

# Fourche Maline: Centerpoint Road

SE/NW/SE Section 5-5N-19E

34.0334°

-95.321°

Latimer County, Oklahoma

WBID#: OK 220100-04-0020T

Blue Thumb Volunteer Monitoring Data Review – December 4, 2007

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## **Description of Watershed and Monitoring Site:**

The name Fourche Maline Creek means “Wicked Fork” Creek. It flows from west to east in southeastern Oklahoma. The headwaters are north of Robbers Cave State Park in the northeast corner of Latimer County. The creek undulates through Latimer and LeFlore Counties to discharge into Wister Lake, which supplies water for over 40,000 people in LeFlore County. The Fourche Maline Creek is a third order stream in the Arkansas Valley ecoregion.

The sampling site is at a low-water crossing on the east side of Centerpoint Road north of Wilburton in Latimer County. Riffles used to be present at the site, but there are no riffles at the present time. The watershed is agricultural, predominantly cattle in pasture land, though oil and gas wells are present.

Data presented here has been compared to the Arkansas Valley Reference, an average of high quality streams within the Arkansas Valley ecoregion.

## **Stream Condition & Habitat Overview**

Fourche Maline Creek is very deep at this site. The habitat was assessed by boat on August 24, 2007, starting at the low water crossing and moving downstream a distance of 400 meters. The stream reach assessed has one bend but is mostly straight with an absence of rocky runs and riffles resulting in slow moving, low-flow conditions.

Although the canopy cover of bottom land hardwoods is good, the riparian area is narrow with grazing right to the edge of the creek in places. A cow path winds on the north side through thick grass with a steep stream bank providing a natural barrier to erosion caused by animal access to the stream. Riprap surrounds a high pressure gas line that crosses the creek. Woody debris and instream cover are present in large quantities throughout assessment area. A reasonable amount of instream structure such as submerged logs, root wads and rocks provides cover for aquatic organisms. Due to drought conditions over the last four years, streamside insect collecting has not been possible as the grasses were not reaching the water.

## **Biological Conditions**

### **Fish**

A possible limiting factor influencing the richness of fish population in species diversity is the ongoing drought. Because of the water depth fish were collected only by electro shocking. The fish collection of 2006 resulted in a total of 91 individuals from 12 species. A further breakdown shows that 29% were bluegill sunfish and 28% were gizzard shad. The remaining species included: redear sunfish (11%), sunfish hybrids (10%), largemouth bass, warmouth sunfish, brook silverside, and spotted sucker. When compared to reference conditions found in known high quality sites in this ecoregion, this Centerpoint collection receives a low score of C. This is due, in part, to the pooled habitat and the absence of runs and riffles and the fish species that require those other habitats.

### **Benthic Macroinvertebrates (bugs)**

Macroinvertebrates have been collected since 2000, but with the absence of rocky riffles most of the samples have been from woody debris and streamside vegetation. The drought has further limited bug collections. The reduced water level precluded streamside sampling as the waterline was below the vegetation line. Insects were collected instead on woody debris and instream vegetation.

The quality of the winter bug collections from Fourche Maline Creek seems to be less than the summer collections. The winter collections from both woody debris and streamside vegetation indicate the loss of most intolerant forms of bugs and a reduction in the most sensitive species (mayflies, stoneflies and caddisflies.) The summer vegetation samples show that species richness is less than expected, while the summer woody debris samples are comparable to the best situation expected within the ecoregion.

### **Bacteria Testing**

Bacteria has been tested four times in the summer months of 2006 and 2007. Each test resulted in an insignificant number of *E. coli* and fecal coliform colonies.

### **Chemical Testing**

Chemical data were collected monthly between 08/20/01 and 06/21/2007.

DO Over the past six years of chemical monitoring, the median oxygen saturation is only 60%. The optimal range is 80% to 130%. The low percent oxygen saturation indicates possible occasional problems with the amount of oxygen available in the water for aquatic life. Because of low

flows, most of the recent samples have been taken from pooled water instead of flowing water. This sampling could be affecting the result.

- pH            pH was within the normal range, always between 6.5 and 7.1.
- Nitrogen        An estimate of soluble nitrogen is made by adding the amounts of ammonia-nitrogen and nitrate/nitrite-nitrogen found in the water. The median value for soluble nitrogen was 0.68 mg/L, a normal value.
- Phosphorus     Phosphorus is another nutrient found in streams and rivers that can cause excessive algal growth. The median value from this site is below the detection levels of the test.
- Chloride        The median value for chloride was 15 mg/L, also very low.

Besides the unfavorable DO saturation, possibly due to the low flow, the rest of the chemical monitoring indicated normal water chemistry.

### **Synopsis**

The health of a stream is determined by the physical habitat, the water chemistry and the biological community that lives in it. The habitat in Fourche Maline at Centerpoint is mostly deep pools with lots of structure providing cover for aquatic animals. While not extremely varied, the site has a healthy, suitable habitat. Flow is limited by upstream dams. Water chemistry indicates Fourche Maline is healthy and within normal parameters with the exception of the amount of dissolved oxygen which has been measured from pools because of the low flow during this time. During the summer months, the invertebrate collection is comparable to the best conditions. The fish collection is also well within acceptable limits with the absence of benthic species (bottom dwellers) explained by the absence of rocky riffles. Fourche Maline Creek at Centerpoint is a healthy stream.