

Automated Stream Data Notes: Nov 2009 - June 2010 (June 10, 2010)

Six stream sites currently have flow and water quality sensors in operation and three of them operated through the winter since the ice thickness on the streams was moderated by early season insulating snow plus a warmer than average winter. Funding from several sources the past year has been sufficient to allow maintenance on a regular basis on four of our five trout streams, with a sixth unit just installed at the Duluth Inlet between the Duluth-Superior Harbor and Lake Superior.

Amity Creek:

The sonde has suffered from occasional burials by sediment as well as fouling from fine particles. It has been raised slightly to promote better flushing of the sensors. This heavy sediment load is consistent with the stream's federal/state listing as being Impaired (lakesuperiorstreams.org/weber/index.html) for turbidity due to excess sediment loading.

Chester Creek:

This sonde was sent in for repair in Oct 2009 and returned to service in Feb 2010. It is now fully functional.

Tischer Creek:

This site has also been completely functional.

Kingsbury Creek:

This site has also been completely functional but has seen some sedimentation of medium sand from an unknown source.

Miller Creek (@ Lake Superior College):

This site is functioning except for the depth/flow sensor. It was removed in Oct 2009 to prevent damage from ice. It was returned to the stream in early April. The communication and sunlight issues appear to be resolved. Maintenance and operation of the unit has been the responsibility of Lake Superior College (owners of the equipment) and the college has included this in an employee's duties as of this spring.

Poplar River:

Poplar River data collection was terminated 10/7/08 due to a lack of funding. In concert with a different study of North Shore streams that did not include the Poplar River, NRRI-UMD staff were able to collect and freeze water from the original site on a number of dates in 2009, and perform a limited number of field measurements.

Duluth Inlet Ship Canal:

A Hydrolab MS5 sonde was fitted alongside the USGS velocity sensing equipment on the harbor breakwall. A full set of velocity, flow, temperature, specific conductivity, turbidity, and dissolved oxygen data, at 5-15 minute intervals and in near real-time (about an hour delay) will be posted in the near future. This effort has been funded by a grant from the U. of Minnesota's Institute on the Environment to the Large Lakes Observatory at UM-Duluth as part of a Global Great Lakes (www.globalgreatlakes.org) project. We are grateful to USGS's collaboration which has provided us with the use of their data logger and modem as well as direct access to their real-time velocity data.