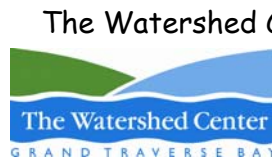




**Federal Clean Water Act
Section 319 Grant
2006-0139**



The Watershed Center Grand Traverse Bay
13272 S. West Bay Shore Drive,
Traverse City, MI, 49684
Phone: 231.935.1514
Contact: Sarah U'Ren, suren@gtbay.org

Grand Traverse Bay Watershed Buffer Initiative and Benchmark Survey
March 2007 through September 2009

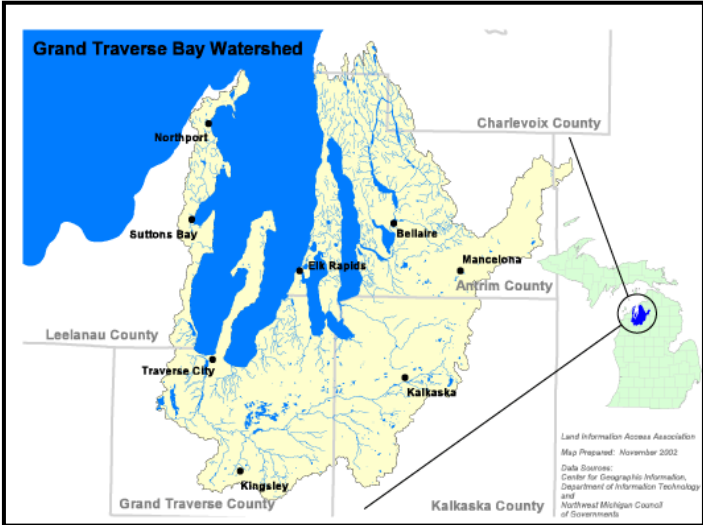
The Grand Traverse Bay watershed, located in northwest Michigan's Lower Peninsula and draining approximately 976 square miles of land, is one of the premier tourist and outdoor recreation regions in the State of Michigan. Sediment and excessive nutrient loading are the two highest ranking priority pollutants that are threatening the watershed. The goals of this project were to: 1) Protect the aquatic life and coldwater fishery in the Grand Traverse Bay watershed by decreasing pollution stemming from eroding stream banks and the lack of riparian buffers along waterways; 2) Address education gaps and other barriers to effective implementation of appropriate water quality protection best management practices (BMPs) that exist at the township level; 3) Establish benchmarks in current public awareness and values relating to watershed protection; and 4) Continue to implement the Grand Traverse Bay Information and Education campaign throughout the watershed by focusing education efforts on the use of appropriate BMPs (buffers, rain gardens, etc.) on private property.

- Best Management Practices:**
- Riparian Buffers - 2 sites on Torch Lake, 2 sites in Grand Traverse County
 - 13 Stream Bank Erosion Sites (4 on North Branch Boardman River, 9 on Kids Creek)
- Annual Load Reductions:**
- 60.093 tons sediment
 - 64.42 pounds of phosphorus, 133.84 pounds of nitrogen



Grant Amount:	\$170,117
Match Funds:	\$ 65,809
Total Amount:	\$235,926

- I&E Activities:**
- Conducted riparian buffer survey of public lands (i.e. public parks, boat launches, marinas) in watershed to determine the existence and/or condition of existing buffers.
 - Conducted riparian buffer survey around Torch Lake to determine the existence and/or condition of existing buffers (1,752 total parcels).
 - Produced greenbelt brochure and 6 different greenbelt garden design options with local nurseries.
 - Mailed informative letter and buffer brochure to every property owner on the lake; provided result information to owners when requested.
 - Conducted 3 Greenbelt Garden Expo events to showcase design options for greenbelts and their importance to water quality.
 - Conducted watershed-wide benchmark social survey to assess current knowledge of watershed issues and associated behaviors, attitudes, and values of residents.
 - Developed "Shades of Blue" newspaper article series in conjunction with local newspapers (topics: lawn care, lakescaping, greenbelts, rain gardens, and composting).



- Partners involved:**
- Grand Traverse Conservation District;
 - Whitepine Associates; NMC M-TEC Research Services; NMC Water Studies Institute; Ellen Kohler, PLC; Milton, Helena, East Bay, and Paradise Townships

Example of Greenbelt Garden design posters (two of six completed)

Greenbelt Garden: Grassy Shore

The Watershed Center
 GRAND TRAVERSE BAY
 13272 S. West Bay Shore Drive
 Traverse City, MI 49684
 231.935.1514
 www.gtbay.org

Garden Design Provided by
 Pine Hill Nursery & Landscaping
 886 US 31 N, Kewadin, MI 49648
 231.599.2016 ~ www.pinehill-nursery.com

- Threadleaf Coreopsis-*Coreopsis Verticillata*
- Bearberry Kinnikinnick-*Arctostaphylos Uva-Ursi*
- Purple Coneflower-*Echinacea Purpurea*
- Gro-Low Sumac-*Rhus Aromatica 'Gro-Low'*
- Sweetspire-*Itea Virginica*
- Common Juniper-*Juniperus Communis 'Depressa'*

Greenbelt Garden: Sandy Shore

The Watershed Center
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Garden Design Provided by
 Barker Creek Nursery & Landscaping
 7048 M-72 NW, Williamsburg, MI 49690
 231.267.5972

- Huron Sunrise Grass-*Miscanthus Sinensis*
- Ninebark-*Physocarpus Opulifolius*
- Siberian Iris-Yellow Flag-*Iris Pseudaeorus*
- Bellflower-*Campanula*
- Dune Grass-*Elymus Mollis*
- Potentilla-*Potentilla Fruticosa*
- Dense Blazing Star-*Liatris Spicata*
- Foxglove-*Digitalis 'Ambia'*

Before/After Pictures of Helena Township Buffer



Before/After Pictures of Milton Township Buffer



Example of Before/After Picture for Streambank Erosion Restoration
North Branch Boardman River - S374

