Fred Creek: Evanston
NE NW SE
Section 8-18N-13E
Tulsa County
N 36° 3’ 8”
W 95° 56’ 48”
WBID#: OK 120420-01-0060G

Blue Thumb Volunteer Monitoring Data Review of data collected between October 1994 and August 2007.

Fred Creek is located in the southern part of Tulsa County, which is located in the Central Irregular Plains ecoregion. The creek is an urban stream that has a watershed, or drainage area, of about four square miles that runs southwest from the intersection of 71st Street and Yale Avenue in Tulsa. The creek goes around the campus of Oral Roberts University (ORU), around Wal-Mart, near many housing sectors of the area, and under many streets. It runs throughout the city and empties into the Arkansas River. The monitoring site of the creek is on South Evanston Avenue.

From October of 1994 to August of 2007 there has been a trend of habitat loss in the creek. Much of the creek has been straightened and channelized. Where it is still natural, there is a lot of in-stream cover, places where fish and insects can hide beneath, behind, or within. The water depth of the pools varies highly, though there are not many riffles. The creek is quite shady and there are many different types of plants growing along the banks to help with the vegetation going into the creek. While the banks are stable, in many places they have been “stabilized” by the city. Because of all of the hard surfaces in the drainage area, Fred Creek floods during rain events and has very low flow the rest of the time. In the natural places, Fred Creek has habitat almost as good as the average high quality streams in the ecoregion.

From October of 1996 to August of 2007 fish were collected three times. If this creek were healthy there should have been about 550 individuals from 22 different species caught, but in all the times of fishing there have been less than 100 individuals (26, 14, and 95) from at most three of four different types caught; the Bluegill sunfish, Green sunfish, Largemouth bass and the Central stoneroller. All these fish are very tolerant to pollution and there were no sensitive species caught. This creek has the lowest ranking of E (from A to E), which means that there are few species and individuals present. The tolerant species are dominant and diseased fish are frequent.

From the winter of 1998 to 2007 bugs were collected from the riffles in the creek. In most of the collections the sensitive bug species in this creek were absent. From the summer of 1997 to 2007 bugs were also collected. While there were more sensitive bug species found than in the winter collections, there were between zero and two species found when you would expect to find seven in a healthy stream. The majority of the bug conditions ranked C, meaning that there were fewer species due the loss of most sensitive species.

The median oxygen saturation in Fred Creek was 71%, with highs occasionally over 100% and occasional lows of 25%. This is clearly less than optimal. The pH level of the creek is normal at 8. The soluble nitrogen level of the creek has a median value of

0.09 mg/L N, with occasional highs of 1.2 mg/L N. The orthophosphate of the creek has a median of 0.05 mg/L P and rarely reaches over 0.16 mg/L P. The median of the chloride level in the creek is 40 mg/L Cl. Bacteria tests show that the levels of *E. coli* are often high. This means that the creek is not suitable for swimming.

Fred Creek is located in southern Tulsa County. It has drainage of about 4 square miles and empties into the Arkansas River. Over the years it has had a trend in the loss of habitat. As an urban stream, its course doesn't vary much and it rarely diverts from a straight line. While the remaining natural habitat is good, the fish collections in this creek are very poor. The fish condition is ranked at an E, which means that there are few species and individuals present. The tolerant species in this creek are dominant and diseased fish in this creek are frequent. In the winter and summer when bugs were collected there were many of the sensitive species missing. The majority of the bug conditions were ranked at a C; this means that there were fewer species due to the loss of the sensitive species. The chemistry of the creek is fair; nutrients are slightly higher than normal the dissolved oxygen is low. The fecal coliform, *E. coli*, in this creek is very high. This means that the creek is not suitable for swimming.

Helen Talaese