Great Lakes Restoration Initiative

Fiscal Year 2012 Report to Congress and the President

Great Lakes RESTORATION

Prepared By:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN PARTNERSHIP WITH THE GREAT LAKES INTERAGENCY TASK FORCE

As of October 2012

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MESSAGE FROM THE FEDERAL GREAT LAKES INTERAGENCY TASK FORCE CHAIR

U.S. ENVIRONMENTAL PROTECTION AGENCY ADMINISTRATOR GINA MCCARTHY

The Great Lakes are home to about 20 percent of the Earth's fresh surface water. They serve as an abundant source of drinking water for nearly 40 million people and they generate an estimated $16 billion in tourism revenue every year. The Great Lakes also support an abundant commercial and recreational fishery, a diverse agricultural sector, a strong industrial economy, and the movement of 160 million metric tons of cargo that sustains more than 200,000 jobs.

But the Great Lakes require maintenance to continue providing so much to millions of American families. The federal government launched the Great Lakes Restoration Initiative (GLRI) in 2010 to accelerate our upkeep of this vital resource.

As this Report to Congress and the President shows, the federal agencies and stakeholders working to implement the GLRI are making steady progress in the effort to revitalize the Great Lakes so they can continue to provide us with jobs, recreation, and an unparalleled quality of life.

Though this is a report to Congress and the President, it is also a report to states, tribes, municipalities, academia, public interest organizations, businesses and individuals who live, play and work in the Great Lakes region. We look forward to continuing our work together to build upon the progress made during the initial stage of the GLRI to protect and restore the Great Lakes.

Gina McCarthy

Chair, Great Lakes Interagency Task Force

Administrator, U.S. Environmental Protection Agency

SECTION I – LIST OF ACRONYMS

AOC	Area of Concern
APHIS	Animal and Plant Health Inspection Service
ATSDR	Agency for Toxic Substances and Disease Registry
BIA	Bureau of Indian Affairs
BUI	Beneficial Use Impairment
CEQ	White House Council on Environmental Quality
DHS	U.S. Department of Homeland Security
DNA	Deoxyribonucleic acid
DOA	U.S. Department of the Army
DOC	U.S. Department of Commerce
DOD	U.S. Department of Defense
DOI	U.S. Department of the Interior
DOS	U.S. Department of State
DOT	U.S. Department of Transportation
eDNA	Environmental deoxyribonucleic acid
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
FY	Fiscal Year
GLAS	Great Lakes Accountability System
GLFC	Great Lakes Fishery Commission
GLLA	Great Lakes Legacy Act
GLRI	Great Lakes Restoration Initiative
GLWQA	Great Lakes Water Quality Agreement
GPRA	Government Performance and Results Act
HHS	U.S. Department of Health and Human Services
HUD	U.S. Department of Housing and Urban Development
IA	Interagency Agreement
IATF	Interagency Task Force
IJC	International Joint Commission
LaMP	Lakewide Management Plan
MARAD	Maritime Administration
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRCS	Natural Resources Conservation Service
PCB	Polychlorinated Biphenyl
SAB	Science Advisory Board
SRP	Soluble Reactive Phosphorus
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

SECTION II – EXECUTIVE SUMMARY

The Great Lakes Restoration Initiative (GLRI) – which was launched in 2010 with bipartisan, multi-sector, community-based support – is already producing real results. In this Report to Congress and the President, the federal agencies working together to implement the GLRI share their results for Fiscal Year 2012 (October 1, 2011, through September 30, 2012). These agencies have met or exceeded 18 of the 28 Measures of Progress set forth in the initial GLRI Action Plan.[1] More work remains to be done under six Measures of Progress for which targets were not met , and for four Measures data are not yet available to accurately assess progress. Highlights of the results achieved so far in each of the GLRI Action Plan's five Focus Areas include:

Toxic Substances and Areas of Concern

Since 2009, 21 Beneficial Use Impairments have been removed at 12 Areas of Concern in Illinois, Indiana, Michigan, New York, and Wisconsin with the help of GLRI-funding -- almost tripling the total number of BUIs removed in the preceding 22 years.

