

Great Lakes Regional Collaboration Habitat/Wetlands Initiative: A Progress Report and Call to Action

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Cover photo: Old Mission Point, Grand Traverse Bay; courtesy Michigan Sea Grant, Todd Marsee.

Back cover: Conservation Reserve Program - wetland with sedges, Coleraine Township Ross Country, Ohio; courtesy USDA Natural Resources Conservation Service, Romy Myszka.

Great Lakes Regional Collaboration Habitat/Wetlands Initiative: Progress Report and Call to Action

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Purpose

In May 2004, a Presidential Executive Order for the Great Lakes was issued that called for increased federal coordination and a Great Lakes Regional Collaboration to develop a strategy for protecting and restoring the Great Lakes. More than 1,500 stakeholders came together to form the Regional Collaboration and worked for a year to develop recommendations for protecting and restoring the Great Lakes. In December 2005, the collaboration produced a Strategy to Restore and Protect the Great Lakes (Strategy) that outlines the challenges that the lakes face, and recommends a suite of long-term goals and short-term actions to address those challenges. Among the recommendations are goals and actions specific to protect and restore habitat.

This report describes recent progress since early 2006 to protect and restore wetlands and other habitat across the Great Lakes basin. The report addresses habitat in general, but focuses on wetlands as a particular habitat that has unique stresses and values, and which has been a focal point for collaboration activity. It describes progress in collaboration as well as progress in on-the-ground protection and restoration. The report further describes new tools that have been developed to support our collaborative restoration efforts by providing easy access to information about potential restoration projects and funding sources. The report discusses the need for a tool to assess progress toward achieving regional habitat and wetlands goals. It presents the challenges in developing such a tool and summarizes some efforts that can provide building blocks for such a tool.

This report does not provide all of the answers. Rather, it recognizes the critical need to continue the momentum that has begun and offers a "Call to Action" to all partners of the Regional Collaboration to come together to accelerate our restoration progress. This call to action recognizes that partnerships are the cornerstone of this Initiative and that the tools will help support it. This report and call to action set the stage for continued dialogue to achieve the Collaboration's habitat goals and will help shape the way we do business in the future.

Great Lakes Habitat and Wetlands: A National Treasure

A May 2004 Presidential Executive Order states "the Great Lakes are a national treasure constituting the largest freshwater system in the world." Wetlands are a critical component of that national treasure.

Why wetlands matter

Past and ongoing alterations have compromised Great Lakes wetlands and other habitat, resulting in their loss or degradation. The Great Lakes have lost more than half of the region's original wetlands and 60 percent of forest lands.

The region only has small remnants of other habitat types. The impacts of climate change on Great Lakes wetlands are not fully understood, but portend large changes in the scale and quality of Great Lakes habitat. In addition, the water level regime within each of the Great Lakes is a critical driver in wetland distribution, vegetation composition, and ecological diversity and functioning. Shoreline wetlands depend on fluctuating water levels to maintain their ecological balance over the long term. Without sufficient fluctuations of water supply, coastal wetland restoration is severely limited, if at all possible.

These impacts are of concern, as quality of habitat is critical to the health the Great Lakes ecosystem, which in turn is inextricably linked to the vitality of the regional economy and quality of life. Nearshore and open waters provide drinking water for municipalities and habitat for numerous species of fish, aquatic life and birds. The 10,000 miles of coastline consist of more than 530,000 acres of coastal wetlands. Inland, thousands of lakes and wetlands support a diversity of fish and wildlife and are important reservoirs for water.

The problems are complex, and resolving them requires a common understanding among the various affected entities. Substantial opportunities exist to protect and restore critical elements of the Great Lakes ecosystem, even as we strive to improve our understanding of emerging issues like climate change, and their impacts.

The management and protection of the Great Lakes and its tributaries depends on a complex jurisdictional system involving two countries, multiple federal agencies, eight states, 35 tribes, and thousands of local governments and other institutions. Countless non-governmental groups and the millions of citizens in the region, of course, also play a key role.

Preserving our national treasure

The Great Lakes Regional Collaboration Strategy's wetlands and habitat recommendations

In the area of habitat, the Strategy contains long-term goals and short-term actions for specific habitat types.

An over-arching long-term goal for all habitat types is to continue progress on recovering state and federally listed species and communities as well as taking proactive steps to prevent future listings. In addition, the Strategy recommends

"a process ... to prioritize conservation actions" and calls for actions that

Project Spotlight: Improving coastal wetlands

by controlling invasive plants

Invasive, non-native plants seriously threaten the diversity and integrity of Lake Erie wetlands that remain in Ohio. Species such as purple loosestrife, Phragmites, reed canary grass, narrow-leaved cattail, flowering-rush and Eurasian watermilfoil are increasing in frequency and abundance in these wetlands and, in turn, degrading the wetlands ability to support native fish and wildlife. The U.S. Fish and Wildlife Service, through the Great Lakes Coastal Program, the Reynoldsburg Ecological Services Field Office and the Ottawa National Wildlife Refuge, partnered with the Ohio DNR's Division of Wildlife and the Erie County Metroparks to control and remove aquatic invasive plants on 5,944 acres of county, state and federal wetlands in the western Lake Erie basin, making this the most extensive Great Lakes Coastal Program



Treating invasive plants has led to wetlands enhancement in the Lake Erie basin; courtesy USFWS.

wetland restoration project yet. The primary means of invasive plant control were with applications of herbicides and releases of beetles that prefer purple loosestrife. This surge of effort has significantly improved treated wetlands in the Coastal Program Western Lake Erie Focus Area. "consider the full range of habitat and species biodiversity and be scientifically justified with measurable outcomes."

Regarding wetlands, a key recommendation of the Strategy in both the Habitat/Species and Nonpoint Source sections is to restore or protect 550,000 acres of wetlands by

Habitat Recommendations	Timeline		
	2010	2015	
Habitat/Species	1.1 million acres: 550,000 wetlands and 550,000 acres "associated uplands"		
Nonpoint Source	550,000 acres of wetlands*	Additional 450,000 acres of wetlands*	

*Nonpoint Source section further defines these goals as "net gains."

2010. The Habitat/Species section further recommends restoration and protection of 550,000 acres of associated upland habitats for a total of 1.1 million acres of habitat restored and protected within the five-year timeframe. Over the longer term, the Nonpoint Source section further called for restoration and protection of an additional 450,000 acres, for a total of 1,000,000 areas of wetlands restored and protected by 2015.

The Strategy also acknowledged that substantial resources, the talents of a wide range of stakeholders and coordination among federal, local, state, tribal and non-governmental organizations are key ingredients for success.

The Wetlands Commitment: A pledge to regional action

In early 2006, absent a regional forum or institutional framework for interagency collaboration, a federal interagency Wetlands Subcommittee was launched. The Wetlands Subcommittee is co-chaired by the U.S. Fish and Wildlife Service and U.S. Environmental Protection Agency and includes representation from the U.S. Geological Survey and National Park Service (U.S. Department of the Interior); U.S. Forest Service and Natural Resources Conservation Service (U.S. Department of Agriculture); National Oceanic and Atmospheric Administration (U.S. Department of Commerce); and the U.S. Army Corps of Engineers. While the Wetlands Subcommittee was comprised only of federal agency representatives, the Executive Committee of the Great Lakes Regional Collaboration, with representation also from states, local government, tribal and non-governmental interests, served in an advisory capacity to the Wetlands Subcommittee. The Wetlands Subcommittee was charged with the following goals as a platform for addressing some of the Strategy recommendations related to wetlands:

- Protect and restore 200,000 acres of wetlands in the Great Lakes basin;
- Improve coordination of federal wetlands management programs;
- Streamline the wetland restoration permitting process; and
- Update the National Wetlands Inventory.

The goal to protect and restore 200,000 acres of wetlands by the end of 2007 had been created in December 2005 by the Council of Great Lakes Governors and the Great Lakes and St. Lawrence Cities Initiative, and was adopted by the Wetlands Subcommittee as a shared near-term commitment to action for federal partners and nonfederal partners. The Wetlands Commitment is nothing short of a near-term pledge by Great Lakes Collaboration partners to work individually and collectively to help achieve the near-term goal to protect and restore 200,000 acres of wetlands in the Great Lakes basin.

