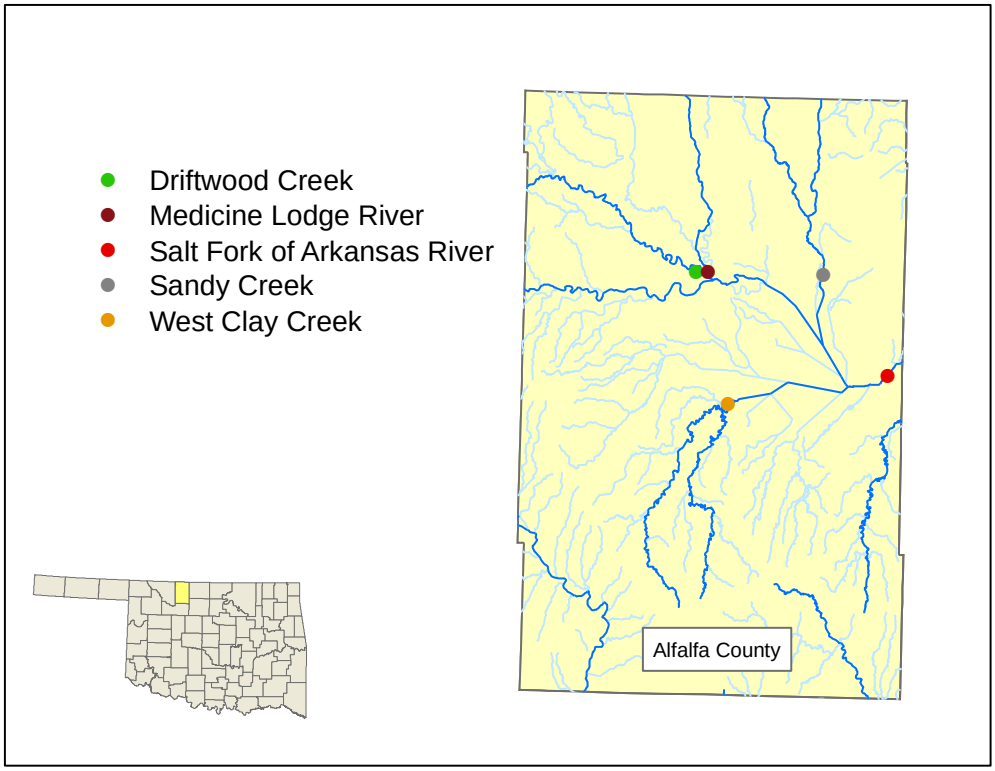
OKLAHOMA CONSERVATION COMMISSION

Know Your Stream: Rotating Basin Site Summary

Alfalfa County, 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.

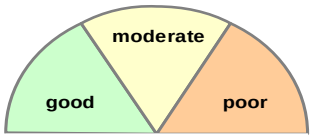
This leaflet gives a brief summary of the assessment results for the second 2-year cycle of the monitoring program for streams in Alfalfa County. The full report can be accessed online at: *http://www.ok.gov/okcc/Agency_Divisions/Water_Quality_Division/WQ_Reports/WQ_Assessment_Reports* or by calling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



OCC Rotating Basin monitoring sites within Alfalfa County.

Through the Rotating Basin Program, 5 streams in Alfalfa Co. were 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*		*Poor*	
	Sandy Creek	**Medicine Lodge River**	**Driftwood Creek**	**Salt Fork of Arkansas River**	**West Clay Creek**
Overall Stream Health	**45**	**35**	**33**	**21**	**11**
Phosphorus	5	5	5	3	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	-5	-5
Macroinvertebrates	5	5	3	3	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.

Sandy Creek (OK621010-02-0010D): This stream is comparable to high quality streams in the ecoregion for all parameters except bacteria. This is an outstanding stream.

Medicine Lodge River (OK621010-03-0010D): This stream is impaired by state standards for fish community and bacteria. All other parameters are comparable to high quality sites.

Driftwood Creek (OK621010-03-0030C): This stream is impaired by state standards for turbidity and bacteria. The macroinvertebrate community was slightly impaired.

Salt Fork of Arkansas River (OK621010-01-0010D): This stream is impaired by state standards for turbidity, salts and fish community. The phosphorus levels were slightly elevated and the macroinvertebrate community was slightly impaired.

West Clay Creek (OK621010-01-0090R): This stream is impaired by state standards for low dissolved oxygen, elevated salts, poor fish community and elevated bacteria. The macroinvertebrate community was of significantly lower quality than the quality sites in the ecoregion.

† 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