26%	0.38%	<0.01%	<0.01%		236719.95	7694		4			
Buck Creek			5.81%	0.39%	0.05%	78.58%			0.17%	0.44%	8.62%		0.57%	5.15%	0.03%	<0.01%		0.19%	<0.01%	41101.33	488					
Buggy Creek	0.01%	0.03%	4.55%		5.58%	48.72%	0.02%	0.42%	0.45%	0.61%	9.24%		7.98%	2.89%	19.49%		<0.01%			60791.56	463	2	3			
Bull Creek		0.42%	3.64%	0.49%		4.68%		0.01%	3.05%	1.22%	56.57%		22.02%	0.18%	6.57%			0.19%		30202.22	406					
California Creek	0.03%	<0.01%	3.70%	0.07%	0.01%	52.96%	<0.01%	<0.01%	0.04%	0.65%	39.52%		2.06%	0.02%	0.31%	0.01%	<0.01%	0.62%		37047.86	1853					1
Chouteau Creek	0.01%	0.07%	8.56%	0.67%	0.44%	24.83%		<0.01%	2.33%	1.40%	45.29%		15.41%	0.18%	0.74%			0.08%		25089.31	177					
Commission Creek	0.37%		0.02%		<0.01%	52.74%			0.01%	0.15%	0.38%		8.80%	31.95%	5.58%			<0.01%		15534.32	42					
Curl Creek		0.04%	9.78%	0.02%	0.29%	58.37%			0.77%	0.68%	29.04%		0.02%	0.42%	0.53%			0.06%		27038.72	1449					
Deer Creek	0.06%	0.44%	1.17%		1.13%	20.41%	0.52%	0.66%	0.26%	0.18%	6.46%		14.75%	1.84%	52.11%		0.01%			202721.39	1396	2	3	4		3
Delaware Creek	<0.01%	0.04%	60.30%		0.15%	22.27%		0.16%	0.85%	1.09%	14.17%		0.15%	0.62%	0.09%	0.28%	0.02%			28737.46	1353					2
Dog Creek	0.01%	2.49%	29.96%	0.40%	1.03%	16.96%	0.33%	3.25%	3.37%	2.05%	38.84%	0.01%	0.28%	0.64%	0.08%		0.06%	0.24%		67267.45	729		1	4		1
Drowning Creek	0.01%	0.59%	45.61%	0.03%	0.02%	0.00%	0.57%	1.93%	0.37%	0.04%	41.57%		7.30%	1.29%	0.21%	0.15%	0.24%	0.06%		16930.97	2					
Fivemile Creek	0.01%	0.06%	6.30%	0.04%	<0.01%	<0.01%	<0.01%		0.01%	0.01%	2.26%		0.34%	0.11%	<0.01%	0.10%	<0.01%	0.02%	90.73%	68989.85						
Fourteenmile Creek	<0.01%	0.04%	33.76%	0.02%	0.76%	<0.01%	<0.01%	<0.01%	2.46%	0.18%	58.53%		2.86%	1.06%	0.24%	0.02%	<0.01%	0.05%		41726.22	1					
Hackberry Creek	0.18%		0.10%		0.59%	77.89%			0.25%	0.16%	0.41%		2.93%	15.64%	1.86%					62110.27	195					
Hogshooter Creek	<0.01%	0.07%	9.36%	0.09%	0.42%	54.08%	<0.01%	0.05%	0.70%	1.18%	32.79%	0.29%	0.04%	0.32%	0.19%	<0.01%	0.02%	0.38%		27181.74	1555					
Hominy Creek	<0.01%	0.01%	25.30%	0.04%	0.10%	70.18%		<0.01%	0.10%	0.30%	2.45%		0.05%	0.29%	0.57%	0.60%				45788.73	1907					
Hominy Creek: downstrm	0.01%	0.18%	34.18%	0.02%	0.28%	48.20%	0.04%	0.39%	0.31%	5.45%	7.53%	<0.01%	0.31%	0.55%	0.47%	2.07%	0.01%			219159.24	7939		5			10
Little Cabin Creek	<0.01%	0.42%	5.74%	0.02%	0.07%	0.29%	0.11%	0.22%	0.25%	0.45%	64.28%	0.10%	26.12%	0.37%	1.15%	0.01%	0.11%	0.29%		86457.50	71	1	2			
Little Caney River	0.05%	0.40%	9.01%	1.48%	0.09%	29.98%	0.13%	0.43%	0.51%	7.87%	27.57%		6.25%	0.28%	0.46%	0.01%	0.19%	1.41%	13.90%	71689.25	3232		1			4
Little Horse Creek		0.09%	0.77%	0.01%	0.01%				0.12%	0.06%	86.17%		11.42%	0.05%	1.18%		<0.01%	0.11%		28243.92						
Lone Creek	0.04%		0.01%		18.53%	55.53%			2.07%	0.35%	0.10%		0.38%	18.53%	4.45%					17877.41	293					
Mission Creek	<0.01%	0.02%	26.79%	0.61%	0.07%	33.47%	0.01%	0.27%	0.86%	0.66%	26.36%		2.54%	4.55%	0.12%	2.84%	0.39%	0.45%		26639.04	637					
Pryor Creek: Hwy 20	<0.01%	0.78%	15.15%	0.29%	0.45%	12.05%	0.10%	0.67%	1.26%	0.71%	62.85%	0.02%	4.45%	0.60%	0.34%	0.15%	0.05%	0.10%		127548.39	910		2			1
Pryor Creek: Hwy 69	<0.01%	1.54%	20.36%	0.45%	1.07%	19.77%	0.42%	2.72%	2.24%	0.70%	45.78%		4.40%	0.36%	0.06%		0.02%	0.11%		19906.01	226			3		
Ranger Creek	0.02%	0.25%	26.02%	0.02%	1.20%		0.05%	0.89%	5.17%	0.24%	62.84%		1.99%	0.59%	0.26%	0.05%	0.18%	0.22%		21532.10	7			1		
Saline Creek	0.01%	0.04%	32.09%	<0.01%	0.04%	<0.01%	<0.01%	0.01%	0.20%	0.01%	66.15%	<0.01%	0.71%	0.57%	0.06%	0.11%	<0.01%	<0.01%		410359.98	4	1		1		
Sand Creek	0.01%	0.02%	38.62%	0.32%	0.05%	50.20%	0.01%	0.01%	0.63%	0.83%	6.27%	0.01%	0.34%	1.78%	0.05%	0.75%	<0.01%	0.10%		145698.47	4159					1
Sycamore Creek	<0.01%	0.06%	19.03%	<0.01%	0.03%				0.24%	0.07%	26.40%		1.15%	0.45%	0.61%	<0.01%		0.05%	51.91%	29032.15						
Tar Creek	7.23%	2.75%	6.18%	1.65%	0.04%	<0.01%	5.15%	3.22%	0.11%	1.78%	29.55%	0.02%	19.31%	0.11%	0.06%	0.01%	1.65%	0.58%		27500.71			4			
Trail Creek	0.03%		1.54%		9.33%	50.67%			1.49%	0.23%	1.20%		2.48%	22.28%	10.76%					28782.02	436					
Walnut Creek	0.02%	0.18%	10.75%	0.01%	0.70%	54.29%	0.19%	1.07%	0.12%	1.37%	6.98%		4.24%	4.51%	15.58%		0.01%			129578.42	1524	1	2	11		

**Table 19. Comparison of NPDES types on nutrient levels.**

Parameter	NPDES type	N	Mean	Standard Deviation	p value
Total Nitrogen (soluble)	Major	37	4.660	3.768	<b>***0.000</b>
	Minor	156	1.366	0.871	
	Minor	156	1.366	0.871	0.586
	None	470	1.287	1.746	
Total Phosphorous	Major	35	0.646	0.677	<b>***0.000</b>
	Minor	149	0.145	0.196	
	Minor	149	0.145	0.196	<b>***0.006</b>
	None	457	0.088	0.222	
Ammonia	Major	37	1.182	2.190	<b>***0.000</b>
	Minor	157	0.161	0.176	
	Minor	157	0.161	0.176	<b>***0.000</b>
	None	468	0.110	0.141	
Available Nitrogen	Major	37	3.909	3.411	<b>***0.000</b>
	Minor	157	0.915	0.655	
	Minor	157	0.915	0.655	0.944
	None	468	0.925	1.700	
TKN	Major	37	1.933	2.557	<b>***0.000</b>
	Minor	156	0.618	0.539	
	Minor	156	0.618	0.539	<b>***0.001</b>
	None	470	0.473	0.423	
Nitrite	Major	37	0.184	0.805	<b>***0.023</b>
	Minor	158	0.034	0.107	
	Minor	158	0.034	0.107	0.550
	None	472	0.058	0.503	
Nitrate	Major	37	2.543	2.246	<b>***0.000</b>
	Minor	158	0.724	0.576	
	Minor	158	0.724	0.576	0.802
	None	472	0.754	1.467	
Total OrthoPhosphate	Major	35	0.512	0.580	<b>***0.000</b>
	Minor	149	0.085	0.135	
	Minor	149	0.085	0.135	<b>***0.023</b>
	None	456	0.047	0.193	

### 3.4 BENEFICIAL USE SUPPORT ASSESSMENT

The beneficial uses assigned to the Rotating Basin Year 1 monitoring sites include fish and wildlife propagation (habitat limited, warm water, or cool 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 attainment status of each use. The causes and potential source(s) (if known) of any impairments are presented in Appendix E.1, and the key for the cause and source codes is given in Appendix E.2.

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

Site Name	WBID	County	FISH AND WILDLIFE PROPAGATION - FINAL SUPPORT STATUS	PRIMARY BODY CONTACT RECREATION - FINAL SUPPORT STATUS	PUBLIC AND PRIVATE WATER SUPPLY - FINAL SUPPORT STATUS	AGRICULTURE - FINAL SUPPORT STATUS	AESTHETICS - FINAL SUPPORT STATUS	SECONDARY BODY CONTACT-FINAL SUPPORT STATUS
Delaware Creek	OK121300-01-0150H	Tulsa	N	N	I*	N	F	
Bird Creek	OK121300-02-0010C	Osage	F	N	I*	F	F	
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	N	N	I*	F	F	
Hominy Creek: upstream	OK121300-04-0280G	Osage	F	N	N	N	F	
Curl Creek	OK121400-01-0270G	Washington	N	N		F	F	
Hogshooter Creek	OK121400-01-0300D	Washington	N	N		F	F	
Little Caney River	OK121400-02-0140H	Osage	N	N	I*	F	F	
Mission Creek	OK121400-02-0190B	Osage	N	N	N	N	F	
Buck Creek	OK121400-03-0170C	Osage	F	N	N	F	F	
Sand Creek	OK121400-04-0010F	Osage	F	N		N	N	
Bull Creek	OK121500-02-0090D	Wagoner	N	N		N	N	
Dog Creek	OK121500-02-0360D	Rogers	N	N	N	N	N	
California Creek	OK121510-02-0050C	Nowata	N	N	N	I*	N	
Big Creek	OK121510-03-0010D	Nowata	F	N		F	N	
Ranger Creek	OK121600-01-0060D	Cherokee	F	N	F	N	F	
Fourteenmile Creek	OK121600-01-0100G	Cherokee	I	N	N	F	N	
Chouteau Creek	OK121600-01-0430M	Mayes	N	N	N	N	N	
Saline Creek	OK121600-02-0030D	Mayes	I	N	F	I*	F	
Drowning Creek	OK121600-03-0090G	Delaware	I	N	F	N	N	
Little Horse Creek	OK121600-03-0190A	Ottawa	N	N	N	N	F	
Sycamore Creek	OK121600-03-0510D	Ottawa	I	N	I*	F	N	
Tar Creek	OK121600-04-0060D	Ottawa	I			I*	F	N
Little Cabin Creek	OK121600-06-0080C	Craig	N	N		N	N	
Big Cabin Creek	OK121600-06-0220I	Craig	N		I	I		I
Fivemile Creek	OK121600-07-0110G	Ottawa	I	I	F	I*	I*	
Pryor Creek	OK121610-00-0050	Mayes	N	N		N	N	
Buggy Creek	OK520610-02-0120C	Grady	N	N		N	N	
Walnut Creek	OK520610-03-0010C	McClain	I	N	I*	F	N	
Trail Creek	OK520620-02-0090G	Dewey	N	N	N	N	N	
Lone Creek	OK520620-03-0020C	Dewey	F	N	N	I*	N	
Hackberry Creek	OK520620-04-0050D	Ellis	I	N	I*		N	
Commission Creek	OK520620-05-0160C	Ellis	F	N	N	N	N	
Deer Creek	OK520620-06-0010F	Caddo	F	N	I*	N	N	

For all assigned beneficial uses, Bull, Dog, Chouteau, Little Cabin, Pryor, Buggy, and Trail Creeks were non-supporting. No sites were fully supporting for all assigned uses, but Bird and Buck Creeks were fully supporting for 3 out of 5 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 30 and 26 (respectively) of the 33 stream sites (Appendix E.1).



#### **4.0 LITERATURE CITED**

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Appendix A.1. Raw chemical and physical water quality data. \*sum of ammonia, nitrite, nitrate. \*\*sum of nitrite, nitrate, TKN.

SiteName	WBID	County	SAMPLEID	Date	Discharge (cfs)	Alkalinity (CaCO3)	Cond (uS/cm)	Temp (°C)	DO (mg/L)	DO (% Sat.)	Turb (NTU)	pH	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	TKN (mg/L)	Available N (mg/L)*	Total N (mg/L)**	TotOrthoPhos (mg/L)	TotPhosphorus (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TotHardness (mg/L as CaCO3)	TotDisSolids (mg/L)	TotSusSolids (mg/L)	CBOD5
Commission Creek	OK520620-05-0160C	Ellis	27407	08-Apr-03	6.78	233	841.0	9.8	11.90	112	11.00	8.45	<b>0.015</b>	0.28	<b>0.01</b>	0.234	0.305	0.524	<b>0.005</b>	0.024	94.12	27.15	239.40	473.0	29	2.7
Commission Creek	OK520620-05-0160C	Ellis	27517	13-May-03	5.02	231	816.0	19.9	9.25	108	24.70	8.34	0.018	0.38	<b>0.02</b>	0.345	0.418	0.745	0.013	0.005	97.70	28.90	234.40	483.0	61	<b>2.0</b>
Commission Creek	OK520620-05-0160C	Ellis	27741	17-Jun-03	7.88	237	843.0	20.1	8.86	106	34.50	8.22	<b>0.015</b>	0.42	<b>0.01</b>	0.270	0.445	0.700	0.027	0.063	99.40	33.10	256.10	483.0	73	<b>2.0</b>
Deer Creek	OK520620-06-0010F	Caddo	23941	14-Aug-01	30.86	151	1000.0	33.9	7.73	114	19.70	8.26	<b>0.015</b>	1.26	<b>0.01</b>	0.560	1.285	1.830	0.143	0.204	15.52	362.60	506.40	728.0	73	3.0
Deer Creek	OK520620-06-0010F	Caddo	24256	18-Sep-01	50.93	142	1055.0	27.0	7.58	101	117.00	8.06	0.620	1.33	<b>0.01</b>	1.273	1.960	2.613	0.157	0.277	15.50	372.60	512.30	743.0	139	2.0
Deer Creek	OK520620-06-0010F	Caddo	24362	23-Oct-01	36.85	155	1206.0	24.5	10.87	137	6.36	8.26	0.021	1.15	<b>0.01</b>	0.442	1.181	1.602	0.042	0.074	17.80	447.00	608.10	852.5	13	2.0
Deer Creek	OK520620-06-0010F	Caddo	24473	04-Dec-01	40.55	187	1358.0	15.8	9.10	95	9.00	8.24	0.215	2.08	0.46	0.396	2.755	2.936	0.089	0.098	18.35	502.40	712.80	957.0	15	7.0
Deer Creek	OK520620-06-0010F	Caddo	24684	08-Jan-02	43.34	189	1418.0	9.2	11.32	103	9.55	8.27	0.119	2.43	<b>0.01</b>	0.395	2.559	2.835	0.009	0.108	18.77	528.10	674.80	1030.0	17	9.0
Deer Creek	OK520620-06-0010F	Caddo	24811	12-Feb-02	36.55	178	1367.0	10.3	11.56	108	12.30	8.29	0.095	2.09	<b>0.01</b>	0.538	2.195	2.638	0.023	0.036	20.22	660.00	786.40	1018.5	27	4.0
Deer Creek	OK520620-06-0010F	Caddo	24963	19-Mar-02	56.44	161	1047.0	12.1	10.21	100	21.40	8.20	0.252	1.91	<b>0.01</b>	0.891	2.172	2.811	0.073	0.100	1973.00	402.90	573.70	854.5	54	2.0
Deer Creek	OK520620-06-0010F	Caddo	25060	22-Apr-02	46.22	192	1342.0	24.0	8.33	105	19.10	8.22	0.119	1.71	0.18	0.613	2.009	2.503	0.173	0.213	19.92	521.90	683.50	1029.5	50	6.0
Deer Creek	OK520620-06-0010F	Caddo	25217	28-May-02	49.15	186	1560.0	24.2	7.97	100	29.90	8.10	0.039	1.24	<b>0.01</b>	0.282	1.289	1.532	0.054	0.128	25.52	619.00	842.50	1181.0	72	4.0
Deer Creek	OK520620-06-0010F	Caddo	25335	09-Jul-02	39.71	118	862.0	35.4	8.18	125	31.90		0.171	0.83	<b>0.01</b>	0.904	1.011	1.744	0.087	0.254	11.49	303.10	421.60	603.0	10	5.0
Deer Creek	OK520620-06-0010F	Caddo	25636	06-Aug-02	22.35	146	1073.0	30.4	7.99	112	8.63	8.29	0.041	0.96	<b>0.01</b>	0.561	1.011	1.531	0.128	0.208	20.75	395.60	521.00	834.0	22	5.0
Deer Creek	OK520620-06-0010F	Caddo	25820	09-Sep-02	26.25	151	981.0	26.1	9.02	118	8.04	8.39	<b>0.015</b>	0.81	<b>0.01</b>	0.452	0.835	1.272			20.40	311.50	460.50	666.0	19	<b>2.0</b>
Deer Creek	OK520620-06-0010F	Caddo	26001	14-Oct-02	30.05	180	1126.0	19.3	9.06	103	12.00	8.25	0.016	1.83	<b>0.01</b>	0.064	1.856	1.904	0.082	0.112	17.13	364.30	528.30	679.0	10	2.0
Deer Creek	OK520620-06-0010F	Caddo	26146	19-Nov-02	34.64	183	1219.0	5.9	11.98	99	7.72	7.79	0.025	1.93	<b>0.01</b>	0.216	1.965	2.156	0.082	0.101	20.80	466.58	604.30	925.0	35	3.0
Deer Creek	OK520620-06-0010F	Caddo	26287	17-Dec-02	40.52	195	1399.0	5.7	14.80	123	7.08	8.25	<b>0.015</b>	2.07	<b>0.01</b>	<b>0.110</b>	2.095	2.190	0.057	0.083	23.24	501.60	709.30	989.0	10	<b>2.0</b>
Deer Creek	OK520620-06-0010F	Caddo	26643	27-Jan-03	45.60	199	1447.0	6.7	12.44	106	8.05	8.29	0.159	2.69	<b>0.01</b>	0.359	2.859	3.059	0.046	0.075	22.29	549.90	756.10	1055.0	46	<b>2.0</b>
Deer Creek	OK520620-06-0010F	Caddo	27204	03-Mar-03	45.45	195	1436.0	11.7	11.39	109	8.30	8.30	0.080	2.67	<b>0.01</b>	<b>0.110</b>	2.760	2.790	0.068	0.089	22.00	553.50	751.40	1094.0	19	2.7
Deer Creek	OK520620-06-0010F	Caddo	27405	07-Apr-03	47.51	153	1130.0	18.4	9.91	111	11.20	8.23	<b>0.015</b>	1.24	<b>0.01</b>	<b>0.110</b>	1.265	1.360	0.084	0.124	22.55	566.50	660.00	1113.0	26	3.7
Deer Creek	OK520620-06-0010F	Caddo	27515	12-May-03	33.65	168	1292.0	26.0	9.38	122	15.50	8.20	0.064	1.11	<b>0.02</b>	0.217	1.194	1.347	0.117	0.123	22.80	501.10	661.80	1054.0	29	<b>2.0</b>
Deer Creek	OK520620-06-0010F	Caddo	27739	16-Jun-03	75.49	114	682.0	26.5	6.28	82	431.00	7.67	0.087	1.97	<b>0.01</b>	1.861	2.067	3.841	0.253	0.511	11.40	207.70	335.70	468.0	513	7.3



## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E. Coli	Enterococcus
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	17-Sep-01	100	20
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	22-Oct-01	10	10
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	22-Apr-02	60	70
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	29-May-02	790	330
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	08-Jul-02	80	100
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	05-Aug-02	130	10
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	16-Sep-02	20	20
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	14-Oct-02	20	20
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	07-Apr-03	1180	490
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	12-May-03	30	40
Delaware Creek	OK121300-01-0150H	Tulsa	CentlrPl	16-Jun-03	60	100
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	14-Aug-01	5	55
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	18-Sep-01	75	55
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	23-Oct-01	10	20
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	23-Apr-02	1600	300
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	29-May-02	800	1530
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	09-Jul-02	50	40
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	06-Aug-02	10	80
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	10-Sep-02	10	30
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	15-Oct-02	60	20
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	08-Apr-03	70	70
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	13-May-03	10	30
Bird Creek	OK121300-02-0010C	Osage	CrossTimb	17-Jun-03	20	80
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	13-Aug-01	80	50
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	17-Sep-01	70	50
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	22-Oct-01	100	30
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	22-Apr-02	40	110
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	08-Jul-02	80	90
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	05-Aug-02	40	80
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	09-Sep-02	30	70
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	14-Oct-02	140	60
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	07-Apr-03	40	100
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	12-May-03	40	170
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	CentlrPl	16-Jun-03	20	180
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	14-Aug-01	5	70
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	18-Sep-01	40	20
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	23-Oct-01	10	20
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	23-Apr-02	800	540
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	28-May-02	220	150
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	09-Jul-02	10	50
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	06-Aug-02	30	70
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	10-Sep-02	10	10
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	15-Oct-02	20	20
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	08-Apr-03	260	190
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	13-May-03	110	560
Hominy Creek	OK121300-04-0280G	Osage	CrossTimb	17-Jun-03	60	20
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	13-Aug-01	10	80
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	17-Sep-01	800	600
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	22-Oct-01	110	20
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	22-Apr-02	360	180
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	28-May-02	280	190
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	08-Jul-02	70	1065

## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E. Coli	Enterococcus
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	05-Aug-02	590	130
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	09-Sep-02	10	100
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	14-Oct-02	280	200
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	07-Apr-03	270	220
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	12-May-03	30	80
Curl Creek	OK121400-01-0270G	Washington	CentlrPl	16-Jun-03	360	310
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	13-Aug-01	130	215
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	17-Sep-01	800	600
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	22-Oct-01	10	10
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	22-Apr-02	80	110
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	28-May-02	610	750
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	08-Jul-02	130	30
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	05-Aug-02	1210	300
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	09-Sep-02	60	40
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	14-Oct-02	20	20
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	07-Apr-03	80	60
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	12-May-03	100	100
Hogshooter Creek	OK121400-01-0300D	Washington	CentlrPl	16-Jun-03	220	280
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	13-Aug-01	35	30
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	17-Sep-01	90	50
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	22-Oct-01	100	40
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	22-Apr-02	50	90
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	29-May-02	70	70
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	08-Jul-02	20	20
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	05-Aug-02	200	30
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	09-Sep-02	40	60
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	14-Oct-02	880	60
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	07-Apr-03	360	130
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	12-May-03	30	100
Little Caney River	OK121400-02-0140H	Osage	CentlrPl	16-Jun-03	40	20
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	14-Aug-01	20	70
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	18-Sep-01	610	850
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	23-Oct-01	10	30
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	23-Apr-02	530	340
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	28-May-02	190	290
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	09-Jul-02	10	10
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	06-Aug-02	100	30
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	10-Sep-02	10	20
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	15-Oct-02	40	20
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	08-Apr-03	1280	610
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	13-May-03	2000	2000
Mission Creek	OK121400-02-0190B	Osage	CrossTimb	17-Jun-03	20	20
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	14-Aug-01	5	5
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	18-Sep-01	800	220
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	23-Oct-01	10	50
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	23-Apr-02	90	50
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	28-May-02	800	170
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	09-Jul-02	10	20
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	10-Sep-02	10	10
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	15-Oct-02	20	20
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	08-Apr-03	10	40
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	13-May-03	2000	2000

## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E. Coli	Enterococcus
Buck Creek	OK121400-03-0170C	Osage	CrossTimb	17-Jun-03	80	40
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	14-Aug-01	5	25
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	18-Sep-01	1770	630
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	23-Oct-01	60	80
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	23-Apr-02	180	340
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	29-May-02	1060	800
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	09-Jul-02	50	40
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	06-Aug-02	60	60
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	10-Sep-02	10	270
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	15-Oct-02	280	20
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	08-Apr-03	310	200
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	13-May-03	70	140
Sand Creek	OK121400-04-0010F	Osage	CrossTimb	17-Jun-03	40	60
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	14-Aug-01	65	20
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	18-Sep-01	800	1000
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	23-Oct-01	800	1310
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	23-Apr-02	1600	745
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	29-May-02	800	820
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	09-Jul-02	160	240
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	06-Aug-02	170	230
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	17-Sep-02	900	200
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	15-Oct-02	1180	20
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	08-Apr-03	400	150
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	13-May-03	50	20
Bull Creek	OK121500-02-0090D	Wagoner	CentlrPl	17-Jun-03	400	460
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	23-Oct-01	110	40
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	09-Jul-02	1340	280
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	06-Aug-02	800	390
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	17-Sep-02	400	540
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	15-Oct-02	40	80
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	08-Apr-03	740	230
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	13-May-03	10	90
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	14-Aug-01	150	295
Dog Creek	OK121500-02-0360D	Rogers	CentlrPl	21-Aug-01	690	250
California Creek	OK121510-02-0050C	Nowata	CentlrPl	13-Aug-01	105	10
California Creek	OK121510-02-0050C	Nowata	CentlrPl	17-Sep-01	70	100
California Creek	OK121510-02-0050C	Nowata	CentlrPl	22-Oct-01	10	30
California Creek	OK121510-02-0050C	Nowata	CentlrPl	22-Apr-02	10	100
California Creek	OK121510-02-0050C	Nowata	CentlrPl	28-May-02	340	375
California Creek	OK121510-02-0050C	Nowata	CentlrPl	08-Jul-02	310	240
California Creek	OK121510-02-0050C	Nowata	CentlrPl	05-Aug-02	50	10
California Creek	OK121510-02-0050C	Nowata	CentlrPl	16-Sep-02	20	20
California Creek	OK121510-02-0050C	Nowata	CentlrPl	14-Oct-02	20	60
California Creek	OK121510-02-0050C	Nowata	CentlrPl	07-Apr-03	75000	630
California Creek	OK121510-02-0050C	Nowata	CentlrPl	12-May-03	10	60
California Creek	OK121510-02-0050C	Nowata	CentlrPl	16-Jun-03	20	20
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	17-Sep-01	650	830
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	22-Oct-01	110	80
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	22-Apr-02	300	110
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	28-May-02	910	330
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	08-Jul-02	70	220
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	05-Aug-02	140	70

## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E. Coli	Enterococcus
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	16-Sep-02	20	20
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	14-Oct-02	20	20
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	07-Apr-03	380	170
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	12-May-03	80	10
Big Creek	OK121510-03-0010D	Nowata	CentlrPl	16-Jun-03	180	60
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	14-Aug-01	5	35
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	18-Sep-01	870	150
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	23-Oct-01	90	50
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	23-Apr-02	340	220
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	29-May-02	1780	900
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	09-Jul-02	50	70
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	06-Aug-02	10	70
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	10-Sep-02	10	40
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	15-Oct-02	20	20
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	08-Apr-03	10	10
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	13-May-03	810	850
Ranger Creek	OK121600-01-0060D	Cherokee	BostonMtn	17-Jun-03	80	20
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	14-Aug-01	55	155
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	18-Sep-01	510	320
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	23-Oct-01	70	20
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	23-Apr-02	1460	710
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	29-May-02	340	180
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	09-Jul-02	490	120
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	06-Aug-02	100	150
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	10-Sep-02	110	110
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	15-Oct-02	20	20
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	07-Apr-03	30	20
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	13-May-03	170	50
Fourteenmile Creek	OK121600-01-0100G	Cherokee	OzarkHigh	17-Jun-03	20	20
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	14-Aug-01	35	10
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	18-Sep-01	800	90
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	23-Oct-01	220	95
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	23-Apr-02	800	600
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	29-May-02	800	310
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	06-Aug-02	90	70
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	17-Sep-02	20	60
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	15-Oct-02	60	20
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	08-Apr-03	1760	470
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	13-May-03	20	170
Chouteau Creek	OK121600-01-0430M	Mayes	CentlrPl	17-Jun-03	280	400
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	14-Aug-01	20	38
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	18-Sep-01	60	80
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	23-Oct-01	30	10
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	22-Apr-02	10	10
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	09-Jul-02	10	30
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	06-Aug-02	10	70
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	09-Sep-02	10	40
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	14-Oct-02	20	20
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	07-Apr-03	10	10
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	13-May-03	20	20
Saline Creek	OK121600-02-0030D	Mayes	OzarkHigh	17-Jun-03	40	40
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	13-Aug-01	25	40

## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E.Coli	Enterococcus
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	17-Sep-01	1040	220
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	22-Oct-01	100	20
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	22-Apr-02	10	10
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	28-May-02	40	150
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	08-Jul-02	10	30
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	05-Aug-02	100	10
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	09-Sep-02	20	40
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	14-Oct-02	40	20
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	07-Apr-03	80	70
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	13-May-03	10	10
Drowning Creek	OK121600-03-0090G	Delaware	OzarkHigh	16-Jun-03	20	40
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	13-Aug-01	5	160
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	17-Sep-01	600	600
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	23-Oct-01	50	110
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	22-Apr-02	50	40
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	28-May-02	800	950
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	08-Jul-02	20	40
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	05-Aug-02	15	80
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	09-Sep-02	10	50
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	14-Oct-02	20	20
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	07-Apr-03	2500	660
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	12-May-03	10	80
Little Horse Creek	OK121600-03-0190A	Ottawa	CentlrPl	16-Jun-03	100	160
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	13-Aug-01	5	70
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	17-Sep-01	610	1630
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	22-Oct-01	40	30
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	22-Apr-02	10	20
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	28-May-02	120	100
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	08-Jul-02	20	30
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	05-Aug-02	50	10
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	09-Sep-02	10	40
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	14-Oct-02	40	20
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	07-Apr-03	10	20
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	12-May-03	10	10
Sycamore Creek	OK121600-03-0510D	Ottawa	OzarkHigh	16-Jun-03	20	40
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	13-Aug-01	400	250
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	17-Sep-01	800	580
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	23-Oct-01	1730	390
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	22-Apr-02	960	200
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	28-May-02	1970	610
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	08-Jul-02	360	120
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	05-Aug-02	330	230
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	09-Sep-02	70	30
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	14-Oct-02	360	40
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	07-Apr-03	2000	430
Tar Creek	OK121600-04-0060D	Ottawa	CentlrPl	12-May-03	760	385
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPl	13-Aug-01	250	300
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPl	17-Sep-01	1680	400
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPl	22-Oct-01	130	80
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPl	22-Apr-02	60	60
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPl	28-May-02	800	860
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPl	08-Jul-02	110	230

## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E. Coli	Enterococcus
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPI	05-Aug-02	40	10
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPI	16-Sep-02	120	200
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPI	14-Oct-02	40	20
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPI	07-Apr-03	1100	190
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPI	12-May-03	330	650
Little Cabin Creek	OK121600-06-0080C	Craig	CentlrPI	16-Jun-03	80	60
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	13-Aug-01	400	15
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	17-Sep-01	800	110
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	22-Oct-01	210	120
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	22-Apr-02	160	90
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	28-May-02	800	230
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	08-Jul-02	440	180
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	05-Aug-02	90	10
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	16-Sep-02	1160	200
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	14-Oct-02	1600	1160
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	07-Apr-03	1480	145
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	12-May-03	210	120
Big Cabin Creek	OK121600-06-0220I	Craig	CentlrPI	16-Jun-03	220	20
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	13-Aug-01	20	65
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	17-Sep-01	100	210
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	23-Oct-01	40	30
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	22-Apr-02	10	10
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	28-May-02	10	10
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	08-Jul-02	10	10
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	05-Aug-02	10	20
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	09-Sep-02	10	40
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	14-Oct-02	20	20
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	07-Apr-03	20	10
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	12-May-03	10	40
Fivemile Creek	OK121600-07-0110G	Ottawa	OzarkHigh	16-Jun-03	20	40
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	14-Aug-01	60	105
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	18-Sep-01	150	90
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	23-Oct-01	410	140
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	29-May-02	800	1240
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	09-Jul-02	120	100
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	06-Aug-02	10	80
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	17-Sep-02	20	60
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	15-Oct-02	20	60
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	08-Apr-03	3250	290
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	13-May-03	10	70
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	CentlrPI	17-Jun-03	100	480
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	14-Aug-01	470	275
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	18-Sep-01	150	50
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	23-Oct-01	210	160
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	09-Jul-02	70	190
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	06-Aug-02	30	10
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	17-Sep-02	80	20
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	15-Oct-02	1600	20
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	08-Apr-03	3000	400
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	13-May-03	10	190
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	CentlrPI	17-Jun-03	120	420
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	14-Aug-01	460	163

## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E. Coli	Enterococcus
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	18-Sep-01	1600	1510
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	22-Oct-01	100	110
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	23-Apr-02	230	160
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	29-May-02	300	130
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	09-Jul-02	60	280
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	06-Aug-02	155	315
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	09-Sep-02	40	30
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	15-Oct-02	20	60
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	07-Apr-03	1800	310
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	12-May-03	670	340
Buggy Creek	OK520610-02-0120C	Grady	CentGrPI	16-Jun-03	60	220
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	14-Aug-01	355	90
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	18-Sep-01	20	
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	22-Oct-01	150	70
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	23-Apr-02	190	190
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	29-May-02	800	2360
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	09-Jul-02	260	310
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	06-Aug-02	130	190
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	09-Sep-02	210	440
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	15-Oct-02	40	20
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	07-Apr-03	3000	510
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	12-May-03	20	40
Walnut Creek	OK520610-03-0010C	McClain	CentGrPI	16-Jun-03	760	1220
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	23-Apr-02	350	140
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	29-May-02	350	140
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	09-Jul-02	140	130
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	06-Aug-02	610	610
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	10-Sep-02	300	220
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	15-Oct-02	20	220
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	08-Apr-03	60	60
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	13-May-03	470	130
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	17-Jun-03	190	130
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	27-Aug-01	1040	500
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	02-Oct-01	230	370
Trail Creek	OK520620-02-0090G	Dewey	CentGrPI	06-Nov-01	30	100
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	14-Aug-01	155	125
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	18-Sep-01	71600	1310
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	23-Oct-01	1010	320
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	23-Apr-02	80	260
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	29-May-02	160	210
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	09-Jul-02	280	330
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	06-Aug-02	520	900
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	10-Sep-02	180	210
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	15-Oct-02	120	80
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	08-Apr-03	200	30
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	13-May-03	1320	90
Lone Creek	OK520620-03-0020C	Dewey	CentGrPI	17-Jun-03	100	120
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	14-Aug-01	105	435
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	18-Sep-01	1120	520
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	23-Oct-01	100	120
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	23-Apr-02	320	250
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	29-May-02	950	140

## Appendix A.2. Raw bacterial data.

SiteName	WBID	County	Ecoregion	Date	E. Coli	Enterococcus
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	09-Jul-02	440	310
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	15-Oct-02	160	100
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	08-Apr-03	30	30
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	13-May-03	100	50
Hackberry Creek	OK520620-04-0050D	Ellis	CentGrPI	17-Jun-03	500	580
Commission Creek	OK520620-05-0160C	Ellis	SWTable	14-Aug-01	40	150
Commission Creek	OK520620-05-0160C	Ellis	SWTable	18-Sep-01	620	580
Commission Creek	OK520620-05-0160C	Ellis	SWTable	23-Oct-01	140	120
Commission Creek	OK520620-05-0160C	Ellis	SWTable	23-Apr-02	10	80
Commission Creek	OK520620-05-0160C	Ellis	SWTable	29-May-02	270	130
Commission Creek	OK520620-05-0160C	Ellis	SWTable	09-Jul-02	280	90
Commission Creek	OK520620-05-0160C	Ellis	SWTable	06-Aug-02	180	200
Commission Creek	OK520620-05-0160C	Ellis	SWTable	10-Sep-02	70	200
Commission Creek	OK520620-05-0160C	Ellis	SWTable	15-Oct-02	20	200
Commission Creek	OK520620-05-0160C	Ellis	SWTable	08-Apr-03	15	15
Commission Creek	OK520620-05-0160C	Ellis	SWTable	13-May-03	120	20
Commission Creek	OK520620-05-0160C	Ellis	SWTable	17-Jun-03	140	200
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	14-Aug-01	55	55
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	18-Sep-01	7800	610
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	23-Oct-01	50	20
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	22-Apr-02	10	10
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	28-May-02	540	40
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	09-Jul-02	650	70
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	06-Aug-02	80	120
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	09-Sep-02	10	140
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	14-Oct-02	20	20
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	07-Apr-03	10	10
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	12-May-03	20	10
Deer Creek	OK520620-06-0010F	Caddo	CentGrPI	16-Jun-03	1620	540















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

Site Name	WBID	Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
	OK121600-02-0030D	pH (SU)	18	2	7.72	0.08	0.35	7.04	7.43	7.71	8.08	8.17
	OK121600-02-0030D	Sulfate (mg/L)	20	0	5.88	0.16	0.72	4.70	5.31	5.92	6.30	7.40
	OK121600-02-0030D	Temp (°C)	20	0	17.32	1.21	5.40	8.30	11.90	17.65	22.03	26.00
	OK121600-02-0030D	TKN (mg/L)	20	0	0.11	0.00	0.01	0.11	0.11	0.11	0.11	0.14
	OK121600-02-0030D	TotDisSolids (mg/L)	20	0	133.25	2.60	11.61	110.00	126.00	133.50	140.88	153.00
	OK121600-02-0030D	TotHardness (mg/L)	20	0	108.42	1.86	8.32	93.71	104.13	108.55	112.28	132.90
	OK121600-02-0030D	Tot-N	20	0	0.84	0.04	0.20	0.48	0.64	0.88	1.00	1.19
	OK121600-02-0030D	TotOrthoPhos (mg/L)	20	0	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.02
	OK121600-02-0030D	TotPhosphorus (mg/L)	20	0	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.05
	OK121600-02-0030D	TotSusSolids (mg/L)	20	0	9.55	0.45	2.01	1.00	10.00	10.00	10.00	10.00
	OK121600-02-0030D	Turb (NTU)	19	1	1.00	0.14	0.61	0.33	0.61	0.88	1.12	2.79
Drowning Creek	OK121600-03-0090G	Alkalinity (CaCO)	19	1	106.95	4.41	19.24	68.00	91.00	105.00	125.00	132.00
	OK121600-03-0090G	Ammonia (mg/L)	20	0	0.02	0.00	0.02	0.02	0.02	0.02	0.03	0.07
	OK121600-03-0090G	Avail-N	20	0	2.57	0.23	1.04	0.98	1.62	2.72	3.38	4.77
	OK121600-03-0090G	cBOD5 (mg/l)	19	0	2.63	0.36	1.59	2.00	2.00	2.00	2.00	7.00
	OK121600-03-0090G	Chloride (mg/L)	20	0	25.40	2.45	10.95	9.41	14.98	23.00	36.75	42.23
	OK121600-03-0090G	Cond (uS/cm)	20	0	353.00	20.90	93.60	190.20	265.10	336.40	453.50	479.30
	OK121600-03-0090G	Discharge (cfs)	20	0	4.63	1.01	4.53	0.11	1.28	3.61	7.31	16.60
	OK121600-03-0090G	Enterococcus	12	0	55	18.7	64.9	10	12.5	35	62.5	220
	OK121600-03-0090G	E. coli	12	0	124.6	83.8	290.2	10	12.5	32.5	95	1040
	OK121600-03-0090G	Final DO (mg/l)	20	0	9.65	0.38	1.70	4.83	8.80	9.59	10.38	12.70
	OK121600-03-0090G	% DO Sat.	20	0	99.70	4.45	19.89	53.00	88.25	94.50	112.25	139.00
	OK121600-03-0090G	Nitrate (mg/L)	20	0	2.50	0.23	1.04	0.95	1.59	2.62	3.35	4.74
	OK121600-03-0090G	Nitrite (mg/L)	20	0	0.04	0.02	0.10	0.01	0.01	0.01	0.01	0.47
	OK121600-03-0090G	pH (SU)	17	3	7.51	0.09	0.37	6.86	7.25	7.52	7.79	8.27
	OK121600-03-0090G	Sulfate (mg/L)	20	0	17.72	1.71	7.65	9.15	12.84	14.46	23.58	33.37
	OK121600-03-0090G	Temp (°C)	20	0	15.82	0.70	3.12	12.00	12.90	15.00	18.10	21.90
	OK121600-03-0090G	TKN (mg/L)	20	0	0.14	0.01	0.04	0.10	0.11	0.11	0.18	0.21
	OK121600-03-0090G	TotDisSolids (mg/L)	20	0	206.60	10.80	48.20	123.00	167.00	212.30	255.10	273.00
	OK121600-03-0090G	TotHardness (mg/L)	20	0	142.97	6.77	30.28	99.10	113.95	141.03	172.25	192.80
	OK121600-03-0090G	Tot-N	20	0	2.68	0.23	1.03	1.15	1.74	2.81	3.48	4.86
OK121600-03-0090G	TotOrthoPhos (mg/L)	19	1	0.05	0.00	0.02	0.01	0.04	0.06	0.07	0.08	
OK121600-03-0090G	TotPhosphorus (mg/L)	19	1	0.07	0.00	0.02	0.04	0.06	0.07	0.08	0.12	
OK121600-03-0090G	TotSusSolids (mg/L)	20	0	9.75	0.25	1.12	5.00	10.00	10.00	10.00	10.00	
OK121600-03-0090G	Turb (NTU)	19	1	1.42	0.12	0.53	0.71	1.00	1.25	1.75	2.49	
Little Horse Creek	OK121600-03-0190A	Alkalinity (CaCO)	20	0	93.25	7.01	31.35	18.00	71.00	95.50	119.50	141.00
	OK121600-03-0190A	Ammonia (mg/L)	20	0	0.18	0.03	0.13	0.02	0.07	0.13	0.28	0.45
	OK121600-03-0190A	Avail-N	20	0	2.07	0.99	4.42	0.14	0.77	0.91	1.48	20.67
	OK121600-03-0190A	cBOD5 (mg/l)	20	0	3.89	0.46	2.05	2.00	2.25	3.20	4.40	9.00
	OK121600-03-0190A	Chloride (mg/L)	20	0	18.71	2.87	12.82	2.90	13.14	15.71	22.31	65.69
	OK121600-03-0190A	Cond (uS/cm)	20	0	359.30	32.30	144.30	121.40	277.20	354.10	418.20	713.00
	OK121600-03-0190A	Discharge (cfs)	19	1	5.89	4.98	21.71	0.00	0.00	0.00	1.71	95.23
	OK121600-03-0190A	Enterococcus	12	0	245.8	89.4	309.7	20	42.5	95	490	950
	OK121600-03-0190A	E. coli	12	0	348	210	727	5	11	35	475	2500
	OK121600-03-0190A	Final DO (mg/l)	20	0	7.32	0.75	3.36	2.83	5.29	6.59	9.84	14.60
	OK121600-03-0190A	% DO Sat.	20	0	69.50	4.92	21.99	35.00	55.50	69.00	85.25	112.00
	OK121600-03-0190A	Nitrite (mg/L)	20	0	0.62	0.54	2.40	0.01	0.01	0.01	0.12	10.80
	OK121600-03-0190A	pH (SU)	17	3	6.99	0.10	0.41	6.20	6.70	7.15	7.23	7.61
	OK121600-03-0190A	Sulfate (mg/L)	20	0	27.86	7.47	33.39	6.79	11.36	17.16	26.24	124.23
	OK121600-03-0190A	Temp (°C)	20	0	15.03	1.74	7.79	3.60	7.48	15.55	22.68	25.90
	OK121600-03-0190A	TKN (mg/L)	20	0	0.69	0.08	0.37	0.11	0.44	0.67	0.93	1.47
	OK121600-03-0190A	TotDisSolids (mg/L)	20	0	203.50	18.80	84.10	37.00	169.00	196.00	223.80	445.00
	OK121600-03-0190A	TotHardness (mg/L)	20	0	144.20	12.90	57.70	31.20	108.40	145.60	165.00	271.10
	OK121600-03-0190A	Tot-N	20	0	2.58	0.97	4.34	0.27	1.38	1.61	2.10	20.76
	OK121600-03-0190A	TotOrthoPhos (mg/L)	20	0	0.11	0.02	0.11	0.01	0.03	0.07	0.18	0.41
OK121600-03-0190A	TotPhosphorus (mg/L)	20	0	0.16	0.03	0.12	0.03	0.07	0.13	0.25	0.50	
OK121600-03-0190A	TotSusSolids (mg/L)	20	0	13.30	1.01	4.52	10.00	10.00	10.00	17.75	24.00	
OK121600-03-0190A	Turb (NTU)	19	1	14.59	2.95	12.85	1.81	4.10	10.70	21.40	46.90	
Sycamore Creek	OK121600-03-0510D	Alkalinity (CaCO)	20	0	104.75	3.68	16.45	76.00	91.50	105.00	117.75	134.00
	OK121600-03-0510D	Ammonia (mg/L)	20	0	0.02	0.00	0.01	0.02	0.02	0.02	0.02	0.06
	OK121600-03-0510D	Avail-N	20	0	1.94	0.12	0.53	0.98	1.61	1.92	2.28	3.02
	OK121600-03-0510D	cBOD5 (mg/l)	19	0	2.93	0.36	1.55	2.00	2.00	2.00	4.00	7.00
	OK121600-03-0510D	Chloride (mg/L)	20	0	8.50	0.44	1.96	5.17	7.30	7.78	10.89	12.10
	OK121600-03-0510D	Cond (uS/cm)	20	0	265.40	8.30	37.13	162.10	253.03	276.25	290.28	305.20
	OK121600-03-0510D	Discharge (cfs)	20	0	24.99	5.90	26.40	4.85	6.79	15.22	36.78	109.95
	OK121600-03-0510D	Enterococcus	12	0	168	133	461	10	20	30	63	1630
	OK121600-03-0510D	E. coli	12	0	78.8	49.2	170.3	5	10	20	47.5	610
	OK121600-03-0510D	Final DO (mg/l)	20	0	10.77	0.61	2.74	6.11	9.36	10.47	12.45	17.89
	OK121600-03-0510D	% DO Sat.	20	0	108.90	4.05	18.12	78.00	96.50	110.50	118.50	152.00
	OK121600-03-0510D	Nitrate (mg/L)	20	0	1.87	0.11	0.51	0.95	1.57	1.87	2.24	2.99











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

Site Name	WBID	Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum	
	OK520620-05-0160C	Cond (uS/cm)	20	0	819.40	43.60	195.00	8.90	823.80	863.00	878.30	944.00	
	OK520620-05-0160C	Discharge (cfs)	20	0	6.18	0.43	1.94	2.21	5.07	6.74	7.35	10.38	
	OK520620-05-0160C	<i>Enterococcus</i>	12	0	165.4	42.4	146.8	15	82.5	140	200	580	
	OK520620-05-0160C	<i>E. coli</i>	12	0	158.8	49.7	172.3	10	25	130	247.5	620	
	OK520620-05-0160C	Final DO (mg/l)	20	0	9.99	0.31	1.37	7.90	8.86	10.03	11.28	11.98	
	OK520620-05-0160C	% DO Sat.	20	0	104.25	1.29	5.76	95.00	99.00	104.50	108.00	115.00	
	OK520620-05-0160C	Nitrite (mg/L)	20	0	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02
	OK520620-05-0160C	pH (SU)	19	1	8.30	0.03	0.14	7.85	8.22	8.34	8.37	8.45	
	OK520620-05-0160C	Sulfate (mg/L)	20	0	30.26	1.29	5.76	21.31	26.92	28.42	33.51	48.20	
	OK520620-05-0160C	Temp (°C)	20	0	14.83	1.52	6.78	3.80	9.30	13.80	21.28	24.60	
	OK520620-05-0160C	TKN (mg/L)	20	0	0.33	0.04	0.16	0.11	0.22	0.28	0.34	0.73	
	OK520620-05-0160C	TotDisSolids (mg/L)	20	0	482.03	5.03	22.48	435.00	473.00	483.00	492.00	536.00	
	OK520620-05-0160C	TotHardness (mg/L)	20	0	232.60	13.20	59.10	0.30	223.90	236.90	261.30	287.60	
	OK520620-05-0160C	Tot-N	20	0	0.97	0.05	0.22	0.52	0.75	1.01	1.12	1.34	
	OK520620-05-0160C	TotOrthoPhos (mg/L)	19	1	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.04
	OK520620-05-0160C	TotPhosphorus (mg/L)	19	1	0.04	0.01	0.03	0.01	0.02	0.03	0.05	0.11	
	OK520620-05-0160C	TotSusSolids (mg/L)	20	0	27.05	4.29	19.20	10.00	11.25	21.00	34.50	73.00	
OK520620-05-0160C	Turb (NTU)	20	0	15.28	2.28	10.21	4.79	6.71	11.00	24.38	36.20		
Deer Creek	OK520620-06-0010F	Alkalinity (CaCO <sub>3</sub> )	20	0	167.15	5.66	25.31	114.00	151.00	173.00	188.50	199.00	
	OK520620-06-0010F	Ammonia (mg/L)	20	0	0.11	0.03	0.14	0.02	0.02	0.07	0.15	0.62	
	OK520620-06-0010F	Avail-N	20	0	1.82	0.14	0.64	0.84	1.21	1.97	2.19	2.86	
	OK520620-06-0010F	cBOD5 (mg/l)	20	0	3.79	0.48	2.12	2.00	2.00	3.00	5.00	9.00	
	OK520620-06-0010F	Chloride (mg/L)	20	0	117.00	97.70	436.90	11.40	17.30	20.30	22.50	1973.00	
	OK520620-06-0010F	Cond (uS/cm)	20	0	1200.00	50.20	224.40	682.00	1049.00	1212.50	1391.00	1560.00	
	OK520620-06-0010F	Discharge (cfs)	20	0	41.61	2.63	11.75	22.35	33.90	40.54	47.19	75.49	
	OK520620-06-0010F	<i>Enterococcus</i>	12	0	137.1	60.5	209.5	10	12.5	47.5	135	610	
	OK520620-06-0010F	<i>E. coli</i>	12	0	905	642	2223	10	13	53	623	7800	
	OK520620-06-0010F	Final DO (mg/l)	20	0	9.76	0.46	2.06	6.28	8.04	9.24	11.37	14.80	
	OK520620-06-0010F	% DO Sat.	20	0	108.65	2.75	12.29	82.00	100.25	107.00	117.00	137.00	
	OK520620-06-0010F	Nitrate (mg/L)	20	0	1.67	0.13	0.59	0.81	1.17	1.77	2.08	2.69	
	OK520620-06-0010F	Nitrite (mg/L)	20	0	0.04	0.02	0.11	0.01	0.01	0.01	0.01	0.46	
	OK520620-06-0010F	pH (SU)	19	1	8.19	0.04	0.18	7.67	8.20	8.25	8.29	8.39	
	OK520620-06-0010F	Sulfate (mg/L)	20	0	456.90	25.70	115.00	207.70	366.40	483.80	544.50	660.00	
	OK520620-06-0010F	Temp (°C)	20	0	19.66	2.11	9.45	5.70	10.65	21.65	26.40	35.40	
	OK520620-06-0010F	TKN (mg/L)	20	0	0.52	0.10	0.44	0.06	0.22	0.42	0.60	1.86	
	OK520620-06-0010F	TotDisSolids (mg/L)	20	0	893.70	43.20	193.30	468.00	731.80	941.00	1048.00	1181.00	
	OK520620-06-0010F	TotHardness (mg/L)	20	0	615.50	29.50	131.90	335.70	514.50	634.10	711.90	842.50	
	OK520620-06-0010F	Tot-N	20	0	2.23	0.16	0.71	1.27	1.55	2.17	2.81	3.84	
	OK520620-06-0010F	TotOrthoPhos (mg/L)	19	1	0.09	0.01	0.06	0.01	0.05	0.08	0.13	0.25	
	OK520620-06-0010F	TotPhosphorus (mg/L)	19	1	0.15	0.02	0.11	0.04	0.09	0.11	0.21	0.51	
	OK520620-06-0010F	TotSusSolids (mg/L)	20	0	60.00	24.80	111.10	10.00	15.50	26.50	53.00	513.00	
OK520620-06-0010F	Turb (NTU)	20	0	39.70	21.30	95.20	6.40	8.10	11.60	21.00	431.00		

























Appendix B. Raw habitat data.