The First Two Years: Progress in Collaboration and Restoration

Collaboration Progress: Great Lakes Habitat/Wetlands Initiative

Around the same time that the Wetlands Subcommittee was established, the U.S. Army Corps of Engineers (Corps) launched a two-year, \$1million Great Lakes Habitat Initiative (GLHI). The Corps pulled together a multistake-holder team to guide its project, which included members of the federal interagency Wetlands Subcommittee, as

Project Spotlight: Hegewisch Marsh

In 2001, the Illinois DNR and the City of Chicago successfully competed for \$2.1 million in grants from the U.S. Fish and Wildlife Service's Wildlife Conservation and Restoration Program, NOAA's Office of Ocean and Coastal Resource Management, Illinois DNR, and State Wildlife Grants Program to purchase 100 acres of Hegewisch Marsh. The project goals: protect this remnant coastal wetland in the one-time backwaters of Lake Michigan, nestled in one of the most heavily industrialized areas in the country; restore the site to an example of the wetland habitat that once dominated the area of northeastern Illinois; and provide access for children of south Chicago to experience the wonders of nature in their backyard. In 2006, ownership of the marsh in hand, the City of Chicago and the Illinois Lieutenant Governor's Office received a \$750,000 National Coastal Wetlands Conservation



Aerial view of industrialized area surrounding Hegewisch Marsh; courtesy AirPhotosUSA

grant from the U.S. Fish and Wildlife Service, enabling the City of Chicago, residents, federal, state and local agencies, educational and cultural institutions, and industrial and commercial entities to begin restoring the area from a neglected and abused landscape to its more natural coastal wetland character.

In addition to its own natural resource values, Hegewisch Marsh will be the keystone for the region's Calumet Open Space Reserve, a complex of open areas in Chicago and adjacent northwest Indiana. The Ford Motor Company, which has an assembly plant adjacent to the project site, donated \$6 million toward a state-of-the-art environmental education building to be built next to Hegewisch Marsh. The Ford Calumet Environmental Center, in conjunction with the coastal wetland, will provide close-to-home access to the natural world for an estimated 300,000 annual visitors. Ford's money was matched by \$3 million from the State of Illinois.

well as representatives from states, nongovernmental organizations and other interests. Recognizing the shared goals of the Corps' Great Lakes Habitat Initiative and the Wetlands Subcommittee, the two initiatives joined forces in summer 2007 to form one overarching Great Lakes Habitat/Wetlands Initiative. By bringing the GLHI under the umbrella of the Great Lakes Regional Collaboration, the newlymerged Great Lakes Habitat/Wetlands Initiative can help ensure that the collaboration on habitat and wetlands has a way to carry on.

The initial focus of the Great Lakes Habitat/Wetlands Initiative will be achieving the wetlands commitment to protect and restore 200,000 acres of wetlands in the Great Lakes basin. Among the first steps will be refining, making publicly available and applying tools and information that can connect partners with the resources they need to make projects happen. The talent and resources of the broader community will be needed to get the job done. The Call to Action (see page 14) aims to harness that talent and those resources to establish a framework for implementing collective actions to achieve the full suite of habitat goals set in the Great Lakes Regional Collaboration Strategy.

Restoration progress

Along with progress in collaboration, there has also been progress toward protecting and restoring 200,000 acres of wetlands.

Several federal agencies have pulled their information together to demonstrate that since December 2005, an estimated 65,000 acres of wetlands have been protected, improved and restored by federal agencies working with partners across the Great Lakes basin.

This 65,000-acre figure was the result of a collective reporting on behalf of federal agencies. The agencies were asked to report wetland restoration accomplishments using terms and methods similar to those used for the President's Council of Environmental Quality annual report on wetlands. Agencies reported accomplishments for completed projects only.

Appendix A includes more detail about the methods and terminology used for this activity. Future requests for data on wetlands protection and restoration accomplishmnents will be extended to non-federal partners.

In addition to representing only federal habitat accomplishments, the 65,000-acre figure comes with several ceaveats. First, many of those acres are part of wetland protection/restoration projects that were planned or in process before the Strategy was released. While the Strategy may have helped those projects progress, and while the projects do demonstrate a level of accomplishment under the GLRC, there is no way to discern how much of the actual work has occurred since the 200,000-acre goal was set. Second, the acreage figure includes gross totals of wetland protection/restoration activity, but does not imply a net acreage gain of wetlands. That is, the figure does not reflect losses of wetlands that occurred during this period, nor does it include wetlands that were created, protected or enhanced through compensatory mitigation (i.e., required by law to offset wetlands losses from certain activities, such as development). Rather, the 65,000 acres consists of wetlands permanently protected through acquisition or easement, restored or improved. Third, an array of activities that do not fit the definition of "restoration, improvement or protection" but nonetheless help maintain healthy wetlands, are also not counted. Fourth, and perhaps most importantly, significant additional acreage has also been protected, improved and restored by states, local and tribal governments, and other partners, but absent a means of collecting and integrating that information, those nonfederal acreage figures could not be included here. In sum, the 65,000 acres represent only a snapshot of the efforts in the Great Lakes basin toward achieving the 200,000-acre commitment.

These caveats reflect the lack of, and the need for, a single, centralized system to collect and qualify information on wetlands protection and restoration activities across the Great Lakes in a way that measures progress and demonstrates the needs for



Canoe and dock, Lake Superior Bark Bay, Wisconsin; courtesy Karen Rodriguez, USEPA

achieving the Wetlands Commitment. Nonetheless, our best estimates show that we are making progress. Individual protection and restoration projects are featured throughout this report to help highlight the progress being made.

The next section describes several tools that demonstrate progress toward a regionally integrated system for identifying habitat protection and restoration projects, and tracking progress toward regional wetland restoration and protection goals.

Decision Support Tools

Among the accomplishments during the first year has been the development of several tools that can help accelerate and sustain progress toward the habitat and species goals of the Strategy. The first two, developed by the Great Lakes Habitat Initiative, consist of a Funding Programs Inventory and a Habitat Projects Database. These tools are designed to make information from multiple sources available on a single website to encourage partnership-based wetland and habitat restoration efforts. Data sets from existing programs that can support improved decisionmaking for habitat protection and restoration are also discussed, including NOAA's Coastal Change Analysis Program (C-CAP), the National Wetlands Inventory, and a new regional project to integrate a variety of data sets into a special decision support system for habitat.

Funding Programs Inventory

The Funding Programs Inventory contains information on more than 130 programs that provide funding and other resources to the planning, design, construction, operation and maintenance of habitat restoration and protection projects. These include programs managed by governmental and nongovernmental agencies and organizations.

These funding programs each have their own unique focus, range and set of requirements that are as diverse as the groups, organizations and agencies that administer them. Some of these programs were created specifically for restoration of habitat in the Great Lakes region. Other programs have a national scope, and projects from the Great Lakes must compete with those from other regions for limited funding. Some programs have broader purposes, including sustainable development, water quality enhancement and recreational development, but may, nevertheless, contribute to habitat restoration.

The Funding Programs Inventory includes data fields with information about the requirements of the programs, their primary objectives, project selection process, and information about the agency or organization that administers the program. These details are important because some programs provide funding or other resources that can support only selected phases or elements of a habitat project and many programs have specific requirements for cost sharing or other limitations. For example, the U.S. Army Corps of Engineers' Great Lakes Remedial Action Plan program can support project planning and design, but not implementation. Under current circumstances, and due to individual program requirements, many habitat projects will require a partnership that utilizes more than one funding

U.S. Fish and Wildlife Service Coastal Program

The Fish and Wildlife Service's Great Lakes Coastal Program is developing innovative partnerships with local and statewide land trusts and other conservation partners to identify and protect some of the most valuable fish and wildlife habitat and species in the Great Lakes basin.

Since 2000, activities of the coastal program have resulted in the restoration or improvement of 2,764 wetland acres and 100 miles of riparian and instream habitat, and the removal of six fish passage barriers.

