

Is the White Creek Suitable for Trout?

Salem Central School
Fish and Wildlife Class
Fall 2007

ABSTRACT

The study was carried out by the students in Amy Maxwell's Fish and Wildlife class because they are raising Brook Trout in their classroom. The Adirondack Chapter of Trout Unlimited sponsored a Trout in the Classroom project and the release site is the White Creek.

The students performed a physical habitat survey, chemical and biological analysis of the stream using the HBRW Tier 1 data collection sheet. Students determined that the site was moderately impacted based on the amount of algal growth in the stream bed, the low number of macro invertebrates and the low amount of dissolved oxygen.

BACKGROUND

The White Creek is a tributary of the Batten Kill River and part of the Hudson River watershed and the DEC has classified it as a C, C(T) stream. The test site is south west of the Vermont/New York borderline and located in the middle of the town of Salem, New York, directly across from the entrance to the Salem Central School. The area surrounding the test sites include farm land, houses, improved stream banks and natural vegetation. Potential sources of pollution include the farm land and the houses. The test site is documented in a previous study conducted the Battenkill Conservancy-New York (BC-NY) as site WC-ws1. In May 2003, BC-NY performed a rapid biological assessment on the White Creek, Washington County, NY, as part of a Hudson Basin River Watch stream monitoring training workshop, (http://www.hudsonbasin.org/Bioreports/Whitewater_03.pdf). In this report the physical survey and habitat assessment were not acceptable for trout habitat and propagation and the biological assessment profile indicated non-impacted water quality.

RESULTS

We collected data on October 3, 2007 and October 4, 2007 at 9am. Weather condition were mild with an air temperature of 52°F. The water temperature was 50°F and the average width of the stream was 6 meters and the average depth was 1 meter. Water appearance was clear and the average velocity was .15 meters/second. Habitat features that were noted were riffles, pools and glides, as well as shelter for fish and patches of aquatic plants. The embeddedness of the substrate was documented at 25% with gravel, cobbles and sand being the dominant substrates. We documented that natural vegetation extended >35 yards beyond the banks in a very few locations but the majority of the stream banks had either 6-12 yards of vegetation or less than 6 yards. The stream banks were noted to be artificially protected in some areas, mowed and eroding in others.

The biological data collected involved using a kick net and collecting macro invertebrates in numerous locations through out the stream bed. We noted that there was a significant

amount of algal growth in the bottom of the stream bed. We collected macro invertebrates on both days of the study and combined our results. We found mayflies, stoneflies and net spinning caddis flies as well as fish flies and a worm.

The results of the chemical data collected includes; temperature, 50°F, ph of 8, dissolved oxygen was low, no nitrates were found, orthophosphates were low, and there was no copper or ammonia present in our samples.

DISCUSSION

We determined the stream to be possibly impacted as our over all rating. This was determined by the fact that the number of macro invertebrates was low and the amount of dissolved oxygen was also low. The Adirondack Chapter of Trout Unlimited has been working to restore the health of the White Creek and have made many improvements in the past year. They have added a water fall to increase the amount of dissolved oxygen and have also been planting vegetation along the banks.

Another issue that we found interesting was the lack of nitrates in the sample. We thought that there would be nitrates in the water because of the proximity to the farm land and the lawns and were surprised to find none. Our thought is that in the spring nitrate levels may spike.

Algal growth on the stream bed is also an issue that needs to be monitored. Something is causing the algae to grow and this could potentially limit the carrying capacity of the stream. Our thought is that the run off from the lawn and farm land fertilizers are providing food for the algae to grow.

CONCLUSIONS

Based on our data we feel that the stream is still unsuitable for trout but with the work of the Adirondack Chapter of Trout Unlimited we feel that the stream will be suitable in the near future.

Further monitoring of the physical, chemical and biological properties of water quality are important to identify potential problems with the White Creek.

BIBLIOGRAPHY

1. http://www.hudsonbasin.org/Bioreports/Whitecreek_03.pdf, visited on November 26, 2007
2. HBRW Tier 1 Physical/Habitat Survey, Fish and Wildlife Class Fall 2007