

Harlow Creek: Golden Acres
SW SE SE
Section 20-20N-12E
Osage County, OK
N 36° 11' 19.2"
W 96° 2' 29.1"
WBID#: OK120420-01-0170T

Data Report Written 2/5/2009

Harlow Creek at Golden Acres is northwest of Tulsa in the northeastern part of Oklahoma. It is on the border between the Cross Timbers and Central Irregular Plains ecoregions. It is small creek with very low flow. The site is in the upper part of the watershed with only about one square mile of land draining to this point. The land is rural with agriculture and oil and gas production. There is some recent home development.

Harlow Creek is beautiful at this site with lots of shade. The banks are well covered with native vegetation and there is good cover (undercut banks, rocks, and logs) in the water for fish to hide. Because it is so small, there is not a lot of water flowing and the channel is fairly straight. The habitat assessment score is better than the average high quality stream in the Central Irregular Plains ecoregion.

Fish

Fish were collected in the summer of 2007 and the number was considerably lower than the average high quality stream in the Central Irregular Plains ecoregion. Even though the creek has little water there were surprisingly more large mouth bass found than the much smaller sunfish. The bottom feeding stoneroller was the most prevalent fish at the site. In general, the total number of fish for a stream decreases with water quality or habitat quality. With this site receiving a "D" for the total fish collection grade (compared with an "A" of other high quality streams) one would expect the habitat and water quality to be poor but this is simply not the case. Our assumption is that the low presence of fish is due to the small amount of water in the stream.

Macroinvertebrates

Macroinvertebrates were collected at this site in 2004, 2005, and 2007. Every collection set, except the winter of 2007 collection, received an above average score. There are usually about 15 different species at this site although the winter of 2007 had decreased numbers. Mayflies, stoneflies, and caddis flies are macroinvertebrate species that are sensitive to pollution. In the Harlow tributary the numbers of these sensitive species were high when compared to other high quality streams in the Central Irregular Plains ecoregion. This suggests that this creek has little pollution and is able to support macroinvertebrate life.

Chemistry and Dissolved Oxygen

Due to the rural agricultural area that the Harlow tributary is located, one might expect the site to have an over abundance of nutrients. However, chemical data suggests an overall healthy stream. Chloride, pH, soluble nitrogen, and orthophosphate phosphorus levels were all at or below the normal healthy limit. These numbers suggest little unwanted pollution or nutrients are present in the stream. Dissolved oxygen levels at this site are in between normal and low levels. This might normally suggest a problem but our assumption is that because the rest of the stream is healthy, the level is due to the low stream flow.

Conclusion

When assessing the health of a creek one must look at the chemical, physical, and biological condition of the creek. The chemical data looks at various nutrients and the percent dissolved oxygen of the creek. The physical data looks at the actual habitat such as shade, habitat area for fish to hide, and the stream flow. Biological data looks at the abundance, condition, and distribution of macroinvertebrates and fish.

The chemical and physical data of Harlow Tributary: Golden Acres looks good and suggest that this site is above average overall when compared to other high quality sites through the Central Irregular Plains ecoregion. The stream has a healthy population of macroinvertebrates. The fish however are low in number. Numbers of fish are presumably low because the water in the creek is so low and there is simply not enough room for them to live. Harlow Tributary: Golden Acres is a small but beautiful creek that is a wonderful home for many species.