

Duncan Creek Monitoring Report

**Summer 2004
Beaver Creek Citizen Science Center**

Becca Spaeth, Michelle Washebek, Jared Pierce

Introduction and Methods

Duncan Creek is part of the Lower Chippewa Basin watershed, which covers an area of 191 square miles. It originates east of New Auburn and flows into the Chippewa River in Chippewa Falls. Four dams on the stream form Lake Como in Bloomer, Tilden Millpond in Tilden, Glen Loch Flowage and Star Lake both in Chippewa Falls. Above Lake Como in Bloomer, Duncan Creek is a Class I trout stream. Numerous management techniques, including stocking, land acquisition, fencing, stream bank brushing, instream habitat improvement, beaver control, and fishing regulations have been employed in the past on this upper section of Duncan Creek. The purpose of this report is to track temperatures just above and below the Lake Como dam on Duncan Creek.

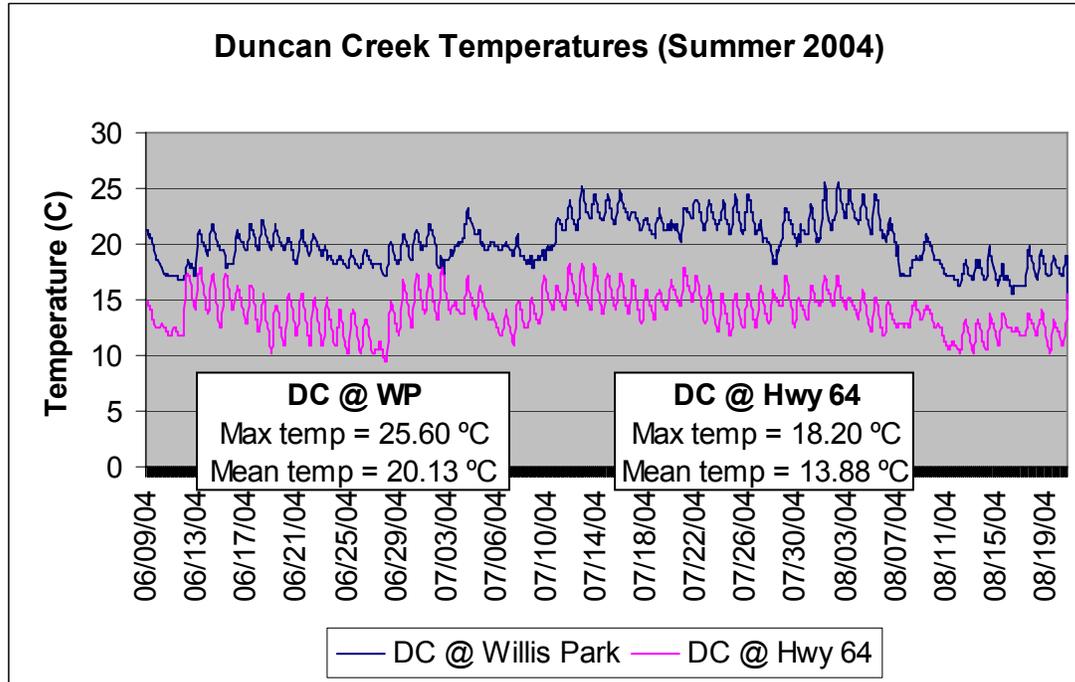
Continuous temperature monitoring devices called HOBOS (Onset Corporation) were placed in three sites on Duncan Creek in June and removed in the end of August. The first site was just above Lake Como where Duncan Creek crosses Hwy 64 north of Bloomer. The second site was just below the Lake Como dam, in Willis Park (Oak St.) in downtown Bloomer. The third site was 3 miles south of Bloomer, on 130th Ave. The monitoring device placed at this site was lost, therefore no data from it is presented.

Results, Discussion, and Conclusion

Summer temperatures recorded on Duncan Creek at the sites just above and below Lake Como are recorded in Figure 1. According to this data and the Thermal Criteria outlined by Lyons and Wang (1996), Duncan Creek is a cold water stream, but the portion just below the dam is at the upper limit of coldwater classification. Optimal temperatures for brook trout survival are in the range of 11-16 °C (23.8 °C upper limit lethal maximum), and optimal brown trout survival temperatures are in the range of 12-19 °C (27.2 °C upper limit lethal maximum). The site above Lake Como records temperatures within these ranges, with a mean temperature of 13.88 °C. However, the site just below the dam at Lake Como records temperatures much higher, well out of both trout ranges, with a mean temperature of 20.13 °C and a maximum of 25.60 °C.

The reason for this temperature change is most likely due to the dam at Lake Como and the activity on the lake. Perhaps surface release of waters over this dam is warming waters downstream. More analyses of water temperatures downstream of the dam are warranted. The third HOBOS, which could not be found in September, would have contributed to this data.

Figure 1



References

Kurz, Joe. 2002. The Status of Brook Trout Populations in Duncan Creek, Chippewa Co. (WBIC 2150600).

Lyons, J. and L. Wang. 1996. Development and Validation of an Index of Biotic Integrity for Coldwater Streams in Wisconsin. North American Journal Fisheries Management. Vol. 16:241-256.

Acknowledgments

Thanks to Ken Schreiber (Water Resource Specialist), Dan Simonson, and John Sours (Fisheries Biologist) of the Western District of the Wisconsin DNR, as well as Darryll Farmer, director of the Eau Claire City-County Health Department, and Jean Schomisch, supervisor of the Eau Claire County Land Conservation Department for direction, instruction, and guidance in this project.