

MARCH 2013

Great Lakes Restoration at work in **Michigan**

The state of Michigan – together with local communities, tribes, nongovernmental organizations and business and industry – is collaborating with the federal government to implement a comprehensive restoration strategy for the Great Lakes. With strong support from Congress and the Administration, this partnership is generating on-the-ground actions that will improve Michigan's economy, environment and quality of life. This fact sheet describes how Great Lakes restoration is benefiting Michigan and showcases selected restoration projects now underway.

The Great Lakes: A Vital Economic Asset for Michigan

The Great Lakes are Michigan's most valuable natural resource and are fundamental to our identity and quality of life. The Great Lakes have extraordinary economic value for Michigan. Despite difficult economic conditions, the last decade saw a 33 percent increase in tourism-related employment in Michigan's coastal counties, generating almost 20,000 new jobs. More broadly, the lakes provide

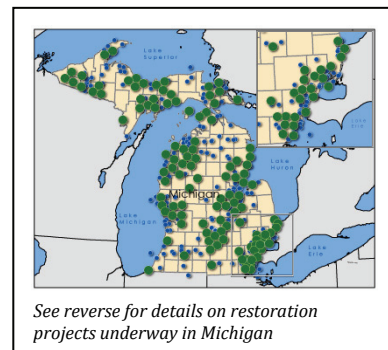
- jobs for more than 800,000 Michigan residents;
- a world-renown commercial and sport fishery with an annual value of more than \$4 billion;
- the foundation for a \$12.8 billion travel industry;
- water resources for manufacturing industries, which produce 60 percent of our nation's steel and 60 percent of our automobiles;
- a maritime transportation network; and
- harbors and marinas that support a \$2 billion annual recreational boating industry.

As these figures show, cleaning up the Great Lakes isn't just about correcting mistakes of the past but of leveraging a vital resource to build a better future.

Investing in Michigan's Waterfront Communities

The Great Lakes Restoration Initiative (GLRI) is supporting implementation of a comprehensive cleanup plan that has been broadly endorsed by the region's governors, tribes, cities, conservation groups, and business and industry. Begun in 2009, the Initiative builds on years of work to identify solutions to key problems facing the Great Lakes:

- Combating aquatic invasive species, such as Asian carp
- Cleaning up contaminated sediments in Areas of Concern
- Controlling polluted runoff and cleaning up beaches
- Restoring degraded wetlands
- Conserving and enhancing valuable fish and wildlife resources



The GLRI is supported by sound science and guided by an Action

Plan with detailed performance goals and clear accountability standards. An interagency task force, led by U.S. EPA, is coordinating federal efforts and directing a majority of funding to states, cities and nongovernmental groups that are best able to address local restoration priorities.

Economic Benefits from Restoring the Great Lakes

Restoring the Great Lakes advances the region's broader strategy to create jobs, stimulate economic development and invest in freshwater resources and waterfront communities. A detailed study by The Brookings Institution found that fully implementing The Great Lakes restoration strategy would generate \$80 billion to \$100 billion in benefits, including

- \$6.5 billion to \$11.8 billion in direct benefits from tourism, fishing and recreation;
- \$50 million to \$125 million in reduced costs to municipalities; and
- \$12 billion to \$19 billion in increased property values in degraded shoreline areas, including \$3.7 billion to \$7 billion for the Detroit metro area alone.