WBID	SiteName	SAMPLEID	Date	Direction	ChanSin	Distance	DepthLgt	DepthCnt	DepthRqt	WidthWater	WidthBank	SubSiltClay	SubSand	SubGravel	SubCobble	SubBoulder	SubBedrock	SubPOM	SubHardPanCaly	RifleHabitat	PoolHabitat	RunHabitat	DryHabitat	CoverUnderCut	CoverLgtWtdDeb	CoverSmWtdDeb	CoverRoots	CoverBdrkLedge	CoverSubAqVeg	CoverEmergAqVeg	CoverTerVeg	CoverCobbBld	Embeddedness	CanopyCover	PointBar	ScouringDeposit	BankVegCover	DomVegType	PercErodeLeft	PercErodeRight	ErodeHtLeft	ErodeHtRight	LeftSlope	RightSlope	LeftWidth	RightWidth	LeftCondition	RightCondition
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	60	0.1	0.1	0.2	16	45	5	90	0	0	0	0	5	0			X		0	1	0.5	0	0	0	0	0	0	0	X	X	10	100	0	4	0	45	90	0	5	1C			
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	80	0.1	0	0.3	13	40	5	60	25	10	0	0	0	0	X		X		0	2.5	2.5	0	0	0	0	0	8	10	5	X	X	30	M	100	0	4	0	60	80	0	5	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	100	0.2	0.1	0.1	10	30	15	80	0	0	0	0	5	0			X		0	1.5	1	0	0	0	0	0	0	10	X	X	20	M	0	50	0	4	65	80	10	20	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	120	0.1	0.1	0.1	17	23	10	85	0	0	0	0	5	0			X		0	0.5	1	0	0	0	0	0	0	0	5		30	M	0	20	0	2	50	80	50	20	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	140	0.1	0.1	0.1	17	35	15	65	10	5	0	0	5	0			X		0	0	0.5	0	0	0	0	3	15	5	X	X	60	M	0	75	0	2	50	80	50	20	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	160	0.1	0	0.1	13	32	10	55	25	0	0	0	10	0	X		X		0	1.5	1.5	0	0	0.5	0	5	10	10	X	X	55	M	0	0	0	0	60	80	50	20	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	180	0.1	0	0.1	10	25	5	80	15	0	0	0	0	0	X		X		0	0.5	1	0.5	0	0	0	2	30	0	X	X	70	M	0	0	0	0	60	70	50	20	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	200	0.1	0.1	0.1	8	22	20	80	0	0	0	0	0	0			X		0	0.5	1.5	0.5	0	0	0	0	0	0	5		60	M	0	0	0	0	45	70	50	20	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	220	0.1	0.1	0.1	17	21	10	80	0	0	0	0	10	0			X		0	0.5	1	0.5	0	0	0	0	0	0	0	X	X	60	M	5	0	0.5	0	60	75	50	20	1C	1C
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	240	0.1	0.1	0.1	26	31	5	85	0	0	0	0	10	0			X		0	0.5	1	0.5	0	0	0	0	0	0	0	X	X	55	M	100	0	0.5	0	70	75	50	15	1C	1C
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	260	0.1	0.1	0.1	15	30	5	85	5	0	0	0	5	0			X		0	0.5	0.5	0	0	0	0	0	0	0	X	X	50	M	100	0	1	0	80	50	50	15	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	280	0.1	0.1	0.1	15	28	5	90	0	0	0	0	5	0			X		0	0.5	0.5	0.5	0	0	0	0	1	X	X	60	M	80	5	1	0.5	80	55	50	50	1C	1C		
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	300	0.2	0.1	0.1	20	26	3	90	0	0	0	0	7	0	X	X			0	0.5	0.5	0.5	0	0	0	0	0	0	X	X	50	M	10	90	0.5	1.5	70	90	50	25	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	320	0.1	0.1	0.1	17	25	10	80	0	0	0	0	10	0			X		0	0.5	0.5	0	0	0	0	0	0	0	X	X	45	M	100	1	2	80	90	50	10	1C	1C		
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	340	0.1	0.3	0.5	10	35	5	70	20	0	0	0	5	0	X	X			0	0	1	0	0	0	0	1	0	0	X	X	50	M	0	50	0	0.5	60	60	50	25	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	360	0.1	0.1	0.1	15	35	7	85	5	0	0	0	3	0			X		0	0.5	0.5	0	0	0	0	0.5	0	0	X	X	60	M	0	0	0	0	65	40	50	50	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	380	0.2	0.2	0.3	13	40	5	85	2	0	0	0	3	0	X	X			0	1	0.5	0	0	0	0	3	0	0	X	X	60	M	0	0	0	0	45	45	50	50	1C	1C	
OK520620-06-0010F	Deer Creek	23902	07-Aug-01	Downstream	1.28	400	0.3	0.2	0.2	14	45	15	80	0	0	0	0	5	0	X	X			0	1.5	0.5	0	0	0	0.5	0.5	0	0	X	X	50	M	0	0	0	0	45	45	50	50	1C	1C	



## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	3	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	2	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	1	Lepisosteidae	Lepisosteus oculatus	Spotted gar	3.5	2.7				X		
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	10	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2						X
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	19	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	7	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	6	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	2	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	10	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	7	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	3	Catostomidae	Moxostoma erythrurum	Golden redhorse	2.3	2	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	9	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	1	Ictaluridae	Noturus nocturnus	Freckeled madtom	2.5	1.8	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	1	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	11	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	91	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	13	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	1	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	15	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	35	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	4	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	4	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	1	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	3	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Delaware Creek	OK121300-01-0150H	Tulsa	14-Sep-01	1	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	391	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	58	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	1	Lepisosteidae	Lepisosteus osseus	Longnose gar	4	3.7				X		
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	188	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2						X
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	1113	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	16	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	5	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	40	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	2	Catostomidae	Cariodes carpio	River carsucker	3.5	3.5			X			
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	28	Catostomidae	Moxostoma erythrurum	Golden redhorse	2.3	2	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	23	Ictaluridae	Noturus nocturnus	Freckeled madtom	2.5	1.8	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	32	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	8	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	34	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	8	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	3	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	113	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	28	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	4	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	3	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	5	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	15	Percidae	Percina caprodes	Logperch	2.3	2.3	X					

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Bird Creek	OK121300-02-0010C	Osage	10-Sep-01	16	Percidae	Percina phoxocephala	Slenderhead darter	2.2	1.8	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	3	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	2	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	2	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	84	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	1	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	29	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	4	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	3	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	3	Fundulidae	Fundulus olivaceus	Blackspotted topminnow	2.7	2.3	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	3	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	13	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	1	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	5	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Hominy Creek: downstream	OK121300-04-0010C	Tulsa	11-Sep-01	4	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	1	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3			X			X
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	1	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	182	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	313	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	5	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	21	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	82	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	1	Sciaenidae	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X					X
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	15	Fundulidae	Fundulus olivaceus	Blackspotted topminnow	2.7	2.3	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	19	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	2	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	5	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	8	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	127	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	11	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	1	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	6	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Hominy Creek: upstream	OK121300-04-0280G	Osage	04-Sep-01	2	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	4	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	34	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	14	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	39	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	9	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	5	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	5	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	2	Catostomidae	Carpodes carpio	River carpsucker	3.5	3.5			X			
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	2	Sciaenidae	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X					X
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	1	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	3	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	5	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	30	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	4	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	15	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	6	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	17	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	2	Centrarchidae	Lepomis microlophus	Redear sunfish	3	2.87	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	4	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	6	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	1	Centrarchidae	Pomoxis nigromaculatus	Black crappie	3.2	2.8				X		
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	4	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	1	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	1	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Curl Creek	OK121400-01-0270G	Washington	30-Aug-01	2	Percidae	Percina phoxocephala	Slenderhead darter	2.2	1.8	X					
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	2	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	7	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	59	Cyprinidae	Camptostoma oligolepis	Largescale stoneroller	1.5	1.5					X	
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	98	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	4	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	10	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	1	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	5	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	2	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	10	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	9	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Hogshooter Creek	OK121400-01-0300D	Washington	30-Aug-01	3	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	23	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	1	Sciaenidae	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X					X
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	2	Lepisosteidae	Lepisosteus platostomus	Shortnose gar	3.8	3.3				X		
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	2	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	59	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	1	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	39	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	21	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	1	Catostomidae	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	6	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	3	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	4	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	2	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	2	Percichthyidae	Morone chrysops	White bass	3.3	3				X		
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	2	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	5	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Little Caney River	OK121400-02-0140H	Osage	31-Aug-01	1	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	60	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Lepisosteidae	Lepisosteus oculatus	Spotted gar	3.5	2.7			X			
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	5	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	4	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	286	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecimenCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	23	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	96	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Catostomidae	Cariodes carpio	River carsucker	3.5	3.5			X			
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	4	Catostomidae	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Catostomidae	Ictiobus cyprinellus	Largemouth buffalo	3.2	3	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Catostomidae	Moxostoma erythrurum	Golden redhorse	2.3	2	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	3	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	27	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	135	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	2	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	13	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	18	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	59	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	13	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	7	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	2	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Mission Creek	OK121400-02-0190B	Osage	05-Sep-01	1	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	1	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	9	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	1	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	84	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	46	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	20	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	35	Cyprinidae	Notropis boops	Bigeye shiner	2	1.5	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	11	Cyprinidae	Notropis rubellus	Rosyface shiner	1.6	1.6	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	74	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	11	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	2	Catostomidae	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	1	Catostomidae	Moxostoma duquesnei	Black redhorse	1.8	2	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	9	Catostomidae	Moxostoma erythrurum	Golden redhorse	2.3	2	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	5	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	2	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	6	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	226	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	6	Percichthyidae	Morone chrysops	White bass	3.3	3				X		
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	34	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	2	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	42	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	18	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	1	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	9	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	7	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	2	Percidae	Percina copelandi	Channel darter	1.8	1.7	X					
Buck Creek	OK121400-03-0170C	Osage	04-Sep-01	1	Percidae	Percina phoxocephala	Slenderhead darter	2.2	1.8	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	2	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	11	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	1	Lepisosteidae	Lepisosteus osseus	Longnose gar	4	3.7				X		
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	1	Lepisosteidae	Lepisosteus platostomus	Shortnose gar	3.8	3.3				X		
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	94	Cyprinidae	Campostoma anomalum	Central stoneroller	2.2	2						X
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	74	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	9	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	48	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	21	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	2	Catostomidae	Moxostoma	Redhorse sucker	2.1	2						
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	14	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	1	Fundulidae	Fundulus olivaceus	Blackspotted topminnow	2.7	2.3	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	47	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	5	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	5	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	29	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	7	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	2	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	1	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	3	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Sand Creek	OK121400-04-0010F	Osage	10-Sep-01	1	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	1	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	159	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	41	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	643	Cyprinidae	Campostoma anomalum	Central stoneroller	2.2	2						X
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	50	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	304	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	7	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	3	Catostomidae	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	4	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	1	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	1	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	281	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	20	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	98	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	2	Percichthyidae	Morone chrysops	White bass	3.3	3				X		
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	20	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	10	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	42	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	79	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	36	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	5	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	12	Centrarchidae	Pomoxis nigromaculatus	Black crappie	3.2	2.8				X		
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	6	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Bull Creek	OK121500-02-0090D	Wagoner	27-Aug-01	5	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	3	Ictaluridae	Ameiurus melas	Black bullhead catfish	4	4	X					X
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	16	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	112	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	16	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2						X
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	53	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	2	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	10	Cyprinidae	Notemigonus crysoleucas	Golden shiner	3.8	3.8			X			
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	2	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	2	Catostomidae	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	1	Catostomidae	<b>Ictiobus bubalus</b>	<b>Smallmouth buffalo</b>	3.2	3.3	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	1	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	9	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	35	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	1	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	15	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	47	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	54	Percichthyidae	Morone chrysops	White bass	3.3	3				X		
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	20	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	27	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	44	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	57	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	2	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	4	Centrarchidae	Pomoxis nigromaculatus	Black crappie	3.2	2.8				X		
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	1	Percidae	Etheostoma gracile	Slough darter	2.6	1.6	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	2	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Dog Creek	OK121500-02-0360D	Rogers	31-Jul-02	2	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	1	Ictaluridae	Ameiurus melas	Black bullhead catfish	4	4	X					X
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	78	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	34	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	413	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2						X
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	161	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	3	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	7	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	6	Cyprinidae	Notemigonus crysoleucas	Golden shiner	3.8	3.8			X			
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	12	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	24	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	4	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	3	Catostomidae	Moxostoma	Redhorse sucker	2.1	2						
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	3	Ictaluridae	Noturus nocturnus	Freckeled madtom	2.5	1.8	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	13	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	10	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	65	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	1	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	12	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	5	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	71	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	3	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	34	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	4	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
California Creek	OK121510-02-0050C	Nowata	03-Aug-01	3	Percidae	Percina caprodes	Logperch	2.3	2.3	X					

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	1	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	4	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	166	Cyprinidae	Campostoma anomalum	Central stoneroller	2.2	2					X	
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	34	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	19	Cyprinidae	<b>Cyprinella lutrensis</b>	<b>Red shiner</b>	4	3.7			X			
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	12	Cyprinidae	Cyprinella whipplei	Steelcolor shiner	2	1.8	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	7	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	18	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	2	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	105	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	7	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	2	Catostomidae	Carpoides carpio	River carpsucker	3.5	3.5			X			
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	15	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	18	Catostomidae	Moxostoma	Redhorse sucker	2.1	2						
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	21	Catostomidae	Moxostoma erythrurum	Golden redhorse	2.3	2	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	93	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	2	Sciaenidae	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X					X
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	5	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	12	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	1	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	255	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	34	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	12	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	16	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	1	Centrarchidae	Lepomis microlophus	Redear sunfish	3	2.87	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	10	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	10	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	2	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Big Creek	OK121510-03-0010D	Nowata	13-Sep-01	21	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	1	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	69	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	188	Cyprinidae	Campostoma anomalum	Central stoneroller	2.2	2					X	
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	12	Cyprinidae	Luxilus cardinalis	Cardinal shiner	1	1	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	74	Cyprinidae	Notropis boops	Bigeye shiner	2	1.5	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	7	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	11	Ictaluridae	Noturus exilis	Slender madtom	2	1	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	1	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	3	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	31	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	38	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	23	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	54	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	40	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	26	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	17	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Ranger Creek	OK121600-01-0060D	Cherokee	01-Aug-01	52	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	2	Cyprinidae	Semotilus atromaculatus	Creek chub	2	2						X

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	17	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	933	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2						X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	831	Cyprinidae	Luxilus cardinalis	Cardinal shiner	1	1	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	4	Cyprinidae	Nocomis asper	Redspot chub	1.5	1.5	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	112	Cyprinidae	Notropis boops	Bigeye shiner	2	1.5	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	191	Cyprinidae	Notropis nubilus	Ozark minnow	1.6	1.2						X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	17	Cyprinidae	Notropis rubellus	Rosyface shiner	1.6	1.6	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	15	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	2	Centrarchidae	Ambloplites ariommus	Shadow bass	2	1.5	X					X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	3	Catostomidae	Erimyzon oblongus	Creek chubsucker	2	1.5	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	52	Catostomidae	Hypentelium nigricans	Northern hog sucker	1.3	1	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	4	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	44	Catostomidae	Moxostoma	Redhorse sucker	2.1	2						
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	6	Catostomidae	Moxostoma duquesnei	Black redhorse	1.8	2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	1	Catostomidae	Moxostoma erythrurum	Golden redhorse	2.3	2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	106	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	3	Ictaluridae	Noturus exilis	Slender madtom	2	1	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	30	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	2	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	1	Cyprinidae	Semotilus atromaculatus	Creek chub	2	2						X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	4	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	3	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3					X	
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	5	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	169	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	7	Centrarchidae	Micropterus dolomieu	Smallmouth bass	1.5	1.5					X	
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	4	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5					X	
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	4	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2					X	
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	1	Percidae	Etheostoma blennioides	Greenside darter	1.6	1.4	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	8	Percidae	Etheostoma flabellare	Fantail darter	2	1.3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	7	Percidae	Etheostoma punctulatum	Stippled darter	1.7	1.3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	1	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	11	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	01-Aug-01	1	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	666	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2						X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	425	Cyprinidae	Luxilus cardinalis	Cardinal shiner	1	1	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	1	Cyprinidae	Notropis amnis	Pallid shiner	1.7	1.3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	71	Cyprinidae	Notropis boops	Bigeye shiner	2	1.5	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	55	Cyprinidae	Notropis nubilus	Ozark minnow	1.6	1.2						X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	12	Cyprinidae	Notropis rubellus	Rosyface shiner	1.6	1.6	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	3	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	1	Centrarchidae	Ambloplites ariommus	Shadow bass	2	1.5	X					X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	5	Catostomidae	Hypentelium nigricans	Northern hog sucker	1.3	1	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	5	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	5	Catostomidae	Moxostoma	Redhorse sucker	2.1	2						
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	2	Catostomidae	Moxostoma duquesnei	Black redhorse	1.8	2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	41	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	56	Ictaluridae	Noturus exilis	Slender madtom	2	1	X					



## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	7	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	3	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	3	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	3	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	43	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	1	Centrarchidae	Micropterus dolomieu	Smallmouth bass	1.5	1.5				X		
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	2	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	3	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	2	Percidae	Etheostoma biennioides	Greenside darter	1.6	1.4	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	1	Percidae	Etheostoma flabellare	Fantail darter	2	1.3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	5	Percidae	Etheostoma punctulatum	Stippled darter	1.7	1.3	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	52	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	6	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Fourteenmile Creek	OK121600-01-0100G	Cherokee	08-Nov-01	5	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	1	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	1	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	11	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	1	Cyprinidae	Campostoma anomalum	Central stoneroller	2.2	2					X	
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	8	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	9	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	3	Cyprinidae	Notemigonus crysoleucas	Golden shiner	3.8	3.8			X			
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	9	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	8	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	3	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	12	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	1	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	26	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	24	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	156	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	9	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	6	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	7	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	31	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	2	Centrarchidae	Lepomis microlophus	Redear sunfish	3	2.87	X					
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	16	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Chouteau Creek	OK121600-01-0430M	Mayes	17-Aug-01	16	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	17	Cyprinidae	Semotilus atromaculatus	Creek chub	2	2						X
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	30	Catostomidae	Catostomus commersoni	White sucker	1.8	1.6	X					X
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	528	Cyprinidae	Campostoma anomalum	Central stoneroller	2.2	2					X	
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	294	Cyprinidae	Luxilus cardinalis	Cardinal shiner	1	1	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	24	Cyprinidae	Nocomis asper	Redspot chub	1.5	1.5	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	6	Cyprinidae	Notropis nubilis	Ozark minnow	1.6	1.2					X	
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	8	Centrarchidae	Ambloplites ariommus	Shadow bass	2	1.5	X					X
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	1	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	9	Catostomidae	Hypentelium nigricans	Northern hog sucker	1.3	1	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	2	Ictaluridae	Noturus exilis	Slender madtom	2	1	X					

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SiteName	WBID	County	Date	TotalSpecimenCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	1	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	12	Cottidae	Cottus carolinae	Banded sculpin	1	1	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	4	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	1	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	4	Centrarchidae	Micropterus dolomieu	Smallmouth bass	1.5	1.5				X		
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	1	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	1	Percidae	Etheostoma blennioides	Greenside darter	1.6	1.4	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	84	Percidae	Etheostoma flabellare	Fantail darter	2	1.3	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	18	Percidae	Etheostoma punctulatum	Stippled darter	1.7	1.3	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	48	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Saline Creek	OK121600-02-0030D	Mayes	02-Aug-01	2	Percidae	Percina caprodes	Loggerperch	2.3	2.3	X					
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	1	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	36	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	60	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	8	Cyprinidae	Phoxinus erythrogaster	Southern redbelly dace	1.2	1.2					X	
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	33	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	166	Cottidae	Cottus carolinae	Banded sculpin	1	1	X					
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	8	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	11	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	2	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	3	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	21	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	20	Percidae	Etheostoma punctulatum	Stippled darter	1.7	1.3	X					
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	68	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Drowning Creek	OK121600-03-0090G	Delaware	08-Aug-01	1	Percidae	Percina caprodes	Loggerperch	2.3	2.3	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	2	Ictaluridae	Ameiurus melas	Black bullhead catfish	4	4	X					X
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	1	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	55	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	6	Cyprinidae	Cyprinella whipplei	Steelcolor shiner	2	1.8	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	122	Cyprinidae	Luxilus cardinalis	Cardinal shiner	1	1	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	1	Cyprinidae	Notropis nubilus	Ozark minnow	1.6	1.2					X	
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	74	Cyprinidae	Notropis rubellus	Rosyface shiner	1.6	1.6	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	1	Catostomidae	Cariodes carpio	River carsucker	3.5	3.5			X			
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	24	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	16	Ictaluridae	Noturus exilis	Slender madtom	2	1	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	1	Fundulidae	Fundulus catenatus	Northern studfish	1.8	1.6	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	1	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	7	Cottidae	Cottus carolinae	Banded sculpin	1	1	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	4	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	3	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	10	Centrarchidae	Micropterus dolomieu	Smallmouth bass	1.5	1.5				X		
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	4	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	52	Percidae	Etheostoma flabellare	Fantail darter	2	1.3	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	3	Percidae	Etheostoma punctulatum	Stippled darter	1.7	1.3	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	29	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Little Horse Creek	OK121600-03-0190A	Ottawa	07-Aug-01	11	Percidae	Percina caprodes	Loggerperch	2.3	2.3	X					

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SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	2	Cyprinidae	Semotilus atromaculatus	Creek chub	2	2						X
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	6	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	360	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	549	Cyprinidae	Luxilus cardinalis	Cardinal shiner	1	1	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	16	Cyprinidae	Nocomis asper	Redspot chub	1.5	1.5	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	1	Cyprinidae	Notropis nubilus	Ozark minnow	1.6	1.2					X	
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	86	Cyprinidae	Notropis rubellus	Rosyface shiner	1.6	1.6	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	4	Centrarchidae	Ambloplites ariommus	Shadow bass	2	1.5	X					X
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	8	Catostomidae	Hypentelium nigricans	Northern hog sucker	1.3	1	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	3	Catostomidae	Moxostoma duquesnei	Black redhorse	1.8	2	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	22	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	30	Ictaluridae	Noturus exilis	Slender madtom	2	1	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	3	Fundulidae	Fundulus catenatus	Northern studfish	1.8	1.6	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	1	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	24	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	4	Cottidae	Cottus caroliniae	Banded sculpin	1	1	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	15	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	13	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	12	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	41	Centrarchidae	Micropterus dolomieu	Smallmouth bass	1.5	1.5				X		
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	1	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	2	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	10	Percidae	Etheostoma flabellare	Fantail darter	2	1.3	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	6	Percidae	Etheostoma punctulatum	Stippled darter	1.7	1.3	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	38	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Sycamore Creek	OK121600-03-0510D	Ottawa	25-Oct-01	4	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	1	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	4	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	2	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	5	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	19	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	14	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	2	Cyprinidae	Notemigonus crysoleucas	Golden shiner	3.8	3.8			X			
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	1	Catostomidae	Ictiobus bubalus	Smallmouth buffalo	3.2	3.3	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	40	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	13	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	25	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	10	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	1	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	2	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	11	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Tar Creek	OK121600-04-0060D	Ottawa	07-Aug-01	10	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	3	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	125	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	1	Lepisosteidae	Lepisosteus osseus	Longnose gar	4	3.7				X		
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	2	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	235	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	14	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	20	Cyprinidae	Notropis buchanani	Ghost shiner	2.6	2.6	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	25	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	20	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	21	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	2	Catostomidae	Moxostoma	Redhorse sucker	2.1	2						
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	13	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	1	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	48	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	2	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	12	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	219	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	17	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	23	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	128	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	129	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	6	Percidae	Etheostoma flabellare	Fantail darter	2	1.3	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	14	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Little Cabin Creek	OK121600-06-0080C	Craig	29-Aug-01	2	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	3	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	85	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	64	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	44	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	10	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	42	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	11	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	7	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	1	Catostomidae	Moxostoma	Redhorse sucker	2.1	2						
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	6	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	6	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	8	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	44	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	3	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	15	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	1	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	33	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	9	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	3	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	6	Percidae	Etheostoma flabellare	Fantail darter	2	1.3	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	10	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	9	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	4	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Big Cabin Creek	OK121600-06-0220I	Craig	13-Sep-01	1	Percidae	Percina phoxocephala	Slenderhead darter	2.2	1.8	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	32	Ictaluridae	Ameiurus melas	Black bullhead catfish	4	4	X					X
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	1	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	418	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	571	Cyprinidae	Luxilus cardinalis	Cardinal shiner	1	1	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	34	Cyprinidae	Nocomis asper	Redspot chub	1.5	1.5	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	2	Cyprinidae	Notemigonus crysoleucas	Golden shiner	3.8	3.8			X			
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	12	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	21	Catostomidae	Hypentelium nigricans	Northern hog sucker	1.3	1	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	6	Catostomidae	Moxostoma duquesnei	Black redhorse	1.8	2	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	14	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	48	Centrarchidae	Ambloplites ariommus	Shadow bass	2	1.5	X					X
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	78	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	64	Fundulidae	Fundulus catenatus	Northern studfish	1.8	1.6	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	3	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	9	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	27	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	72	Cottidae	Cottus carolinae	Banded sculpin	1	1	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	6	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	34	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	77	Centrarchidae	Micropterus dolomieu	Smallmouth bass	1.5	1.5				X		
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	21	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	1	Percidae	Etheostoma blennioides	Greenside darter	1.6	1.4	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	3	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Fivemile Creek	OK121600-07-0110G	Ottawa	07-Aug-01	3	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	4	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	3	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Lepisosteidae	Lepisosteus oculatus	Spotted gar	3.5	2.7				X		
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	139	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	165	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Cyprinidae	Notemigonus crysoleucas	Golden shiner	3.8	3.8			X			
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	30	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	6	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	7	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	7	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Sciaenidae	Aplodinotus grunniens	Freshwater drum	3.2	3.2	X					X
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	6	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	17	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	11	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	10	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	5	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	70	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	3	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	7	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					

