

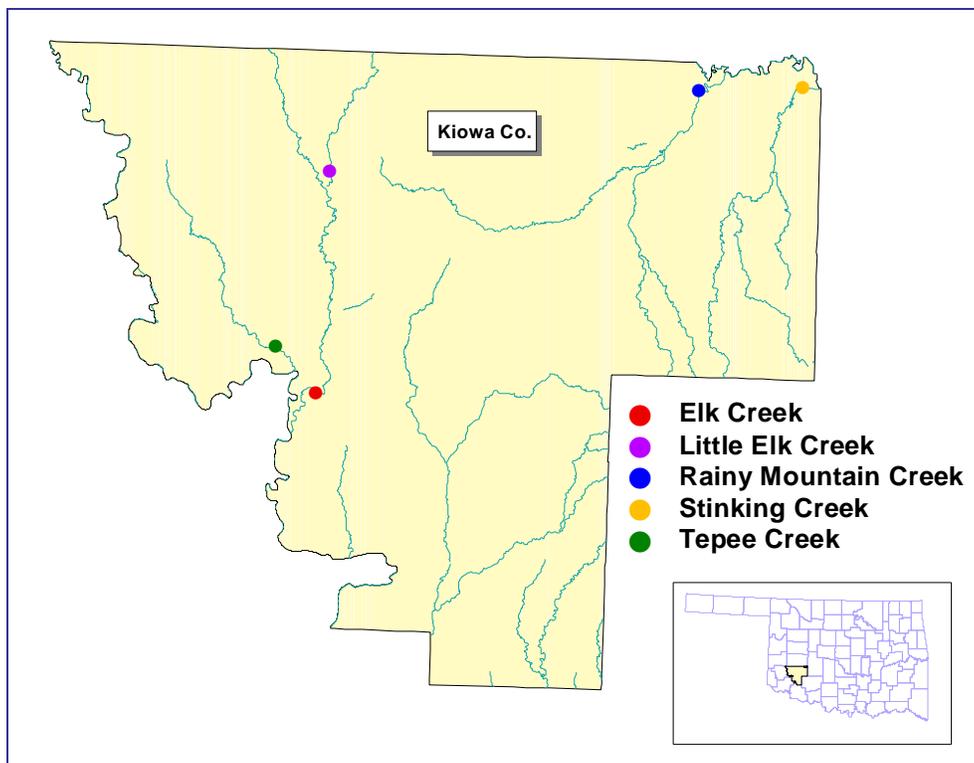


Rotating Basin Site Summary Central Great Plains Level 3 Ecoregion: Kiowa County

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 the 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 first cycle of the monitoring program for streams in Kiowa County. The full report can be accessed online at:

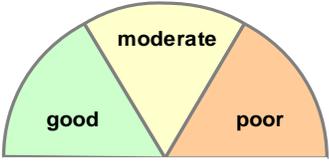
http://www.ok.gov/okcc/Agency_Divisions/Water_Quality_Division/WQ_Reports/WQ_Assessment_Reports
or by calling (405) 522-4500 and requesting a copy of the "Rotating Basin Year 4 Final Report."



OCC Rotating Basin monitoring sites within Kiowa County.

Through the Rotating Basin Program, five streams in Kiowa County were sampled approximately every five weeks from June 2004-June 2006. Nineteen 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 during this time. 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†.

|  | <i>Moderate</i> | | <i>Poor</i> | | |
|---|------------------|----------------------|-------------|-------------|----------------|
| | Little Elk Creek | Rainy Mountain Creek | Elk Creek | Tepee Creek | Stinking Creek |
| Overall Stream Health | 43 | 33 | 23 | 17 | 13 |
| 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 | 1 | 5 |
| Macroinvertebrates | 3 | 5 | 3 | 3 | 3 |
| Instream/Riparian Habitat | 5 | 5 | 5 | 3 | 5 |
| Bacteria | -5 | 3 | -5 | -5 | -5 |
| <i>Scale of 1-5 with 5 being the best</i> | | | | | |

KEY: 1=significantly lower 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

Elk Creek (OK311500-03-0010G): This stream is on the state’s 303(d) list† as impaired due to high turbidity and bacteria. The fish community is impaired by state standards, and the macroinvertebrate community is not as healthy as the high quality sites in the ecoregion.

Little Elk Creek (OK311500-03-0040D): This stream is on the state’s 303(d) list† as impaired for bacteria, as are many streams across the state. The macroinvertebrate community is not as healthy as the high quality sites in the ecoregion, but all other parameters are equal to or better than the high quality sites in the area.

Rainy Mountain Creek (OK310830-02-0060G): This stream is on the state’s 303(d) list† as impaired due to high turbidity and high chloride levels. The macroinvertebrate community is not as healthy as the high quality sites in the ecoregion, but all other parameters are equal to or better than the high quality sites in the area.

Stinking Creek (OK310830-02-0020D): This stream is on the state’s 303(d) list† as impaired due to high levels of turbidity, chloride, and bacteria as well as low dissolved oxygen levels. The macroinvertebrate community is not as healthy as the high quality sites in the ecoregion.

Tepee Creek (OK311500-01-0110D): This stream is on the state’s 303(d) list† as impaired due to high levels of salts and bacteria as well as low dissolved oxygen levels. The fish community is “very poor” compared to the reference sites in the area, and the macroinvertebrate community and instream habitat is not as healthy as the high quality sites in the ecoregion.

† A description of the use of Oklahoma Water Quality Standards to assess streams and the 2008 results are described in the DEQ’s 2008 Integrated Report, accessible online at http://www.deq.state.ok.us/wqdnew/305b_303d/2008_integrated_report_entire_document.pdf