Solving Great Lakes Problems

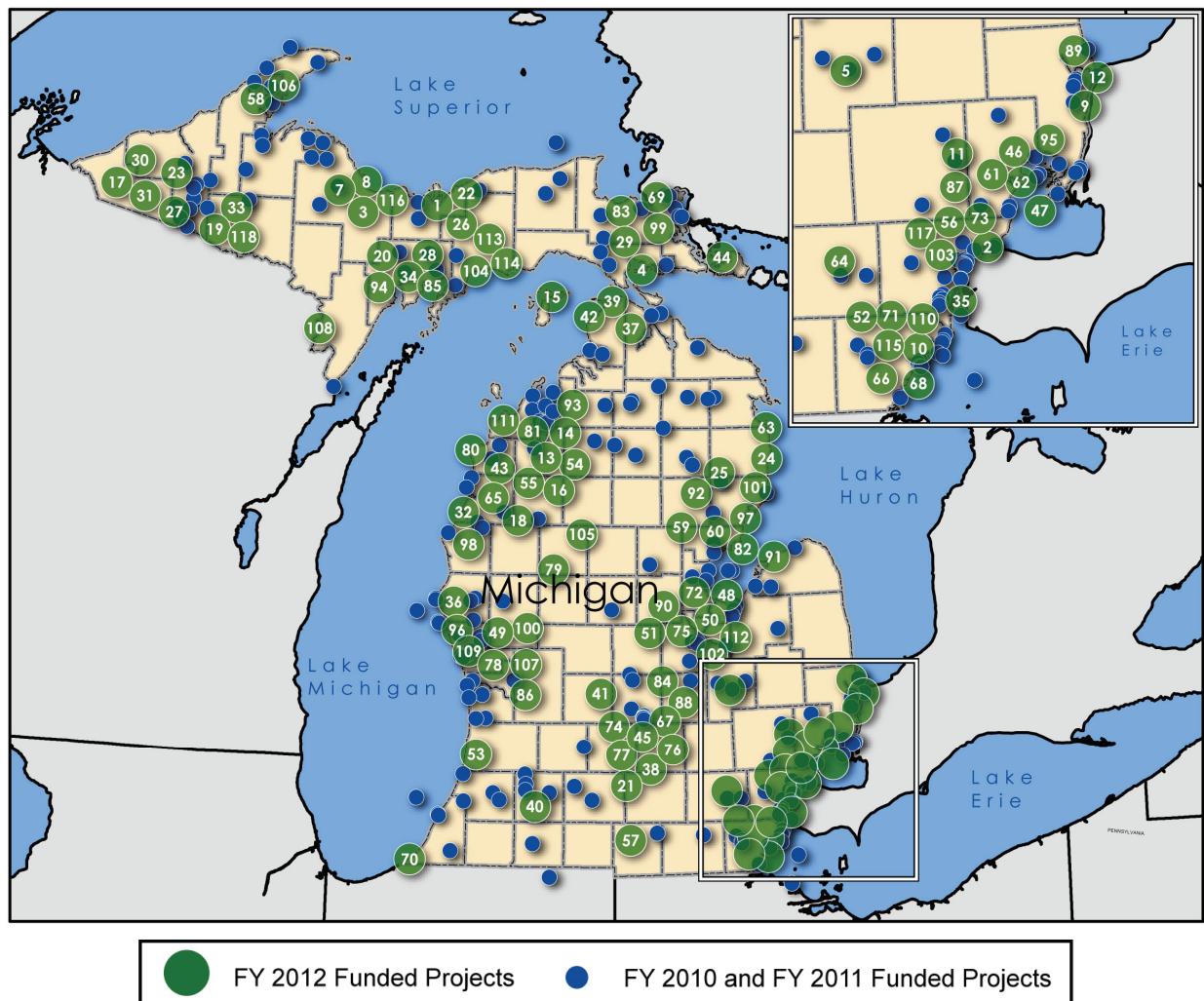
The GLRI builds on state and local efforts to solve the problems facing the Great Lakes. Michigan's restoration work is guided by a number of federal, state and local plans that translate regional restoration goals into specific actions. These plans aim to prevent the introduction of invasive species; conserve and enhance fish and wildlife; reduce the release of and exposure to toxic substances; clean up Areas of Concern; control pollution from nonpoint sources; monitor the health of the Great Lakes ecosystem; and protect and enhance Michigan's water, land, and related resources through sustainable practices.

Great Lakes Restoration in Michigan

The GLRI is well underway in Michigan, with more than \$163 million coming into the state to implement 364 local and on-the-ground restoration projects in the first three years, FY 2010-2012. This federal support is leveraging substantial resources from state and local governments. Restoration projects funded in fiscal year 2012 are featured on the map below and details are provided in the attached table. In addition to these site specific projects, Michigan will also benefit from funding for broad-scale projects and activities that are underway under the GLRI that will strengthen restoration efforts across the region:

