

Sand Creek: Osage Hills State Park

By: Samantha Woodall

SE NW SW

Section 13-26N-10E

Osage County

N 36° 43' 42.13" (36.72837°)

W 96° 10' 56.39" (-96.18233°)

WBID#: OK121400-04-0010M

Sand Creek is monitored in Osage Hills State Park west of Bartlesville. It drains about 125 square miles of land starting in the Osage Indian Reservation, the Tall Grass Prairie, which is owned by The Nature Conservancy. It runs west to east into the Caney River in Bartlesville. The watershed is all rural, meaning there are no cities or large towns. It is located in northeastern Oklahoma and is in the Cross Timbers ecoregion.

Habitat:

Within Sand Creek there are many places for fish and bugs to live and hide like submerged logs, cobbles and boulders, root wads, beds of aquatic plants, gravel, and small woody debris. The bottom of the stream is very stable, and that is good for burrowing organisms and fish that spawn at the bottom of the stream or pool. This is very good news since at least 80% of all pool bottoms should be stable. The stream is very stable and doesn't change much. There isn't much dirt moving down the creek, which helps stability. The stability of the bank itself is very good also and it is covered with native vegetation. It is also very natural and few things have been changed. Trees on the banks provide shade and food for the animals in and around the stream.

Sand Creek always has water, though on the day of the habitat assessment, the flow was low. The stream is fairly straight at the site. The habitat in Sand Creek scores high against other high quality streams in this area. It has exceptional habitat and should be able to support healthy stream life.

Fish:

On July 8th, 2008 fish were collected from Sand Creek by seining (dragging a net through the stream) for a quarter of a mile. There were 337 fish caught. The fish sensitive to habitat and water quality are: bigeye shiner (36), suckermouth minnow (1), and channel darter (1). These are great to find because they cannot live with pollution or loss of habitat. There is a large variety of fish that were caught, such as the longnose gar, red shiner, bluntnose minnow, freckled madtom, blackstripe topminnow, mosquitofish, brook silverside, orangespotted sunfish, bluegill sunfish, longear sunfish, spotted bass, largemouth bass, logperch, slenderhead darter, and the central stoneroller. When graded

against known high quality streams in the Cross Timbers ecoregion, Sand Creek is comparable to pristine conditions.

Bugs:

Other aquatic animals are assessed in a collection of benthic macroinvertebrates (bugs). Winter collections indicate that while there are as many sensitive taxa as you would expect in a high quality stream, there were not quite the same number of sensitive individuals. (Larval stages of mayflies, stoneflies, and caddis flies are sensitive.) In Sand Creek the number of these sensitive species weren't quite as high in 2007 as in 2008. In 2008 it is exactly what you would expect in a high quality stream.

The summer collections had almost as many species as you would expect to find in a pristine stream and had more of the sensitive mayflies, stoneflies, and caddis flies. In the summer of 2007, 9 of 17 species of bugs collected from Sand Creek were sensitive. In the summer of 2008, 8 of 19 species of bugs were sensitive. These numbers are very good and indicate the creek is comparable to pristine conditions

Chemical:

Water chemistry has been tested using field screening techniques since 2007. The nutrients, nitrogen and phosphorous, were all very low. The oxygen saturation, pH and chloride are normal. The water chemistry at Sand Creek is quite good.

Bacteria:

When bacteria was tested at Sand Creek in the summers of 2007 and 2008 results show *E.coli* was always below 400 colony forming units per 100 mL and often undetectable. Sand Creek would be a safe place to swim.

Summary:

In order to tell if a stream is healthy, you look at the physical habitat, the water chemistry and the life in the creek. Sand Creek has excellent habitat, water chemistry, and abundant aquatic life (fish and bugs). Bacteria have been detected in extremely low numbers. Sand Creek is in pristine condition. If you are interested in visiting a beautiful stream in northeastern Oklahoma, visit Sand Creek in the Osage Hills State Park.