



**Clean Michigan Initiative
Nonpoint Source Grant**
Manistee, Wexford, Missaukee,
Kalkaska Counties



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Manistee River Watershed Restoration Project

August 1, 2001 through December 31, 2005

The Manistee River is a regionally important Lake Michigan tributary that supports a nationally recognized fishery. Sediment is the primary pollutant of concern in the watershed. Major erosion problems with streambanks and road/stream crossings are degrading water quality and instream habitat on the Manistee main stem and important coldwater tributaries, primarily Bear Creek and the Pine River. The river is also impounded by two hydro electric dams, Tippy and Hodenpyl. Land use in the watershed is approximately 41% forested, 39% agricultural, 3% urban or suburban, 13% wetlands, 2% range lands, and 2% lakes and streams. Through this project a total of 11 stream banks were stabilized and 11 road/stream crossings were restructured. This project built on the previous success of a 319 grant awarded in 1999, and helped leverage additional funding from the US EPA for continued restoration efforts within the watershed.



Grant Amount: \$ 696,700
Match Funds: \$ 642,800

Total Amount: \$1,339,500

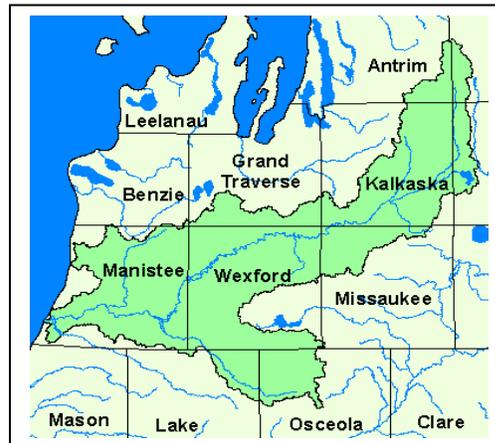
Best Management Practices:

- fieldstone placement
- access roads
- log terracing
- tree and shrub plantings
- runoff control
- pavement
- diversion outlets
- culvert installation for fish passage & improved hydrology
- road/stream crossings
- streambank stabilization



Annual Load Reductions:

- 427 tons of Sediment



Partners involved:

- Manistee County Road Commission
- Wexford County Road Commission
- Little River Band of Ottawa Indians
- Huron Manistee National Forest
- MDNR Fisheries Division & Forest, Minerals, Fire Division
- Michigan Department of Environmental Quality

I&E Activities:

(Completed outside the scope of the project)

- project presentations
- web-site watershed database information





Stream Bank Site #184 Before: This severely eroding streambank was dumping tons of sand into the Manistee River every year. The southerly exposure and sandy conditions prevented the bank from revegetating on its own.



Site #184 After 1 Year: Approximately 100 cubic yards of fieldstone was placed at the toe of the bank, log terraces were installed along the upper slope, seedlings were planted, and topsoil was placed behind the rock to help the site revegetate. Brush was placed on the slope to provide shade for seedlings.



Pine River site O-6 before work. The uncurbed bridge deck and sandy approaches allowed road runoff to directly enter the East Branch of the Pine River during rain events.



Pine River site O-6 months after completion. The bridge was replaced with an arch culvert, road shoulders vegetated to filter road runoff, and riprap placed to protect the structure and prevent scour.