- **Engineering and design** of sustainable restoration projects, new technologies to detect bacterial contamination, and techniques to monitor invasive species.
- **Pollution prevention** to keep the Great Lakes clean, prevent beach contamination, safeguard investments in restoration and prevent polluted runoff from agricultural land and city streets.
- **Outreach** to engage citizens in restoration efforts; promote best practices to prevent the introduction of invasive species; improve fish consumption and beach advisories; and keep pesticides, pharmaceuticals and other pollutants out of the lakes.
- **Monitoring** of mercury pollution to protect children's health; beaches to enhance swim advisories; and Great Lakes water and wildlife to detect contaminants.
- **Research to strengthen management**, including control methods for invasive species such as Asian carp, Phragmites and sea lamprey; preventing the introduction of invasive species in ballast water; enhancing knowledge of the Great Lakes ecosystem; protecting endangered species; identifying habitat for sensitive species; and understanding climate change impacts.
- **Capacity building** to help states and local governments implement restoration projects, improve collaboration, and educate health care providers about fish consumption advisories.
- **Sound science and accountability** to ensure that funds are spent effectively and that the GLRI reflects a strong, science-based understanding of the Great Lakes.

These activities will benefit the next generation of Michigan citizens who will look to the Great Lakes as an important resource to improve their quality of life and economic well-being.



An **interactive map** featuring Great Lakes Restoration Initiative projects funded in fiscal years 2010 through 2012 is available at www.glc.org/restore.

Great Lakes Restoration Initiative in Michigan

Selected Restoration Projects Funded in Fiscal Year 2012

Map Number	Project Title	Recipient Organization or Lead Agency	GLRI Award Amount	Fiscal Year
1	Alger-Marquette (MI) Cross-Border Restoration Project	Alger Conservation District	\$105,000	2012
2	Marine Debris Removal and Prevention on Belle Isle	Alliance for the Great Lakes	\$50,000	2012
3	Reducing the Amount of Airborne Mercury Entering the Great Lakes	Cedar Tree Institute	\$194,400	2012
4	Non-Native Invasive Plant Species Control	Chippewa East Mackinac Conservation District	\$170,000	2010, 2011, 2012
5	Greening Chevy in the Hole #2	City of Flint	\$250,000	2012
6	Greening of Chevy in the Hole (brownfield restoration)	City of Flint	\$625,000	2010, 2012
7	Partridge Creek Diversion - Phase 2	City of Ishpeming	\$4,880,000	2012
8	Making Lake Superior Beaches Safer through Green Practices	City of Marquette	\$179,700	2012
9	Chrysler Beach Stormwater Improvements	City of Marysville	\$500,000	2012
10	Installation of Fish Passage Structures at Four Dams Along the River Raisin in Michigan	City of Monroe	\$200,000	2012
11	Paint Creek Restoration Project	City of Rochester, Michigan	\$750,000	2012
12	Upper St. Clair River Habitat Restoration	Community Foundation of St. Clair County	\$2,000,000	2012
13	River Dam Removal: Phase 1-Brown Bridge Dam (LM-2-11)	Conservation Resource Alliance	\$123,284	2012
14	Boardman Fish Passage and Habitat Restoration	Conservation Resource Alliance	\$150,000	2012
15	Beaver Island Archipelago Invasive Species Initiative (MI)	Conservation Resource Alliance	\$368,646	2012
16	Brown Bridge Restoration and Sediment Management	Conservation Resource Alliance	\$500,000	2012
17	Produce and install informational signs; aquatic invasive species	Dept. of Agriculture - U.S. Forest Service	\$5,490	2012
18	Wendy's Loop Phragmites control	Dept. of Agriculture - U.S. Forest Service	\$9,100	2012
19	Wild Rice Restoration; Blair, Stickley, Cowslip, Little Beaton lakes	Dept. of Agriculture - U.S. Forest Service	\$10,000	2012
20	Lake habitat - placement of large wood structures	Dept. of Agriculture - U.S. Forest Service	\$10,000	2012
21	Kirtland Warbler and Gold-Winged Warbler Habitat Enhancement	Dept. of Agriculture - U.S. Forest Service	\$11,000	2012
22	Forest user outreach/education regarding invasive species	Dept. of Agriculture - U.S. Forest Service	\$30,000	2012
23	Bat hibernaculum protection	Dept. of Agriculture - U.S. Forest Service	\$30,000	2012
24	Pine River Streambank Stabilization	Dept. of Agriculture - U.S. Forest Service	\$33,000	2012
25	Au Sable River Streambank Stabilization	Dept. of Agriculture - U.S. Forest Service	\$40,000	2012
26	Early Successional Habitat Restoration	Dept. of Agriculture - U.S. Forest Service	\$40,000	2012
27	Wood Turtle nesting habitat restoration	Dept. of Agriculture - U.S. Forest Service	\$55,000	2012
28	Sturgeon River spawning habitat restoration	Dept. of Agriculture - U.S. Forest Service	\$75,000	2012
29	Little Bear Creek Crossing at Forest Road 3511 or 3517	Dept. of Agriculture - U.S. Forest Service	\$100,000	2012
30	Herpetile studies and turtle protection	Dept. of Agriculture - U.S. Forest Service	\$100,000	2012
31	Education/Outreach to anglers for invasive species control (boat wash)	Dept. of Agriculture - U.S. Forest Service	\$110,000	2012
32	Manistee County Aquatic Invasive Species Suppression	Dept. of Agriculture - U.S. Forest Service	\$124,090	2012
33	Jumbo River at Forest Road 3616; culvert replacement	Dept. of Agriculture - U.S. Forest Service	\$175,000	2012
34	Kirtland Warbler Habitat Restoration	Dept. of Agriculture - U.S. Forest Service	\$373,000	2010, 2011, 2012