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SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Pryor Creek: Hwy 20	OK121610-00-0050D	Mayes	06-Aug-01	1	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	3	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	14	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	18	Cyprinidae	Camptostoma anomalum	Central stoneroller	2.2	2					X	
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	168	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	4	Cyprinidae	Lythrurus umbratilis	Redfin shiner	2	2	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	19	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	18	Cyprinidae	Pimephales notatus	Bluntnose minnow	3	2.7			X			
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	26	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	16	Catostomidae	Minytrema melanops	Spotted sucker	2	1.5	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	1	Ictaluridae	Noturus nocturnus	Freckled madtom	2.5	1.8	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	2	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	5	Fundulidae	Fundulus notatus	Blackstripe topminnow	2.7	2.3	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	18	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	50	Atherinidae	Labidesthes sicculus	Brook silverside	2.7	2	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	2	Centrarchidae	Lepomis gulosus	Warmouth sunfish	3.2	3				X		
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	3	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	6	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	143	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	10	Centrarchidae	Micropterus punctulatus	Spotted bass	2.3	2.5				X		
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	16	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	1	Percidae	Etheostoma spectabile	Orangethroat darter	2.4	2	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	7	Percidae	Etheostoma whipplei	Redfin darter	2	1.8	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	1	Percidae	Percina caprodes	Logperch	2.3	2.3	X					
Pryor Creek: Hwy 69	OK121610-00-0050M	Mayes	06-Aug-01	8	Percidae	Percina phoxocephala	Slenderhead darter	2.2	1.8	X					
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	1	Ictaluridae	Ameiurus melas	Black bullhead catfish	4	4	X					X
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	8	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	661	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	137	Cyprinidae	Notropis stramineus	Sand shiner	2.7	2.5	X					
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	6	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	37	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	5	Catostomidae	Carpiodes carpio	River carsucker	3.5	3.5			X			
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	6	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	18	Fundulidae	Fundulus zebrinus	Plains killifish	3.3	3.2	X					
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	6	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	36	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Buggy Creek	OK520610-02-0120C	Grady	07-Aug-01	26	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	3	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	15	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	1	Lepisosteidae	Lepisosteus oculatus	Spotted gar	3.5	2.7				X		
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	1	Lepisosteidae	Lepisosteus osseus	Longnose gar	4	3.7				X		
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	3	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	1681	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	18	Cyprinidae	Hybognathus placitus	Plains minnow	3.6	3					X	
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	59	Cyprinidae	Notropis atherinoides	Emerald shiner	3.2	3.2	X					

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	212	Cyprinidae	Notropis stramineus	Sand shiner	2.7	2.5	X					
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	5	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	157	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	2	Catostomidae	Cariodes carpio	River carpsucker	3.5	3.5			X			
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	18	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	11	Ictaluridae	Pylodictis olivaris	Flathead catfish	3.3	3				X		
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	13	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	12	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	12	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	20	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	1	Centrarchidae	Lepomis microlophus	Redear sunfish	3	2.87	X					
Walnut Creek	OK520610-03-0010C	McClain	16-Aug-01	24	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2					X	
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	757	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	1	Cyprinidae	Cyprinus carpio	Common carp	4	3.8			X			
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	17	Cyprinidae	Hybognathus placitus	Plains minnow	3.6	3					X	
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	55	Cyprinidae	Notropis stramineus	Sand shiner	2.7	2.5	X					
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	1	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	7	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	1	Fundulidae	Fundulus zebrinus	Plains killifish	3.3	3.2	X					
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	1	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	1	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	1	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	1	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Trail Creek	OK520620-02-0090G	Dewey	07-Jun-01	2	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	325	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	37	Cyprinidae	Hybognathus placitus	Plains minnow	3.6	3					X	
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	3	Cyprinidae	Notropis atherinoides	Emerald shiner	3.2	3.2	X					
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	33	Cyprinidae	Notropis girardi	Arkansas River shiner	1.8	1.4	X					
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	167	Cyprinidae	Notropis stramineus	Sand shiner	2.7	2.5	X					
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	6	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	6	Cyprinidae	Pimephales promelas	Fathead minnow	3.7	3.5			X			
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	3	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	4	Cyprinodontidae	Cyprinodon rubrofluviatilis	Red River pupfish	2.6	2	X					
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	160	Fundulidae	Fundulus zebrinus	Plains killifish	3.3	3.2	X					
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	96	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	16	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	2	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Lone Creek	OK520620-03-0020C	Dewey	08-Aug-01	3	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		
Hackberry Creek	OK520620-04-0050D	Ellis	08-Aug-01	84	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Hackberry Creek	OK520620-04-0050D	Ellis	08-Aug-01	63	Cyprinidae	Notropis atherinoides	Emerald shiner	3.2	3.2	X					
Hackberry Creek	OK520620-04-0050D	Ellis	08-Aug-01	57	Cyprinidae	Notropis stramineus	Sand shiner	2.7	2.5	X					
Hackberry Creek	OK520620-04-0050D	Ellis	08-Aug-01	7	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Hackberry Creek	OK520620-04-0050D	Ellis	08-Aug-01	49	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Hackberry Creek	OK520620-04-0050D	Ellis	08-Aug-01	5	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	23	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	10	Cyprinidae	Notropis stramineus	Sand shiner	2.7	2.5	X					
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	40	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					

## Appendix C. Fish collection data.

SiteName	WBID	County	Date	TotalSpecime nCount	Family	Species	VernName	WQMean	HabMean	Insectivor	Planktivor	Omnivore	Piscivore	Herbivore	Generalist
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	3	Ictaluridae	Ameiurus natalis	Yellow bullhead catfish	3.6	3.2	X					X
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	2	Fundulidae	Fundulus zebrinus	Plains killifish	3.3	3.2	X					
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	8	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	2	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	6	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	1	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Commission Creek	OK520620-05-0160C	Ellis	08-Aug-01	22	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	1	Lepisosteidae	Lepisosteus osseus	Longnose gar	4	3.7				X		
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	18	Clupeidae	Dorosoma cepedianum	Gizzard shad	3.3	3.5			X			
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	2472	Cyprinidae	Cyprinella lutrensis	Red shiner	4	3.7			X			
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	34	Cyprinidae	Hybognathus placitus	Plains minnow	3.6	3					X	
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	322	Cyprinidae	Notropis atherinoides	Emerald shiner	3.2	3.2	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	59	Cyprinidae	Notropis girardi	Arkansas River shiner	1.8	1.4	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	274	Cyprinidae	Notropis stramineus	Sand shiner	2.7	2.5	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	18	Cyprinidae	Phenacobius mirabilis	Suckermouth minnow	2.3	1.3	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	70	Cyprinidae	Pimephales promelas	Fathead minnow	3.7	3.5			X			
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	83	Cyprinidae	Pimephales vigilax	Bullhead minnow	3.6	3.4			X			
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	2	Catostomidae	Cariodes carpio	River carpsucker	3.5	3.5			X			
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	2	Catostomidae	<b>Cariodes carpio</b>	<b>River carpsucker</b>	3.5	3.4			X			
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	28	Ictaluridae	Ameiurus melas	Black bullhead catfish	4	4	X					X
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	25	Ictaluridae	Ictalurus punctatus	Channel catfish	3.2	3.3				X		X
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	19	Fundulidae	Fundulus zebrinus	Plains killifish	3.3	3.2	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	7	Poeciliidae	Gambusia affinis	Mosquitofish	4	4	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	1	Centrarchidae	Lepomis cyanellus	Green sunfish	4	4	X					X
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	8	Centrarchidae	Lepomis humilis	Orangespotted sunfish	3.5	3.3	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	1	Centrarchidae	Lepomis macrochirus	Bluegill sunfish	3.2	3.2	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	6	Centrarchidae	Lepomis megalotis	Longear sunfish	3.3	3	X					
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	1	Centrarchidae	Micropterus salmoides	Largemouth bass	3.2	3.2				X		
Deer Creek	OK520620-06-0010F	Caddo	07-Aug-01	2	Centrarchidae	Pomoxis annularis	White crappie	3.4	3.2				X		



## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		24	8		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		2			62.00	ARTHROPODA	Insecta	Coleoptera	Gyrinidae	Dineutus
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100			1		73.00	ARTHROPODA	Insecta	Coleoptera	Hydrochidae	Hydrochus
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100			1		87.00	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		1			87.50	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Atrichopogon
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		21	31		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		5	2		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		19	9		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		15	7		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		5	1		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		2			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		2			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		2			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		1			153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100			1		166.50	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Chauliodes
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100			1		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		1	1		213.00	ARTHROPODA	Insecta	Coleoptera	Perilidae	Neoperla
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		22	24		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		1	1		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-01-0150H	Delaware Creek	16-Jul-02	25502	100	100		50	100		4	1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121300-01-0150H	Delaware Creek	27-Jan-03	26650											NO FLOW				
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	1			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50			7	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	3	7		45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	5			57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	12			58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcyloepus
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	14	2	3	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	33	30	4	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	2			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	1	25	12	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	3		2	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	5	2		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	1			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	2	4	8	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50			3	159.00	ARTHROPODA	Insecta	Hemiptera	Velidae	Rhagovelia
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	5	5		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	1	10		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50			8	180.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Enallagma
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	1	2		195.00	ARTHROPODA	Insecta	Odonata	Macromiinae	Macromia
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	1	1		225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	10	5	7	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	11	5		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50		1		239.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Oecetis

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCo	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	2			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50			1	262.00	MOLLUSCA	Gastropoda	Basommatophora	Ancylidae	Ferrissia
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50			6	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	2	4	55	275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	3		3	277.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Eupera
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50	13		2	279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121300-02-0010C	Bird Creek	03-Aug-01	23898	50	100	100	3.13	50	50			1	285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	3		1	14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1	1	8	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25		2		45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25		3		57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	4			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	4	3	1	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	17	55	87	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladinae
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	3	2		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	3	1	2	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	13	28	13	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25			1	122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1	1		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	9	1	3	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			146.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25		2	2	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25		1		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25		1		192.80	ARTHROPODA	Insecta	Odonata	Libellulidae	Libellula
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	60	7	5	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	6	10	2	229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			230.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Potamyia
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25		2		267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	2			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			281.00	NEMATODA				
OK121300-02-0010C	Bird Creek	05-Feb-02	25454	100	100	100	50	100	25	1			281.50	NEMERTEA	Enopla	Hoploneurtea	Tetrastemmatidae	Prostoma
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1		1	3.70	ANNELIDA	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		2		9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	2			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	2			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		3		28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		3		58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcyloepus
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	9		8	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		4		83.20	ARTHROPODA	Insecta	Coleoptera	Staphylinidae	

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampColl	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	29	11	17	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	2		2	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaidiinae
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	2		30	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		3	3	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		1		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25			1	111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	8	1		123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1			124.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Camelobaetidius
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	2			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	12	3	1	142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1		1	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	5			146.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1		1	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1			155.90	ARTHROPODA	Insecta	Hemiptera	Mesoveliidae	Mesovelia
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		1		164.00	ARTHROPODA	Insecta	Lepidoptera	Pyalidae	Petrophila
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	2	13	2	167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25			2	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1	1	1	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1			180.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Enallagma
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	1			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25		1		225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	26	21	35	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	6	69	1	229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	12		2	275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25	8			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121300-02-0010C	Bird Creek	17-Jul-02	25488	80	100	98	25	50	25			1	285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			2		54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			10		57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			29		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			13		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			8		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			5		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		127.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Labiobaetis
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		128.80	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Proclleon
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			4		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			19		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			2		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		195.70	ARTHROPODA	Insecta	Orthoptera	Tridactylidae	Ellipes
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			3		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			18		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121300-04-0010C	Hominy Crk: downstr.	02-Aug-01	23895		100			100			1		275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		3	11		14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		2			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50			1		57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		9			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1	16		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		61	95		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50			2		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		2	10		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		4	27		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1	1		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1	1		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1			138.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		8	1		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		4			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		3			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		10	6		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		3			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1	1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50			3		239.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Oecetis
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50			1		250.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Cynnellus
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50			2		252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		2			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121300-04-0010C	Hominy Crk: downstr.	04-Feb-02	25451	60	100		12.5	50		1			281.50	NEMERTEA	Enopla	Hoplonemertea	Tetrastemmatidae	Prostoma
OK121300-04-0010C	Hominy Crk: downstr.	16-Jul-02	25487											NO FLOW				
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100			1		29.10	ARTHROPODA	Crustacea	Cladocera		
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		33	3		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		16			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		26	71		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		11			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		6			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		1			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		1			230.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Potamyia
OK121300-04-0010C	Hominy Crk: downstr.	27-Jan-03	26664	100	100		25	100		2			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			16			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			2			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			23.00	ARTHROPODA	Acari	Ararina		
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			4			45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			5			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			87.50	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Atrichopogon
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			25			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			6			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			11			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			141.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenacron
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			21			146.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			2			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			164.00	ARTHROPODA	Insecta	Lepidoptera	Pyalidae	Petrophila
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			9			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			5			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			3			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			1			225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			13			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			11			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			2			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121300-04-0280G	Hominy Crk: upstream	03-Aug-01	23900	100			25			14			275.00	MOLLUSCA	Veneroida	Corbiculidae	Corbicula	
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		5			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		1	3		19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		2			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		7			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		1			71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Ecnochrus
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		4	8		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		43	85		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		1	4		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25			2		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		25	10		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		3			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		3	1		126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		5	1		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		3			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		11			146.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		5			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		2			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		4	1		186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		2			214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		2			220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		1			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25			1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydrophilidae	Hydroptila
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		7	9		267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		3			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-04-0280G	Hominy Crk: upstream	05-Feb-02	25458	90	100		25	25		1			281.00	NEMATODA				

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCo	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	18			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			3	45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			3	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1			58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	9		2	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	13	8	27	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1	2	2	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	6	6	4	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1	2	8	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			2	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1			117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	12	2	4	123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	2		1	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	128.80	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Proclonon
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	5		1	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	8			146.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100		2	9	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	155.90	ARTHROPODA	Insecta	Hemiptera	Mesovellidae	Mesovelia
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	7	1	2	167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	173.00	ARTHROPODA	Insecta	Odonata	Aeshnidae	Basiaeschna
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			6	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			2	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	1	3		225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	21	1	20	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100		1	1	234.00	ARTHROPODA	Insecta	Trichoptera	Hydrotiliidae	Hydroptila
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100			1	247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121300-04-0280G	Hominy Crk: upstream	17-Jul-02	25492	100	100	100	25	100	100	7			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			2			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			4			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			91.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Diamesinae
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			12			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			3			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			13			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			3			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			6			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			143.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			5			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			2			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			2			234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			1			263.50	MOLLUSCA	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			4			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121300-04-0280G	Hominy Crk: upstream	28-Jan-03	26668	85			25			26			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			2			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			31.10	ARTHROPODA	Crustacea	Decapoda	Cambaridae	Cambarus
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			34			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			63.00	ARTHROPODA	Insecta	Coleoptera	Gyrinidae	Gyretes
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			21			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			10			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			10			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			10			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			168.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Nigronia
OK121400-01-0270G	Curl Creek	02-Aug-01	23896	100			25			1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			1			3.70	ANNELIDA	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			1			17.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Slavina
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			6			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			1			48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			22			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			59			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			1			160.70	ARTHROPODA	Insecta	Lepidoptera	Nepticulidae	
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			4			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121400-01-0270G	Curl Creek	04-Feb-02	25452	50			25			1			281.00	NEMATODA				
OK121400-01-0270G	Curl Creek	16-Jul-02	25484											NO FLOW				
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		8	1		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100			2		71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		49	53		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		1			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		5	20		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		3	9		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100				2	99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		1			110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		4	1		122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		6	1		123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		1			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		5	8		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		1			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isorychiidae	Isorychia
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100			1		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		7	12		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100			1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100			1		235.30	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Neotrichia
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		1	2		247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		1			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121400-01-0300D	Hogshooter Creek	02-Aug-01	23897	85	100		12.5	100		9			279.00	MOLLUSCA	Pelecypoda	Veneroidea	Sphaeriidae	Sphaerium
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			2			3.70	ANNELIDA	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			70			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			1			67.50	ARTHROPODA	Insecta	Coleoptera	Hydraenidae	Hydraena
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			11			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			2			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			1			117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK121400-01-0300D	Hogshooter Creek	11-Feb-02	24799	90			12			4			279.00	MOLLUSCA	Pelecypoda	Veneroidea	Sphaeriidae	Sphaerium
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		1			19.00	ANNELIDA	Haplotaxida	Tubificidae	Limnodrilus	
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		2	1		49.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Uvarus
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		55	3		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100			1		72.00	ARTHROPODA	Insecta	Coleoptera	Helophoridae	Helophorus
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100			1		83.20	ARTHROPODA	Insecta	Coleoptera	Staphylinidae	
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		1			84.50	ARTHROPODA	Insecta	Diptera	Anthomyiidae	Limnophora
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		16	37		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		1	1		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		5	14		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		4	4		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100			1		96.00	ARTHROPODA	Insecta	Diptera	Dolichopodidae	
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		2	1		123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		1			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		1			153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100			1		161.00	ARTHROPODA	Insecta	Lepidoptera	Pyralidae	
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		1			170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		4			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100		22	9		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-01-0300D	Hogshooter Creek	16-Jul-02	25485	70	100		25	100			1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121400-01-0300D	Hogshooter Creek	27-Jan-03	26666											NO FLOW				
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50			1		43.00	ARTHROPODA	Insecta	Coleoptera	Chrysomelidae	
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50			8		57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus



## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCoil	Vegetation %SampCoil	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		13	4		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50			1		83.60	ARTHROPODA	Insecta	Collembola	Isotomidae	Isotomurus
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		1			87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50			1		88.06	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Probezzia
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		4	21		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		5	8		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		1	7		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		2	4		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		5	22		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50			1		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		6	6		123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		4	1		127.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Labiobaetis
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50			1		128.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Paracloeodes
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		6			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		7			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		33	4		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		4	5		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		2			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		1			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		4			187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		4	3		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		1	2		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		1	3		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121400-02-0140H	Little Caney River	02-Aug-01	23894	100	100		25	50		1			275.00	MOLLUSCA	Pelecypoda	Veneroidea	Corbiculidae	Corbicula
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		5			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50			1		23.00	ARTHROPODA	Acari	Acarina		
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		4			57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		24	2		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		2	12		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		7	55		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1	6		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		7	17		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		6	12		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		3	2		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		11	5		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1			149.70	ARTHROPODA	Insecta	Ephemeroptera	Potamanthidae	Anthopotamus
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		12	2		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50			1		153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		2			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		13	3		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCo	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus	
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		3	6		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		1			230.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Potamyia	
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50				1	234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila	
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50				1	243.50	ARTHROPODA	Insecta	Trichoptera	Limnephilidae	Pycnopsyche	
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50				1	252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus	
OK121400-02-0140H	Little Caney River	04-Feb-02	25453	100	100		25	50		5			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	8			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	17		1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			1	49.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Uvarus	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			4	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50		5	1	57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	7	2	1	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	5	69	6	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			1	2	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			1		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	1	5			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	1	2	1	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	2	1	2	127.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Labiobaetis	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	1			136.10	ARTHROPODA	Insecta	Ephemeroptera	Ephemeridae	Hexagenia	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			2	141.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenacron	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	10			1	142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	7	3	65	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50		2	1	167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	2			168.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Nigronia	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			1	170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			4	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			1	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	1		1	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	23	1	1	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50	1	30	1	229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	
OK121400-02-0140H	Little Caney River	16-Jul-02	25486	20	100	100	25	50	50			2	238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				1		14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				2		18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				1		57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				13		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				1		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				15		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				3		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				3		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				4		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				2		117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				10		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				1		142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia	
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50				3		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis	

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampColl	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50			3			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50			1			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50			5			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-02-0140H	Little Caney River	28-Jan-03	26671	100			50			9			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		3			3.70	ANNELIDA	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		8			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100			7		28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100			1		29.50	ARTHROPODA	Crustacea	Copepoda		
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		22			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		8			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100			1		83.60	ARTHROPODA	Insecta	Collembola	Isotomidae	Isotomurus
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100			56		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		4	23		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100			2		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		29	2		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		3	15		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		2			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		1	3		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		2			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		19			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		5			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100			1		161.00	ARTHROPODA	Insecta	Lepidoptera	Pyrilidae	
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		2			170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100			1		174.00	ARTHROPODA	Insecta	Odonata	Aeshnidae	Nasiaeschna
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		1			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		15			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		3			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		5			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		1			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		1			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121400-02-0190B	Mission Creek	05-Feb-02	25456	75	100		25	100		3			281.00	NEMATODA				
OK121400-02-0190B	Mission Creek	17-Jul-02	25490											NO FLOW				
OK121400-02-0190B	Mission Creek	28-Jan-03	26670											NO FLOW				
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			12			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			8			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			25			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			3			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			4			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			115.70	ARTHROPODA	Insecta	Diptera	Tipulidae	Geranomyia
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			4			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			26			214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			7			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121400-03-0170C	Buck Creek	05-Feb-02	25457	75			12.5			1			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		31	3		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1	2		88.06	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Probezzia
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		12	41		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		11	6		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75			4		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75			1		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75			6		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1	1		111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		2	4		123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		2	1		139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		25	3		142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1	1		143.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		7	6		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		25	25		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75			18		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		4	2		247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121400-03-0170C	Buck Creek	17-Jul-02	25491	100	100		25	75		1			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			3			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			2			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			7			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			12			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			7			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			6			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			3			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			26			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			1			149.70	ARTHROPODA	Insecta	Ephemeroptera	Potamanthidae	Anthopotamus
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			3			170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			6			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			1			220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			1			243.50	ARTHROPODA	Insecta	Trichoptera	Limnephilidae	Pycnopsyche
OK121400-03-0170C	Buck Creek	28-Jan-03	26669	100			75			2			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		18			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Riffle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		4	1		45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25				8	57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		33	4		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		10	60		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			11		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			6		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		11	17		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		2			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		1			128.80	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Procloeon
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		2	1		142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		1			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		2	1		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		2	1		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		1			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		9	6		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		1	1		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25			1		267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		14			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121400-04-0010F	Sand Creek	03-Aug-01	23899	100	100		25	25		13			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50			2		11.50	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Bratislavia
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50			1		13.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Dero
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		3			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50			2		45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		24	3		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		3	63		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		3	16		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50			3		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		10	3		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		1			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		6	12		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		6			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50			1		122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		3			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		5	2		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		1			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		1			217.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Hydroperla
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		32	1		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		1			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50			1		250.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Cyrnellus
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50			5		267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		23			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121400-04-0010F	Sand Creek	05-Feb-02	25455	65	100		25	50		2			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		1			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50			2		57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		10	1		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50			1		83.20	ARTHROPODA	Insecta	Coleoptera	Staphylinidae	
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		15	55		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50			1		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		1	6		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50			1		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		1			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		8	1		123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50			1		138.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		7			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		1			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		10	1		142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		63	35		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		1	34		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		9	1		275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121400-04-0010F	Sand Creek	17-Jul-02	25489	80	100		12.5	50		1			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			3			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			3			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			22			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			4			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			3			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			3			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			8			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			2			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			72			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121400-04-0010F	Sand Creek	27-Jan-03	26667	100			25			1			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121500-02-0090D	Bull Creek	28-Jan-03	26651											NO FLOW				