In 2006 a total of 26 projects were funded by the Great Lakes Coastal Program. As a result, approximately 5,600 acres of coastal fish and wildlife habitat and eight miles of stream habitat were enhanced, restored or protected. Two fish passage barriers were removed, opening 4.5 miles of habitat and reconnecting 434 acres of wetland. Projects affected lakes Superior, Michigan, Huron, Erie and the Detroit River.

Project spotlight: St. Marys River Bird Migration Corridor Phase II

A project in the eastern Upper Peninsula of Michigan has protected valuable migratory bird habitat in an area where three of the Great Lakes come together. Completed in 2004, the second phase of the St. Marys River Bird Migration Corridor project used a \$1 million North American Wetlands Conservation Act grant and \$4.7 million in matching funds to protect 2,200 acres of habitat containing approximately 900 acres of wetlands and more than eight miles of riparian shoreline.

The key parcel in the overall project is the 175-acre Vermilion Point Tract on Whitefish Peninsula, with 1.5 miles of Lake Superior shoreline. Located roughly 8.5 miles from the Whitefish Point Bird Observatory, Vermilion Point is a hotspot for birders



An aerial view of Vermilion Point; courtesy Little Traverse Conservancy.

and researchers. The project area carries an Important Bird Area designation for migrating birds of prey, and at least two of the project tracts are raptor migration focal points.

source. A limited number of funding programs managed by federal agencies are capable of taking habitat projects from start to finish, but even these programs require cost sharing, land or other resources that may be provided through non-federal programs. Some of the nongovernmental grant programs can provide funding for the acquisition of lands for conservation or restoration. Many of the U.S. Department of Agriculture programs can provide funding or other incentives to landowners for short- or long-term easements for conservation or restoration. A continuing goal is to simplify and streamline programs so that securing funds and implementing restoration projects is more straightforward and expeditious.

Until now, all of these details about habitat funding programs were located in disparate locations requiring funding applicants to sift through myriad documents in order to try to find an appropriate source of funds. The Funding Programs Inventory is intended to simplify that process by serving as a one-stop repository of funding sources that can be searched to match potential habitat projects with relevant funding sources. It can also be used to evaluate existing funding available against demonstrated funding needs for restoration, it has the potential to increase the likelihood of leveraging additional funding support for Great Lakes restoration activities.

Information about these funding programs was gathered during early-to-mid 2007 and has been stored in a Microsoft Access database. The Funding Programs Inventory is expected to be available online in early 2008. Additional work will be required to facilitate the interface between the Funding Programs Inventory and the Habitat Projects Database described below.

Habitat Projects Database

The Habitat Projects Database is an inventory of current and potential habitat projects in the Great Lakes basin. These projects are stored within a spatiallyenabled database, normalized across time and space. The database includes a user-friendly, web-based interface that allows users to search for, enter and/or update information about current and potential habitat projects.

Unlike the Funding Programs Inventory, the Habitat Projects Database was not populated by a single entity. Rather, data in the Habitat Projects Database was generated through input by hundreds of federal, state, local and non-governmental users. This was done by developing a web-based "project entry form" that could receive an array of information about habitat projects that would allow stakeholders to search for projects by location, type of habitat and other factors. Collaboration partners involved in developing the web-based form for the Habitat Projects Database used the National Estuaries Restoration Inventory (NERI) database developed by NOAA (http://neri.noaa.

gov) as a model, but modified it to meet the unique features and needs in the Great Lakes region. The web-based form was launched in March 2007. At that time, a call went out to all Great Lakes Collaboration partners to enter project information into the database, using the web-based form. Specific outreach was undertaken in spring 2007 through a series of eight workshops in each of the Great Lakes states to introduce state resource agency staff to the database and encourage the entry of projects. During this time, the web-based form was refined based on feedback from the workshops and input from a technical workgroup.

The web-based form was carefully designed to allow a potentially unlimited number of individuals to provide information about an unlimited number of projects that would feed into a database that contains consistent, comparable data and information about habitat protection and restoration projects across the entire Great Lakes basin.

Between March and July 2007, staff from federal, state, local and non-governmental entities from across the Great Lakes region entered 188 projects into the database. The total cost associated with protecting and restoring the areas covered by these 188 projects is nearly \$635 million. Individual project costs range from \$13,500

for coastal landowner education to \$75 million to dredge and dispose of contaminated sediment. It should be noted that 43 projects entered to the database did not include total cost estimates; the inclusion of these cost estimates would add substantially to the overall total.

Of the 188 project submissions, 120 were submitted under the heading of "Restoration, Rehabilitation, and/or Creation"; 27 projects were submitted under "Enhancement/ Improvement"; 12 projects were submitted under "Protection"; and 29 were submitted under the "Other" category, which includes education, monitoring and research. Each of the Great Lakes states

Habitat Projects Web Form				
Required Fields	Optional Fields			
Project Title Project Abstract Project Abstract Project Status Estimated Timeline Locality Description Geographic Extent Estimated Project Size Habitat Type(s) Ecological Stressors Anticipated Ecological Outcomes Project Lead Project Manager Contact Info	Status Toward Restoration Goals Present Land Use Habitat Connectivity Significance to Other Programs Sensitive Species / Habitat Mitigation Techniques/Measures Monitoring Requirements Federal Sponsors Non-Federal Sponsors Other Project Partners Cost Estimates Land Ownership / Easement Real Estate Availability			
Access Constraints	Legal Authorities in Place Organizational Project Ranking Additional Project Documentation			

had projects identified within its borders. And though many projects originate at a local level and within a de-





Thunder Bay Island, Lake Huron; courtesy Michigan Sea Grant.

fined geographic area, project benefits may extend over broad spatial scales and beyond a particular state. These figures represent the status of the database as of June 2007 when a report was due on the status of the database as part of the Great Lakes Habitat Initiative.

To date, more than 200 projects have been entered into the Habitat Projects Database. However, not all of the projects have all informational fields populated. The habitat project web-based form is still functional and available online at http://www.glhi.org. Members of the Great Lakes community are encouraged to continue entering potential restoration projects and updating information in the database.

In its current state, the project database represents a very effective tool in capturing and storing habitat projects within the Great Lakes, with multiple applications. It serves as a one-stop information source about current and potential projects in the Great Lakes basin. It is searchable and accessible by location, habitat type, size, scope and other factors so that it can be used to identify projects by their specific features such as readiness for implementation, geographic location or habitat type. Federal agencies and other funders can use the database to help evaluate prospective projects. Project proponents can use the database to identify project partners. State and local governmental agency staff can check out the total acreage of projects that have been entered in their jurisdiction. This represents a substantive leap in capabilities related to protecting and restoring wetlands and other habitat in the Great Lakes region.

With some refinement and enhancement of both the Habitat Funding Inventory and the Habitat Projects Database, the two tools could be integrated so that users could go from one to the other to find appropriate matches between

funding programs and projects (habitat needs).

National and Regional Data Sets

There are existing national and regional data sets that, together with the information in the Habitat Project Database, could significantly improve our decison-making and ability to track regional wetland changes over time. Several of these data sets are described below. These data sets should be assessed to determine if the Initiative would benefit from their use.

Coastal Change Analysis Program

The Coastal Change Analysis Program (C-CAP) administered by NOAA, also has potential to inform tracking and assessment of efforts to restore and protect Great Lakes habitat. C-CAP products are part of a nationally standardized database of land cover and change information, developed using remotely sensed imagery for the coastal regions of the United States. C-CAP land cover classes include five classes of wetlands and the land cover data is generated at five-year intervals for coastal areas across the United States. http://www.csc.noaa.gov/crs/lca/ccap.html.

National Wetlands Inventory

The National Wetlands Inventory (NWI) is a federal mapping and management tool administered by the U.S. Fish and Wildlife Service. NWI is the accepted federal standard for wetlands classification, mapping and inventory, which is served in a master geodatabase and is relied upon by many users, ranging from landowners to Congress, to understand the nature and extent of our wetlands and surface water systems. Despite efforts to convert most state maps to a geographic information systems (GIS) format beginning in the 1990s, many state maps are out of date and lack the detail required for today's resource management challenges.