Map Number	Project Title	Recipient Organization or Lead Agency	GLRI Award Amount	Fiscal Year
35	Early Warning Program to Detect and Identify Contaminants of Emerging Concern	Dept. of Interior-U.S. Fish and Wildlife Service	\$10,290	2012
36	Winston Road Culvert Replacement on Carleton Creek (White River) in Oceana County, MI	Dept. of Interior-U.S. Fish and Wildlife Service	\$35,714	2012
37	Piping Plover Recovery	Dept. of Interior-U.S. Fish and Wildlife Service	\$40,000	2012
38	Kirtland's Warbler Recovery	Dept. of Interior-U.S. Fish and Wildlife Service	\$60,000	2012
39	Recovery of Piping Plover at Wilderness State Park	Dept. of Interior-U.S. Fish and Wildlife Service	\$90,000	2012
40	Feasibility Study and Engineering Design Work for the Removal of the Alcott Street Dam	Dept. of Interior-U.S. Fish and Wildlife Service	\$141,683	2012
41	Removal of Lyons Dam (Grand River) in Ionia County, Michigan	Dept. of Interior-U.S. Fish and Wildlife Service	\$166,856	2012
42	Recovery of Piping Plover in Michigan	Dept. of Interior-U.S. Fish and Wildlife Service	\$205,000	2011, 2012
43	Kirtland's Warbler Recovery through control of nest parasitism	Dept. of Interior-U.S. Fish and Wildlife Service	\$1,030,000	2010, 2011, 2012
44	Conservation of Great Lakes Islands	Dept. of Interior-U.S. Fish and Wildlife Service	\$2,498,800	2010, 2011, 2012
45	Determine Baseline and Sources of Toxic Contaminant Loadings	Dept. of Interior-U.S. Geological Survey MI	\$840,000	2010, 2011, 2012
46	Nowcast models for beach closure predictions at Metro Beach, Mount Clemens and Memorial Beach in St. Clair Shores	Dept. of Interior-U.S. Geological Survey MI	\$2,250,000	2010, 2011, 2012
47	Fish Habitat Enhancement Strategies for the Huron-Erie Corridor	Dept. of Interior-U.S. Geological Survey MI	\$3,100,000	2010, 2011, 2012
48	Refining and Updating the Wetland Protection Status in the Saginaw Bay Coastal Plain	Ducks Unlimited	\$24,127	2012
49	Bosma Wetland Restoration - Topographic Survey and Engineering Design	Ducks Unlimited	\$50,000	2012
50	Crow Island State Game Area Marsh Enhancement - Topographic Survey and Engineering Design	Ducks Unlimited	\$58,881	2012
51	Shiawassee River State Game Area Wildlife - Michigan	Ducks Unlimited	\$202,423	2012
52	Ford Marsh Coastal Wetland Enhancement	Ducks Unlimited	\$335,658	2012
53	Allegan State Game Area Wetland Restoration Project	Ducks Unlimited - Great Lakes Office	\$283,128	2012
54	Kids Creek Stormwater Reduction Project	Grand Traverse Bay Watershed Initiative	\$499,741	2012
55	Controlling Terrestrial Invasive Species in Northwest Lower Michigan	Grand Traverse Conservation District	\$399,971	2012
56	Emerald Ash Borer Reforestation Initiative	Greening of Detroit	\$750,000	2010, 2012
57	MI/OH Erosion & Sediment Reduction for the Tiffin River/WLEB	Hillsdale Conservation District - MI	\$299,976	2012
58	Non-Native Invasive Plant Species Control	Houghton Keweenaw Conservation District	\$45,000	2011, 2012
59	Rifle River Watershed Restoration Project	Huron Pines	\$140,000	2012
60	Northern Saginaw Bay Restoration Initiative	Huron Pines	\$416,000	2012
61	Reducing the Impact of Stormwater at Lake St. Clair Metropark (Metro Beach)	Huron-Clinton Metropolitan Authority	\$1,500,000	2011, 2012
62	Black Creek Marsh	Huron-Clinton Metropolitan Authority	\$221,000	2012
63	Non-Native Invasive Plant Species Control	Lake Huron Cooperative Weed Management Area	\$110,000	2011, 2012
64	Upper River Raisin Riparian Protection Program	Legacy Land Conservancy - MI	\$103,954	2012
65	Peterson Creek culvert replacement	Manistee County	\$250,000	2012

