

# Minnesota Chapter Report

## NCD Rivers and Streams Technical Committee

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### MN Stream Habitat Program (SHP), Division of Ecological and Water Resources, Minnesota Department of Natural Resources

#### Stream restoration projects:

##### Completed:

- Minnesota Falls Dam, Minnesota River, dam removal
- Montevideo Dam, Chippewa River, dam removal & modification with rock arch rapids
- Cross Lake Dam, Snake River, dam modification with rock arch rapids
- Christine and Hickson Dams, Red River, dam modification with rock arch rapids
- Redby Dam, Mud River, dam removal and channel restoration

##### Started:

- Buffalo River, Hawley (river restoration of straightened reach)

##### Starting in 2015:

- Lake Shady Dam, Zumbro River, rock arch rapids and river restoration
- Solid Bottom Creek, Otter Tail River, river restoration
- multiple lowhead dams, Sandhill River, river restoration
- Whitewater River

#### Restoration success stories:

Pomme de Terre River – Three mussels species (deertoe, plain pocket book and elktoe) have returned above the Appleton dam site, which was converted to a rock-arch-rapids in 1999.

Lawndale Creek – Natural reproduction of brook trout and a new fish species (trout perch) have been found since the restoration was completed in 2011.

Minnesota River – Removal of the Minnesota Falls dam reconnected three river miles and exposed natural waterfalls and rock outcrops and restored significant riffle spawning habitat. Fish that are now present upstream of Minnesota Falls dam site include: paddlefish, lake sturgeon, shovel nose sturgeon, flathead catfish, sauger, longnose gar, smallmouth buffalo, and black buffalo. Furthermore shortnose gar, gizzard shad, river carpsucker, American eel, and blue sucker are now present in much higher numbers.

**Watershed Assessment of River Stability and Sediment Supply (WARSSS)** – The SHP initiated an EPA endorsed WARSSS study in 2008 for the Whitewater River watershed, which is now in the finalization of the initial results phase. From this study, several products will assist resource managers in accurately assessing and managing sediment in the Whitewater basin and adjacent watersheds.

In development is a procedure for classifying stream types and valley types in Minnesota using LiDAR data. Sampling areas for the analysis area a subset of field survey sites identified utilizing hydrophysiographical regions, HUC 4 watersheds and stream type distribution within the state. Final stream type and valley type classifications will be derived from custom and standard tools as well as compared to field surveyed data. Statistical analysis will be used to determine if there is an unacceptable difference between the final classifications between the methods.

The SHP mussel program has a new mussel propagation facility in Lake City. Equipment from the Mussel Host Lab at MPCA in St. Paul was recently moved to the new site, and now begins the process of constructing the pieces necessary to culture young mussels, that will include some of the rarest species in the world.

**Watershed Health Assessment Framework (WHAF)** provides a comprehensive overview of ecological health of Minnesota's watersheds. By applying a consistent statewide approach, the WHAF expands our understanding of processes and interactions that create healthy and unhealthy responses in Minnesota's watersheds. The tool is continually being updated and new components. It can be accessed at the following.

<http://www.dnr.state.mn.us/whaf/index.html>

Two workshops will be taught by the MN DNR Stream Habitat Program this summer.

**The Fundamentals of Stream Restoration: Applied Geomorphology & Ecology** – July 13-17, Fergus Falls, MN – Cost is \$1,000.

**Diagnosing Streams: Symptoms, Underlying Causes, and Remedies** – September 14-16, Fergus Falls, MN – Cost is \$300.00.

For more information see the following: [http://files.dnr.state.mn.us/eco/streamhab/diagnosing\\_streams\\_workshop.pdf](http://files.dnr.state.mn.us/eco/streamhab/diagnosing_streams_workshop.pdf)

#### **Publications:**

Reducing Localized Impacts to River Systems through Proper Geomorphic Sizing of On-Channel and Floodplain Openings at Road/River Intersections in Nov. 2013.

<http://files.dnr.state.mn.us/eco/streamhab/geomorphology/reducing-rrior.pdf>

In the works:

Ecological Implications and Strategies for Invasive Carp in MN by Luther Aadland, Amy Childers, & Ian Chisholm. This paper has been peer reviewed. They are working on final edits and hope to distribute as a DNR report soon. They will be submitting a condensed version for publication in a scientific journal.

Ecology and Sustainable Water Management in Minnesota by Dan O'Shea and Ian Chisholm. This paper has been sent out for peer review. They are working on edits and formatting.

#### **Minnesota Pollution Control Agency**

The most recent reports on the health of Minnesota streams can be found in the following publications from 2014.

Water Quality Trends for Minnesota Rivers and Streams at Milestone Sites, June 2014

<http://www.pca.state.mn.us/index.php/view-document.html?gid=21554>

The Condition of Rivers and Streams in Minnesota, Based on Probabilistic Surveys, 1995-2011, April 2014

<http://www.pca.state.mn.us/index.php/view-document.html?gid=21234>