Progress is being made in updating NWI maps for the Great Lakes region. Since June 2006, Wisconsin is allowing the

North American Waterfowl Management Plan and the North American Wetlands Conservation Act

The North American Waterfowl Management Plan was signed by Canada and the United States in 1986 with the primary goal to restore waterfowl populations to the levels recorded in the 1970s. Partnerships known as Joint Ventures have been developed to implement the plan. In 1989 U.S. Congress passed the North American Wetlands Conservation Act (NAWCA), which officially recognized the goals of the North American Waterfowl Management Plan and created a grants program as a funding mechanism to help achieve the goals of Plan and other wetland associated migratory bird programs. The NAWCA encourages public-private partnerships to protect, enhance, restore and manage wetlands and other habitats for migratory birds and other wildlife resources in North America. Funding for this program comes from congressional appropriations, funds collected from fines, penalties and forfeitures under the Migratory Bird Treaty Act, interest accrued to the Pittman-Robertson Wildlife Restoration Act, and from excise taxes paid on small engine fuels through the Dingell-Johnson Sport Fish Restoration Act. Nationally, from 1990 through March 2007, more than 3,230 partners have been involved in 1,612 NAWCA grant projects. More than \$791.3 million in grants has leveraged some \$1.6 billion in matching funds to affect approximately 23.6 million acres of wetlands and associated uplands across the continent. In the Great Lakes states, since 1991, the USFWS has awarded 182 NAWCA grants totaling \$76 million. Partners have contributed more than \$227 million to these projects, resulting in conservation, restoration and enhancement of nearly 422,000 acres of wetland habitat.

conversion of its existing Wisconsin Wetland Inventory maps to NWI with a few counties being updated per year. In addition, Ducks Unlimited has teamed up with the USFWS, USEPA, and multiple State agencies to complete a full update of NWI maps for Ohio, Michigan, Illinois and Indiana. If updated and completed to provide consistent coverage across the Great Lakes region, NWI could complement or inform the suite of existing tools to help the region track status and trends in wetlands in protection. http://www.fws.gov/nwi

Integrating Great Lakes Wetlands Data: A Spatial Decision Support System

In mid-2007, a project was initiated that holds promise for addressing the need for a comprehensive wetlands database that can be used as a baseline to measure changes in total wetlands acreage, and measure achievements in wetlands protection and restoration. The Great Lakes Commission is leading this project with funding support from the U.S. Geological Survey's National Spatial Data Infrastructure Cooperative Agreement (CAP) Program. This nine-month project will create an integrated, web-based Spatial Decision Support System (SDSS) to facilitate comprehensive baseline tracking and analysis of wetlands change over time across the Great Lakes region. Specifically, it will:

- identify and integrate national, state and provincial wetlands data, most of which are currently inconsistent and incompatible, and normalize these data across time and space so that they can be used comparatively to support trend assessments and restoration progress;
- integrate data from the Habitat Projects database described above to identify and account for areas of wetlands change (i.e., restoration gains);
- provide a suite of user-friendly query and analysis tools to help users discover and analyze aggregated wetlands datasets to facilitate comprehensive, interagency tracking, reporting and analysis; and,
- make available value-added wetlands data through a variety of file formats and as OGC Web services to maximize the accessibility and extensibility of otherwise unconnected wetlands-related datasets.

In short, the Wetlands Spatial Decision Support System will integrate existing wetlands data sets and provide the type of information (and the tools to access and analyze that information), that resource managers and decision makers need to track and report on wetlands gains and losses within and across the Great Lakes region. http://www.glc.org/wetlands_sdss

Project Spotlight: Ohio Partners for Fish and Wildlife Program

In 2006, the Ohio Partners for Fish and Wildlife Program restored 114 acres of wetlands and 54 acres of uplands on private land in the Grand River and Glacial Lake Region focus areas. These focus areas were identified as target habitat for threatened and endangered species in the Lake Erie watershed. During the 2007 field season, the Ohio Partners for Fish and Wildlife Program restored some 232 acres of wetlands and 120 acres of uplands within the Lake Erie watershed.



Early stages of a wetland restoration in Williams County, Ohio; courtesy USFWS

Lakeview Wildlife Management Area, Lake Ontario Eastern Basin; courtesy M. Knutson, The Nature Conservancy, Central and Western New York Chapter.

A Call to Action: Moving Forward

to Achieve Regional Habitat Goals

A Call to Action is issued to the Great Lakes community to come together to accelerate restoration activities. This call seeks to encourage use of the tools and asks partners to take those actions that they can toward our common goal of protecting and restoring the Great Lakes. While progress is being made, more needs to be done.

This Call to Action includes a call for participating in an ongoing dialogue on how to best organize to accelerate restoration. The challenge will be to bring the numerous Great Lakes organizations and programs together in a way that moves from static plans to action. Increasing coordination and establishing solid linkages with existing efforts will be critical if the Strategy is to make a difference.

Using the tools to move forward

Using the tools alone is not going to achieve our habitat goals, but it can help us collaborate better and make more informed decisions as a community to reach those shared goals. Some tools are further developed than others and some fine-tuning is required to ensure they are serving their intended uses. They are important initial products that Regional Collaboration partners can employ to achieve shared goals. Below are some guidelines and suggestions to apply the tools and other information in this report toward achieving regional habitat restoration and protection goals.

- Everyone needs to participate: Keeping the information in these databases current and relevant will require ongoing input from all partners of the Regional Collaboration.
- Use the tools: If you have a project idea, search the projects database to see if there's a similar one in your area that you can build on or use the database to identify partnerships. Once the Funding Programs Inventory is available online, use it to assist with matching projects with funding sources.
- Be engaged in improving the tools: Engage with the new Wetlands/Habitat Initiative to develop a process whereby the Funding Programs Inventory can be updated when new funding sources are discovered.

The web-based user form and functionality of the habitat database will need to be maintained and updated to improve usability, query functions and serve emerging needs. This includes routine website maintenance, limited quality assurance of project entries to detect and remove duplicate entries, and providing feedback and guidance to users. With enhancements to the database, more thorough quality management may be required depending on the

National Coastal Zone Management Program

The National Coastal Zone Management (CZM) Program is a voluntary partnership between the federal government and U.S. coastal states. NOAA administers the program at the federal level and works with state coastal zone management partners to balance coastal development with resource conservation. Great Lakes CZM programs support restoration planning, wetland mapping and monitoring, wetlands education, local watershed management, and coastal habitat permitting programs. The CZM programs can also provide funding for land acquisition and on-the ground habitat restoration projects.

In fiscal year 2006, the CZM program provided more than \$3.3 million in federal funding supporting habitat protection and management projects and programs in the Great Lakes; of that total, \$785,000 was passed through to local governments and community groups for locally based coastal habitat projects. The Ohio Coastal Management Program alone funded invasive species removal on over 500 acres within the state's nature preserves along the coast of Lake Erie. In recent years, the Wisconsin Coastal Management Program has supported the development of a comprehensive Geographic Information System (GIS) database that inventories more than 2,800 acres of wetland restoration projects in nine coastal counties. This initiative will increase resource managers' ability to monitor and assess the success of these restoration projects.

NOAA also administers the Coastal and Estuarine Land Conservation Program (CELCP). Since 2002, the CELCP has provided \$198 million for 131 projects to protect and conserve coastal and estuarine lands. In fiscal year 2007, the CELCP awarded \$2.8 million for land acquisition projects in the Great Lakes region.

complexity of those enhancements. Stakeholders should consider the challenges presented here and participate in that process as appropriate. If the Habitat Projects Database is to remain viable and relevant, ongoing input of new and updated project information by all Collaboration partners is imperative. No single entity has the mandate or resources to maintain information on all of the current and prospective habitat protection and restoration projects in the Great Lakes basin.

