

Little Polecat Creek: Jones

SE NE SE
Section 9-17N-10E
Creek County
Latitude N35.96585
Longitude W-96.247663
WBID# OK120420-02-0260M

Blue Thumb Volunteer Monitoring Data Review - October 8, 2013
Written by: Doug Jones

Description of Watershed and Monitoring Site:

The headwaters of Little Polecat Creek start about one-half mile north of Highway 33 about ten miles west of Sapulpa, an outskirt city of Tulsa. The monitoring site is one and one-half miles south of Highway 33, almost due south of the headwaters. This is a small system, with only a few square miles of drainage above the monitoring site and has minimal flow. Land use upstream of the monitoring site includes light grazing, with rural housing widely spaced on ten acre lots. From the monitoring site the creek flows south and east into Polecat Creek.

Stream Condition and Habitat Overview:

The habitat assessment at Little Polecat was conducted on 6/17/2010 for 400 meters and scored 97.7, better than the average of high quality Cross Timbers streams (reference conditions) which averaged a score of 84. There was good instream cover, canopy cover shading, and streamside cover. All of this vegetation will help to filter out pollution running off into the creek, will help with bank erosion, will help to keep the water shaded/cooler to allow for more oxygen and will serve as nice habitat for biologics. The creek flows through heavy woods typical of this area where clearing has not occurred. There is average pool variability meaning there were a couple of semi-deep pools but the majority of the creek was quite shallow. In a few places the creek banks showed some signs of active erosion. Rocky runs/riffles were present but in little amounts. Little Polecat Creek has an unstable bottom due to sandy/silty materials. This stretch of the creek is pretty much straight with really no bends or turns. Little Polecat Creek also scores low in flow, being a small creek anyway, and with the monitoring site very near the headwaters. Overall, Little Polecat Creek scored excellent in habitat.

Biological Conditions:

Fish

A fish collection was conducted on Little Polecat Creek the same day as the habitat assessment and in the same 400 meter stretch. When compared to the reference condition, Little Polecat scored only 45%, a "D" grade. The fish population was limited to sunfish species, of which 5 were found. In addition, the diversity in this stream was low, with 87.5% of the fish collected from bluegill and longear sunfish. The other fish species were green sunfish, white crappie and

largemouth bass. This means there were no sensitive benthic species (such as darters or madtoms), no intolerant species, and no minnows. This could be due to low, and sometimes no flow.

Benthic Macroinvertebrates (bugs)

Benthic macroinvertebrates were collected from Little Polecat in the winters of 2010 and 2011. Summer collections were attempted but not successful due to low or no flow. In the winter of 2010 the stream had 20 species compared to an expected 16 from reference conditions. There were also more types of sensitive bugs found in the 2010 collection, and in more abundance than the reference. The diversity was also very excellent. Little Polecat scored 115% on this collection, so better than reference conditions. By the winter of 2011, the area was in the beginning of the drought that had left the stream with little or no flow since winter 2010. On this 2011 collection, the stream had only 13 species compared to an expected 16 species, and only 2 sensitive species compared to an expected sensitive 5 species. Thus the diversity declined a little too. Little Polecat scored only 62% on this collection.

Chemical Condition:

Chemical monitoring had been performed at Little Polecat Creek monthly from 11/1/2008 to 6/30/2011.

DO	About half of the readings were in the normal range of 80-130%, with the rest in the low caution range of 79%-50%. Oxygen saturation problems were most often associated with lack of flowing water in the creek, with the best readings when the flow was at base level or slightly elevated.
pH	All of the data were within normal values and averaged 7.5.
Nitrogen	Most readings were below detectable level, with 3 very low readings.
Ammonia	All readings were below detectable level.
Phosphorus	Most readings were below detectable level, with 3 very low readings.
Chloride	Chloride readings ranged from a low of 5mg/L Cl on 7/26/2010 to a high 60mg/L Cl on 11/1/2008. Most of the values were between 20-40mg/L Cl which is in the normal range. Only four readings were in the 50-60mg/L Cl range during the two and a half years of monitoring.

Synopsis:

Little Polecat Creek is a small scenic stream that flows through mostly grassland and woods, following the base of bluffs near the monitor site. Lack of flow keeps it from being consistently

healthy. Since 2011 it has had only intermittent flow. However, widely spaced pools maintain sufficient depth to support a small fish population. Prior to 2011 the flow was much more consistent, so with better rainfall there is hope for the future.