Deer Creek: Hwy 4

SW SW NW Section 9-13N-5W
Canadian County
N 35° 37’ 5.9”
W 97° 44’ 42”
WBID#: OK 620910-04-0120T

Deer Creek is monitored on Highway 4 just south of the community of Piedmont in Canadian County, which is located in central Oklahoma in the Central Great Plains ecoregion. The stream drains an area that is about 16 square miles. Deer Creek runs west to east and drains into Cottonwood Creek, which drains into the Cimarron River north of Guthrie. The stream flows along a much wooded area in a rural town. There are few houses that dot the landscape around it. There is agricultural land use around the stream, such as the raising of crops and cattle.

The habitat in Deer Creek consists of good canopy cover, or shade, and good streamside cover, or the grasses and shrubs that grow along the bank. The stream has pretty good instream cover, places for fish and bugs to hide, such as rocks and boulders. There are rocky runs and ruffles, which is where the water runs over the rocks causing the water to become highly oxygenated. The bank of the stream has a fairly good root system from the plants that grow there to keep it from eroding, and the bank has a large variety of vegetation. The stream depth does not vary, but stays pretty constant. It has a low flow, or it is quite lazy and doesn’t flow very much or very fast most of the time. The stream also doesn’t change its course, or twist and turn, but stays fairly straight. The habitat in Deer Creek is better than the average high quality stream in this ecoregion.

There was a total of 11 species of fish found in Deer Creek on August 23, 2006. There were no sensitive benthic species, or fish that live on the bottom of the stream. There were 5 species of Sunfish found, 1 long-lived species, but no intolerant species. The fact there were no intolerant species found means that something is there that has caused them to die out, because of their sensitivity these fish will be the first to die out if there is a drastic change in the stream, such as pollutants. Deer Creek scored a D+ for its fish conditions.

Benthic macroinvertebrates, or bugs, have been collected at Deer Creek from the winter of 2003 to the winter of 2006. The stream has scored a B+, A, A, and a B in its bug conditions. The number of sensitive species of bugs are present and are very close to the reference average.

Bugs have been collected in the summer months from 2003 to 2006. Deer Creek has scored an A, B, and a B for its bug conditions in the summer. The sensitive bugs are also present and thriving in the summer months. We compare from summer to summer and from winter to winter because different amounts and species of bugs show up in different seasons.

The chemistry of Deer Creek has been monitored monthly since October 2002. The oxygen saturation is normal at 90%. The soluble nitrogen is normal at 0.46 mg/L N.

The orthophosphate phosphorus is in the caution zone at 0.06 mg/L P. The chloride is normal at 80 mg/L Cl, and the pH is normal at 8.

Deer Creek has been tested twice for *E.coli*, first in July 2006 and second in September 2006. The colony count reached above 400 colony forming units per 100 mL of water one out of the two times, and that was in July 2006. If the *E.coli* count reaches above 400 it is unsafe to swim in.

Deer Creek has proven to be a fairly good habitat for the variety of bugs and fish that call it home. The shade along its banks keeps the water cool, and comfortable for the fish. This is a good habitat and can measure up nicely to other high quality streams. There could be a wider variety of fish, that coupled with the lack of intolerant species brings a little concern, maybe something to look into. The bug population is thriving, with many sensitive species living in Deer Creek. The only concern with the chemistry is the amount of orthophosphate phosphorus. The *E. coli* count exceeded 400 cfu /100 mL once.

Deer Creek has very few problems with its thriving bug community, good habitat, and good chemistry levels. The only real concern is the absence of intolerant species of fish, which could be caused by pesticides washing into the stream, or the high levels orthophosphate phosphorus. Other than that, this stream is pretty healthy overall and can measure up quite well with other high quality streams in the Central Great Plains ecoregion.

Written by: Shelbey Hill