- Institutionalize the data collection: While data calls can be helpful where tracking systems are not in place, institutionalizing ongoing project entries and updates into the Habitat Projects Database will likely be most effective.
- There are several ways to do this without placing extraordinary demands on either funders or project funding applicants, including:
 - ^o Funders can modify their funding applications to ask applicants if the project for which they are seeking funding has been entered into the habitat projects database. This simple step does not require funding entities to modify their funding priorities or commit them to funding a project, it simply communicates that they are using the database as a source of information.
 - ^o Funders could take it a step further and modify their funding criteria to give projects extra points that are registered in the database. This would most certainly overcome any resistance to entering new/updating projects.
 - ^o Using internet technology, when applications for habitat protection and restoration projects are submitted online, the project data could be automatically entered into the project habitat database. The same could be done with project reports -- project information (e.g., progress) could be automatically entered into the database when funding recipients submit their required reports.

These are ideas for helping to advance these tools and ensure their utility and relevance. As the partners continue to collaborate, it is likely that other options will emerge.

Needed: A tool for tracking progress

Tracking restoration and protection activities on local and regional scales will facilitate accounting of progress toward the Collaboration's near-term commitment to protect and restore 200,000 acres of wetlands. One benefit of this type of tracking is that it will allow individual jurisdictions across the Great Lakes basin to quantify the wetlands they have protected, restored and enhanced (see Apendex A for definitions of these terms). Another potential benefit is that it will support individual protection and restoration projects in gauging their contribution to the overall ("net") gains in habitat acreage (relative to habitat losses). As noted above, the region does not currently have an operable tool in place to monitor progress toward achieving regional wetlands/habitat protection and restoration goals. The Spatial Decision Support System described above holds promise to enable the region to do just this. However, as we can see from the tools already developed, tool development is only the first step. There are multiple challenges associated with developing a broad regional agreement on an approach for using the tools.

For a tracking tool to be effective, there are a variety of institutional barriers that need to be overcome to ensure that the tool can and will be employed in the ways needed to assess progress across the region. Currently, each of the entities involved in protecting and restoring habitat has its own approach to assessing progress. These entities often have different priorities (or mandates) for what to track, as well as different methods for tracking that information and different performance metrics. Some entities may hesitate to give up their current approach for a

Project Spotlight: Metzger Marsh Restoration

Metzger Marsh is a 906-acre marsh located along the western Lake Erie shoreline, approximately 11 miles east of Toledo, Ohio. The marsh is part of the Ottawa National Wildlife Refuge and is jointly owned and managed by the Ohio Division of Wildlife and the U.S. Fish and Wildlife Service.

Subject to diking, draining and channelization of a stream beginning in the late 1800s, the marsh was nevertheless protected from wave actions of Lake Erie by a beach barrier until the late 1940s when 58 percent of the marsh was



Metzger Marsh in 1996 after first year of restoration; courtesy Douglas A. Wilcox.



Metzger Marsh in 1994 prior to restoration; courtesy Douglas A. Wilcox.

vegetated. In the late 1960s, Great Lakes water levels began to rise and by 1972, the barrier eroded, and by the end of 1973, it was completely lost. By 1994, only 10 percent of the marsh remained vegetated. Beginning in 1995, the Metzger Marsh Wetland Restoration Project involved construction of a dike across the mouth of this barrier beach wetland in western Lake Erie to mimic the protective function of the barrier beach that had been lost to erosion and would not return naturally because of extensive shoreline armoring. However, the dike has a water-control structure that allows it to remain hydrologically connected to the lake. An initial drawdown of water levels with the structure closed mimicked a low lake-level year and allowed the seed bank to revegetate much of the wetland. The structure was then opened, fish use of the wetland increased greatly, and nutrient flow between wetland and lake was restored. The USGS-Great Lakes Science Center has been conducting research at this site since its inception. The wetland is managed by USFWS-Ottawa National Wildlife Refuge and the Ohio Department of Natural Resources.

The restoration was undertaken with primary funding support from the U.S. Fish and Wildlife Service, although there were many other project partners who provided additional funding and/or in-kind support, including: Ohio Department of Natural Resources (Division of Wildlife), Ducks Unlimited, Lake Erie Waterfowlers, Ohio Decoy Carvers and Collectors, USGS-Great Lakes Science Center, Maumee Valley Audubon Society, Wolf Creek Sportsmen's Club, Ohio Division of Natural Resources' Division of Geological Survey, and Blufton Sportsmen's Club.

National Coastal Wetlands Conservation Grant Program

National Coastal Wetlands Conservation Grants are used to acquire, restore or enhance coastal wetlands for long-term conservation benefits to wildlife and habitat. The program is funded under provisions of the 1990 Coastal Wetlands Planning, Protection and Restoration Act, with money generated from excise taxes on fishing equipment and motorboat and small engine fuels.

The Fish and Wildlife Service has awarded more than \$182 million to states and insular areas since the program began in 1992; when the 2007 projects are complete, they will have protected, restored or enhanced more than 39,000 acres of coastal habitat. A total of more than 235,000 acres will have been protected or restored since the grant program's inception.

In 2007, the Fish and Wildlife Service awarded more than \$2.7 million in National Coastal Wetlands Conservation Grants in Great Lakes states. Partners added \$2.4 million in additional dollars to conserve a total of more than 5,000 acres of coastal wetland habitat. Projects in 2007 included a grant to the state of Illinois, which received \$357,284 as the federal share for invasive species removal from remnant coastal wetlands of Lake Michigan. The State of Michigan received a \$397,000 grant to acquire 214 acres at Lightfoot Bay of Lake Superior and \$1 million to acquire 132 acres at the mouth of the Maumee River in Lake Erie; and Wisconsin received a \$1 million grant to acquire 139 acres at Rowley Bay on Lake Michigan. The Rowley Bay project will complete the acquisition of the Mink River estuary in partnership with The Nature Conservancy, ensuring the integrity of the coastal wetland habitat of the estuary.

new, untried system. Or, they may determine that the costs to switch to another tracking method are prohibitively high as new systems are put in place and people are trained to learn those systems. Many tracking systems are built on platforms that are incompatible with other tracking systems. Security concerns are another very real obstacle that complicate the sharing of information. Some data and information is sensitive (e.g., endangered species data; landowner data) and systems must be put in place to ensure that necessary protections are in place before the data can be shared. A regional tracking mechanism need not replace existing internal agency or organizational tracking mechanisms or compromise security of sensitive information. Indeed the regional tracking system should be complementary to individual organizational tracking systems.

Additionally, sorting out which entity claims credit for each project or restoration activity is a challenge. Many protection and restoration projects involve multiple partners, each of which may have a valuable role and contribution to the overall project. This is the type of collaboration that many funding programs aim for, but it does not lend itself well to a tracking system that demands accountability from individual entities, which, without careful attention, can result in some level of multiple-counting of progress. These are just a few of the challenges that must be considered in developing a toolkit for tracking protection and restoration activities on a regional, multi-juris-dictional scale. Most important will be to integrate this tracking system into the way we collectively do business in the Great Lakes so that it will stand the test of time.

A regional framework

In addition to using the tools to advance habitat protection and restoration, this Call to Action invites the Great



View of the Mink River Estuary wetland restoration project in Wisconsin, funded by a National Coastal Wetlands Conservation grant; courtesy USFWS.

Lakes community to join in an ongoing dialogue to refine the framework for collaboration that will guide regional action to protect and restore wetlands and other habitats to the next level. Many collaboration partners have expressed a desire to build on progress, and set a path for moving forward. Although we know where we want to end up as a region—achieve the goals set forth in the Collaboration Strategy—the path to get there is not yet clear. As we move forward, the Initiative will look at ways to improve efficiencies and remove obstacles that can slow restoration work. Areas that will be explored include the wetland restoration permitting process and a review of federal wetlands management programs to identify improvements that will reduce transaction costs, increase coordination and benefit habitat restoration in the Great Lakes basin.