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66	Reducing Sediment and Nutrients Entering the Western Lake Erie Basin	Michigan Department of Agriculture	\$265,980	2012
67	Implementing Michigan's Comprehensive State Management Plan for Non- indigenous Aquatic Nuisance Species	Michigan Department of Environmental Quality	\$2,736,958	2010, 2011, 2012
68	River Raisin Area of Concern	Michigan Department of Natural Resources	\$570,000	2012
69	Chippewa County Beach Restoration	Michigan Dept of Environmental Quality	\$217,015	2012
70	New Buffalo Green Storm Water Project	Michigan Dept of Environmental Quality	\$263,188	2012
71	Nutrient Reduction in the River Raisin and Lake Erie Basin	Michigan Dept of Environmental Quality	\$350,000	2012
72	Kawkawlin River Targeted Phosphorus and E. Coli Reduction	Michigan Dept of Environmental Quality	\$995,204	2012
73	Restoring Fish Spawning Habitat in the Detroit River	Michigan Sea Grant	\$799,226	2012
74	Locating and Targeting High-Impact Farm Fields to Reduce Phosphorus Discharges	Michigan State University	\$189,376	2012
75	Improving Water Quality Restoration Partnerships in Michigan's Shiawassee and Flint River Watersheds	Michigan State University	\$299,674	2012
76	Use of a Chemical Repellent to Improve Sea Lamprey Control	Michigan State University	\$392,823	2012
77	Development of a Portable Monitoring Device for High-Risk Invasive Species	Michigan State University	\$600,000	2012
78	Muskegon Lake AOC	Muskegon County	\$200,000	2012
79	Restoration of Riparian Areas in the Muskegon River Watershed	Muskegon River Watershed Assembly	\$287,349	2012
80	Non-Native Invasive Plant Species Control	Northwest Michigan Cooperative Weed Management Area	\$105,000	2010, 2011, 2012
81	River Care - A Framework for Restoring Stream Connectivity and Habitat in the Upper Great Lakes	River Care	\$767,736	2010, 2011, 2012
82	Saginaw Bay Imperiled Lake Plain Prairie Habitat Restoration	Saginaw Basin Land Conservancy	\$150,000	2012
83	Hazardous Ash Removal	Sault Ste. Marie Tribe of Chippewa Indians	\$132,274	2012
84	A Novel Hybrid BMP Auction Program, Shiawassee River	Shiawassee Conservation District - MI	\$270,000	2012
85	Non-Native Invasive Plant Species Control	Superior Watershed Partnership	\$100,000	2010, 2011, 2012
86	Grand River EAB	The Friends of Grand Rapids Parks	\$70,000	2012
87	Restoring Fish Passage in the Red Run Headwaters	City of Troy	\$985,000	2012
88	GLFER - Shiawassee River Sea Lamprey Barrier and Trap, MI	U.S. Army Corps of Engineers	\$25,000	2012
89	CAP 206 - Doe Creek Restoration, MI	U.S. Army Corps of Engineers	\$25,000	2012
90	GLFER - Tittabawasee River Sea Lamprey Trap, MI	U.S. Army Corps of Engineers	\$25,000	2012
91	CAP 206 - Caseville Restoration, MI	U.S. Army Corps of Engineers	\$25,000	2012
92	CAP 206 - Rifle River Restoration, MI	U.S. Army Corps of Engineers	\$25,000	2012
93	GLFER - Union Street Dam Sea Lamprey Trap, MI	U.S. Army Corps of Engineers	\$25,000	2012
94	GLFER - Days River Sea Lamprey Barrier and Trap, Delta County, MI	U.S. Army Corps of Engineers	\$25,000	2012
95	GLFER - Salt River Marsh Coastal Habitat Restoration, MI	U.S. Army Corps of Engineers	\$75,000	2012
96	GLFER - White River Sea Lamprey Barrier and Trap, Newaygo Co, MI	U.S. Army Corps of Engineers	\$75,000	2012

