DEQ Nonpoint Source Grants: What You Get For the Money!

Upper Peninsula grants administered by Nonpoint Source staff since 2000 include a total of 29 grants totaling over $8M:

* Federal Clean Water Act Section 319 and 604(b) grants - 18 totaling $2.8M
* State Clean Michigan Initiative Nonpoint Source: 6 totaling $2M
* State Clean Michigan Initiative Clean Water Fund Grants: 5 totaling $3.3M

These projects leveraged over $14.3M in local matching funds.

Statewide:

* Federal Clean Water Act Section 319 and 604(b) grants: 173 grants totaling $29M
* Clean Michigan Initiative Nonpoint Source grants: 79 grants totaling $32M
* Clean Michigan Initiative Clean Water Fund grants:
* Illicit connections grants: 39 grants totaling $8M
* Remedial Action Plans/Lakewide Management Plans: 12 grants totaling $8M
* "Voluntary" Storm Water Permit: 10 grants totaling $3.6 M
* On-site Septic Systems (corrections projects): 9 grants totaling $6.9M
* High Quality Waters: 17 grants totaling $6M

This document was developed to highlight some of the successes of the Nonpoint Source Grant Program in the Upper Peninsula and to show the continued social, economic and environmental impacts of such projects on Michigan's lakes, streams, and wetlands.

Nonpoint source pollution is diffuse, intermittent pollution, which includes agricultural runoff, erosion from construction sites and stream banks, and runoff from parking lots.

DEQ Michigan's Nonpoint Source Program

All values since CMI started in early 2000 and as of February 2007

Mooo-ve It!

The Nonpoint Source Grant Program has provided funding in the Upper Peninsula to implement agricultural practices that are better for the environment and yet work well for local farmers. For example, as part of the Pine Creek Watershed Project in Dickinson County, the Dickinson Conservation District worked with a farmer to implement an animal waste structure.

Before implementation, manure was running through the feedlot area and flowing down a steep slope behind the barn and entering a tributary to Dickinson Creek.

After implementation, manure is directed into a waste storage facility. Along with a diversion to direct runoff into a filter strip and adjacent vegetation, no manure runoff enters Dickinson Creek from this site.

Livestock that have direct access to a stream significantly impact water quality. The Nonpoint Source Program awarded the Dickinson Conservation District two grants totaling $430,506, which included funding to restrict cattle access to a tributary of the Hamilton Creek. The result of implementing fencing and providing an alternative watering source is shown in the before and after photos, below.

The "Dirt" on Sediment

Sediment eroding from stream banks, road-stream crossings, forestry activities and other sources is a concern in Upper Peninsula watersheds because sediment covers up gravel and other habitat important to trout and other aquatic species.

The Nonpoint Source Program has funded numerous projects that control erosion and prevent sedimentation. These photos were taken from the St. Martin's Hill Project, which is part of the Munising Bay Watershed. St. Martin's Road was a significant source of erosion to the Munising Bay, and in August 2003 the Alger Conservation District was awarded a Clean Michigan Initiative Nonpoint Source grant for $325,610 to stabilize the site.

Site stabilization required repaving the road, installing rock-lined storm water conveyance channels, and installing sediment basins to help trap any remaining sediment. It also required relocating part of the road to reduce erosion. This project resulted in the reduction of 4,455 tons of sediment, 3,791 pounds of phosphorus, and 7,582 pounds of nitrogen from entering Munising Bay. Sediment reductions would fill 240 dump trucks.

In April 2008, the DEQ Nonpoint Source Program awarded Michigan Technological University $225,000 to demonstrate effective forestry best management practices on a site used for forest management education. This project will continue to reduce sediment in UP waters.

A Bad Vibration Turned Good

Watershed management planning projects generally necessitate the grantee to get out into their watershed to identify the sources of nonpoint pollution affecting or threatening their watershed. In 2001, while doing an inventory of pollution sources during the Lower Dead River Planning project the Marquette Conservation District discovered that the LS&I Railroad crossing over a Lower Dead tributary was a significant source of sediment. Steep slopes, sandy soils, and years of vibration from trains had caused the stream bank to fail and severely impact the culvert outlet.

Accessibility and steep terrain were some of the challenges faced before the project even began. JM Longyear, a large corporate forest company and stakeholder in the Lower Dead River watershed, and an adjacent property owner, granted access via a network of old forest hauling roads. A temporary culvert crossing needed to be installed in order for equipment to even reach the site.

As part of a $349,850 Nonpoint Source grant awarded to the Marquette Conservation District for the Lower Dead River Watershed Project, the site was stabilized with a new culvert, 90 tons of rock, 100 tons of boulders, 60 pounds of seed and 6 rolls of straw blanket.

