



2011 in Review

Mission: The Great Lakes Research and Education Center (GLREC) facilitates research and provides educational opportunities in 10 national parks in the Western Great Lakes Region. It involves public-private partnerships with a wide range of people and organizations, including researchers, universities, educators, students, and community groups. Through collaborative efforts, the GLREC communicates scientific information to enhance management decisions within the network parks and contributes to public understanding of natural and cultural resources.

Research and Education: Supporting the NPS Call to Action in Network Parks

Natural Resources:

- Investigate Morphology and Genetics of Cattail Populations in Cuyahoga Valley National Park (CUVA), Pictured Rocks National Lakeshore (PIRO), and Sleeping Bear Dunes National Lakeshore (SLBE) (internships)
- Research Outreach/Communication Internship at Mississippi National River and Recreation Area
- Summer Research Institute for Educators at Indiana Dunes National Lakeshore (INDU)

Cultural Resources:

- The Story of Copper: Archaeological and Architectural Resource Surveys in Isle Royale National Park (ISRO) and Keweenaw National Historical Park
- Archeological Investigation of Artifacts from the North West Company Depot Site at Fort Charlotte, Grand Portage National Monument (GRPO) (internship)
- Researcher/Writer for Visitor Destinations at Voyageurs National Park (VOYA) (internship)
- Public Barn Restoration Workshop at SLBE
- Oral History Project at SLBE

Facilitating the Use of Parks for Scientific Inquiry

Five research grant proposals were reviewed. Five peer reviewed journal manuscripts and four George Wright Society graduate student climate change research proposals were reviewed. Eighteen peer reviewed publications resulted from GLREC research facilitation. The GLREC staff provided project input and assistance with lodging, lab use, permits and outreach for two NSF projects: a) researchers from Brown University and the University of Wyoming investigating patterns and dynamics of local-scale plant extinctions; and b) a Purdue University researcher modeling hydrodynamics along the southern Lake Michigan shoreline. Staff helped to facilitate a multi-park methylmercury and organic contaminants study and outreach efforts conducted through the Great Lakes Inventory and Monitoring Network.

Providing Research Information or Value-added Products to Parks

Results of cattail population genetics surveys in CUVA, INDU, PIRO, SLBE, VOYA, and St. Croix National Scenic Riverway lead to the discovery of invasive hybrid cattails in at least four parks. As a result, hybrid cattails are now being controlled by herbicide application in INDU, ISRO, and SLBE. Research results were shared with the Great Lakes Exotic Plant Management Team and through webinars for managers, scientists, and the public. Periodic e-mail bulletins on a variety of research topics were shared with resource management and interpretive staffs from network parks and park partners. Presentations showcasing distance learning capabilities were shared at the “Interpreting for the 21st Century Student” workshop, and eleven lunchtime seminars for staff and partners were presented at INDU.



USGS Scientist, USFWS Biologist, and local high school teacher investigate effects of seed predation on federally threatened Pitcher's thistle

Communicating the Relevance of, and Providing Access to Knowledge Gained through Scientific Research

Presentations for middle-school through university groups (12), conferences and conference presentations/posters (6), educator institutes (2), public workshops and presentations (7), booths (4), brown-bag lunches (11), curriculum activities (2), citizen science projects (8), newsletter articles (1), resource trunk supplement (1), webpage updates (2 websites), and e-mail bulletins (numerous) were created/shared, and education grant proposals (3) were reviewed. Topics included: climate change science, mitigation, and communication; invasive species; phenology; cattail hybridization; shoreline processes; near shore food webs; local scale plant extinctions; Karner blue butterflies; water quality; bioaccumulation and biomagnification of toxins; historic barn restoration techniques; and the importance of research to resource management.



Local high school teacher practices processing soil cores while developing lessons based on NSF funded research on the dynamics of plant species gain and loss in Indiana Dunes ponds over the past 150 years.

Promoting Science Literacy and Resource Stewardship through Partnerships

The GLREC staff worked with 40 partner organizations to facilitate both research and education projects. Highlights include: six research and education internships coordinated in partnership with Bemidji State University, Michigan Technological University, and the Universities of Minnesota, New England, and Wisconsin; a week-long educator institute focusing on research and related citizen science projects at INDU supported by the USGS Lake Michigan Ecological Research Station, Indiana University NW, Indiana Dunes State Park, and additional organizations/agencies; a two-week educator institute co-sponsored by the University of Wisconsin at Madison and the Annis Water Research Institute building capacity for six restoration-focused, inquiry-based educator networks around the Great Lakes; a distance learning presentation for middle school students and web-based curriculum activities developed in partnership with the Illinois Math and Science Academy.

2011 Budget	
Category	Dollars
Salaries	195,000
Network Park Assistance/ Internships	15,000
Science Education/Outreach	3,000
Equipment	3,000
Supplies	3,000
Other admin costs (vehicle)	3,000
Other (services, utilities, dorm charges)	3,000
Travel	0
Total	\$225,000

Advancing Climate Change Response Strategy

- Facilitated climate change research projects in VOYA and research permits at INDU
- Participated in National Climate Change and Chicago Wilderness Working Groups
- Reviewed George Melendez Wright Climate Change Fellowship Proposals
- Contributed to Rocky Mountain Climate Organization’s “Great Lakes National Parks in Peril: The Threats of Climate Disruption” report.
- Facilitated implementation of two Climate Friendly Parks workshops at INDU and SLBE

Table: Students Participating in GLREC Facilitated Research

Degree	Number
High School/V.I.P.	1
Bachelors	21
Masters	2
Ph.D.	2
Internships (BS and post BS)	6