



**Federal Clean Water Act
Section 319 Grant**
Tracking Code: 2006-0109



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Les Cheneaux Watershed Implementation Project

February 1, 2007 through December 31, 2009

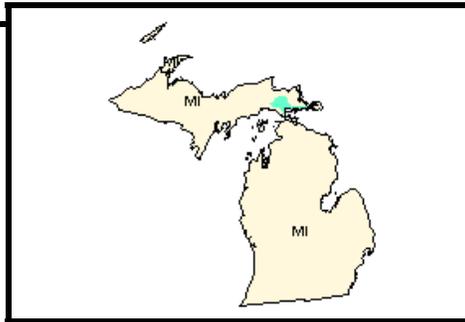
The Les Cheneaux watershed project was located in Michigan's eastern upper peninsula and focused on nine creeks that empty into Northern Lake Huron near the Clark Township communities of Cedarville and Hessel and the Les Cheneaux island archipelago. The area is a critical "Biodiversity Investment Area" in the Great Lakes basin, with inventories of 9 globally-rare natural communities providing habitat for 13 federally/60 state-listed threatened or endangered species, and 11 critical aquatic habitats recognized as "Environmental Areas" by the State Of Michigan.

Poor land use planning and lack of awareness resulted in significant occurrences of failing on-site septic systems, eroding road/stream crossings and riparian areas, and other land use issues. Pollutants threatening the Les Cheneaux watershed's high quality waters from these sources include pathogens, nutrients phosphorous and nitrogen, toxins (salt, oil, solvents), sediment, and alteration of hydrology. The primary goal of this project was to lessen nonpoint source pollution and improve, protect, and restore the high quality waters of the Les Cheneaux Watershed and northern Lake Huron. Completed were 3 road/stream crossing improvements, two stream bank stabilization projects, 6 public workshops, redevelopment of Clark Township's Master Plan and zoning ordinances, 3 household hazardous waste collections, and several land protection agreements, resulting in the elimination of 179 tons of sediment, 176 pounds of phosphorus, 352 lbs of nitrogen, and over 25,000 pounds of household hazardous waste. Conservation easements were secured on 3800' of Northern Lake Huron shoreline and 1300' of riparian habitat.

Grant Amount: \$ 486,287

Match Funds: \$ 217,139

Total Amount: \$ 703,426



Best Management Practices:

- 3 Road/stream crossings improved
- 200 feet stream bank stabilized
- 25,000 pounds hazardous waste removed
- 3,800 feet shoreline, 1,300 feet creek permanently protected

Annual Load Reductions:

- 179 tons sediment reduced annually
- 176 pounds phosphorus reduced annually
- 352 pounds nitrogen reduced annually



The Les Cheneaux watershed is located within the Carp-Pine watershed in Michigan's Eastern Upper Peninsula.

Partners involved:

- Les Cheneaux Watershed Council
- Lake Superior State University
- LMAS & Chippewa County Health
- Mackinac County Road Commission
- Little Traverse Conservancy
- Land Information Access Ass.
- Clark Township Officials
- RS Scott Associates
- Gourdie Fraser Consultants
- Islands Wildlife
- Boy Scouts of America
- Drug and Disposal Inc.

I&E Activities:

- 6 water quality management workshops
- Quarterly newsletters
- Septic System management booklet
- Redevelopment of Township Master Plan and Zoning ordinances
- Water quality website





PRS 2 before BMP installation, showing three short, perched culverts with steep eroding embankments. The downstream bank is almost vertical and eroding away behind a dilapidated wooden seawall.



PRS 2 after installation of a large concrete culvert, resloping of embankments to 3:1 and replacement of stream bank with large riprap to 3:1 slope.



PRS 5 before BMP installation. The old culvert was too short, leaving the embankment almost vertical. Road gravel was graded into the creek with each road commission grading. The culvert was also installed at an acute angle to the creek, causing stream bank erosion and impounding of upstream flows.



PRS 5 after BMP installation. A longer culvert with increased discharge capacity was installed at a more natural angle to the creek, and embankment slopes increased to 3:1 to provide a vegetated buffer between the road gravel and the creek.