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			3			3.70	ANNELIDA	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			5			13.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Dero
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			8			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			11			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			3			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			16			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			26			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladinae
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			8			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			25			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			1			107.80	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Nemotelus
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121500-02-0360D	Dog Creek	29-Jan-02	25669	100			50			3			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121510-02-0050C	Dog Creek	07-Jan-02	24672											NO FLOW				
OK121510-02-0050C	Dog Creek	27-Jan-03	26649											NO FLOW				
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50			4	12.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Chaetogaster
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50			1	17.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Slavina
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50			1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50			3	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	46	44		35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	1			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	7	8		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	34	35		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladinae
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	4	1		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	5			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	1			180.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Enallagma
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	1			214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	1	10		217.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Hydroperla
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	1			218.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Isoperla
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	1			238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	2			258.00	ARTHROPODA	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	4			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121510-03-0010D	Big Creek	28-Jan-02	25668		100	100		50	50	2	3		279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						1	31.10	ARTHROPODA	Crustacea	Decapoda	Cambaridae	Cambarus
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						20	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						1	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						30	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						4	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						12	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						1	99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						1	122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						2	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						2	180.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Enallagma
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						20	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100						1	234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila

Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampColl	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121510-03-0010D	Big Creek	16-Jul-02	25503			100			50				267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121510-03-0010D	Big Creek	27-Jan-03	26648											NO FLOW				
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			1			58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcyloepus
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			11			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			15			87.50	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Atrichopogon
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			1			87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			15			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			2			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			7			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			6			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			30			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			1			128.80	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Procloleon
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			1			137.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			2			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			1			146.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			8			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			8			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			6			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-01-0060D	Ranger Creek	23-Jul-01	23324	100			12.5			1			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	1			19.00	ANNELIDA	Oligochaeta	Haplotaenidia	Tubificidae	Limnodrilus
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5			1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5			50	35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5			1	58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcyloepus
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5			1	83.60	ARTHROPODA	Insecta	Collembola	Isotomidae	Isotomurus
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	4			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	70			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5				94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	1			98.00	ARTHROPODA	Insecta	Diptera	Empididae	Clinocera
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	3			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	1			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	3		3	122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5				131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	2			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	5		2	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5				145.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Leptophlebia
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	14		4	198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocaenia
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	2			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	1		1	214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Plerista
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	1			216.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Clioperla
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	2			218.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Isoperla
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	1			219.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Oemopteryx
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75	100	12.5	12.5	12.5	12.5	2			220.00	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Strophopteryx



## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCo	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75		100	12.5		12.5	1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75		100	12.5		12.5			1	235.60	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Oxyethira
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75		100	12.5		12.5				262.00	MOLLUSCA	Gastropoda	Basommatophora	Ancylidae	Ferrissia
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75		100	12.5		12.5				263.50	MOLLUSCA	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
OK121600-01-0060D	Ranger Creek	12-Feb-02	24825	75		100	12.5		12.5	1			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			5			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			23.00	ARTHROPODA	Acari	Ararina		
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			15			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			87.50	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Atrichopogon
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			42			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			5			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			9			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			2			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			2			111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			2			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			8			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			129.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Pseudocleon
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			4			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			7			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			3			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			2			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			35			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			1			234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121600-01-0060D	Ranger Creek	16-Jul-02	25363	100			12.5			17			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			4			28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			3			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			17			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			3			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			1			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			1			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			1			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			1			126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			6			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			4			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			71			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCo	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			5			212.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Agnetina=Phasgan
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			2			217.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Hydroperla
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			3			220.00	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Strophopteryx
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			3			220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK121600-01-0060D	Ranger Creek	28-Jan-03	26661	75			12.5			1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			4			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			7			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			7			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			9			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			4			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			1			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			2			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			22			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			13			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			13			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			10			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			11			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			1			225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			6			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			8			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-01-0100G	Fourteenmile Creek	23-Jul-01	23325	100			25			4			272.00	MOLLUSCA	Gastropoda	Neotaenioglossa	Pleuroceridae	Goniobasis=Elimia
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			29			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			1			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			8			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			1			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			1			133.00	ARTHROPODA	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			8			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			5			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			2			201.00	ARTHROPODA	Insecta	Plecoptera	Chloroperlidae	Alloperla
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			2			207.00	ARTHROPODA	Insecta	Plecoptera	Nemouridae	Amphinemura
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			3			214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			1			218.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Isoperla
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			12			219.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Oemopteryx
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			3			220.00	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Strophopteryx
OK121600-01-0100G	Fourteenmile Creek	12-Feb-02	24826	100			12.5			4			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			1			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			4			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			4			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			4			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			5			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			38			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			7			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			3			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			26			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			34			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			3			143.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			1			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			1			155.80	ARTHROPODA	Insecta	Hemiptera	Hebridae	Merragata
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			11			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			15			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			3			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			3			272.00	MOLLUSCA	Gastropoda	Neotaenioglossa	Pleuroceridae	Goniobasa=Elimia
OK121600-01-0100G	Fourteenmile Creek	16-Jul-02	25362	100			25			7			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			6			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			23.27	ARTHROPODA	Acari	Ararina	Protziidae	Wandesia
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			6			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			37			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			6			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			136.00	ARTHROPODA	Insecta	Ephemeroptera	Ephemeridae	Ephemera
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			9			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			21			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			9			145.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Leptophlebia
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			201.00	ARTHROPODA	Insecta	Plecoptera	Chloroperlidae	Alloperla
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			3			210.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			1			212.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Agnetina=Phasgan
OK121600-01-0100G	Fourteenmile Creek	28-Jan-03	26662	100			12.5			13			219.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Oemopteryx
OK121600-01-0430M	Chouteau Creek	28-Jan-03	26655											NO FLOW				
OK121600-01-0430M	Chouteau Creek	31-Jul-03	23351											NO FLOW				
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			1			54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			6			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			5			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			5			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			5			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			2			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			2			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			1			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			13			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			1			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			2			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			2			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			7			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			40			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			18			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121600-02-0030D	Saline Creek	23-Jul-01	23326	100			6.25			1			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			1			23.28	ARTHROPODA	Acari	Arcarina	Sperchonidae	Sperchon
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			2			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			3			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			30			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			5			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			23			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			4			133.00	ARTHROPODA	Insecta	Ephemeroptera	Ephemereilidae	Ephemera
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			5			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			11			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			3			212.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Agnetina=Phasgan
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			1			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			1			223.00	ARTHROPODA	Insecta	Trichoptera	Glossosomatidae	Agapetus
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			2			225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			6			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			1			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			1			252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus
OK121600-02-0030D	Saline Creek	29-Jan-02	24784	100			6.25			2			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			11.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			23.00	ARTHROPODA	Acari	Arcarina		
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			31.10	ARTHROPODA	Crustacea	Decapoda	Cambaridae	Cambarus
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			4			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			5			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			8			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			9			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			9			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			2			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			2			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			23			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			141.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenacron
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			16			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			3			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			1			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			3			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			6			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-02-0030D	Saline Creek	16-Jul-02	25361	100			25			4			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			23.25	ARTHROPODA	Acari	Arcarina	Lebertiidae	Lebertia
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			32.00	ARTHROPODA	Crustacea	Decapoda	Cambaridae	Orconectes
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			36.00	ARTHROPODA	Crustacea	Amphipoda	Gammaridae	
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			17			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			2			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			11			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladinae
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			3			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			12			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			6			133.00	ARTHROPODA	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			16			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			17			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			211.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Acroneuria
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			223.00	ARTHROPODA	Insecta	Trichoptera	Glossosomatidae	Agapetus
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			4			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121600-02-0030D	Saline Creek	28-Jan-03	26663	100			25			1			272.00	MOLLUSCA	Gastropoda	Neotaenioglossa	Pleuroceridae	Goniobasis=Elimia
OK121600-03-0090G	Drowning Creek	23-Jul-01	23327											NO FLOW				
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			6			28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			2			30.00	ARTHROPODA	Crustacea	Decapoda	Astacidae	
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			89			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			1			35.50	ARTHROPODA	Crustacea	Ostracoda		
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			5			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			1			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			3			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			7			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			10			141.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenacron
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			1			252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus
OK121600-03-0090G	Drowning Creek	29-Jan-02	24783	100			6.25			6			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			18			28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			2			30.00	ARTHROPODA	Crustacea	Decapoda	Astacidae	
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			54			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			1			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			1			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			10			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			11			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			2			128.80	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Proclleon
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			1			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			1			153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK121600-03-0090G	Drowning Creek	15-Jul-02	25360	100			6.25			1			180.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Enallagma
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			1			8.50	ANNELIDA	Oligochaeta	Haplotaxida	Glossoscolecidae	Sparganophilus

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			3			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			28			28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			90			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			1			35.50	ARTHROPODA	Crustacea	Ostracoda		
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			1			36.00	ARTHROPODA	Crustacea	Amphipoda	Gammaridae	
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			4			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			2			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			1			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			5			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			2			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			3			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			2			141.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenacron
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			1			210.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	
OK121600-03-0090G	Drowning Creek	27-Jan-03	26660	80			12.5			4			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-03-0190A	Little Horse Creek	24-Jul-01	23330											NO FLOW				
OK121600-03-0190A	Little Horse Creek	29-Jan-02	24782											NO FLOW				
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			10			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			4			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			1			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			37			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			7			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			3			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			4			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			4			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			3			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			6			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			1			128.80	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Procloeon
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			9			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			2			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocota
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			10			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			2			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			5			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			6			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			1			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			1			188.50	ARTHROPODA	Insecta	Odonata	Gomphidae	Lanthis
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			1			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121600-03-0510D	Sycamore Creek	31-Jul-01	23354	100			25			1			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			1			23.40	ARTHROPODA	Acari	Arcarina	Torrenticolidae	Torrenticola
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			20			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			2			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			2			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			25			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			1			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			9			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			40			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			6			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			11			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			1			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			3			212.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Agnetina=Phasgan
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			1			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			4			218.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Isoperla
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			1			225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			2			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-03-0510D	Sycamore Creek	29-Jan-02	24781	100			6.25			1			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			30.00	ARTHROPODA	Crustacea	Decapoda	Astacidae	
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			3			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			14			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			4			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			5			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaidiinae
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			2			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			23			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			2			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			14			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			29			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			143.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			4			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			4			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			2			188.50	ARTHROPODA	Insecta	Odonata	Gomphidae	Lanthus
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocaenia
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			225.00	ARTHROPODA	Insecta	Trichoptera	Helicopsychidae	Helicopsyche
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			5			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			2			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			1			252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus
OK121600-03-0510D	Sycamore Creek	15-Jul-02	25359	100			12.5			5			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25				1	17.00	ANNELIDA	Oligochaeta	Haplotaenidae	Naididae	Slavina
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25				1	23.28	ARTHROPODA	Acari	Acarina	Sperchonidae	Sperchon
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25				1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25	29		38		35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25	3				59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25	2				81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25	1		10		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaidiinae
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25	3			1	122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25	16			3	142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100	100	100	12.5	25	47			4	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25			1	143.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25	2			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25	1			188.50	ARTHROPODA	Insecta	Odonata	Gomphidae	Lanthus
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25			2	198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25			1	212.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Agnetina=Phasgan
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25			1	220.00	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Strophopteryx
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25	1			220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25			1	223.00	ARTHROPODA	Insecta	Trichoptera	Glossosomatidae	Agapetus
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25	3			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-03-0510D	Sycamore Creek	13-Jan-03	26720	100		100	12.5		25			38	272.00	MOLLUSCA	Gastropoda	Neotaenioglossa	Pleuroceridae	Goniobasis=Elimia
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			1			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			1			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			10			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			9			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			5			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			4			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			2			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			5			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			82			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-04-0060D	Tar Creek	24-Jul-01	23329	100			25			1			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			1			12.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Chaetogaster
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			2			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			1			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			108			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			3			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			2			120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			1			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-04-0060D	Tar Creek	28-Jan-02	25664	100			50			11			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			2			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			1			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			1			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			20			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			8			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			67			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			19			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			1			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			2			120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			6			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			27			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-04-0060D	Tar Creek	15-Jul-02	25357	75			50			1			234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	3			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	



## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	7		1	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100			1	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	8		12	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100			1	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	3			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	2			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	79		20	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100	7		3	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121600-04-0060D	Tar Creek	13-Jan-03	26718	100		100	25		100			2	281.50	NEMERTEA	Enopla	Hoplonemertea	Tetrastemmatidae	Prostoma
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			1			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			87			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			1			72.00	ARTHROPODA	Insecta	Coleoptera	Helophoridae	Helophorus
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			4			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			1			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			2			117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			3			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			1			141.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenacron
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			4			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			1			161.00	ARTHROPODA	Insecta	Lepidoptera	Pyrilidae	
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121600-06-0080C	Little Cabin Creek	31-Jul-01	25131	100			50			6			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			1			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			1			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			2			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			90			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			2			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			19			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			1			110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			1			214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			11			217.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Hydroperla
OK121600-06-0080C	Little Cabin Creek	28-Jan-02	25667	100			50			3			258.00	ARTHROPODA	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			9			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			25			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			6			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			1			117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			1			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			67			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-06-0080C	Little Cabin Creek	16-Jul-02	25501	100			50			6			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-06-0080C	Little Cabin Creek	27-Jan-03	26647											NO FLOW				
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			41			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			4			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			4			117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampColl	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			6			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			6			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			1			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			4			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			2			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			22			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			1			234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			1			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			7			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121600-06-0220I	Big Cabin Creek	31-Jul-01	25130	100			25			4			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50				2	13.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Dero
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50		3			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50			41		28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50				1	29.10	ARTHROPODA	Crustacea	Cladocera		
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	1				31.10	ARTHROPODA	Crustacea	Decapoda	Cambaridae	Cambarus
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	1			9	35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	2		5		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	80		39		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	2			1	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	2			1	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	18		20		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	4				117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	1				131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	1			1	142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	2				167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50				1	174.00	ARTHROPODA	Insecta	Odonata	Aeshnidae	Nasiaeschna
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50				1	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50				3	180.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Enallagma
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	9			2	198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocaupnia
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	1			1	214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	1			2	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	5				275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121600-06-0220I	Big Cabin Creek	28-Jan-02	25666	100	100	50	50	50	5		1		279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			46			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			8			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			3			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			2			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			9			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			1			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			7			117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			2			122.70	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acerpenna
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			2			139.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Leucrocuta
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			5			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			55			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			5			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			1			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121600-06-0220I	Big Cabin Creek	16-Jul-02	25504	100			50			2			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121600-06-0220I	Big Cabin Creek	27-Jan-03	26646											NO FLOW				
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			6			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			1			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			3			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			2			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			2			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			6			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			41			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			3			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			28			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			10			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			2			210.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			5			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			9			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			6			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-07-0110G	Fivemile Creek	24-Jul-01	23328	100			12.5			1			252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				23.28	ARTHROPODA	Acari	Arcarina	Sperchonidae	Sperchon
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				34.50	ARTHROPODA	Crustacea	Isopoda	Asellidae	Asellus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	55	78				35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				35.50	ARTHROPODA	Crustacea	Ostracoda		
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	3				80.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Ectopria
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	6	1			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	2				86.00	ARTHROPODA	Insecta	Diptera	Athericidae	Atherix
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	11	8			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	19	7			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	2				142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1			2	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	2				211.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Acroneuria
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				212.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Agnetina=Phasgan
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1			1	214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				214.50	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlinella
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				218.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Isoperla
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	2			2	220.00	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Strophopteryx
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100	70	50	50	50	1				220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100		70	50		50	2			223.00	ARTHROPODA	Insecta	Trichoptera	Glossosomatidae	Agapetus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100		70	50		50	12		1	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100		70	50		50	5			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100		70	50		50			1	252.00	ARTHROPODA	Insecta	Trichoptera	Polycentropodidae	Polycentropus
OK121600-07-0110G	Fivemile Creek	28-Jan-02	25665	100		70	50		50			2	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			1			35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			6			58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			1			81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			1			87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			33			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			22			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			7			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			4			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			2			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			1			110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			1			122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			25			123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			4			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			9			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			3			151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			1			204.00	ARTHROPODA	Insecta	Plecoptera	Leuctridae	Leuctra
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			1			213.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Neoperla
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			7			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			2			229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			4			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121600-07-0110G	Fivemile Creek	15-Jul-02	25358	100			12.5			6			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	1			6.50	ANNELIDA	Polychaeta	Scolecida	Aeolosomatidae	Aeolosoma
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	18		15	35.00	ARTHROPODA	Crustacea	Isopoda	Asellidae	Lirceus
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100			1	59.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Optioservus
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100			1	71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	4		1	81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	5		21	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	1			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	8		4	122.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Acentrella
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100			1	123.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Baetis
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	4		12	142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	25		21	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	1		11	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	1			177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100			1	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	1		4	198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	3		3	212.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Agnetina=Phasgan
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	3		1	220.00	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Strophopteryx
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100	100	25	100	100	100	8		2	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100		100	25		100	35		7	229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100		100	25		100			2	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121600-07-0110G	Fivemile Creek	13-Jan-03	26719	100		100	25		100	1			272.00	MOLLUSCA	Gastropoda	Neotaenioglossa	Pleuroceridae	Goniobasis=Elimia
OK121610-00-0050D	Pryor Creek: Hwy 20	31-Jul-01	23353											NO FLOW				
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			2			3.70	ANNELIDA	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			3			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			3			37.00	ARTHROPODA	Crustacea	Amphipoda	Gammaridae	Gammarus
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			1			45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			1			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			90			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			14			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			1			170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK121610-00-0050D	Pryor Creek: Hwy 20	29-Jan-02	25670	100			50			1			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		1	1		19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		36	33		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		15	5		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25			1		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		27	15		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		9	12		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25			1		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		43	64		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		7	6		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121610-00-0050D	Pryor Creek: Hwy 20	15-Jul-02	25500	100	100		12.5	25		1			247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			1			3.70	ANNELIDA	Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			12			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			7			37.00	ARTHROPODA	Crustacea	Amphipoda	Gammaridae	Gammarus
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			1			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			4			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			3			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			44			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			17			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			1			263.50	MOLLUSCA	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			8			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			1			269.00	MOLLUSCA	Gastropoda	Basommatophora	Planorbidae	Gyraulus
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			2			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121610-00-0050D	Pryor Creek: Hwy 20	28-Jan-03	26653	100			25			14			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121610-00-0050M	Pryor Creek: Hwy 69	31-Jul-01	23352											NO FLOW				
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			2			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			5			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			2			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			8			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			72			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			10			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			24			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			3			117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			2			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			2			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			217.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Hydroperla
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			258.00	ARTHROPODA	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			3			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121610-00-0050M	Pryor Creek: Hwy 69	29-Jan-02	25671	100			50			1			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		2	2		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25			1		62.00	ARTHROPODA	Insecta	Coleoptera	Gyrinidae	Dineutus
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25			1		71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Ecnorus
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		18	26		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		1	2		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		3	3		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		6	15		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		1	2		99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		1			141.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenacron
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		77	73		228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		3	1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK121610-00-0050M	Pryor Creek: Hwy 69	15-Jul-02	25499	100	100		25	25		2	1		247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			13.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Dero
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			1			18.20	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Branchiura
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			21			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			37.00	ARTHROPODA	Crustacea	Amphipoda	Gammaridae	Gammarus
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			8			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			30			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			47			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			4			117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			1			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			142.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Stenonema
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			1			198.00	ARTHROPODA	Insecta	Plecoptera	Capniidae	Allocapnia
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			263.50	MOLLUSCA	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			1			267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampColl	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			10			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			279.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Sphaerium
OK121610-00-0050M	Pryor Creek: Hwy 69	28-Jan-03	26654	100			25			2			285.50	HES	Turbellaria	Tricladida	Planariidae	Dugesia
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25		8		87.50	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Atrichopogon
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25		1		88.06	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Probezzia
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	110	66		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	1	1		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	3			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	1			99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25		1		109.50	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Stratiomys
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25		4	2	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Falliceon
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25		1		128.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Paracloeodes
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			6	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			6	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isynychiidae	Isynychia
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	8	16		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	159.00	ARTHROPODA	Insecta	Hemiptera	Veliidae	Rhagovelia
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	2	1		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25		5		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25		2		191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	2	28		238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25			1	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520610-02-0120C	Buggy Creek	18-Jul-01	23258		50	100		50	25	1	1		275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		2		14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		3		19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1		29.10	ARTHROPODA	Crustacea	Cladocera		
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1	4	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50			1	62.00	ARTHROPODA	Insecta	Coleoptera	Gyrinidae	Dineutus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1		70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50			1	76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50			1	83.20	ARTHROPODA	Insecta	Coleoptera	Staphylinidae	
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1	3	88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stilobezzia
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		4	8	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50	54	46		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1	3	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50			6	117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50	11	6		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1		142.40	ARTHROPODA	Insecta	Ephemeroptera	Isynychiidae	Isynychia

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1	1	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50			1	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50			1	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		1		191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50		8		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK520610-02-0120C	Buggy Creek	04-Feb-02	25151		100	40		100	50			1	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			8	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	33.50	ARTHROPODA	Crustacea	Isopoda		
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			58	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			3	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			3	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	109.50	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Stratiomys
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	124.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Callibaetis
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			3	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			3	128.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Paracloeoedes
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			6	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			12	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			6	152.55	ARTHROPODA	Insecta	Hemiptera	Belostomatidae	Belostoma
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			2	155.90	ARTHROPODA	Insecta	Hemiptera	Mesovellidae	Mesovelia
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			3	167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			3	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			11	238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520610-02-0120C	Buggy Creek	06-Aug-02	25631			100			50			1	275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50		1		14.00	ANNELIDA	Oligochaeta	Haplotaenidae	Naididae	Nais
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50		1	12	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	50.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Hydroporus
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	62.00	ARTHROPODA	Insecta	Coleoptera	Gyrinidae	Dineutus
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	81.00	ARTHROPODA	Insecta	Coleoptera	Psephenidae	Psephenus
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stilobezzia
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50		106	83	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50		28		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon



## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampColl	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus	
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis	
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae		
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus	
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina	
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50			1	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia	
OK520610-02-0120C	Buggy Creek	28-Jan-03	26645		100	50		50	50		2	2	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	50.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Hydroporus	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	63.00	ARTHROPODA	Insecta	Coleoptera	Gyrinidae	Gyretes	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999	1	6	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus		
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	72.00	ARTHROPODA	Insecta	Coleoptera	Helophoridae	Helophorus	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	73.00	ARTHROPODA	Insecta	Coleoptera	Hydrochidae	Hydrochus	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999		2	83.00	ARTHROPODA	Insecta	Coleoptera	Scirtidae	Scirtes		
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999		2		88.05	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Palpomyia	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999	38	28		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999	2	10		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999	45	23		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	107.80	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Nemotelus	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			2	124.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Callibaetis	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			2	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999	1	1		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999	9	27		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			1	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			2	234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila	
OK520610-03-0010C	Walnut Creek	31-Jul-01	23349		50	100		100	9999			14	238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	83.60	ARTHROPODA	Insecta	Collembola	Isotomidae	Isotomurus	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			2	84.50	ARTHROPODA	Insecta	Diptera	Anthomyiidae	Limnophora	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			2	87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			10	88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stilobezzia	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	88.20	ARTHROPODA	Insecta	Diptera	Chaoboridae	Chaoborus	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			7	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50		91	65	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	3	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			4	18	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	96.00	ARTHROPODA	Insecta	Diptera	Dolichopodidae		
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			6	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			2	115.70	ARTHROPODA	Insecta	Diptera	Tipulidae	Geranomyia	