Ideas for site-specific projects for habitat restoration and protection in the Great Lakes region abound. The types of projects are diverse, including protection of a coastal wetland from shore erosion, modification of a dam to restore fishery passage to a tributary, removal of drainage tiles to return an agricultural field to a wetland, creation of an artificial reef in the nearshore, and removal of invasive plant species from a meadow and marsh along an urban stream. In order to bring a project to life, in most cases a group of partners must come together to plan and implement the project, including defining partner roles and required resources, finding the necessary funding and monitoring project success. Each group, organization or agency has its own mission, focus and purpose for participating in habitat restoration and protection projects, such as protecting and conserving the basin's biodiversity; promoting recreational uses of fish and wildlife; enhancing the quality of life in cities and towns; preserving resources of cultural and historic value; providing educational opportunities and aesthetic appreciation; and many others. These partners also bring a diverse set of capabilities and resources to the table. Some may bring funding, while others may provide planning or design skills, supply lands or easements, or operate or maintain a completed project. A big challenge is getting these diverse interests to collaborate on individual habitat restoration and protection projects.

Progress is likely to be more rapid if there is a framework and process for the partners to come together to communicate about the outstanding questions. Will there be a more formal leadership structure for the Wetlands/Habitat Initiative and, if so, what will it look like? Who will lead the day-to-day coordination? Who will assume leadership to catalyze the review of federal wetlands and habitat programs and spearhead other work to streamline wetlands and habitat protection and restoration? Beyond our shared goals, will incentives be created for partners to engage in additional collaboration activities? Will additional funding be available? What improvements to the tools are needed? Who should employ the tools? Will the expectation to achieve the goals still remain if no new funding is brought to bear? A framework that promotes collaboration at the policy, management and project levels holds promise for a path that can move restoration forward quickly and efficiently, maximizing the skills and resources of all partners.

Local Implementation Partnerships, part of Joint Ventures under the North American Waterfowl Management Plan, offer a promising model for bringing multiple partners and resources together to achieve on-the-ground results in habitat protection and restoration. There are likely other models of successful approaches to identifying, implementing and monitoring habitat projects. Implementing collaborative projects on the ground will ultimately determine success.

Decisions about which projects to support, participate in and/or fund will always be made by individual agencies and organizations based on their respective goals, missions and objectives. This report, however, calls out the need for regional leadership and for improved process for planning and implementation of habitat and wetlands projects where a number of partners with mutual objectives are agreeable. The next section summarizes roles of Collaboration partners. Leveraging these individual mandates and strengths and responding to the Call for Action, all partners can collaborate to achieve the greatest level of restoration as quickly as possible, and build on the progress to date.

Project Spotlight: Northern Great Lakes Visitor Center

The Northern Great Lakes Visitor Center is a four-season, 37,000 square foot, multi-agency visitor center located in northern Wisconsin that receives in excess of 150,000 visitors a year. The Center has a 180-acre land base which is situated in the Lake Superior coastal clay plain. This land base was previously operated as a dairy farm and there is evidence that wetland areas were drained and filled. Starting in the fall of 2001 a series of 12 wetlands were created totaling six acres. The wetlands were created not only to restore habitat but also to serve as a demonstration project for private landowners desiring to restore wetlands on their property.

The wetlands design and construction were a partnership effort with the following organizations lending their expertise and resources to the project:

- U.S. Fish and Wildlife Service initial wetlands planning and design
- USDA Forest Service technical review, environmental analysis, and public involvement
- Ashland and Bayfield Counties surveying
- Great Lakes Indian Fish and Wildlife Commission construction funding

Partners for Fish and Wildlife

Since 2002, the USFWS, through its Partners for Fish and Wildlife Program, has worked in partnership with others in the Great Lakes basin to restore more than 5,400 acres of wetland and upland habitats on private lands and improve more than 407 stream miles. The Partners Program has identified key focus areas within the basin to maximize benefits to fish and wildlife from habitat improvement. While the backbone of the Partners program remains restoration of degraded wetlands and establishment of grasslands, recent efforts are focused on the landscape needs of endangered and threatened species, such as the Karner blue butterfly and copperbelly water snake. In meeting the needs of the listed species, the needs of a whole suite of more common species are also met. Partners' biologists also provide biological expertise to staff of the U.S. Department of Agriculture regarding the Farm Bill conservation programs. Through strong partnerships with dozens of agencies and organizations, and a good rapport with hundreds of private landowners, the Partners Program has delivered cooperative conservation in the Great Lakes basin, an acre at a time. For fiscal year 2006, the Partners for Fish and Wildlife Program contributed \$181,000 in project dollars—matched with an additional \$200,000 from partners—for projects in the Great Lakes basin that resulted in the restoration of 528 wetland acres.

Roles of Collaboration partners

The Regional Collaboration includes all levels of government, including tribal governments, representatives of nongovernmental organizations, private interests and citizens, all of whom have a role in protecting and enhancing wetlands and other habitat. Habitat projects typically involve a partnership of two or more groups, organization or agencies with compatible objectives. The various levels of government have interdependent roles and responsibilities when it comes to protecting and restoring wetlands. Numerous projects are conceived, funded and implemented without any governmental participation, other than permitting.

Habitat projects that utilize governmental funding often involve multiple partners from local, state and/or federal agencies and nongovernmental groups, each of which may bring different resources to the table. For example, federal programs that address wetlands habitat are sometimes administered by states and often funding is further passed on to local units of governments, tribes and nongovernmental organizations. Understanding how various agencies and organizations fit into this puzzle can foster progress toward regional wetland protection and restoration goals.

The following sections will provide brief descriptions of the types of roles that partner agencies and organizations might play in a habitat restoration or protection project.

Federal agencies

Federal agencies have an important leadership role in habitat restoration and protection. The programs they administer enable them to perform a variety of roles in supporting habitat projects in the Great Lakes region. These roles include funding, technical assistance, and regulatory responsibility. By their nature, federal programs are supported by a national institutional infrastructure. The clout that comes along with that, including real or prospective funding, cannot be overstated.

However, as noted in the description of the Funding Programs Inventory, most federal programs require a nonfederal "match" of some kind, which means that entities seeking funding (e.g., states and local governments, tribes, nongovernmental or private sector interests) must provide leadership, funding or both to secure federal funds for a conservation or restoration project.

Federal funding and resources for habitat projects may be provided as grants or payments to nonfederal partners who can then plan, design, build and/or manage habitat restoration projects. Funds may be provided for agreements to take agricultural lands out of production for conservation. Federal funding may also be used for design and construction of cost-shared projects built by the federal partner. In almost all cases, non-federal partners must take the lead in applying to these funding programs and cost-share the project. An exception is funding for federal

lands (e.g., national forests and parks), where habitat projects may be implemented at full federal cost.

There is also a wide range of other technical support available to assist the evaluation of wetlands and other habitat to identify potential projects and conduct related planning for habitat restoration and protection. The technical assistance capability reflects the expertise of the federal agencies.

In addition to their funding and technical assistance roles, federal agencies also have a regulatory role for habitat projects which must obtain permits under federal environmental laws. For example, in order to comply with the Clean Water Act, most wetlands restoration projects must obtain a Section 404 permit from the Corps of Engineers. In some locations, nationwide permit number 27 may be able to streamline this process. Other federal agencies participate in the review of federal permits.

States

The eight Great Lakes states have primary ownership and responsibility for natural resources such as the management of Great Lakes submerged bottomlands and fisheries and wildlife. The states also have direct and delegated federal authority for environmental protection. Together, the natural resource management and environmental protection responsibilities render states as the linchpin for most habitat protection and restoration efforts of any notable size. That is, the state will usually have some role in a large or even moderate-sized habitat protection and restoration project, either from a resource management or a (environmental) regulatory standpoint, but often both. State wildlife action plans and the state engagement in Joint Venture plans under the North American Wetlands Conservation Act are examples of major state habitat initiatives across the Great Lakes. The many other ways states engage in habitat protection and restoration are too numerous to list here. The examples below illustrate a few key state programs.

