

Title: Iron River Livestock Exclusion Project

Michigan 303(d) Number: This reach of the Iron River is not on Michigan's 303(d) list.

GRTS Number: Grant: 975474010 – Project 40

Opening Paragraph:

The Iron River is a blue ribbon trout stream in southwestern Iron County in Michigan's Upper Peninsula. The watershed is primarily forested (57%), with significant amounts of urban and agricultural development (16% and 12%, respectively). MDEQ provided funding for several BMPs, including livestock exclusion fencing, alternate watering sources, and livestock crossings, which substantially improved macroinvertebrate communities.

Problem:

Stream quality has been impaired by acid mine drainage, waste water treatment effluent, and most recently by sediment and polluted runoff from uncontrolled livestock access.

Project Highlights:

Watershed-wide, this project included the following BMPs:

- Installed 20 alternate livestock watering sources
- Installed 3,600 linear feet of vegetated filter strips
- Installed 53,839 linear feet of livestock exclusion fencing
- Created or restored 546 acres of wetland
- Installed 13 livestock crossings
- Installed 100 linear feet of windbreak

These BMPs reduced annual pollutant loads by 260 tons of sediment, 250 tons of phosphorous, and 500 tons of nitrogen. A subset of BMPs were installed in 2003 on a farm owned by Mr. James Shepich, and consisted of an alternate livestock watering source and 5,000 linear feet of livestock exclusion fencing. The BMPs on this particular farm eliminated 10 tons of sediment, 10 pounds of phosphorus, and 20 pounds of nitrogen. Pre-BMP biological monitoring was conducted at this site in 2000 and post-BMP monitoring in 2007. All monitoring was supported by Section 319 funds.

Results:

Biological sampling at the Shepich Farm in 2007 found substantially improved macroinvertebrate communities compared to 2000 (Table 1, below):

- The total number of macroinvertebrate taxa more than doubled (from 9 to 23 taxa).
- The number of sensitive taxa (mayflies, caddisflies and stoneflies) increased slightly (from 4 to 6 taxa), and their proportion of the overall benthic community almost tripled (from 26% to 77%).
- The proportion of pollution-tolerant midge larvae (Family Chironomidae) decreased substantially (from 58% to 7%).

Partners and Funding:

In 2003 MDEQ provided \$429,217 in Clean Michigan Initiative funds to the Iron County Conservation District, which provided \$157,043 in matching funds. The grant funding included \$10,184 for the installation of an alternate watering source and 5,000 linear feet of livestock exclusion fencing on the Shepich Farm. Mr. Shepich personally provided \$10,475 in matching funds.

Photographs: None.

Data:

Table 1. Macroinvertebrate Community Data in the Iron River at the Shepich Farm, Before and After BMP Installation.

Metric	2000 (Pre-BMP)	2007 (Post-BMP)
Total taxa	9	23
No. EPT* taxa	4	6
Proportion EPT*	26%	77%
Proportion midge larvae	58%	7%

* EPT = mayfly, caddisfly and stonefly taxa = sensitive macroinvertebrates

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