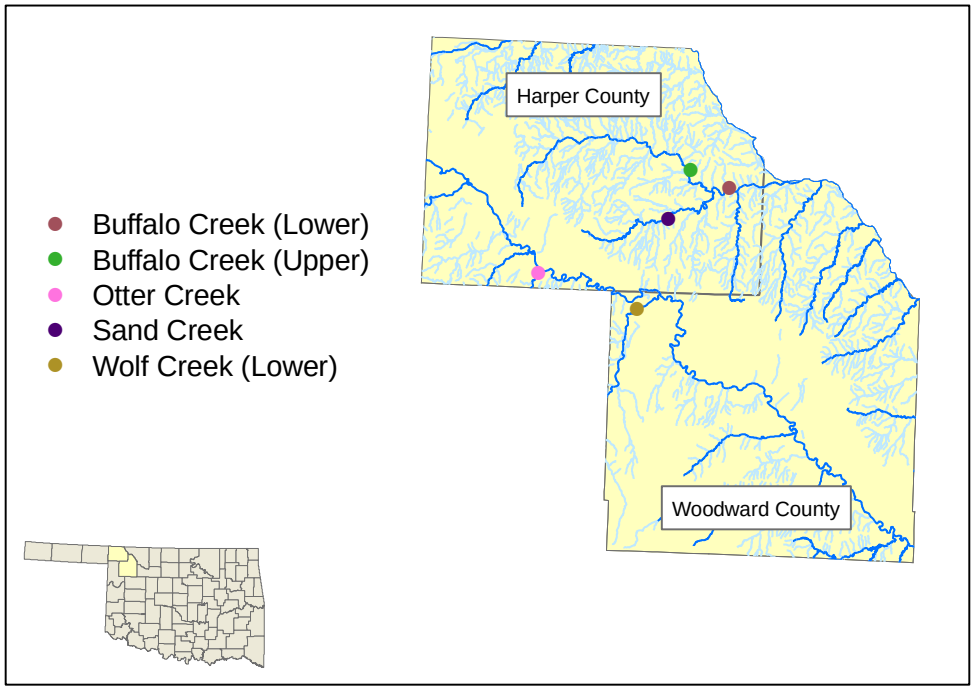
OKLAHOMA CONSERVATION COMMISSION

Know Your Stream: Rotating Basin Site Summary

Harper & Woodward Counties, Central Great Plains Level 3 Ecoregion

The Oklahoma Conservation Commission (OCC) has the statutory responsibility of monitoring streams across the state in order to identify healthy streams as well as those which may be impacted by non-point source (NPS) pollution. NPS pollution is pollution which runs off the land from diffuse sources rather than being discharged from a specific source. If a stream is found to be impaired by NPS pollution, the OCC may be able to implement a voluntary cost-share program to address the identified problems; however, streams must be monitored in order to select best management practices necessary for improvement. The OCC's "Rotating Basin Monitoring Program" provides the tools to assess and then restore water quality in Oklahoma.

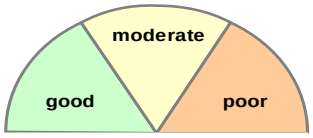
This leaflet gives a brief summary of the assessment results for the second 2-year cycle of the monitoring program for streams in Harper & Woodward Counties. The full report can be accessed online at: *http://www.ok.gov/okcc/Agency_Divisions/Water_Quality_Division/WQ_Reports/WQ_Assessment_Reports* or by calling (405) 522-4500 and requesting a copy of the "Rotating Basin Group 2, Cycle 2 Final Report."



OCC Rotating Basin monitoring sites within Harper & Woodward Counties.

Through the Rotating Basin Program, five streams in Harper & Woodward Counties. was sampled approximately every five weeks from June 2007-May 2009. Eighteen water quality parameters were measured or analyzed at each site visit. In addition, OCC staff conducted one fish and habitat assessment and up to four macroinvertebrate collections. Summer samples were also analyzed for *E. coli* and *Enterococcus* bacteria. Each site was compared to "high quality" streams in the ecoregion, streams known to have high quality fish populations, benthic macroinvertebrate populations, instream and riparian habitat, and water quality. All of the data collected has been distilled into a few key components in order to produce an index score of general, overall stream health, shown on the next page.

Summary of general stream health as determined by comparison to high quality streams in the Central Great Plains ecoregion and by assessment using Oklahoma State Water Quality Standards†.

	***Good***	***Moderate***			
	Wolf Creek (Lower)	**Buffalo Creek (Upper)**	**Buffalo Creek (Lower)**	**Otter Creek**	**Sand Creek**
Overall Stream Health	**45**	**43**	**43**	**39**	**39**
Phosphorus	5	5	5	5	5
Nitrogen	5	5	5	5	5
Ammonia	5	5	5	5	5
Dissolved Oxygen	5	5	5	5	-5
pH	5	5	5	5	5
Turbidity	5	5	5	5	5
Salts (chloride, sulfate, TDS)	5	5	5	5	5
Fish	5	5	5	3	3
Macroinvertebrates	5	3	3	1	1
Instream/Riparian Habitat	5	5	5	5	5
Bacteria	-5	-5	-5	-5	5
	Scale of 1-5 with 5 being the best				
KEY: 1=significantly different than high quality sites; 3=not as good as high quality sites but not impaired 5=equal to or better than high quality sites in the area -5=Impaired by state standards					

Note: Most streams in Oklahoma are impaired by at least one type of bacteria.

Wolf Creek (Lower) (OK720500-03-0010C): This stream is impaired by state standards for bacteria. All other parameters are comparable to high quality sites in the ecoregion. This is an outstanding stream.

Buffalo Creek (Upper) (OK620920-05-0010P): This stream is impaired by state standards for bacteria. The macroinvertebrate community is of slightly lower quality relative to high quality streams in the ecoregion.

Buffalo Creek (Lower) (OK620920-05-0010G): This stream is impaired by state standards for bacteria. The macroinvertebrate community is of slightly lower quality relative to high quality streams in the ecoregion.

Otter Creek (OK720500-02-0050B): This stream is listed as impaired by state standards for bacteria. The fish community was of slightly lower quality and the macroinvertebrate community was of significantly lower quality relative to high quality sites in the area.

Sand Creek (OK620920-05-0050G): This stream is listed as impaired by state standards low dissolved oxygen. The fish community was of slightly lower quality and the macroinvertebrate community was of significantly lower quality relative to high quality sites in the area.

† The use of Oklahoma Water Quality Standards to assess streams and the 2010 results are described in the DEQ's 2010 Integrated Report, accessible online at: http://www.deq.state.ok.us/wqdnew/305b_303d/2010_integrated_report_entire_document.pdf