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50		1	12	117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			2	120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis	
OK520610-03-0010C	Walnut Creek	01-Feb-02	25145		50	50		100	50			1	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				1	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				65	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				8	93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				2	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				23	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				14	128.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Paracloeodes	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				1	128.80	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Procloeon	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				2	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				2	153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae		
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				1	155.00	ARTHROPODA	Insecta	Hemiptera	Gerridae	Rheumatobates	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				1	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia	
OK520610-03-0010C	Walnut Creek	06-Aug-02	25630		100			12.5				2	234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila	
OK520610-03-0010C	Walnut Creek	28-Jan-03	26644		100			50				2	14.00	ANNELIDA	Oligochaeta	Haplotaenidae	Naididae	Nais	
OK520610-03-0010C	Walnut Creek	28-Jan-03	26644		100			50				3	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini	
OK520610-03-0010C	Walnut Creek	28-Jan-03	26644		100			50				101	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae	
OK520610-03-0010C	Walnut Creek	28-Jan-03	26644		100			50				2	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae	
OK520610-03-0010C	Walnut Creek	28-Jan-03	26644		100			50				7	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			3	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	42.70	ARTHROPODA	Insecta	Coleoptera	Carabidae		
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	3	45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	6	49.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Uvarus
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	51.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Laccophilus	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			2	58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			2	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	66.00	ARTHROPODA	Insecta	Coleoptera	Haliplidae	Peltodytes	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	2	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	83.00	ARTHROPODA	Insecta	Coleoptera	Scirtidae	Scirtes	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			2	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	88.06	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Probezzia	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stiobezzia	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			55	22	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			7	3	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			12	12	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			9	9	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	1	124.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Callibaetis
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			2	1	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			8	9	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1		153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1		167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	2	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus	
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	18	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1		187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1	6	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			1		235.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Ithytrichia
OK520620-02-0090G	Trail Creek	25-Jul-02	25523		100	100		25	25			2		238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		52.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Oreodytes
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			2		54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			63		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			25		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			2		126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Falliceon
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			31		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		176.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Calopteryx
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			3		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-02-0090G	Trail Creek	27-Jan-03	26642			75			50			1		186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Ergatogomphus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			33		28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			2		65.10	ARTHROPODA	Insecta	Coleoptera	Haliplidae	Haliplus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			2		66.00	ARTHROPODA	Insecta	Coleoptera	Haliplidae	Peltodytes
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			3		70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		72.00	ARTHROPODA	Insecta	Coleoptera	Helophoridae	Helophorus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			17		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			2		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			21		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			5		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			2		107.80	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Nemotelus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		109.50	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Stratiomys
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			14		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		152.55	ARTHROPODA	Insecta	Hemiptera	Belostomatidae	Belostoma
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			1		173.00	ARTHROPODA	Insecta	Odonata	Aeshnidae	Basiaeschna
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			3		177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			6	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			2	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			3	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			5	191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-03-0020C	Lone Creek	17-Jul-01	23246			50			50			10	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	48.05	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Celina
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	48.05	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Celina
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	48.05	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Celina
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	52.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Oreodytes
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	52.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Oreodytes
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	52.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Oreodytes
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			3	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			3	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			3	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			3	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stilobezzia
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			9	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			80	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			14	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			5	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	109.50	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Stratiomys
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	110.50	ARTHROPODA	Insecta	Diptera	Tabanidae	Chrysops
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			1	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-03-0020C	Lone Creek	04-Feb-02	24794			100			50			2	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			7	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			19	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	33.50	ARTHROPODA	Crustacea	Isopoda		
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			6	50.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Hydroporus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			7	50.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Hydroporus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			3	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			8	66.00	ARTHROPODA	Insecta	Coleoptera	Halipilidae	Peltodytes
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			3	66.00	ARTHROPODA	Insecta	Coleoptera	Halipilidae	Peltodytes
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			3	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			4	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			2	70.50	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Cymbiodyta
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	72.00	ARTHROPODA	Insecta	Coleoptera	Helophoridae	Helophorus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			6	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			5	76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	83.20	ARTHROPODA	Insecta	Coleoptera	Staphylinidae	
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	87.00	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			11	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			8	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			10	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			8	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			3	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			10	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			4	107.80	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Nemotelus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	109.50	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Stratiomys
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	117.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Hexatoma
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			3	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	128.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Paracloeodes
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			7	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			3	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			3	152.55	ARTHROPODA	Insecta	Hemiptera	Belostomatidae	Belostoma
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	152.80	ARTHROPODA	Insecta	Hemiptera	Cicadellidae	
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	155.60	ARTHROPODA	Insecta	Hemiptera	Hebidae	
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	159.00	ARTHROPODA	Insecta	Hemiptera	Veliidae	Rhagovelia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			2	170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			2	173.00	ARTHROPODA	Insecta	Odonata	Aeshnidae	Basiaeschna
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			4	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			9	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			5	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			11	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	184.10	ARTHROPODA	Insecta	Odonata	Gomphidae	Arigomphus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	235.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Ithytrichia
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	263.50	MOLLUSCA	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			8	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520620-03-0020C	Lone Creek	25-Jul-02	25524			90			50			1	281.00	NEMATODA				
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			1	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			1	88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stilobezzia
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			2	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			110	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			1	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			3	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			1	152.55	ARTHROPODA	Insecta	Hemiptera	Belostomatidae	Belostoma
OK520620-03-0020C	Lone Creek	27-Jan-03	26641			70			50			1	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50			1	58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		1	1	60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50			1	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50			1	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50			2	88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stilobezzia
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		80	63	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		3	1	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		5	3	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		1	3	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50			1	99.00	ARTHROPODA	Insecta	Diptera	Empididae	Hemerodromia

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampColl	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		2	4	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		2		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		5	9	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		1		179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		4	6	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50			1	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		1	3	191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		3	2	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-04-0050D	Hackberry Creek	17-Jul-01	23248		85	75		100	50		7	4	238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		1		28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	31.10	ARTHROPODA	Crustacea	Decapoda	Cambaridae	Cambarus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		1		45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		1	2	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		1		52.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Oreodytes
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	62.00	ARTHROPODA	Insecta	Coleoptera	Gyrinidae	Dineutus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			3	66.00	ARTHROPODA	Insecta	Coleoptera	Haliplidae	Peltodytes
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		4		70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		2	70.50	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Cymbiodyta	
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		2		76.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Tropisternus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	83.00	ARTHROPODA	Insecta	Coleoptera	Scirtidae	Scirtes
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		3	3	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		84	78	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaidiinae
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		4	2	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		18	6	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		3	5	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		3		124.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Callibaetis
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		4	6	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		2		131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		2		153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			2	155.60	ARTHROPODA	Insecta	Hemiptera	Hebridae	
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		2		180.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Enallagma
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		1		186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		11	1	214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlsta
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50			1	243.00	ARTHROPODA	Insecta	Trichoptera	Limnephilidae	Limnephilus
OK520620-04-0050D	Hackberry Creek	04-Feb-02	24792		75	60		50	50		2		267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			3	33.50	ARTHROPODA	Crustacea	Isopoda		
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			5	45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	50.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Hydroporus
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	54.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Dubiraphia
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			11	70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			5	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			14	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			6	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	96.00	ARTHROPODA	Insecta	Diptera	Dolichopodidae		
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			2	109.50	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Stratiomys	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			2	117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			3	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	152.80	ARTHROPODA	Insecta	Hemiptera	Cicadellidae		
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			3	161.00	ARTHROPODA	Insecta	Lepidoptera	Pyralidae		
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	170.00	ARTHROPODA	Insecta	Megaloptera	Sialidae	Scirtes	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			1	173.00	ARTHROPODA	Insecta	Odonata	Aeshnidae	Basiaeschna	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			2	184.10	ARTHROPODA	Insecta	Odonata	Gomphidae	Arigomphus	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			19	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			6	191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			2	192.97	ARTHROPODA	Insecta	Odonata	Libellulidae	Plathemis	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			3	263.50	MOLLUSCA	Gastropoda	Basommatophora	Lymnaeidae	Fossaria	
OK520620-04-0050D	Hackberry Creek	25-Jul-02	25526			75			50			3	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			1			18.30	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Ilydrilus	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			1			28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			3			48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			77			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			4			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			19			104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			10			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			9			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus	
OK520620-04-0050D	Hackberry Creek	27-Jan-03	26639	75			50			4			214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta	
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50				1	28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50			2	45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus	
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	3	16	6	58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus	
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50				1	73.00	ARTHROPODA	Insecta	Coleoptera	Hydrochidae	Hydrochus
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50				1	75.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Paracymus
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	11	13	16	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini	
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	11	6	4	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae	
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50			1	3	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	6			2	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	1				109.50	ARTHROPODA	Insecta	Diptera	Stratiomyidae	Stratiomys
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50				1	111.00	ARTHROPODA	Insecta	Diptera	Tabanidae	Tabanus
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	1				117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50				1	120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	10	8	5	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon	
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50				4	127.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Labiobaetis
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	1			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50				2	137.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	



## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampColl	Woody %SampCol	Vegetation %SampCol	Riffle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50			5	138.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	9	2	5	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	12	10	10	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50			1	167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	1	1	6	177.00	ARTHROPODA	Insecta	Odonata	Calopterygidae	Hetaerina
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	21	1	8	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	1			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	4	33	23	231.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Smicridea
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50	10	4	40	238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK520620-05-0160C	Commission Creek	19-Jul-01	23266	75	50	90	50	25	50		1		278.00	MOLLUSCA	Veneroida	Sphaeriidae	Pisidium	
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25				35.50	ARTHROPODA	Crustacea	Ostracoda		
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			2	48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	1			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	87.75	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Dasyhelea
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	126		56	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			2	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			4	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			6	138.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			17	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			2	145.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Leptophlebia
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	1		1	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	9		1	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	3			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	3		13	214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	7		1	217.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Hydroperla
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			4	220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25	2			230.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Potamyia
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			4	231.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Smicridea
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	243.50	ARTHROPODA	Insecta	Trichoptera	Limnephilidae	Pycnopsyche
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	247.00	ARTHROPODA	Insecta	Trichoptera	Philopotamidae	Chimarra
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			3	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520620-05-0160C	Commission Creek	04-Feb-02	24793	60		70	25		25			1	281.00	NEMATODA				
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	33.50	ARTHROPODA	Crustacea	Isopoda		
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			2	58.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Microcylloepus
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	66.00	ARTHROPODA	Insecta	Coleoptera	Haliplidae	Peltodytes
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	87.60	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Bezzia
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			2	90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			4	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			3	94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampCoil	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			2	126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	127.50	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Labiobaetis
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	128.00	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Paracloeodes
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			3	138.00	ARTHROPODA	Insecta	Ephemeroptera	Heptageniidae	Heptagenia
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			19	142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			3	151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50	2			159.00	ARTHROPODA	Insecta	Hemiptera	Veliidae	Rhagovelia
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			7	177.00	ARTHROPODA	Insecta	Odonata	Colepterygidae	Hetaerina
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			2	179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50	92		9	186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			2	187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50	3			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50	1			192.50	ARTHROPODA	Insecta	Odonata	Libellulidae	Brechmorhoga
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			29	231.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Smicridea
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50	2		5	238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	263.50	MOLLUSCA	Gastropoda	Basommatophora	Lymnaeidae	Fossaria
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50			1	267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520620-05-0160C	Commission Creek	25-Jul-02	25525	100		75	25		50	29			275.00	MOLLUSCA	Veneroida	Corbiculidae	Corbicula	
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			1			9.00	ANNELIDA	Oligochaeta	Haplotaxida	Lumbricidae	
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			1			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			1			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			91			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			1			120.00	ARTHROPODA	Insecta	Diptera	Tipulidae	Tipula
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			7			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			4			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			4			214.00	ARTHROPODA	Insecta	Plecoptera	Perlidae	Perlesta
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			11			217.00	ARTHROPODA	Insecta	Plecoptera	Perlodidae	Hydroperla
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			2			220.50	ARTHROPODA	Insecta	Plecoptera	Taeniopterygidae	Taeniopteryx
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			1			243.50	ARTHROPODA	Insecta	Trichoptera	Limnephilidae	Pycnopsyche
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			3			275.00	MOLLUSCA	Pelecypoda	Veneroida	Corbiculidae	Corbicula
OK520620-05-0160C	Commission Creek	27-Jan-03	26640	66			25			1			278.00	MOLLUSCA	Pelecypoda	Veneroida	Sphaeriidae	Pisidium
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		6			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		2			71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5				1	83.20	ARTHROPODA	Insecta	Coleoptera	Staphylinidae	
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5				1	87.50	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Atrichopogon
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		29	45		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5				6	92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		33			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytopodinae
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		17	13		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		13	12		126.60	ARTHROPODA	Insecta	Ephemeroptera	Baetidae	Fallceon
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		4			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		1			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychiidae	Isonychia
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		1			146.00	ARTHROPODA	Insecta	Ephemeroptera	Leptophlebiidae	Neochoroterpes
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		8	1		151.00	ARTHROPODA	Insecta	Ephemeroptera	Tricorythidae	Tricorythodes

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Riffle %SampCoil	Woody %SampCol	Vegetation %SampCoil	Riffle %SampPick	Woody %SampPick	Vegetation %SampPick	NumRiffle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalis
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		4			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		2			187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		1			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		3			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		3	32		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		1			230.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Potamyia
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5			3		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK520620-06-0010F	Deer Creek	16-Jul-01	23244	100	100		25	12.5		1			238.00	ARTHROPODA	Insecta	Trichoptera	Leptoceridae	Nectopsyche
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		1	11		14.00	ANNELIDA	Oligochaeta	Haplotaxida	Naididae	Nais
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		2			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		28.00	ARTHROPODA	Crustacea	Amphipoda	Talitridae	Hyalella
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		1			48.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Agabus
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		1			52.00	ARTHROPODA	Insecta	Coleoptera	Dytiscidae	Oreodytes
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		1			57.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Macronychus
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		2	2		60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		73.00	ARTHROPODA	Insecta	Coleoptera	Hydrochidae	Hydrochus
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		88.07	ARTHROPODA	Insecta	Diptera	Ceratopogonidae	Stiobezzia
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		9	11		90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		80	91		92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		6	1		93.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Pseudochironomini
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		1	4		94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		3	6		95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		26	18		104.00	ARTHROPODA	Insecta	Diptera	Simuliidae	Simulium
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		3			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		153.00	ARTHROPODA	Insecta	Hemiptera	Corixidae	
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		3			186.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Erpetogomphus
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		1			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25		9	23		229.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Hydropsyche
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		234.00	ARTHROPODA	Insecta	Trichoptera	Hydroptilidae	Hydroptila
OK520620-06-0010F	Deer Creek	01-Feb-02	24796	75	100		25	25			1		267.00	MOLLUSCA	Gastropoda	Basommatophora	Physidae	Physella
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			6			45.00	ARTHROPODA	Insecta	Coleoptera	Dryopidae	Helichus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			2			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			1			70.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Berosus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			1			71.00	ARTHROPODA	Insecta	Coleoptera	Hydrophilidae	Enochrus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			1			72.00	ARTHROPODA	Insecta	Coleoptera	Helophoridae	Helophorus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			45			90.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Chironomini
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			1			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthocladiinae
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			7			94.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanypodinae
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			33			95.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Tanytarsini
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			6			131.00	ARTHROPODA	Insecta	Ephemeroptera	Caenidae	Caenis
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			2			142.40	ARTHROPODA	Insecta	Ephemeroptera	Isonychidae	Isonychia

## Appendix D. Macroinvertebrate collection data.

WBID	SiteName	Date	SAMPLEID	Rifle %SampColl	Woody %SampCol	Vegetation %SampCol	Rifle %SampPick	Woody %SampPick	Vegetation %Samppick	NumRifle	NumWoody	NumVeg	BugRef#	Phylum	Class	Order	Family	Genus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			1			167.00	ARTHROPODA	Insecta	Megaloptera	Corydalidae	Corydalus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			1			179.00	ARTHROPODA	Insecta	Odonata	Coenagrionidae	Argia
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			2			187.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Gomphus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			13			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus
OK520620-06-0010F	Deer Creek	02-Aug-02	25338	75			50			1			228.00	ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche
OK520620-06-0010F	Deer Creek	27-Jan-03	26643	75			100			2			19.00	ANNELIDA	Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus
OK520620-06-0010F	Deer Creek	27-Jan-03	26643	75			100			4			60.00	ARTHROPODA	Insecta	Coleoptera	Elmidae	Stenelmis
OK520620-06-0010F	Deer Creek	27-Jan-03	26643	75			100			12			92.00	ARTHROPODA	Insecta	Diptera	Chironomidae	Orthoclaadiinae
OK520620-06-0010F	Deer Creek	27-Jan-03	26643	75			100			1			117.50	ARTHROPODA	Insecta	Diptera	Tipulidae	Limnophila
OK520620-06-0010F	Deer Creek	27-Jan-03	26643	75			100			12			191.00	ARTHROPODA	Insecta	Odonata	Gomphidae	Progomphus

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121300010150	Delaware Creek	attaining		XXX							230		09/14/01
OK121300010150	Delaware Creek	not enough information						XXX			398	140	09/17/01
OK121300010150	Delaware Creek	not enough information				XXX					400	140	09/17/01
OK121300010150	Delaware Creek	not attaining				XXX					217	68	09/25/01
OK121300010150	Delaware Creek	not attaining				XXX					217	92	09/25/01
OK121300010150	Delaware Creek	not attaining				XXX					217	140	09/25/01
OK121300010150	Delaware Creek	not attaining				XXX					215	68	09/16/02
OK121300010150	Delaware Creek	not attaining				XXX					215	92	09/16/02
OK121300010150	Delaware Creek	not attaining				XXX					215	140	09/16/02
OK121300010150	Delaware Creek	attaining		XXX							413		12/16/02
OK121300010150	Delaware Creek	not attaining							XXX	138	103		01/27/03
OK121300010150	Delaware Creek	not attaining							XXX	399	103		01/27/03
OK121300010150	Delaware Creek	not attaining							XXX	138	140		01/27/03
OK121300010150	Delaware Creek	not attaining							XXX	399	140		01/27/03
OK121300010150	Delaware Creek	attaining		XXX							91		01/27/03
OK121300010150	Delaware Creek	attaining						XXX			302		01/27/03
OK121300010150	Delaware Creek	attaining							XXX	385			01/27/03
OK121300010150	Delaware Creek	attaining						XXX		302, 462			01/27/03
OK121300010150	Delaware Creek	not attaining		XXX							322	68	03/03/03
OK121300010150	Delaware Creek	not attaining		XXX							322	92	03/03/03
OK121300010150	Delaware Creek	not attaining		XXX							322	140	03/03/03
OK121300010150	Delaware Creek	not attaining		XXX							441	140	03/03/03
OK121300010150	Delaware Creek	attaining		XXX							317		03/03/03
OK121300010150	Delaware Creek	attaining						XXX			317		03/03/03
OK121300010150	Delaware Creek	attaining		XXX							153		
OK121300020010	Bird Creek	not enough information						XXX			398	140	09/18/01
OK121300020010	Bird Creek	not enough information				XXX					400	140	09/18/01
OK121300020010	Bird Creek	attaining		XXX							91		12/17/02
OK121300020010	Bird Creek	attaining							XXX	138			12/17/02
OK121300020010	Bird Creek	attaining						XXX		302			12/17/02
OK121300020010	Bird Creek	attaining							XXX	385			12/17/02
OK121300020010	Bird Creek	attaining							XXX	399			12/17/02
OK121300020010	Bird Creek	attaining		XXX						413			12/17/02
OK121300020010	Bird Creek	attaining						XXX		302, 462			12/17/02
OK121300020010	Bird Creek	attaining		XXX							317		03/04/03
OK121300020010	Bird Creek	attaining						XXX			317		03/04/03

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121300020010	Bird Creek	attaining							XXX		317		03/04/03
OK121300020010	Bird Creek	attaining		XXX							322		03/04/03
OK121300020010	Bird Creek	attaining		XXX							441		03/04/03
OK121300020010	Bird Creek	not attaining				XXX					215	85	05/13/03
OK121300020010	Bird Creek	not attaining				XXX					217	85	05/13/03
OK121300020010	Bird Creek	not attaining				XXX					215	156	05/13/03
OK121300020010	Bird Creek	not attaining				XXX					217	156	05/13/03
OK121300020010	Bird Creek	not attaining				XXX					215	92	05/13/03
OK121300020010	Bird Creek	not attaining				XXX					215	140	05/13/03
OK121300020010	Bird Creek	not attaining				XXX					217	140	05/13/03
OK121300040010	Hominy Creek	not enough information		XXX							230	140	09/11/01
OK121300040010	Hominy Creek	not enough information						XXX			398	140	09/17/01
OK121300040010	Hominy Creek	not enough information				XXX					400	140	09/17/01
OK121300040010	Hominy Creek	attaining		XXX							91		01/27/03
OK121300040010	Hominy Creek	attaining								XXX	138		01/27/03
OK121300040010	Hominy Creek	attaining						XXX			302		01/27/03
OK121300040010	Hominy Creek	attaining								XXX	385		01/27/03
OK121300040010	Hominy Creek	attaining								XXX	399		01/27/03
OK121300040010	Hominy Creek	attaining							XXX		302, 462		01/27/03
OK121300040010	Hominy Creek	not attaining		XXX							441	140	03/03/03
OK121300040010	Hominy Creek	attaining		XXX							317		03/03/03
OK121300040010	Hominy Creek	attaining						XXX			317		03/03/03
OK121300040010	Hominy Creek	attaining							XXX		317		03/03/03
OK121300040010	Hominy Creek	attaining		XXX							322		03/03/03
OK121300040010	Hominy Creek	not enough information		XXX							413	140	03/03/03
OK121300040010	Hominy Creek	not attaining				XXX					215	85	05/12/03
OK121300040010	Hominy Creek	not attaining				XXX					215	68	05/12/03
OK121300040010	Hominy Creek	not attaining				XXX					215	92	05/12/03
OK121300040010	Hominy Creek	not attaining				XXX					215	140	05/12/03
OK121300040010	Hominy Creek	not enough information				XXX					217	140	05/12/03
OK121300040280	Hominy Creek	not attaining				XXX					400	156	06/05/00
OK121300040280	Hominy Creek	not attaining				XXX					400	92	06/05/00
OK121300040280	Hominy Creek	not attaining				XXX					400	140	06/05/00
OK121300040280	Hominy Creek	attaining						XXX			302		06/05/00
OK121300040280	Hominy Creek	attaining				XXX					217		09/18/00
OK121300040280	Hominy Creek	not attaining						XXX			398	156	03/19/01
OK121300040280	Hominy Creek	not attaining							XXX		138	103	03/19/01

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121300040280	Hominy Creek	not attaining						XXX			398	92	03/19/01
OK121300040280	Hominy Creek	not attaining								XXX	138	140	03/19/01
OK121300040280	Hominy Creek	not attaining						XXX			398	140	03/19/01
OK121300040280	Hominy Creek	attaining		XXX							91		03/19/01
OK121300040280	Hominy Creek	attaining		XXX							317		03/19/01
OK121300040280	Hominy Creek	attaining						XXX			317		03/19/01
OK121300040280	Hominy Creek	attaining							XXX		317		03/19/01
OK121300040280	Hominy Creek	attaining		XXX							322		03/19/01
OK121300040280	Hominy Creek	attaining								XXX	385		03/19/01
OK121300040280	Hominy Creek	attaining		XXX							413		03/19/01
OK121300040280	Hominy Creek	attaining		XXX							441		03/19/01
OK121300040280	Hominy Creek	attaining							XXX		302, 462		03/19/01
OK121300040280	Hominy Creek	not attaining								XXX	399	103	01/28/03
OK121300040280	Hominy Creek	not attaining								XXX	399	140	01/28/03
OK121300040280	Hominy Creek	not attaining				XXX					215	156	05/13/03
OK121300040280	Hominy Creek	not attaining				XXX					215	92	05/13/03
OK121300040280	Hominy Creek	not attaining				XXX					215	140	05/13/03
OK121400010270	Curl Creek	attaining		XXX							230		08/30/01
OK121400010270	Curl Creek	not enough information				XXX					400	140	09/17/01
OK121400010270	Curl Creek	not attaining		XXX							413	156	01/27/03
OK121400010270	Curl Creek	not attaining		XXX							413	140	01/27/03
OK121400010270	Curl Creek	attaining		XXX							91		01/27/03
OK121400010270	Curl Creek	attaining								XXX	138		01/27/03
OK121400010270	Curl Creek	attaining								XXX	385		01/27/03
OK121400010270	Curl Creek	attaining								XXX	399		01/27/03
OK121400010270	Curl Creek	attaining							XXX		302, 462		01/27/03
OK121400010270	Curl Creek	not attaining		XXX							322	156	03/03/03
OK121400010270	Curl Creek	not attaining		XXX							322	92	03/03/03
OK121400010270	Curl Creek	not attaining		XXX							322	140	03/03/03
OK121400010270	Curl Creek	attaining		XXX							317		03/03/03
OK121400010270	Curl Creek	attaining							XXX		317		03/03/03
OK121400010270	Curl Creek	attaining		XXX							441		03/03/03
OK121400010270	Curl Creek	not attaining				XXX					215	156	05/12/03
OK121400010270	Curl Creek	not attaining				XXX					217	156	05/12/03
OK121400010270	Curl Creek	not attaining				XXX					215	92	05/12/03
OK121400010270	Curl Creek	not attaining				XXX					217	92	05/12/03
OK121400010270	Curl Creek	not attaining				XXX					215	140	05/12/03

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121400010270	Curl Creek	not attaining				XXX					217	140	05/12/03
OK121400010300	Hogshooter Creek	attaining		XXX							230		09/04/98
OK121400010300	Hogshooter Creek	not attaining				XXX					217	156	09/19/00
OK121400010300	Hogshooter Creek	not attaining				XXX					400	156	09/19/00
OK121400010300	Hogshooter Creek	not attaining				XXX					217	92	09/19/00
OK121400010300	Hogshooter Creek	not attaining				XXX					400	92	09/19/00
OK121400010300	Hogshooter Creek	not attaining				XXX					217	140	09/19/00
OK121400010300	Hogshooter Creek	not attaining				XXX					400	140	09/19/00
OK121400010300	Hogshooter Creek	not attaining		XXX							322	156	03/20/01
OK121400010300	Hogshooter Creek	not attaining		XXX							322	92	03/20/01
OK121400010300	Hogshooter Creek	not attaining		XXX							322	140	03/20/01
OK121400010300	Hogshooter Creek	attaining		XXX							91		03/20/01
OK121400010300	Hogshooter Creek	attaining							XXX		138		03/20/01
OK121400010300	Hogshooter Creek	attaining		XXX							317		03/20/01
OK121400010300	Hogshooter Creek	attaining							XXX		317		03/20/01
OK121400010300	Hogshooter Creek	attaining								XXX	385		03/20/01
OK121400010300	Hogshooter Creek	attaining		XXX							413		03/20/01
OK121400010300	Hogshooter Creek	attaining		XXX							441		03/20/01
OK121400010300	Hogshooter Creek	attaining							XXX		302, 462		03/20/01
OK121400010300	Hogshooter Creek	attaining								XXX	399		12/16/02
OK121400010300	Hogshooter Creek	not attaining				XXX					215	156	05/12/03
OK121400010300	Hogshooter Creek	not attaining				XXX					215	92	05/12/03
OK121400010300	Hogshooter Creek	not attaining				XXX					215	140	05/12/03
OK121400020140	Little Caney River	not enough information		XXX							230	140	08/31/01
OK121400020140	Little Caney River	not enough information						XXX			398	140	09/17/01
OK121400020140	Little Caney River	not enough information				XXX					400	140	09/17/01
OK121400020140	Little Caney River	attaining		XXX							91		01/28/03
OK121400020140	Little Caney River	attaining							XXX		138		01/28/03
OK121400020140	Little Caney River	attaining						XXX			302		01/28/03
OK121400020140	Little Caney River	attaining							XXX		385		01/28/03
OK121400020140	Little Caney River	attaining							XXX		399		01/28/03
OK121400020140	Little Caney River	attaining						XXX			302, 462		01/28/03
OK121400020140	Little Caney River	not attaining		XXX							413	156	03/03/03
OK121400020140	Little Caney River	not attaining		XXX							413	140	03/03/03
OK121400020140	Little Caney River	not attaining		XXX							441	140	03/03/03
OK121400020140	Little Caney River	attaining		XXX							317		03/03/03
OK121400020140	Little Caney River	attaining						XXX			317		03/03/03



