

## **Wall Trip Branch: Chicken Creek**

SE SW SE  
Sec 26-17N-23E  
Cherokee County  
Latitude N 35.91552°  
Longitude W94.82083°  
WBID#: OK121700-05-0070M

Blue Thumb Volunteer Monitoring Data Review, December 13, 2010

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

Wall Trip Branch (Chicken Creek) is a spring fed creek in the Baron Fork watershed in the Ozark Highlands ecoregion. Its upstream spring source is located approximately ½ mile east of the monitoring site. The stream's entire length is through rural area before it emptying into the Baron Fork Creek approximately 2 miles from its spring source. The upper mile of the creek runs year round (except in extremely long periods of drought.) The bottom mile is normally subsurface except after heavy rain falls where the stream flows freely.

### **Stream Condition & Habitat Overview**

Except where McLemore Hollow Rd and other County/State roads cross the creek its riparian boundaries have been allowed to grow freely with stable banks with good vegetation. A rocky bottom with numerous aquatic plants and bordering trees providing sufficient shade promote a good habitat for a variety of biological life. There exist a couple of small, beaver formed ponds and swampy areas in the upper portion of the creek. There are a few small natural pools along the year-round flowing portion of the creek and mostly the creek is composed of runs and riffles.

### **Biological Conditions**

#### **Fish**

At first, the stream appears to be in good condition with a Habitat Score of 123.46 (Summer 2008) compared to the Ozark Highlands reference of 122.4. However, the total number of fish species captured and their diversity all scored low with a Shannon's diversity measure of 0.30 (compared to Ozark Highlands 1.91). One of the fish species (Southern Redbelly Dace) comprised 94% of the sample. There were only 7 species captured with 4 being "sensitive benthic species." The number of intolerant species was 4 against a standard of 11. Overall the condition was graded as a "D" on a scale of A to E for fish sampling. This low score implies that some expected fish species are missing. This is most likely due to the limited time during the year that the stream is actually connected to the Baron Fork Creek at the surface level.

#### **Benthic Macroinvertebrates**

The overall condition of the stream scored an “A” in the 3 monitoring periods reviewed in this report (Summer 2007, Summer 2008, and Winter 2008) when compared to the Ozark Highlands Summer and Winter averages. This implies that there is a large number of different Benthic Macroinvertebrates including many that are not tolerant to polluted waters.

### **Bacteria Testing**

No testing was done during this review period.

### **Chemical Testing**

**DO.** Of the 20 sample periods, dissolved oxygen saturation ranged from a low of 58% to a high of 107% with the majority of the readings being at or above the 80% level. These levels are sufficient to maintain a wide variety of life in the stream.

**pH.** The pH readings for the 20 sample periods ranged from 7.0 to 7.5 making it just slightly alkaline. Most Oklahoma streams have a pH between 6.5 and 8.0

**Nitrogen.** The nitrate readings ranged from BDL (below detectable level) to 2.00 with all of the nitrite levels being BDL. High Nitrogen levels in a stream promote excessive vegetation growth that can “choke” remaining life from the stream.

**Ammonia.** The Ammonia readings in mg/L ranged up to 0.5 with the majority of the reading being BDL.

**Orthophosphate.** The reading in mg/L ranged from BDL to 0.027; all below the Scenic River tolerance level of 0.037mg/L. Like Nitrogen, Phosphorus is a nutrient. Too high a level can cause excessive algal growth which can, in turn, result in wide variations in dissolved oxygen and the “choking out” of other steam life forms.

**Chloride.** Chloride levels were all less than 10 mg/L. Eastern Oklahoma streams naturally have a low Chloride level. If high levels are detected it could indicate a pollution source problem.

**Synopsis.** The Wall Trip Branch is a clear, free flowing stream with a very health physical habitat. All water chemistry readings indicate that there are no major sources of pollution contaminating upstream of the sampling site. Aquatic invertebrate collections are quite healthy. The fish collection was sub-standard, possibly because the stream dries up during the summer months and is not always connected to the Baron Fork for repopulation and possibly because the water is so clear that fish could “see us coming” and escape from the seine.