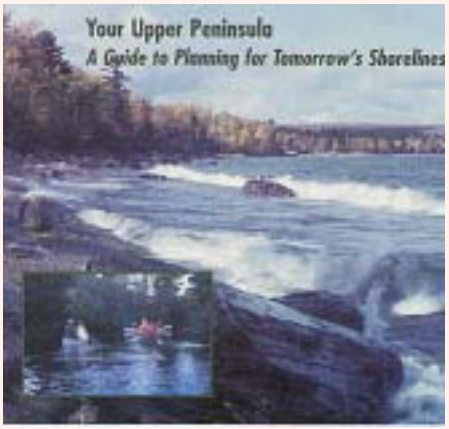
Even when subjected to spring snow melt and the vibration of passing trains, the site remained stabilized after installation. Stabilization of this site resulted in preventing 88 tons of sediment, 75 pounds of phosphorus and 150 pounds of nitrogen from entering the local stream. Cleveland Cliffs Inc. (the landowner) and O.S. Excavating (the contractor) were presented with the 2007 Watershed Project of the Year award at the Marquette County Conservation District's Annual Meeting for their outstanding work and commitment.

Keeping it Safe Forever

The Nonpoint Source Grant Program believes that a few dollars of prevention is worth hundreds of dollars of cure. Put another way: it is far cheaper to protect our water resources than to restore them. And when we do restore waterbodies, it is best to protect the restored waterbody from future degradation.

One Upper Peninsula project that resulted in both restoration and permanent protection is the Whetstone Brook Restoration Project. For over 130 years, the Whetstone Brook had been confined to a culvert under the south railroad yards adjacent to the City of Marquette downtown business district. With a $180,000 Clean Michigan Initiative Nonpoint Source grant, the City was able to remove the culvert and restore this section of trout stream to its original condition.

To ensure this restoration effort remains, the City established permanent vegetative buffers on both sides of the stream. The vegetation will filter and clean area storm water runoff before entering the brook, and provide better habitat for plants, animals and fish.



Another way to permanently protect high quality UP waters is purchasing permanent conservation easements on high priority parcels, such as in headwaters and in sensitive areas. Permanent conservation easements have been secured in the Lower Dead River Nonpoint Source Watershed Project.

The Nonpoint Source Program has also supported the development of land use planning tools, including improvements in local ordinances to protect UP water resources.

The Triple Bottom Rhyme

Every Nonpoint Source grant has social, economic, and environmental benefits. Take the Iron River Watershed Nonpoint Source project. With two Nonpoint Source grants totaling $505,423, the Iron Conservation District was able to:

* Engage schools and other groups in the watershed project
* Develop an education "tool kit"
* Create a display for public events
* Conduct a campaign to mark storm drains to prevent improper disposal
* Create and distribute newsletters, brochures, and pamphlets
* Conduct a shore landscaping workshop
* Launch a Web site
* Develop radio and television advertisements
* Develop articles for publication in local newspapers
* Install a 84 linear foot storm water conveyance channel to prevent erosion from ORVs
* Stabilize 19,200 square feet of hill side eroding from ORV access
* Install a storm water treatment unit in a sewer catch basin to trap pollutants
* Install a 5,000 linear feet of fencing to prevent livestock from accessing the river
* Install one alternative watering source for the livestock
* Stabilize one eroding road-stream crossing
* Stabilize 80 linear feet of eroding stream bank
* Restore 4 acres of riparian corridor

Partners included all levels of government, schools, the media, nonprofit groups, private consultants, landowners, a nature center, and the local library.

This project's blend of information/education with implementation of nonpoint source controls is typical of Nonpoint Source Program projects. The social benefit: engaged and enlightened citizens. The economic benefit: improved water quality (which benefits tourism), along with the jobs supported during the project. The environmental benefit: an annual load reduction of 260 tons of sediment, 250 pounds of phosphorus and 500 pounds of nitrogen.

Stamping Out Stamp Sands

Stamp sands at the Central Mine

Between 1864 and 1930, the Keweenaw Peninsula was the hub of intensive copper mining activity. Over the course of those 94 years, copper ore was crushed in stamping mills and the copper separated from rock by flotation. Since the mills--which were run by steam acquired by heating local river water--were located by rivers, the metal-rich residue left over from the stamping process were dumped nearby. As rivers ran through these stamp sands, concentrations of metals rose to levels above those toxic to most aquatic life and wildlife. These stamp sands are so low in organic matter and are so dry during the summer that after more than 80 years plants still can't grow on the sites.

Today, parts of the UP are still decimated moonscapes comprised of piles of stamp sands. Some of the deposits are 15 feet high and extend for several miles.