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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121400020140	Little Caney River	attaining							XXX		317		03/03/03
OK121400020140	Little Caney River	attaining		XXX							322		03/03/03
OK121400020140	Little Caney River	not attaining				XXX					215	85	05/12/03
OK121400020140	Little Caney River	not attaining				XXX					215	156	05/12/03
OK121400020140	Little Caney River	not attaining				XXX					215	68	05/12/03
OK121400020140	Little Caney River	not attaining				XXX					215	92	05/12/03
OK121400020140	Little Caney River	not attaining				XXX					215	140	05/12/03
OK121400020140	Little Caney River	not enough information				XXX					217	140	05/12/03
OK121400020190	Mission Creek	attaining						XXX			398		09/18/01
OK121400020190	Mission Creek	not enough information				XXX					400	140	09/18/01
OK121400020190	Mission Creek	attaining		XXX							413		12/17/02
OK121400020190	Mission Creek	not attaining				XXX					91	140	01/28/03
OK121400020190	Mission Creek	not attaining				XXX				XXX	138	140	01/28/03
OK121400020190	Mission Creek	not attaining		XXX				XXX			302	140	01/28/03
OK121400020190	Mission Creek	attaining								XXX	385		01/28/03
OK121400020190	Mission Creek	attaining								XXX	399		01/28/03
OK121400020190	Mission Creek	attaining							XXX		302, 462		01/28/03
OK121400020190	Mission Creek	attaining		XXX							317		03/04/03
OK121400020190	Mission Creek	attaining						XXX			317		03/04/03
OK121400020190	Mission Creek	attaining		XXX					XXX		317		03/04/03
OK121400020190	Mission Creek	attaining		XXX							322		03/04/03
OK121400020190	Mission Creek	attaining		XXX							441		03/04/03
OK121400020190	Mission Creek	not attaining				XXX					215	156	05/13/03
OK121400020190	Mission Creek	not attaining				XXX					217	156	05/13/03
OK121400020190	Mission Creek	not attaining		XXX							215	92	05/13/03
OK121400020190	Mission Creek	not attaining				XXX					217	92	05/13/03
OK121400020190	Mission Creek	not attaining				XXX					215	140	05/13/03
OK121400020190	Mission Creek	not attaining		XXX							217	140	05/13/03
OK121400030170	Buck Creek	not enough information						XXX			302	140	06/06/00
OK121400030170	Buck Creek	not attaining				XXX					217	156	09/19/00
OK121400030170	Buck Creek	not attaining				XXX					400	156	09/19/00
OK121400030170	Buck Creek	not attaining				XXX					217	92	09/19/00
OK121400030170	Buck Creek	attaining									400		09/19/00
OK121400030170	Buck Creek	attaining		XXX							217		09/19/00
OK121400030170	Buck Creek	attaining									400		09/19/00
OK121400030170	Buck Creek	not attaining				XXX		XXX			398	156	03/20/01
OK121400030170	Buck Creek	attaining		XXX				XXX			398		03/20/01

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121400030170	Buck Creek	attaining						XXX			398		03/20/01
OK121400030170	Buck Creek	attaining		XXX							91		03/20/01
OK121400030170	Buck Creek	attaining								XXX	138		03/20/01
OK121400030170	Buck Creek	attaining									317		03/20/01
OK121400030170	Buck Creek	not enough information				XXX		XXX			317	140	03/20/01
OK121400030170	Buck Creek	attaining		XXX					XXX		317		03/20/01
OK121400030170	Buck Creek	attaining		XXX							322		03/20/01
OK121400030170	Buck Creek	attaining								XXX	385		03/20/01
OK121400030170	Buck Creek	not attaining				XXX					215	156	05/13/03
OK121400030170	Buck Creek	not attaining				XXX					215	92	05/13/03
OK121400030170	Buck Creek	attaining									215		05/13/03
OK121400040010	Sand Creek	not attaining				XXX					413	140	03/20/01
OK121400040010	Sand Creek	not attaining									441	140	03/20/01
OK121400040010	Sand Creek	not attaining				XXX			XXX		302, 462	140	03/20/01
OK121400040010	Sand Creek	attaining		XXX							230		08/27/01
OK121400040010	Sand Creek	not attaining				XXX					400	156	09/18/01
OK121400040010	Sand Creek	attaining		XXX							400		09/18/01
OK121400040010	Sand Creek	attaining		XXX							400		09/18/01
OK121400040010	Sand Creek	not attaining				XXX					215	156	09/17/02
OK121400040010	Sand Creek	not attaining				XXX					217	156	09/17/02
OK121400040010	Sand Creek	not attaining				XXX					215	92	09/17/02
OK121400040010	Sand Creek	not attaining									217	92	09/17/02
OK121400040010	Sand Creek	attaining									215		09/17/02
OK121400040010	Sand Creek	attaining		XXX							217		09/17/02
OK121400040010	Sand Creek	not attaining				XXX					413	156	12/17/02
OK121400040010	Sand Creek	attaining									413		12/17/02
OK121400040010	Sand Creek	not attaining				XXX			XXX		399	140	01/27/03
OK121400040010	Sand Creek	attaining									91		01/28/03
OK121400040010	Sand Creek	attaining							XXX		385		01/28/03
OK121400040010	Sand Creek	attaining							XXX		138		01/28/03
OK121400040010	Sand Creek	not attaining									322	156	03/04/03
OK121400040010	Sand Creek	not attaining				XXX					322	92	03/04/03
OK121400040010	Sand Creek	attaining									322		03/04/03
OK121400040010	Sand Creek	attaining		XXX							317		03/04/03
OK121400040010	Sand Creek	attaining						XXX			317		03/04/03
OK121500020090	Bull Creek	not attaining				XXX					91	85	07/17/01
OK121500020090	Bull Creek	not attaining		XXX							215	85	07/17/01

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121500020090	Bull Creek	not attaining				XXX					217	85	07/17/01
OK121500020090	Bull Creek	not attaining				XXX					322	85	07/17/01
OK121500020090	Bull Creek	not attaining		XXX							400	85	07/17/01
OK121500020090	Bull Creek	not attaining				XXX					91	85	07/17/01
OK121500020090	Bull Creek	not attaining		XXX							215	85	07/17/01
OK121500020090	Bull Creek	not attaining				XXX					217	85	07/17/01
OK121500020090	Bull Creek	not attaining				XXX					322	85	07/17/01
OK121500020090	Bull Creek	not attaining		XXX							400	85	07/17/01
OK121500020090	Bull Creek	not attaining									215	156	07/17/01
OK121500020090	Bull Creek	not attaining				XXX					217	156	07/17/01
OK121500020090	Bull Creek	not attaining		XXX							322	156	07/17/01
OK121500020090	Bull Creek	attaining									400		07/17/01
OK121500020090	Bull Creek	attaining		XXX							91		07/17/01
OK121500020090	Bull Creek	attaining		XXX							215		07/17/01
OK121500020090	Bull Creek	attaining									217		07/17/01
OK121500020090	Bull Creek	attaining									322		07/17/01
OK121500020090	Bull Creek	attaining		XXX							400		07/17/01
OK121500020090	Bull Creek	attaining									91		07/17/01
OK121500020090	Bull Creek	not attaining				XXX			XXX		399	140	01/28/03
OK121500020090	Bull Creek	not attaining		XXX					XXX		302, 462	140	01/28/03
OK121500020090	Bull Creek	not attaining				XXX					441	140	03/04/03
OK121500020360	Dog Creek	not attaining				XXX					230	140	08/11/99
OK121500020360	Dog Creek	not attaining		XXX							215	92	07/17/01
OK121500020360	Dog Creek	not attaining				XXX					217	92	07/17/01
OK121500020360	Dog Creek	not attaining				XXX					322	92	07/17/01
OK121500020360	Dog Creek	not attaining		XXX							400	92	07/17/01
OK121500020360	Dog Creek	not attaining				XXX					91	140	07/17/01
OK121500020360	Dog Creek	not attaining		XXX							215	140	07/17/01
OK121500020360	Dog Creek	not attaining				XXX					217	140	07/17/01
OK121500020360	Dog Creek	not attaining				XXX					322	140	07/17/01
OK121500020360	Dog Creek	not attaining		XXX							400	140	07/17/01
OK121500020360	Dog Creek	not attaining				XXX			XXX		138	140	07/17/01
OK121500020360	Dog Creek	not attaining				XXX		XXX			302	140	07/17/01
OK121500020360	Dog Creek	not attaining		XXX							317	140	07/17/01
OK121500020360	Dog Creek	not attaining				XXX		XXX			317	140	07/17/01
OK121500020360	Dog Creek	not attaining		XXX					XXX		317	140	07/17/01
OK121500020360	Dog Creek	not attaining				XXX		XXX			398	140	07/17/01

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121500020360	Dog Creek	not attaining				XXX					413	140	07/17/01
OK121500020360	Dog Creek	not attaining		XXX							441	140	07/17/01
OK121500020360	Dog Creek	not attaining				XXX			XXX		302, 462	140	07/17/01
OK121500020360	Dog Creek	attaining		XXX							230		08/03/01
OK121500020360	Dog Creek	attaining		XXX				XXX			398		09/17/01
OK121500020360	Dog Creek	not enough information									400	140	09/17/01
OK121500020360	Dog Creek	not attaining				XXX					215	156	09/16/02
OK121500020360	Dog Creek	not attaining		XXX							215	92	09/16/02
OK121500020360	Dog Creek	not attaining				XXX					215	140	09/16/02
OK121500020360	Dog Creek	attaining									217		09/16/02
OK121500020360	Dog Creek	not attaining				XXX					413	156	12/16/02
OK121500020360	Dog Creek	not attaining				XXX					413	140	12/16/02
OK121500020360	Dog Creek	attaining									91		01/27/03
OK121500020360	Dog Creek	not enough information		XXX					XXX		138	140	01/27/03
OK121500020360	Dog Creek	attaining						XXX			302		01/27/03
OK121500020360	Dog Creek	attaining							XXX		385		01/27/03
OK121500020360	Dog Creek	attaining		XXX					XXX		399		01/27/03
OK121500020360	Dog Creek	not attaining		XXX					XXX		399	140	01/28/03
OK121500020360	Dog Creek	not attaining		XXX							322	156	03/03/03
OK121500020360	Dog Creek	not attaining				XXX					322	92	03/03/03
OK121500020360	Dog Creek	not attaining		XXX							322	140	03/03/03
OK121500020360	Dog Creek	attaining									317		03/03/03
OK121500020360	Dog Creek	attaining						XXX			317		03/03/03
OK121500020360	Dog Creek	attaining							XXX		317		03/03/03
OK121510020050	California Creek	attaining		XXX							230		08/10/99
OK121510020050	California Creek	attaining						XXX			302		06/13/00
OK121510020050	California Creek	attaining									400		07/18/00
OK121510020050	California Creek	not attaining				XXX					217	156	08/22/00
OK121510020050	California Creek	not attaining		XXX							217	92	08/22/00
OK121510020050	California Creek	attaining									217		08/22/00
OK121510020050	California Creek	not attaining		XXX				XXX			398	156	03/26/01
OK121510020050	California Creek	not attaining		XXX				XXX			398	92	03/26/01
OK121510020050	California Creek	not enough information				XXX		XXX			398	140	03/26/01
OK121510020050	California Creek	attaining		XXX							91		03/26/01
OK121510020050	California Creek	attaining							XXX		138		03/26/01
OK121510020050	California Creek	attaining									317		03/26/01
OK121510020050	California Creek	attaining						XXX			317		03/26/01

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121510020050	California Creek	attaining							XXX		317		03/26/01
OK121510020050	California Creek	attaining									322		03/26/01
OK121510020050	California Creek	not enough information				XXX				XXX	385	140	03/26/01
OK121510020050	California Creek	not attaining		XXX							215	156	09/16/02
OK121510020050	California Creek	not attaining				XXX					215	92	09/16/02
OK121510020050	California Creek	attaining		XXX							215		09/16/02
OK121510020050	California Creek	not attaining		XXX					XXX		302, 462	140	01/27/03
OK121510020050	California Creek	attaining		XXX						XXX	399		01/27/03
OK121510020050	California Creek	not attaining				XXX					441	140	03/03/03
OK121510030010	Big Creek	not attaining				XXX					413	140	03/26/01
OK121510030010	Big Creek	not attaining				XXX					441	140	03/26/01
OK121510030010	Big Creek	not attaining							XXX		302, 462	140	03/26/01
OK121510030010	Big Creek	attaining		XXX							230		08/01/01
OK121510030010	Big Creek	attaining									400		09/18/01
OK121510030010	Big Creek	not attaining				XXX					215	156	09/10/02
OK121510030010	Big Creek	not attaining				XXX					217	156	09/10/02
OK121510030010	Big Creek	not attaining									215	92	09/10/02
OK121510030010	Big Creek	not attaining				XXX					217	92	09/10/02
OK121510030010	Big Creek	not attaining				XXX					215	140	09/10/02
OK121510030010	Big Creek	not attaining									217	140	09/10/02
OK121510030010	Big Creek	attaining		XXX							215		09/10/02
OK121510030010	Big Creek	attaining									217		09/10/02
OK121510030010	Big Creek	attaining		XXX							91		01/28/03
OK121510030010	Big Creek	attaining								XXX	138		01/28/03
OK121510030010	Big Creek	attaining								XXX	385		01/28/03
OK121510030010	Big Creek	attaining		XXX						XXX	399		01/28/03
OK121510030010	Big Creek	attaining									413		01/28/03
OK121510030010	Big Creek	attaining		XXX					XXX		302, 462		01/28/03
OK121510030010	Big Creek	attaining									317		03/04/03
OK121510030010	Big Creek	attaining		XXX					XXX		317		03/04/03
OK121510030010	Big Creek	attaining									322		03/04/03
OK121510030010	Big Creek	not enough information				XXX					441	140	03/04/03
OK121600010060	Ranger Creek	attaining						XXX			398		09/18/01
OK121600010060	Ranger Creek	attaining		XXX							400		09/18/01
OK121600010060	Ranger Creek	attaining		XXX							230		11/08/01
OK121600010060	Ranger Creek	not attaining				XXX					215	92	09/10/02
OK121600010060	Ranger Creek	not attaining				XXX					217	92	09/10/02

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600010060	Ranger Creek	not attaining				XXX					215	140	09/10/02
OK121600010060	Ranger Creek	not attaining				XXX					217	140	09/10/02
OK121600010060	Ranger Creek	not attaining				XXX					91	140	01/28/03
OK121600010060	Ranger Creek	not attaining				XXX				XXX	138	140	01/28/03
OK121600010060	Ranger Creek	attaining						XXX			302		01/28/03
OK121600010060	Ranger Creek	attaining								XXX	385		01/28/03
OK121600010060	Ranger Creek	not enough information				XXX				XXX	399	140	01/28/03
OK121600010060	Ranger Creek	attaining		XXX							413		01/28/03
OK121600010060	Ranger Creek	attaining		XXX							317		03/04/03
OK121600010060	Ranger Creek	attaining		XXX				XXX			317		03/04/03
OK121600010060	Ranger Creek	attaining							XXX		317		03/04/03
OK121600010060	Ranger Creek	attaining		XXX							322		03/04/03
OK121600010060	Ranger Creek	attaining									441		03/04/03
OK121600010100	Fourteenmile Creek	not attaining				XXX		XXX			398	156	09/18/01
OK121600010100	Fourteenmile Creek	not attaining				XXX					400	156	09/18/01
OK121600010100	Fourteenmile Creek	attaining			XXX			XXX			398		09/18/01
OK121600010100	Fourteenmile Creek	attaining									400		09/18/01
OK121600010100	Fourteenmile Creek	attaining						XXX			398		09/18/01
OK121600010100	Fourteenmile Creek	not enough information				XXX					400	140	09/18/01
OK121600010100	Fourteenmile Creek	not enough information				XXX					400		09/18/01
OK121600010100	Fourteenmile Creek	attaining						XXX			400		09/18/01
OK121600010100	Fourteenmile Creek	attaining			XXX						230		11/08/01
OK121600010100	Fourteenmile Creek	not attaining				XXX					215	92	09/10/02
OK121600010100	Fourteenmile Creek	not attaining				XXX					217	92	09/10/02
OK121600010100	Fourteenmile Creek	not attaining				XXX					215	156	09/17/02
OK121600010100	Fourteenmile Creek	not attaining				XXX					217	156	09/17/02
OK121600010100	Fourteenmile Creek	attaining									215		09/17/02
OK121600010100	Fourteenmile Creek	attaining			XXX						217		09/17/02
OK121600010100	Fourteenmile Creek	attaining			XXX						215		09/17/02
OK121600010100	Fourteenmile Creek	attaining			XXX						217		09/17/02
OK121600010100	Fourteenmile Creek	attaining			XXX						413		11/19/02
OK121600010100	Fourteenmile Creek	attaining			XXX						413		11/19/02
OK121600010100	Fourteenmile Creek	not attaining				XXX			XXX		302, 462	140	01/28/03
OK121600010100	Fourteenmile Creek	attaining								XXX	399		01/28/03
OK121600010100	Fourteenmile Creek	attaining			XXX						91		01/28/03
OK121600010100	Fourteenmile Creek	attaining							XXX		138		01/28/03
OK121600010100	Fourteenmile Creek	attaining			XXX						91		01/28/03

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600010100	Fourteenmile Creek	attaining								XXX	385		01/28/03
OK121600010100	Fourteenmile Creek	attaining						XXX			302		01/28/03
OK121600010100	Fourteenmile Creek	attaining							XXX		302, 462		01/28/03
OK121600010100	Fourteenmile Creek	attaining								XXX	399		01/28/03
OK121600010100	Fourteenmile Creek	attaining								XXX	138		01/28/03
OK121600010100	Fourteenmile Creek	attaining			XXX						413		01/28/03
OK121600010100	Fourteenmile Creek	not attaining				XXX					322	156	03/04/03
OK121600010100	Fourteenmile Creek	attaining									322		03/04/03
OK121600010100	Fourteenmile Creek	attaining									322		03/04/03
OK121600010100	Fourteenmile Creek	attaining			XXX						441		03/04/03
OK121600010100	Fourteenmile Creek	attaining			XXX						322		03/04/03
OK121600010100	Fourteenmile Creek	attaining			XXX						317		03/04/03
OK121600010100	Fourteenmile Creek	attaining						XXX			317		03/04/03
OK121600010100	Fourteenmile Creek	attaining							XXX		317		03/04/03
OK121600010430	Chouteau Creek	not attaining									230	140	08/02/01
OK121600010430	Chouteau Creek	not attaining				XXX					230	140	08/17/01
OK121600010430	Chouteau Creek	attaining		XXX				XXX			398		09/18/01
OK121600010430	Chouteau Creek	attaining									400		09/18/01
OK121600010430	Chouteau Creek	not attaining		XXX							215	85	09/09/02
OK121600010430	Chouteau Creek	not attaining									215	156	09/09/02
OK121600010430	Chouteau Creek	not attaining				XXX					215	100	09/09/02
OK121600010430	Chouteau Creek	not attaining				XXX					215	140	09/09/02
OK121600010430	Chouteau Creek	not attaining									217	140	09/09/02
OK121600010430	Chouteau Creek	not attaining				XXX		XXX			302	140	01/28/03
OK121600010430	Chouteau Creek	not attaining		XXX						XXX	385	140	01/28/03
OK121600010430	Chouteau Creek	not attaining				XXX			XXX		302, 462	140	01/28/03
OK121600010430	Chouteau Creek	not attaining				XXX					91	140	01/28/03
OK121600010430	Chouteau Creek	not attaining		XXX						XXX	138	140	01/28/03
OK121600010430	Chouteau Creek	not attaining				XXX		XXX			302	140	01/28/03
OK121600010430	Chouteau Creek	attaining								XXX	385		01/28/03
OK121600010430	Chouteau Creek	attaining								XXX	399		01/28/03
OK121600010430	Chouteau Creek	attaining									413		01/28/03
OK121600010430	Chouteau Creek	attaining							XXX		302, 462		01/28/03
OK121600010430	Chouteau Creek	not attaining		XXX							317	140	03/03/03
OK121600010430	Chouteau Creek	attaining		XXX				XXX			317		03/03/03
OK121600010430	Chouteau Creek	attaining							XXX		317		03/03/03
OK121600010430	Chouteau Creek	attaining		XXX							322		03/03/03

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600010430	Chouteau Creek	attaining		XXX							441		03/03/03
OK121600010430	Chouteau Creek	not attaining		XXX							317	140	03/04/03
OK121600010430	Chouteau Creek	not attaining						XXX			317	140	03/04/03
OK121600010430	Chouteau Creek	not attaining				XXX			XXX		317	140	03/04/03
OK121600010430	Chouteau Creek	not attaining				XXX					441	140	03/04/03
OK121600020030	Saline Creek	attaining			XXX						230		08/02/01
OK121600020030	Saline Creek	attaining									230		08/08/01
OK121600020030	Saline Creek	attaining			XXX			XXX			398		09/17/01
OK121600020030	Saline Creek	attaining									400		09/17/01
OK121600020030	Saline Creek	not enough information				XXX					400		09/18/01
OK121600020030	Saline Creek	attaining						XXX			400		09/18/01
OK121600020030	Saline Creek	not attaining				XXX					215	85	09/09/02
OK121600020030	Saline Creek	not attaining				XXX					217	85	09/09/02
OK121600020030	Saline Creek	not attaining				XXX					215	156	09/09/02
OK121600020030	Saline Creek	not attaining				XXX					217	156	09/09/02
OK121600020030	Saline Creek	attaining			XXX						215		09/09/02
OK121600020030	Saline Creek	attaining									217		09/09/02
OK121600020030	Saline Creek	attaining			XXX						215		09/09/02
OK121600020030	Saline Creek	attaining									217		09/09/02
OK121600020030	Saline Creek	not enough information				XXX					217		09/09/02
OK121600020030	Saline Creek	not attaining				XXX					215	140	09/09/02
OK121600020030	Saline Creek	not enough information				XXX				XXX	138	140	01/27/03
OK121600020030	Saline Creek	attaining			XXX					XXX	399		01/27/03
OK121600020030	Saline Creek	attaining									91		01/27/03
OK121600020030	Saline Creek	attaining			XXX			XXX			302		01/27/03
OK121600020030	Saline Creek	attaining			XXX					XXX	385		01/27/03
OK121600020030	Saline Creek	attaining			XXX						91		01/28/03
OK121600020030	Saline Creek	attaining								XXX	385		01/28/03
OK121600020030	Saline Creek	attaining						XXX			302		01/28/03
OK121600020030	Saline Creek	attaining							XXX		302, 462		01/28/03
OK121600020030	Saline Creek	attaining								XXX	399		01/28/03
OK121600020030	Saline Creek	attaining								XXX	138		01/28/03
OK121600020030	Saline Creek	attaining			XXX						413		01/28/03
OK121600020030	Saline Creek	attaining									317		03/03/03
OK121600020030	Saline Creek	attaining						XXX			317		03/03/03
OK121600020030	Saline Creek	attaining							XXX		317		03/03/03
OK121600020030	Saline Creek	not enough information				XXX					322	140	03/03/03



## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600020030	Saline Creek	attaining			XXX						441		03/03/03
OK121600020030	Saline Creek	attaining			XXX						322		03/03/03
OK121600020030	Saline Creek	attaining			XXX						317		03/03/03
OK121600020030	Saline Creek	attaining						XXX			317		03/03/03
OK121600020030	Saline Creek	attaining							XXX		317		03/03/03
OK121600030090	Drowning Creek	attaining									230		08/07/01
OK121600030090	Drowning Creek	attaining			XXX						230		08/08/01
OK121600030090	Drowning Creek	not attaining									400	156	09/17/01
OK121600030090	Drowning Creek	attaining			XXX						400		09/17/01
OK121600030090	Drowning Creek	not enough information				XXX					400		09/17/01
OK121600030090	Drowning Creek	attaining						XXX			400		09/17/01
OK121600030090	Drowning Creek	not attaining				XXX					215	156	09/09/02
OK121600030090	Drowning Creek	not attaining				XXX					217	156	09/09/02
OK121600030090	Drowning Creek	not attaining				XXX					215	140	09/09/02
OK121600030090	Drowning Creek	not attaining				XXX					217	140	09/09/02
OK121600030090	Drowning Creek	attaining			XXX						215		09/09/02
OK121600030090	Drowning Creek	attaining									217		09/09/02
OK121600030090	Drowning Creek	not attaining				XXX					217	140	09/09/02
OK121600030090	Drowning Creek	not attaining				XXX					215	140	09/09/02
OK121600030090	Drowning Creek	not attaining				XXX					413	140	01/27/03
OK121600030090	Drowning Creek	not attaining				XXX			XXX		302, 462	140	01/27/03
OK121600030090	Drowning Creek	attaining			XXX					XXX	399		01/27/03
OK121600030090	Drowning Creek	attaining									91		01/27/03
OK121600030090	Drowning Creek	attaining			XXX					XXX	138		01/27/03
OK121600030090	Drowning Creek	attaining								XXX	385		01/27/03
OK121600030090	Drowning Creek	attaining									413		01/27/03
OK121600030090	Drowning Creek	attaining			XXX				XXX		302, 462		01/27/03
OK121600030090	Drowning Creek	attaining			XXX						91		01/27/03
OK121600030090	Drowning Creek	attaining								XXX	385		01/27/03
OK121600030090	Drowning Creek	attaining						XXX			302		01/27/03
OK121600030090	Drowning Creek	attaining							XXX		302, 462		01/27/03
OK121600030090	Drowning Creek	not attaining	Drowning Creek							XXX	399	140	01/27/03
OK121600030090	Drowning Creek	not attaining								XXX	138	140	01/27/03
OK121600030090	Drowning Creek	attaining			XXX						413		01/27/03
OK121600030090	Drowning Creek	not attaining				XXX					441	140	03/03/03
OK121600030090	Drowning Creek	not attaining				XXX					322	156	03/03/03
OK121600030090	Drowning Creek	not attaining									322	140	03/03/03

