

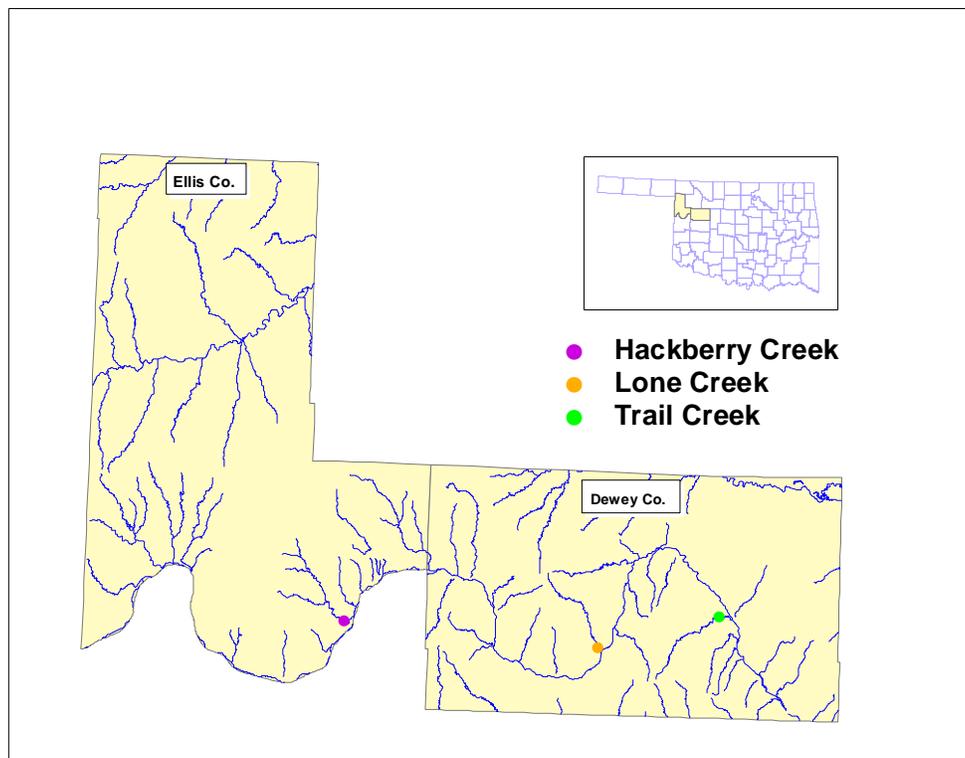


Know Your Stream: Rotating Basin Site Summary **Dewey and Ellis Counties, Central Great Plains Level 3 Ecoregion**

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 two cycles of the monitoring program for streams in Dewey and Ellis Counties. The full report can be accessed online at:

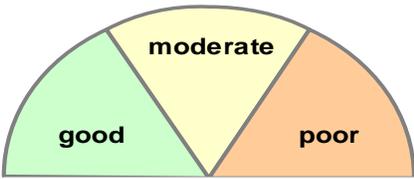
http://www.ok.gov/okcc/Agency_Divisions/Water_Quality_Division/WQ_Reports/WQ_Assessment_Reports
or by calling (405) 522-4500 and requesting a copy of the "Rotating Basin Group 1, Cycle 2 Final Report."



OCC Rotating Basin monitoring sites within Dewey and Ellis Counties.

Through the Rotating Basin Program, two streams in Dewey County and one stream in Ellis County were sampled approximately every five weeks from June 2001-May 2003 and June 2006-May 2008. 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 each 2 year cycle. 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> | | |
|---|-----------------|------------|-------------|
| | Hackberry Creek | Lone Creek | Trail Creek |
| Overall Stream Health | 27 | 31 | 33 |
| Phosphorus | 5 | 5 | 5 |
| Nitrogen | 5 | 5 | 5 |
| Ammonia | 5 | 5 | 5 |
| Dissolved Oxygen | 5 | 5 | 5 |
| pH | 5 | 5 | 5 |
| Turbidity | 5 | 5 | 5 |
| Salts (chloride, sulfate, TDS) | -5 | -5 | -5 |
| Fish | 1 | 5 | 5 |
| Macroinvertebrates | 1 | 3 | 3 |
| Instream/Riparian Habitat | 5 | 3 | 5 |
| Bacteria | -5 | -5 | -5 |
| <i>Scale of 1-5 with 5 being the best</i> | | | |
| <p>KEY: 1=significantly worse than high quality sites 3=not as good as high quality sites but not impaired 5=equal to or better than high quality sites -5=impaired by state standards</p> | | | |

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

Hackberry Creek (OK520620-04-0050D): This stream is listed as impaired by state standards for salts. It is comparable to high quality streams in the ecoregion for all other parameters except the fish and macroinvertebrate communities which were significantly impaired.

Lone Creek (OK520620-03-0020C): This stream is listed as impaired by state standards for salts. It is comparable to high quality sites for all other parameters except the macroinvertebrate community and the instream/riparian habitat, which were slightly worse than the high quality sites in the area.

Trail Creek (OK520620-02-0090G): This stream is impaired by state standards for salts. It is comparable to high quality sites for all other parameters except the macroinvertebrate community, which was slightly worse than the high quality sites in the area.

† 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