Invasive Species

Led by the White House Council on Environmental Quality, a partnership of federal, state, provincial and local agencies, and private stakeholders and citizens – supported by the GLRI – has helped to prevent invasive Asian carp from establishing self-sustaining populations in the Great Lakes. This effort has involved strategic monitoring, prevention actions, development of control technologies, and supporting actions such as education and outreach.

Nearshore Health and Nonpoint Source Pollution

Great Lakes beaches were open and safe for swimming 93.5 percent of the beach season, due in part to GLRI-funded efforts to identify and eliminate sources of beach contamination.

Habitat and Wildlife Protection and Restoration

GLRI-funded projects have protected, restored, or enhanced approximately 100,000 acres of wetland, coastal, upland and island habitat. Hundreds of barriers have been removed or bypassed in Great Lakes tributaries, making it easier for fish to move freely in almost 1,000 additional river-miles. U.S. Fish & Wildlife Service monitoring shows that these projects are improving native fish populations in the Great Lakes.

Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships

Using GLRI funding, hundreds of educational institutions have incorporated Great Lakes-specific material into their curricula, and many other educational efforts are under way to ensure the next generation will understand the importance of the Great Lakes.

[1] http://glri.us/pdfs/glri_actionplan.pdf

In FY 2012, after considering stakeholder input, the GLRI Interagency Task Force announced three priorities to achieve greater results in coming years:

- Accelerate cleanups of Areas of Concern in FY 2013-2014.
- Continue to prevent invasive species, such as Asian carp, from establishing self-sustaining populations in the Great Lakes in FY 2013.
- Reduce phosphorus runoff that contributes to harmful algal blooms, which threaten coastal communities' economic well-being and public health in three key watersheds in FY 2013:
  - Lower Fox River (Wisconsin).
  - Saginaw River (Michigan).
  - Maumee River (Ohio, Michigan, Indiana).

The federal agencies working to implement the GLRI continue to refine their efforts to maximize results. The agencies recognize the need to improve upon the initial version of the Great Lakes Accountability System and have begun a process to identify and implement those improvements. The agencies are also working to address recommendations from the EPA's independent Science Advisory Board to ensure that the GLRI has the best information on the most pressing ecological threats.

About This Report

This report presents an overview of GLRI progress. It includes information on funding and performance on GLRI Action Plan Measures of Progress through FY 2012 and includes highlighted projects accomplished in FY 2012. Data on direct spending are taken from EPA financial systems. Information on GLRI projects and additional GLRI activities is available at http://glri.us.

EPA, with its Administrator serving as chair of the IATF of 11 federal departments and agencies, is required by the 2010 Appropriations Conference Report, 111-316, to submit this report to Congress:

> Beginning in 2011 and each year thereafter, the Agency is directed to provide detailed yearly program accomplishments and compare specific funding levels allocated for participating Federal agencies from fiscal year to fiscal year.

This report also satisfies the reporting requirements of the GLRI Action Plan:

> Annual reports to the President, beginning in 2011, will describe accomplishments to date, action planned for the coming year, and progress toward meeting ecosystem goals and targets.

To avoid duplicative and unnecessary reporting, this congressionally required report is intended to replace the Report to Congress on the Great Lakes Ecosystem called for by Section 118 of the Clean Water Act.

SECTION III – BACKGROUND

The Great Lakes watershed includes two countries, eight U.S. states, two Canadian provinces, more than 40 tribes, and more than one-tenth of the U.S. population. The region's leaders recognize that more than a century of environmental degradation took a significant toll on the Great Lakes, which serve as the lifeblood of the region. As a result, many diverse groups and individuals have been working together on a wide-ranging, coordinated effort to help the Great Lakes recover economically and ecologically. This coordinated effort among businesses, academia, tribes, states, legislative leaders, municipalities, public interest organizations, and many individuals has provided the groundwork for the GLRI.