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600030090	Drowning Creek	attaining									317		03/03/03
OK121600030090	Drowning Creek	attaining			XXX				XXX		317		03/03/03
OK121600030090	Drowning Creek	not enough information				XXX					441	140	03/03/03
OK121600030090	Drowning Creek	attaining			XXX						441		03/03/03
OK121600030090	Drowning Creek	attaining			XXX						322		03/03/03
OK121600030090	Drowning Creek	attaining			XXX						317		03/03/03
OK121600030090	Drowning Creek	attaining						XXX			317		03/03/03
OK121600030090	Drowning Creek	attaining							XXX		317		03/03/03
OK121600030190	Little Horse Creek	attaining						XXX			398		09/17/01
OK121600030190	Little Horse Creek	attaining		XXX							400		09/17/01
OK121600030190	Little Horse Creek	not attaining		XXX							230	140	10/25/01
OK121600030190	Little Horse Creek	not attaining				XXX					215	92	09/09/02
OK121600030190	Little Horse Creek	not attaining				XXX					217	92	09/09/02
OK121600030190	Little Horse Creek	not attaining		XXX							215	140	09/09/02
OK121600030190	Little Horse Creek	not attaining				XXX					217	140	09/09/02
OK121600030190	Little Horse Creek	not attaining				XXX					91	140	01/27/03
OK121600030190	Little Horse Creek	not attaining				XXX				XXX	138	140	01/27/03
OK121600030190	Little Horse Creek	not attaining						XXX			302	140	01/27/03
OK121600030190	Little Horse Creek	attaining		XXX						XXX	385		01/27/03
OK121600030190	Little Horse Creek	attaining								XXX	399		01/27/03
OK121600030190	Little Horse Creek	attaining		XXX							413		01/27/03
OK121600030190	Little Horse Creek	not attaining				XXX					317	140	03/03/03
OK121600030190	Little Horse Creek	attaining		XXX				XXX			317		03/03/03
OK121600030190	Little Horse Creek	attaining							XXX		317		03/03/03
OK121600030190	Little Horse Creek	attaining		XXX							322		03/03/03
OK121600030190	Little Horse Creek	not enough information									441	140	03/03/03
OK121600030510	Sycamore Creek	attaining									230		08/07/01
OK121600030510	Sycamore Creek	attaining			XXX						400		09/17/01
OK121600030510	Sycamore Creek	not enough information				XXX					400		09/17/01
OK121600030510	Sycamore Creek	not enough information						XXX			400		09/17/01
OK121600030510	Sycamore Creek	attaining			XXX						230		10/25/01
OK121600030510	Sycamore Creek	not attaining				XXX					215	85	09/09/02
OK121600030510	Sycamore Creek	not attaining				XXX					215	156	09/09/02
OK121600030510	Sycamore Creek	not attaining				XXX					215	84	09/09/02
OK121600030510	Sycamore Creek	not attaining				XXX					215	140	09/09/02
OK121600030510	Sycamore Creek	attaining			XXX						217		09/09/02
OK121600030510	Sycamore Creek	not attaining				XXX					215	140	09/09/02

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600030510	Sycamore Creek	not attaining				XXX					217	140	09/09/02
OK121600030510	Sycamore Creek	attaining			XXX						215		09/16/02
OK121600030510	Sycamore Creek	attaining									217		09/16/02
OK121600030510	Sycamore Creek	attaining									215		09/16/02
OK121600030510	Sycamore Creek	not enough information				XXX					217	156	09/16/02
OK121600030510	Sycamore Creek	attaining			XXX						215		09/16/02
OK121600030510	Sycamore Creek	attaining									217		09/16/02
OK121600030510	Sycamore Creek	not attaining				XXX			XXX		302, 462	140	01/27/03
OK121600030510	Sycamore Creek	not attaining				XXX					91	140	01/27/03
OK121600030510	Sycamore Creek	attaining									413		01/27/03
OK121600030510	Sycamore Creek	attaining			XXX						91		01/27/03
OK121600030510	Sycamore Creek	attaining								XXX	385		01/27/03
OK121600030510	Sycamore Creek	attaining						XXX			302		01/27/03
OK121600030510	Sycamore Creek	attaining							XXX		302, 462		01/27/03
OK121600030510	Sycamore Creek	attaining								XXX	399		01/27/03
OK121600030510	Sycamore Creek	attaining								XXX	138		01/27/03
OK121600030510	Sycamore Creek	attaining			XXX						413		01/27/03
OK121600030510	Sycamore Creek	attaining			XXX						317		03/03/03
OK121600030510	Sycamore Creek	attaining									322		03/03/03
OK121600030510	Sycamore Creek	attaining									441		03/03/03
OK121600030510	Sycamore Creek	not enough information									322	85	03/03/03
OK121600030510	Sycamore Creek	attaining			XXX						322		03/03/03
OK121600030510	Sycamore Creek	attaining			XXX						441		03/03/03
OK121600030510	Sycamore Creek	attaining			XXX						322		03/03/03
OK121600030510	Sycamore Creek	attaining			XXX						317		03/03/03
OK121600030510	Sycamore Creek	attaining						XXX			317		03/03/03
OK121600030510	Sycamore Creek	attaining							XXX		317		03/03/03
OK121600040060	Tar Creek	attaining	XXX								230		08/07/01
OK121600040060	Tar Creek	attaining	XXX								230		08/29/01
OK121600040060	Tar Creek	attaining	XXX								400		09/17/01
OK121600040060	Tar Creek	not enough information					XXX				400		09/17/01
OK121600040060	Tar Creek	not enough information					XXX				217		09/09/02
OK121600040060	Tar Creek	not attaining					XXX				215	140	09/09/02
OK121600040060	Tar Creek	not attaining					XXX				215	140	09/16/02
OK121600040060	Tar Creek	not attaining					XXX				217	140	09/16/02
OK121600040060	Tar Creek	attaining	XXX							XXX	385		01/27/03
OK121600040060	Tar Creek	not enough information					XXX			XXX	399	140	01/27/03

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600040060	Tar Creek	attaining	XXX								91		01/27/03
OK121600040060	Tar Creek	attaining	XXX							XXX	138		01/27/03
OK121600040060	Tar Creek	attaining	XXX								91		01/27/03
OK121600040060	Tar Creek	attaining	XXX								413		01/27/03
OK121600040060	Tar Creek	not attaining					XXX				322	92	03/03/03
OK121600040060	Tar Creek	not attaining					XXX				322	140	03/03/03
OK121600040060	Tar Creek	not enough information					XXX				317	140	03/03/03
OK121600040060	Tar Creek	attaining	XXX						XXX		317		03/03/03
OK121600040060	Tar Creek	attaining	XXX								441		03/03/03
OK121600040060	Tar Creek	attaining	XXX								322		03/03/03
OK121600040060	Tar Creek	attaining	XXX								317		03/03/03
OK121600060080	Little Cabin Creek	not attaining				XXX					230	140	09/13/01
OK121600060080	Little Cabin Creek	attaining		XXX							400		09/17/01
OK121600060080	Little Cabin Creek	not attaining		XXX							215	140	09/16/02
OK121600060080	Little Cabin Creek	not attaining				XXX					217	140	09/16/02
OK121600060080	Little Cabin Creek	attaining		XXX							215		09/17/02
OK121600060080	Little Cabin Creek	attaining									217		09/17/02
OK121600060080	Little Cabin Creek	attaining		XXX							215		09/17/02
OK121600060080	Little Cabin Creek	attaining		XXX							217		09/17/02
OK121600060080	Little Cabin Creek	not attaining				XXX					413	140	12/16/02
OK121600060080	Little Cabin Creek	attaining									413		12/16/02
OK121600060080	Little Cabin Creek	not attaining		XXX					XXX		302, 462	140	01/27/03
OK121600060080	Little Cabin Creek	not attaining				XXX				XXX	138	140	01/27/03
OK121600060080	Little Cabin Creek	not attaining				XXX				XXX	385	140	01/27/03
OK121600060080	Little Cabin Creek	not attaining		XXX						XXX	399	140	01/27/03
OK121600060080	Little Cabin Creek	not attaining				XXX					91	140	01/27/03
OK121600060080	Little Cabin Creek	attaining		XXX					XXX		302, 462		01/27/03
OK121600060080	Little Cabin Creek	not attaining				XXX					441	140	03/03/03
OK121600060080	Little Cabin Creek	not attaining				XXX					441	140	03/03/03
OK121600060080	Little Cabin Creek	not attaining		XXX							317	140	03/03/03
OK121600060080	Little Cabin Creek	not attaining							XXX		317	140	03/03/03
OK121600060080	Little Cabin Creek	not attaining									322	140	03/03/03
OK121600060080	Little Cabin Creek	not enough information				XXX					322	85	03/04/03
OK121600060080	Little Cabin Creek	attaining									322		03/04/03
OK121600060220	Big Cabin Creek	attaining		XXX							230		08/06/01
OK121600060220	Big Cabin Creek	not attaining									215	84	09/17/02
OK121600060220	Big Cabin Creek	not attaining									217	84	09/17/02

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121600060220	Big Cabin Creek	not attaining		XXX							215	92	09/17/02
OK121600060220	Big Cabin Creek	attaining		XXX							217		09/17/02
OK121600060220	Big Cabin Creek	attaining		XXX							215		09/17/02
OK121600060220	Big Cabin Creek	attaining		XXX							217		09/17/02
OK121600060220	Big Cabin Creek	not enough information					XXX			XXX	138	140	01/28/03
OK121600060220	Big Cabin Creek	not enough information					XXX				91	140	01/28/03
OK121600060220	Big Cabin Creek	not enough information						XXX			302	140	01/28/03
OK121600060220	Big Cabin Creek	not attaining									322	84	03/04/03
OK121600060220	Big Cabin Creek	not enough information					XXX				322	92	03/04/03
OK121600060220	Big Cabin Creek	attaining									322		03/04/03
OK121600060220	Big Cabin Creek	attaining		XXX							441		03/04/03
OK121600070110	Fivemile Creek	attaining			XXX						215		08/27/01
OK121600070110	Fivemile Creek	attaining									217		08/27/01
OK121600070110	Fivemile Creek	attaining									400		08/27/01
OK121600070110	Fivemile Creek	attaining									215		08/27/01
OK121600070110	Fivemile Creek	not enough information				XXX					217	156	08/27/01
OK121600070110	Fivemile Creek	attaining			XXX						400		08/27/01
OK121600070110	Fivemile Creek	attaining			XXX						215		08/27/01
OK121600070110	Fivemile Creek	attaining									217		08/27/01
OK121600070110	Fivemile Creek	attaining			XXX			XXX			398		09/18/01
OK121600070110	Fivemile Creek	attaining			XXX						400		09/18/01
OK121600070110	Fivemile Creek	attaining									413		12/17/02
OK121600070110	Fivemile Creek	not enough information				XXX				XXX	385	140	01/28/03
OK121600070110	Fivemile Creek	attaining								XXX	399		01/28/03
OK121600070110	Fivemile Creek	attaining							XXX		302, 462		01/28/03
OK121600070110	Fivemile Creek	attaining			XXX						317		03/04/03
OK121600070110	Fivemile Creek	attaining						XXX			317		03/04/03
OK121600070110	Fivemile Creek	not enough information				XXX			XXX		317	140	03/04/03
OK121610000050	Pryor Creek	not attaining				XXX					400	100	08/27/01
OK121610000050	Pryor Creek	not attaining				XXX					215	92	08/27/01
OK121610000050	Pryor Creek	not attaining		XXX							217	92	08/27/01
OK121610000050	Pryor Creek	not attaining				XXX					400	92	08/27/01
OK121610000050	Pryor Creek	not attaining				XXX					215	140	08/27/01
OK121610000050	Pryor Creek	not attaining		XXX							217	140	08/27/01
OK121610000050	Pryor Creek	not attaining				XXX					400	140	08/27/01
OK121610000050	Pryor Creek	attaining		XXX							215		08/27/01
OK121610000050	Pryor Creek	attaining		XXX							215		08/27/01

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK121610000050	Pryor Creek	attaining									215		08/27/01
OK121610000050	Pryor Creek	attaining		XXX							215		08/27/01
OK121610000050	Pryor Creek	attaining									215		08/27/01
OK121610000050	Pryor Creek	not enough information									217	140	08/27/01
OK121610000050	Pryor Creek	not attaining				XXX					91	140	04/01/02
OK121610000050	Pryor Creek	not attaining		XXX						XXX	138	140	04/01/02
OK121610000050	Pryor Creek	not attaining				XXX					317	140	04/01/02
OK121610000050	Pryor Creek	not attaining				XXX			XXX		317	140	04/01/02
OK121610000050	Pryor Creek	not attaining		XXX							322	140	04/01/02
OK121610000050	Pryor Creek	not attaining								XXX	385	140	04/01/02
OK121610000050	Pryor Creek	not attaining				XXX					413	140	04/01/02
OK121610000050	Pryor Creek	not attaining		XXX							441	140	04/01/02
OK121610000050	Pryor Creek	not attaining		XXX					XXX		302, 462	140	04/01/02
OK121610000050	Pryor Creek	attaining									91		04/01/02
OK121610000050	Pryor Creek	attaining								XXX	138		04/01/02
OK121610000050	Pryor Creek	attaining									317		04/01/02
OK121610000050	Pryor Creek	not enough information				XXX			XXX		317	140	04/01/02
OK121610000050	Pryor Creek	attaining		XXX							322		04/01/02
OK121610000050	Pryor Creek	attaining								XXX	385		04/01/02
OK121610000050	Pryor Creek	not attaining				XXX				XXX	399	140	01/28/03
OK520610020120	Buggy Creek	not attaining				XXX					400	140	08/27/01
OK520610020120	Buggy Creek	not attaining				XXX					400	156	08/27/01
OK520610020120	Buggy Creek	not attaining				XXX					400	92	08/27/01
OK520610020120	Buggy Creek	attaining		XXX							400		08/27/01
OK520610020120	Buggy Creek	not attaining				XXX					413	140	04/01/02
OK520610020120	Buggy Creek	not attaining				XXX					441	140	04/01/02
OK520610020120	Buggy Creek	not attaining				XXX			XXX		302, 462	140	04/01/02
OK520610020120	Buggy Creek	attaining		XXX							413		12/17/02
OK520610020120	Buggy Creek	not attaining				XXX				XXX	385	155	01/27/03
OK520610020120	Buggy Creek	not attaining				XXX				XXX	399	155	01/27/03
OK520610020120	Buggy Creek	attaining		XXX						XXX	385		01/27/03
OK520610020120	Buggy Creek	attaining								XXX	399		01/27/03
OK520610020120	Buggy Creek	attaining									91		01/27/03
OK520610020120	Buggy Creek	attaining		XXX						XXX	138		01/27/03
OK520610020120	Buggy Creek	not attaining				XXX				XXX	399	140	01/28/03
OK520610020120	Buggy Creek	attaining									317		03/04/03
OK520610020120	Buggy Creek	attaining							XXX		317		03/04/03

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK520610020120	Buggy Creek	attaining		XXX							322		03/04/03
OK520610020120	Buggy Creek	attaining									441		03/04/03
OK520610020120	Buggy Creek	not attaining				XXX					215	156	05/13/03
OK520610020120	Buggy Creek	not attaining				XXX					217	156	05/13/03
OK520610020120	Buggy Creek	not attaining				XXX					215	92	05/13/03
OK520610020120	Buggy Creek	not attaining				XXX					217	92	05/13/03
OK520610020120	Buggy Creek	not attaining				XXX					215	140	05/13/03
OK520610020120	Buggy Creek	not attaining				XXX					217	140	05/13/03
OK520610030010	Walnut Creek	not attaining				XXX			XXX		302, 462	140	01/27/03
OK520610030010	Walnut Creek	attaining		XXX						XXX	385		01/27/03
OK520610030010	Walnut Creek	attaining								XXX	399		01/27/03
OK520610030010	Walnut Creek	attaining								XXX	385		01/27/03
OK520610030010	Walnut Creek	attaining		XXX						XXX	399		01/27/03
OK520610030010	Walnut Creek	attaining									91		01/27/03
OK520610030010	Walnut Creek	attaining								XXX	138		01/27/03
OK520610030010	Walnut Creek	not enough information				XXX		XXX			302	140	01/27/03
OK520610030010	Walnut Creek	attaining		XXX							317		03/04/03
OK520610030010	Walnut Creek	attaining		XXX				XXX			317		03/04/03
OK520610030010	Walnut Creek	attaining							XXX		317		03/04/03
OK520610030010	Walnut Creek	not attaining				XXX					215	156	05/13/03
OK520610030010	Walnut Creek	not attaining				XXX					217	156	05/13/03
OK520610030010	Walnut Creek	not attaining				XXX					215	92	05/13/03
OK520610030010	Walnut Creek	not attaining				XXX					217	92	05/13/03
OK520610030010	Walnut Creek	attaining				XXX					215		05/13/03
OK520610030010	Walnut Creek	attaining		XXX							217		05/13/03
OK520620020090	Trail Creek	not attaining				XXX		XXX			398	140	09/18/01
OK520620020090	Trail Creek	not attaining				XXX					400	140	09/18/01
OK520620020090	Trail Creek	not attaining									215	156	07/09/02
OK520620020090	Trail Creek	not attaining									217	156	07/09/02
OK520620020090	Trail Creek	not attaining				XXX					215	92	07/09/02
OK520620020090	Trail Creek	not attaining				XXX					217	92	07/09/02
OK520620020090	Trail Creek	not attaining				XXX					215	140	07/09/02
OK520620020090	Trail Creek	attaining		XXX							217		07/09/02
OK520620020090	Trail Creek	not attaining				XXX					413	140	01/27/03
OK520620020090	Trail Creek	not attaining				XXX			XXX		302, 462	140	01/27/03
OK520620020090	Trail Creek	not attaining								XXX	385	155	01/27/03
OK520620020090	Trail Creek	not attaining								XXX	399	155	01/27/03

## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK520620020090	Trail Creek	attaining								XXX	385		01/27/03
OK520620020090	Trail Creek	attaining		XXX						XXX	399		01/27/03
OK520620020090	Trail Creek	attaining									91		01/27/03
OK520620020090	Trail Creek	attaining		XXX						XXX	138		01/27/03
OK520620020090	Trail Creek	attaining		XXX				XXX			302		01/27/03
OK520620020090	Trail Creek	not attaining				XXX					322	140	03/04/03
OK520620020090	Trail Creek	not attaining				XXX					441	140	03/04/03
OK520620020090	Trail Creek	attaining		XXX							317		03/04/03
OK520620020090	Trail Creek	attaining						XXX			317		03/04/03
OK520620030020	Lone Creek	not attaining				XXX		XXX			398	140	09/18/01
OK520620030020	Lone Creek	not attaining				XXX					400	140	09/18/01
OK520620030020	Lone Creek	attaining		XXX				XXX			398		09/18/01
OK520620030020	Lone Creek	attaining									400		09/18/01
OK520620030020	Lone Creek	not attaining									413	140	01/27/03
OK520620030020	Lone Creek	not attaining				XXX			XXX		302, 462	140	01/27/03
OK520620030020	Lone Creek	attaining									91		01/27/03
OK520620030020	Lone Creek	attaining								XXX	138		01/27/03
OK520620030020	Lone Creek	attaining		XXX				XXX			302		01/27/03
OK520620030020	Lone Creek	not enough information				XXX				XXX	385	140	01/27/03
OK520620030020	Lone Creek	attaining		XXX						XXX	399		01/27/03
OK520620030020	Lone Creek	not attaining				XXX			XXX		317	140	03/04/03
OK520620030020	Lone Creek	not attaining				XXX					322	140	03/04/03
OK520620030020	Lone Creek	not attaining									441	140	03/04/03
OK520620030020	Lone Creek	attaining									317		03/04/03
OK520620030020	Lone Creek	attaining						XXX			317		03/04/03
OK520620030020	Lone Creek	attaining		XXX					XXX		317		03/04/03
OK520620030020	Lone Creek	not enough information									322	140	03/04/03
OK520620030020	Lone Creek	not attaining				XXX					215	156	05/13/03
OK520620030020	Lone Creek	not attaining									217	156	05/13/03
OK520620030020	Lone Creek	not attaining									215	140	05/13/03
OK520620030020	Lone Creek	attaining		XXX							217		05/13/03
OK520620040050	Hackberry Creek	not attaining				XXX					215	85	09/09/02
OK520620040050	Hackberry Creek	not attaining									217	85	09/09/02
OK520620040050	Hackberry Creek	not attaining									215	85	09/09/02
OK520620040050	Hackberry Creek	not attaining				XXX					217	85	09/09/02
OK520620040050	Hackberry Creek	not attaining				XXX					215	156	09/09/02
OK520620040050	Hackberry Creek	not attaining									217	156	09/09/02



## Appendix E.1. OCC assessment results for beneficial use support.

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK520620040050	Hackberry Creek	not attaining									215	84	09/09/02
OK520620040050	Hackberry Creek	attaining		XXX							217		09/09/02
OK520620040050	Hackberry Creek	attaining									215		09/09/02
OK520620040050	Hackberry Creek	attaining									217		09/09/02
OK520620040050	Hackberry Creek	attaining		XXX							215		09/09/02
OK520620040050	Hackberry Creek	attaining									217		09/09/02
OK520620040050	Hackberry Creek	attaining									215		09/09/02
OK520620040050	Hackberry Creek	attaining		XXX							217		09/09/02
OK520620040050	Hackberry Creek	not attaining				XXX					413	140	01/27/03
OK520620040050	Hackberry Creek	not attaining				XXX			XXX		302, 462	140	01/27/03
OK520620040050	Hackberry Creek	not enough information									91	140	01/27/03
OK520620040050	Hackberry Creek	not enough information				XXX				XXX	138	140	01/27/03
OK520620040050	Hackberry Creek	not enough information		XXX				XXX			302	140	01/27/03
OK520620040050	Hackberry Creek	attaining		XXX							317		03/03/03
OK520620040050	Hackberry Creek	attaining						XXX			317		03/03/03
OK520620040050	Hackberry Creek	not attaining				XXX					441	140	03/04/03
OK520620050160	Commission Creek	not attaining				XXX		XXX			398	140	09/18/01
OK520620050160	Commission Creek	attaining									400		09/18/01
OK520620050160	Commission Creek	not attaining				XXX			XXX		385	140	01/27/03
OK520620050160	Commission Creek	attaining		XXX						XXX	399		01/27/03
OK520620050160	Commission Creek	attaining									413		01/27/03
OK520620050160	Commission Creek	attaining							XXX		302, 462		01/27/03
OK520620050160	Commission Creek	not attaining				XXX			XXX		317	140	03/03/03
OK520620050160	Commission Creek	not attaining				XXX					322	140	03/03/03
OK520620050160	Commission Creek	attaining		XXX							441		03/03/03
OK520620050160	Commission Creek	attaining									322		03/04/03
OK520620050160	Commission Creek	not enough information				XXX					322	92	03/04/03
OK520620050160	Commission Creek	attaining									322		03/04/03
OK520620050160	Commission Creek	attaining									215		05/13/03
OK520620050160	Commission Creek	attaining		XXX							217		05/13/03
OK520620050160	Commission Creek	not enough information									215	92	05/13/03
OK520620050160	Commission Creek	attaining									217		05/13/03
OK520620050160	Commission Creek	attaining		XXX							215		05/13/03
OK520620050160	Commission Creek	attaining		XXX							217		05/13/03
OK520620060010	Deer Creek	attaining									230		08/07/01
OK520620060010	Deer Creek	not attaining				XXX					230	140	09/05/01
OK520620060010	Deer Creek	not enough information						XXX			398	140	09/17/01

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

OKWBID	SITE NAME	ATTAINMENT	HABITAT LIMITED AQ. COMM.	WARM WATER AQ. COMM.	COOL WATER AQ. COMM.	PRIMARY CONTACT (RECR)	SECONDARY CONTACT (RECR)	PUBLIC/PRIVATE WATER SUP.	AESTHETICS	AGRICULTURE	CAUSE	SOURCE	DATE LAST MONITORED
OK520620060010	Deer Creek	not enough information				XXX					400	140	09/17/01
OK520620060010	Deer Creek	not attaining				XXX					400	140	09/18/01
OK520620060010	Deer Creek	not attaining				XXX					215	140	09/09/02
OK520620060010	Deer Creek	attaining		XXX							217		09/09/02
OK520620060010	Deer Creek	not attaining				XXX					91	140	01/27/03
OK520620060010	Deer Creek	not attaining				XXX				XXX	138	140	01/27/03
OK520620060010	Deer Creek	attaining						XXX			302		01/27/03
OK520620060010	Deer Creek	attaining								XXX	385		01/27/03
OK520620060010	Deer Creek	attaining								XXX	399		01/27/03
OK520620060010	Deer Creek	attaining		XXX							413		01/27/03
OK520620060010	Deer Creek	attaining							XXX		302, 462		01/27/03
OK520620060010	Deer Creek	not attaining				XXX					91	140	01/28/03
OK520620060010	Deer Creek	not attaining				XXX				XXX	138	140	01/28/03
OK520620060010	Deer Creek	not attaining				XXX				XXX	385	140	01/28/03
OK520620060010	Deer Creek	not attaining				XXX				XXX	399	140	01/28/03
OK520620060010	Deer Creek	not attaining				XXX					413	140	01/28/03
OK520620060010	Deer Creek	not attaining				XXX			XXX		302, 462	140	01/28/03
OK520620060010	Deer Creek	attaining		XXX							317		03/03/03
OK520620060010	Deer Creek	attaining						XXX			317		03/03/03
OK520620060010	Deer Creek	attaining							XXX		317		03/03/03

## Appendix E.2. Key for beneficial use support assessment codes and impairment 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