- Illinois' Replanting the Prairie State Initiative aims to plant more than 2 million trees and restore habitat
- Indiana's Heritage Trust Program acquires state interests in real properties that are examples of outstanding natural resources and habitats
- Michigan's Wetland Conservation Strategy provides a framework for protecting and restoring wetlands; the state has a goal of increasing its wetland base by 50,000 acres by 2010
- Minnesota has a "no net loss" wetlands policy and also aims to increase the quantity, quality and biological diversity of wetlands of the state (M.S. 103A.201); the Reinvest in Minnesota program focuses on protecting and improving water quality by encouraging landowners to retire environmentally sensitive land from agricultural production
- New York's Environmental Protection Fund provides funding for environmental projects and programs including habitat and wetlands restoration work including the New York State Open Space Conservation Plan
- Pennsylvania's Growing Greener Initiative ties economic and community development to environmental initiatives including wetlands and habitat projects
- Ohio's Private Lands Wetlands Restoration Program provides technical assistance and cost-sharing to private landowners interested in wetlands restoration
- Wisconsin has a Knowles-Nelson Stewardship Program, which acquires land and easements for conservation purposes and to restore habitat.

Tribal governments

There are 35 federally recognized Indian Tribal Nations whose reservations are located in the Great Lakes basin and/or who retain treaty rights to hunt, fish or gather within the Great Lakes basin. Thus, Tribes play an important governmental and partnership role in protecting, improving and restoring ecosystems both on and off-reservation. Tribal governments exercise management and regulatory authority over reservation lands and natural resources, and many have integrated re-



Wetland within Indiana Dunes National Lakeshore, Lake Michigan, Indiana; courtesy David Riecks, Illinois- Indiana Sea Grant.

source management plans that serve as comprehensive planning documents to guide tribal decisions relating to land use and management. While tribal lands face degradation and pollution problems, many are among the most pristine lands in the basin. Many Great Lakes tribes are implementing habitat restoration and enhancement projects in cooperation with the Bureau of Indian Affairs (BIA), the U.S. Fish and Wildlife Service, and other state, county and nongovernmental partners. For example, with respect to waterfowl, a tool used by many tribes is the BIA Circle of Flight program which provides funds to tribes that in turn are used to match funds provided by other partners. The program has been in operation since 1991, over the last decade providing nearly 8 million dollars that has been used to leverage nearly 24 million in project funds.

All considered, tribes have a very important role as partners in Great Lakes habitat protection and restoration.

Local governments

Local governments exercise natural resource and environmental protection responsibilities delegated by the individual states and are responsible for many land-use decisions that affect riparian lands on tributaries and shoreline areas of the Great Lakes. Local governments also fund and implement land conservation and habitat protection programs of their own, using a variety of creative local funding mechanisms, from tax increment financing, to real estate transfer fees to local millages for conservation easements and land acquisition.

Many local governments are involved in habitat restoration projects, which extend to watershed groups and other non-government organizations. Examples of activities local governments are involved with include:

- · Direct purchase of land or easements for conservation or recreation
- · Linking state projects to local watershed efforts to restore habitats
- · Providing outreach to local constituents and schools
- · Developing environmental stewardship in local communities
- Coordinating volunteers for local restoration efforts
- Developing and implementing wetland preservation plans as a component of locally based integrated watershed management

Project Spotlight: Wolf Lake Aquatic Ecosystem Restoration

Wolf Lake is a 976-acre inland lake along the southern shore of Lake Michigan in a heavily urbanized and industrial area of Hammond, Ind., and Chicago, Ill. The Illinois-Indiana state line nearly bisects the lake system which has been highly stressed and modified by the surrounding urban development for more than a century. The city of Hammond and U.S. Army Corps of Engineers have recently completed a \$7 million project in Wolf Lake (photo during construction shown) to restore wetlands, improve water quality, control invasive species, enhance fish and wildlife habitat, and improve biodiversity. Federal funding for this project was provided through the Corps' Aquatic Ecosystem Restoration program (Section 206).

The Wolf Lake restoration project, which is an integral part of the city of Hammond's master plan, has created a series of deep-



er holes and wetlands islands in the lake to enhance habitat value. Approximately 6,200 feet of shoreline has been restored to decrease erosion, remove invasive species, and create a gentle transition from aquatic to upland habitats. Openings were cut in dikes between lake sections to improve water circulation. Wetlands were created to filter stormwater and improve water quality. In all, this project has protected 450 acres of wetlands and restored an additional 25 acres.



Lotus-in situs, Michigan; courtesy National Park Service, Indiana Dunes National Lakeshore.

Non-governmental organizations

Non-governmental organizations (NGOs), including private enterprises as well as not-for-profit/citizen-based groups, play an extensive list of roles in protecting and restoring habitat with, and often independent of, government efforts at every level. As land owners, NGOs can donate land or otherwise allow for its use in habitat projects. They can also manage their lands with tools and methods, such as buffers and conservation easements, which are sensitive to the needs of adjacent ecosystems.

Not-for profit NGOs often provide operation and management skills for habitat restoration efforts, while at the same time, coordinating and supplying volunteers for specific projects. These NGOs can also play partnership roles in watershed groups and other planning and outreach efforts. In partnership with their communities, not-for-profit NGOs can play a significant role in guiding the local development process toward projects that preserve or increase habitat, or that minimize the stresses to existing habitat through the use of low-impact development tools such as native landscaping, innovative stormwater management and open-space conservation.

Private enterprises, including private foundations as well as for-profit companies, are known for their innovation and philanthropy. Although technically "non-governmental," these entities play a decisively different role than not-for-profits by virtue of their ability to bring considerable financial resources to the table. Much like governmental agencies, when and where companies and foundations invest in habitat protection and restoration can have a tremendous impact on the type, location and extent of restoration. Also, where corporate actions result in compensatory mitigation for wetlands losses, private companies can use the Habitat Projects Database to help locate areas for mitigation efforts.



Aerial view of the completed restoration on the Waggoner tract at Pickerel Creek Wildlife Area, Ohio; courtesy Ohio Division of Wildlife.



Water level control structure being installed as part of the wetland restoration on the Wagonner tract at Pickerel Creek Wildlife Area, Ohio; courtesy Ducks Unlimited, Inc.

Project spotlight: Pickerel Creek Wildlife Area

Pickerel Creek Wildlife Area, located on the south shore of Sandusky Bay off Lake Erie, is owned and managed by the Ohio Division of Wildlife (DOW). During Summer 2007, Ducks Unlimited restoration biologists and engineers worked with the DOW to restore 170 acres of wetlands on three tracts recently acquired for the wildlife area. Funding for this project came from a National Coastal Wetland Conservation grant and sale of state habitat stamps.

Conclusion

This report describes some of the activities that have been undertaken since the Great Lakes Regional Collaboration Strategy was unveiled in December 2005. These activities include progress in collaboration, as evidenced by the U.S. Army Corps of Engineers' Great Lakes Habitat Initiative, the federal interagency Wetlands Subcommittee, and their merger into the new Great Lakes Habitat/Wetlands Initiative. And while collaborative processes were being refined and unfolded, progress was also being made on the ground as demonstrated by the estimated 65,000 acres of Great Lakes wetlands that have been protected and restored by federal agencies since 2005. Still, many more acres of wetlands have been protected or restored during this time by other orders of government and nongovernmental interests, but did not get counted in this report. This has provided further evidence of the lack of, and need for, tools and processes to get an accurate picture of wetlands protection and restoration across the region.

Toward that end, this report describes several new tools that have been developed to support the Initiative's restoration efforts, including an inventory of programs that can fund habitat protection and restoration and a webbased database of current and prospective habitat projects. Although the tools can be used as they are, the report suggests improvements to make these tools easier to use and have broad and sustained application. The need for a process and tool to track completed projects has been proposed, and the challenges inherent in developing and implementing such a tool have been discussed. Some promising efforts toward developing that tool have been presented. Finally, and perhaps most importantly, a Call to Action has been issued urging all Great Lakes Regional Collaboration partners to mobilize and to engage in a dialogue on how to best organize so that the GLRC partners can continue to collaborate and overcome existing obstacles, develop improved ways to undertake habitat protection and restoration, and effectively assess the progress being made toward achieving regional habitat protection and restoration goals. To join in continuing this collaborative effort toward protecting and restoring Great Lakes wetlands and other habitat, please visit http://www.glrc.us.

