

2004 Baseline Survey of Sylvester Creek

Lower Sugar River Watershed (SP11), Sugar/Pecatonica Basin

Green County

WBIC 877400

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Sylvester Creek is a 14 mile long stream that flows eastward through a broad, flat valley and enters the Sugar River south of Brodhead. The lower 8.4 miles of the stream supports a warm water sport fishery while the next 4 miles of the stream supports a cold water fishery and is a Class III trout fishery and is considered an Exceptional Resource Water. Although the stream has benefited from enrollment of lands in the Conservation Reserve Program, its stream habitat is still impacted by agricultural nonpoint source pollution, stream bank erosion, and channelization.

On August 26, 2004 a survey was conducted on 2 sections of Sylvester Creek: upstream from Ten Eyck Road and upstream from Prien Road. Fish were collected from both sites using a 240 volt stream shocker with 2 probes. In addition, a habitat evaluation was conducted at the Ten Eyck Road site and a macroinvertebrate sample was taken downstream from CTH S. The results of the habitat and macroinvertebrate evaluations are not yet available.

Ten Eyck Road

The section of stream is approximately 1 mile upstream from the confluence with the Sugar River. It is 10.8 meters wide but fairly shallow with an average depth of 0.3 meters. The water temperature was 60°F and had a flow of 26.6 ft³/second (0.754 m³/second). The stream runs through a wooded corridor in an agricultural area, but is fairly well buffered (5-10 meters) by shrubs, meadow, and woodland. The stream banks vary from 1 to 3 meters and are raw. The bottom is mostly sand and silt, but contains some areas of gravel, especially in riffles. Wood and log jams provide most of the fish cover.

A 425 meter stretch of stream was shocked. The following non-game species were collected:

Species	Number
Spotfin Shiner	203
White Sucker	54
Bluntnose minnow	13
Common Carp	8
Bigmouth Shiner	13
Brassy Minnow	6
Blackside Darter	6
Johnny Darter	5
Shorthead Redhorse	4
Creek Chub	1
Green Sunfish	1
Brook Stickleback	7
Banded Darter	2
Northern Hog Sucker	1
Blackstripe Topminnow	1
Horneyhead Chub	1
Suckermouth Minnow	1
Sand Shiner	5

Rosyface Shiner	2
Common Shiner	4

In addition, one largemouth bass (5.9 inches) and one smallmouth bass (12.9 inches) were collected. There were 7 brown trout collected of the following lengths: 6.5, 7.3, 8.5, 9.4, 10.4, 10.6, and 14.8 inches. There are no trout stocked in this section of stream, but trout are stocked about 8 miles further upstream above Balls Mills Road. The warmwater IBI for this site was 44 (fair). The coldwater IBI was calculated at 30 (fair).

Prien Road

This section falls within the Class III trout waters. The stream is channelized at this point and has an average width of 3.5 meters. The average depth is about 0.6 meters. The water temperature was 61°F. It flows through mostly cropland (row crops). The banks are steep with very little buffer, but are fairly stable as they are covered with grasses and jewelweed. The bottom is mostly sand with a few areas of silt and some gravel. The sand generally covers a gravel bottom. Curlyleaf pondweed, sago pondweed, and some elodia occur in the more silty areas. While the stream has pretty good depth, the width and channelized nature inhibit fish holding areas.

A 233 meter section of stream was shocked. The following species were collected:

Species	Number
White Sucker	157
Creek Chub	55
Johnny Darter	18
Mottled Sculpin	18
Brook Stickleback	2

There were no trout collected in this section. It was dominated by white suckers. The presence of mottled sculpin and brook stickleback, two coolwater species indicate that water temperatures are likely appropriate for brown trout. The warmwater IBI for this site was 0 (very poor). The coldwater IBI was 10 (poor).

Summary

The two sections sampled are about nine miles apart and represent two distinctively different sections of the stream. The lower area contains a diversity of species, although with the exception of spottail shiners, this survey did not yield great number of them. There were not good numbers of coolwater species, but the presence of trout indicated they could survive at some level in this section of stream. It is probable that the habitat was more to their liking than further upstream. The lower section is basically a warm water stream that has occasional runs of warm water sport fish from the Sugar River, and in certain years can probably hold coolwater species year 'round as well. It should be noted that this survey was completed near the end of a cool, wet summer. With better habitat, there is the potential to hold more gamefish; however depth is a limiting factor.

The upper section is very channelized. The presence of mottled sculpin could indicate that the water is cooler in this section of stream, however the stream was dominated by tolerant eurythermal species. The depth is sufficient to hold more fish if the creek were narrower and/or had more cover. This stream really needs to have its meanders reestablished in order to improve as a fishery.

Management Recommendations:

Employ agricultural best management practices in the watershed to mitigate nonpoint source pollution.

Slope and stabilize stream banks for the entire length of the stream.

Re-establish meanders to return natural scour and depositional patterns in order to increase habitat for fish.