On September 13, 2007, the DEQ awarded the Houghton Keweenaw Conservation District a $808,714 Nonpoint Source grant for the Stamp Sand Stabilization Project. This project will restore the stream channel flowing through two stamp sand deposits in the headwaters of the East Branch of the Eagle River, known as Central Mine sites #1 and #2, and stabilize one stamp sand deposit in the headwaters of the Sleepy River, known as the Winona Mine site. This grant will make good strides in addressing what unfortunately is just a fraction of the stamp sand sites in the UP.

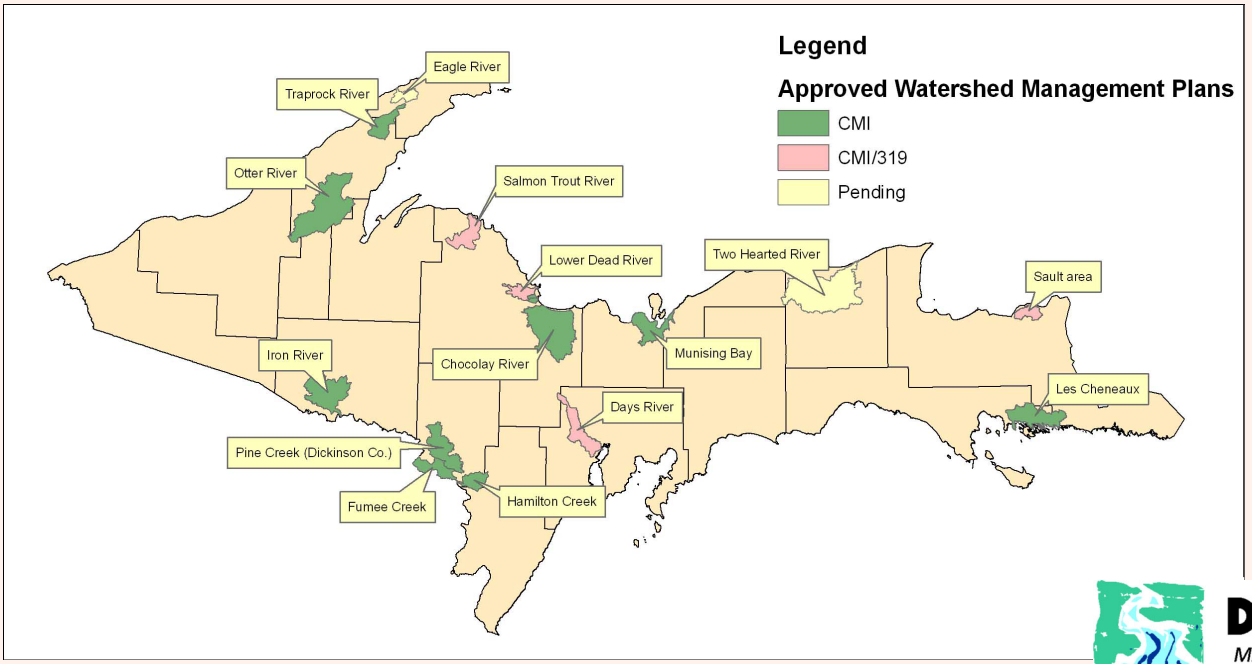
What's Been Done, What's Left to Finish

What's Done:
As of February 2007, statewide, the 79 CMI Nonpoint Source grants alone resulted in annual pollutant load reductions of 80,114 tons of sediment, 78,974 pounds of phosphorus and 185,385 pounds of nitrogen. These grants have supported hundreds of jobs and engaged thousands of Michigan citizens.

What's Left to Do:
In addition to finishing the Stamp Sands, Munising Bay and Lower Dead River projects, other nonpoint source projects ongoing in the UP include:

* A $325,610 grant awarded to the Alger Conservation District to implement nonpoint source controls in the Munising Bay watershed.
* A $618,403 grant awarded to the Chippewa/East Mackinac Conservation District to implement nonpoint source controls in the Les Cheneaux Watershed.
* Watershed management planning projects in the Eagle River, Two Hearted River and Huron Creek watersheds.
* Three $1 million Clean Michigan Initiative Clean Water Fund projects are nearing completion to reduce pollution from septic systems in Masonville Township (Delta County), Bark River Township (Delta County), and Ironwood Township (Gogebic County).

Many lakes and streams are still threatened or impaired by nonpoint sources of pollution. Additional grant funds will help the DEQ to assist UP communities and non-profit entities implement additional nonpoint source controls.



For more information about Nonpoint Source Projects, see www.michigan.gov/deqnps; click under Nonpoint Source Successes.

DEQ Michigan's Nonpoint Source Program