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97	GLFER - East Au Gres River Sea Lamprey Trap, Arenac Co, MI	U.S. Army Corps of Engineers	\$75,000	2012
98	GLFER - Little Manistee River Sea Lamprey Barrier and Trap, MI	U.S. Army Corps of Engineers	\$75,000	2012
99	GLFER - St. Marys River Sea Lamprey Trap, MI	U.S. Army Corps of Engineers	\$75,000	2012
100	GLFER - Muskegon River Sea Lamprey Trap, MI	U.S. Army Corps of Engineers	\$100,000	2012
101	GLFER - Au Sable River Sea Lamprey Trap, MI	U.S. Army Corps of Engineers	\$100,000	2012
102	SA - Flint River Sec 216	U.S. Army Corps of Engineers	\$100,000	2012
103	GLFER - Ford Estate Dam Fish Passage, MI	U.S. Army Corps of Engineers	\$200,000	2012
104	"Strategic" Navigation Dredging - Manistique Harbor, Strategic Navigation Dredge, MI	U.S. Army Corps of Engineers	\$255,000	2011, 2012
105	CAP 206 - Marion Mill Pond, Marion, MI	U.S. Army Corps of Engineers	\$598,300	2010, 2011, 2012
106	GLFER - Keweenaw Stamp Sands, MI	U.S. Army Corps of Engineers	\$609,300	2010, 2011, 2012
107	GLFER - Grand Rapids Dam Fishway, MI	U.S. Army Corps of Engineers	\$661,400	2010, 2011, 2012
108	GLFER - White Rapids / Chalk Hill Dam, MI	U.S. Army Corps of Engineers	\$666,000	2010, 2011, 2012
109	Great Lakes Remedial Action Plans - MI, MN, and WI	U.S. Army Corps of Engineers	\$831,000	2011, 2012
110	"Strategic" Navigation Dredging - River Raisin Strategic Navigation Dredging, MI	U.S. Army Corps of Engineers	\$1,181,900	2010, 2011, 2012
111	GLFER - Boardman River Dams, Traverse City, MI	U.S. Army Corps of Engineers	\$1,328,800	2010, 2011, 2012
112	GLFER - Frankenmuth Dam Fish Passage, MI	U.S. Army Corps of Engineers	\$1,600,000	2012
113	CAP 1135 - Manistique River Lamprey Barrier, MI	U.S. Army Corps of Engineers	\$3,484,000	2011, 2012
114	Manistique River Area of Concern Great Lakes Legacy Act Contaminated Sediment Site Characterization	U.S. EPA-Great Lakes Legacy Act	\$468,000	2010, 2012
115	River Raisin Area of Concern Great Lakes Legacy Act Contaminated Sediment Remediation	U.S. EPA-Great Lakes Legacy Act and State of Michigan	\$5,600,000	2012
116	Invasive Phragmites Control in Michigan's Upper Peninsula	Upper Peninsula Resource Conservation and Development Council	\$458,160	2012
117	Evaluating Potential Pathways for the Spread of Aquatic Invasive Species	Wayne State University	\$310,995	2012
118	Non-Native Invasive Plant Species Control	Western Peninsula Invasives Coalition	\$50,000	2011, 2012