Appendix A: Data Call Methodology and Definitions

In (year), the federal agencies were asked to report wetland restoration accomplishments using terms and methods similar to those used for the President's Council of Environmental Quality annual report on wetlands. Agencies reported accomplishments for completed projects only. This appendix includes detail about the methods and terminology used for this activity. Future requests for data on wetlands protection and restoration accomplishments will be extended to non-federal partners.

Data call to federal agencies

A data call for Federal wetlands performance in the Great Lakes basin and went to the Departments of Agriculture, Army, Commerce, the Interior, and to the Environmental Protection Agency. The methodology used by the Working Group for the President's annual Wetlands report was used.

Reporting period

Performance data for programs covered the following time periods: 2006 performance results 1/2007 - 6/2007 performance results 6/2007 -12/2007 estimated performance results 2008 estimated performance results.

Year performance data reported

Performance data are reported in the year the project is completed, land acquired or easement purchased.

Wetlands only

Programs that perform both wetlands activities and non-wetlands activities reported performance related only to the wetlands component, not their entire program. For example, when land is purchased for waterfowl management it may include both wetlands and associated upland nesting cover. These upland acres were deducted from the acres reported as contributing to the wetlands goal. The number of acres of wetlands contributed by a program to the wetlands goal will be smaller than the number of habitat acres reported in other documents because the habitat acres typically include upland buffer strips, associated upland cover, and nesting islands. The first year an invasive plant or animal is eradicated or its population abated, the acreage will be reported as a gain under "improve." Additional eradication or abatement work on the same area is considered to be maintenance and is not counted in the improve category.



Wild Fowl Bay, Bay Port, Saginaw Bay; courtesy Michigan Sea Grant, Todd Marsee.

Double counting

Correcting for over-reporting of acreage is a challenge to accurately reporting accomplishments. One partner may provide materials and equipment, another labor, another technical assistance, and yet another land. For example, a 100-acre project with four partners could be reported by each of the partners, and could appear to be 400 acres when combined. In some cases, one partner may not be aware that a landowner is working with multiple partners. These partnerships may result in over-reporting of performance. To correct for this "double-counting," partnership worksheets were used. Programs were asked to identify partnership groups separately on the worksheets.

Definitions of accomplishments

In 2000, the White House Wetlands Working Group (WHWWG)-composed of representatives from all major Federal agencies involved in wetlands work-agreed to use wetlands terminology and definitions that had been developed during the mid-1990s. The terminology for the Great Lakes data call is similar to that previously developed by the WHWWG and the same terminology used in the national Earth Day wetlands reports.

To "restore or create" wetlands results in a gain of wetland acres and includes:

Creation of wetlands that did not previously exist on an upland or deepwater site. These actions are referred to as "establishment" by the WHWWG. Restoration of a former wetland to its natural/historic function and resulting value. Typically, such a former wetland had been drained for some purpose. These actions are known as "re-establishment" by the WHWWG.

To "improve" wetlands results in a gain of wetlands functions or quality, rather than additional acreage, and includes: Repair of the natural/historic functions and associated values of a degraded wetland. This is referred to as "rehabilitation" of wetlands. Rehabilitation results in a gain in wetlands quality. Heightening, intensification, or improvement of one or more selected functions and associated values. The WHWWG called these types of actions "enhancement." Enhancement is undertaken for a purpose such as water quality improvement, flood water retention, or wildlife habitat. Enhancement results in the gain of selected wetland functions and associated values but may also lead to a decline in other wetland functions and values.

To "protect" wetlands includes: Acquisition of land or easements of at least 30 years duration.

Activities excluded from acreage counted toward the President's

goal

Accomplishments outside the United States

Due to the migratory nature of birds, some programs work to restore, improve, and protect wetlands in Canada, Mexico, and the Caribbean. International portions of programs were not included in the data reported.

Uplands work

Many programs carry out activities in upland areas that are crucial to the health and sustainability of wetlands. These upland acres were not counted toward the President's wetlands goal.

Wetland activities that maintain the wetland base

Many important wetland activities are not counted toward meeting the wetlands goal because they are focused on maintaining or managing the wetlands base and do not add acres, increase wetland quality, or fall within the definition of "protect." Many agencies spend more funds maintaining and managing the existing wetlands base than they do making additions to the base. The base is critically important, because wetland gains can only be built on a stable foundation. The activities that help maintain the wetlands base are briefly described below.

Cyclical work

Work carried out to sustain wetlands (e.g., habitat maintenance on a National Wildlife Refuge to maximize wetland habitat values). Cyclic water-level management and other cyclic wetland activities are used to mimic naturally occurring flood regimes for the benefit of wildlife. Only new activities on a footprint of wetlands not previously manipulated for increased value were counted in the "improved" category as rehabilitation or an enhancement.

Management and maintenance activities

Effective management and maintenance activities are critical to sustain wildlife and plant populations. Management activities involve periodic manipulation of the physical, chemical, or biological characteristics critical to maintaining habitat quality. These manipulations mimic natural regimes through periodic flooding, mowing, or prescribed burns. Maintenance activities include the repair of water control structures, fences, or structural protection. Cessation of management and maintenance activities triggers loss in wetland quality. Maintenance activities do not result in an increase in wetlands acreage or quality.

Mitigation

Wetlands created or improved as mitigation for the loss or degradation of other wetland values are not counted. The rehabilitation of wetlands at former hazardous waste sites are considered to be compensatory mitigation. Programs that mitigate for wetland losses are not counted as contributing to the new wetlands goal because they maintain the Nation's wetlands base. Examples of these types of programs are the Federal Highway Administration programs that mitigate the impacts of highways on wetlands, the Clean Water Act provisions that require the mitigation of permitted wetland losses, and the Natural Resources Damage Assessment and Restoration Program, which restores and improves wetlands at former hazardous waste sites.

Restoring wetlands Injured by oil spills and contaminant releases

Because wetlands provide important habitats for many species of fish and wildlife, contaminants entering wetlands can injure fish and wildlife and decrease productivity. As a result of concerns over the influx of contaminants into the environment, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also known as CERCLA or "Superfund"); the Clean Water Act as amended in 1977 (CWA); and the Oil Pollution Act of 1990 (OPA). These three laws authorize natural resource trustees—such as the Department of the Interior (DOI) and the National Oceanic and Atmospheric Administration (NOAA)—to assess injuries to natural resources from contaminants and to seek restoration from those responsible for the injury.

Restoration projects may focus on either restoring the habitat (e.g., improving hydrology and reducing runoff into wetlands) needed for the injured fish and wildlife, or on actions to increase their populations (e.g., reducing predators and providing nesting substrate and habitat). Where injured habitat cannot be restored, replacement habitat can be restored or purchased. In addition, trustees may seek projects (or funds for projects) to compensate for lost services (e.g., improved access to fishing sites) from the time of injury until recovery. Following is an example of a recent restoration project conducted under CERCLA, OPA, and/or CWA.

The U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources are working in partnership with Ducks Unlimited and Rush Lake Watershed Restoration Inc., to improve water clarity and quality, remove invasive species, and restore prairie pothole vegetation to Rush Lake in Wisconsin. These efforts will compensate for injuries to fish and wildlife from PCB releases into the Fox River/Green Bay ecosystem. The restoration of Rush Lake will benefit many of the injured wildlife and fish, including Forster's terns; blackcrowned night herons; red-necked grebes; sand-pipers; redhead, ruddy, and wood ducks; and northern pike and yellow perch. Increases in fish and wildlife will also enhance fishing, hunting, and trapping opportunities. Projects recently completed include installation of a dam, and dredging and regrading of outlet channels to improve stream flow and facilitate lake drawdown. When complete, more than 3,000 acres will be restored.

Shoreline stabilization

The preservation of a marsh or channel using shoreline stabilization techniques (e.g., rock revetments, or steel or plastic sheet pile protection) is called armored or hard shoreline stabilization. Partial protection of shoreline erosion using vegetative plantings is called soft shoreline protection. Shoreline stabilization prevents loss of wetland acreage due to subsidence; erosion by tides, wind, and boat traffic; and similar factors. This acreage is not counted toward the President's goal.



Wetland within Illinois Beach State Park, Illinois; courtesy David Riecks, Illinois-Indiana Sea Grant.