In 2009, the President proposed the historic Great Lakes Restoration Initiative, including significant additional federal funding within the FY 2010 President's Budget, to address the longstanding environmental challenges in the region. In February 2010, at a Council of Great Lakes Governors meeting, the Obama Administration released an Action Plan to guide this initiative. The Action Plan guides GLRI funding priorities for all participating agencies and establishes ambitious environmental goals, objectives, and 28 Measures of Progress.

The GLRI invests in the region's environmental and economic health, as well as its public health, through a coordinated interagency process. As outlined in the Action Plan,[2] this unprecedented program focuses on five major restoration topics:

1. Toxic Substances and Areas of Concern.
2. Invasive Species.
3. Nearshore Health and Nonpoint Source Pollution.
4. Habitat and Wildlife Protection and Restoration.
5. Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships.

To coordinate work under the Action Plan, the EPA Administrator chairs the IATF. IATF member departments and agencies are:

U.S. Environmental Protection Agency (EPA)
White House Council on Environmental Quality (CEQ)
U.S. Department of Agriculture (USDA)
U.S. Department of the Army (DOA)
U.S. Department of Commerce (DOC)
U.S. Department of Health and Human Services (HHS)
U.S. Department of Homeland Security (DHS)
U.S. Department of Housing and Urban Development (HUD)
U.S. Department of the Interior (DOI)
U.S. Department of State (DOS)

[2] http://glri.us/pdfs/glri_actionplan.pdf

U.S. Department of Transportation (DOT)[3]

The IATF, through its Regional Working Group, selects the best combination of programs and projects using principles and criteria such as:

- The ability of a program or project to achieve strategic and measurable environmental results.
- The feasibility of prompt implementation, achieving tangible results quickly, and leveraging additional resources.
- The ability to take advantage of opportunities for interagency/inter-organizational coordination and collaboration.

The GLRI is being applied strategically to implement projects with states, tribes, municipalities, universities, and other organizations to help promote a healthy, functioning Great Lakes ecosystem for future generations to use and enjoy.

[3] The GLRI comprises 11 federal departments or agencies, several of which may contain multiple agencies, bringing the total number of participating GLRI agencies to 16. For example, the U.S. Department of the Interior includes the Fish & Wildlife Service, Geological Survey, Bureau of Indian Affairs, and National Park Service, each of which participates in the GLRI.

SECTION IV – PROGRAM ACCOMPLISHMENTS AND PLANNED ACTIVITIES

The GLRI Action Plan identifies the most significant ecosystem problems, and ways to solve them, in five major focus areas:

- **Focus Area 1: Toxic Substances and Areas of Concern** – includes pollution prevention and cleanup of the most polluted areas in the Great Lakes.
- **Focus Area 2: Invasive Species** – includes instituting a "zero tolerance policy" toward new invasions, including preventing the establishment of self-sustaining populations of invasive species such as Asian carp.
- **Focus Area 3: Nearshore Health and Nonpoint Source Pollution** – includes a targeted geographic focus on high-priority watersheds and polluted runoff reductions from urban, suburban, and agricultural sources.
- **Focus Area 4: Habitat and Wildlife Protection and Restoration** – includes bringing wetlands and other habitat back to life, and the first comprehensive assessment of the entire 530,000 acres of Great Lakes coastal wetlands to target restoration and protection efforts using the best science.
- **Focus Area 5: Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships** – includes the implementation of goal- and results-based accountability measures, learning initiatives, outreach, and strategic partnerships.

The GLRI supplements[4] the significant work under way by federal agencies, states, and other partners to support Great Lakes restoration. Progress in each of the five focus areas is necessary to ensure that the GLRI succeeds in restoring the Great Lakes. Restoring the Great Lakes means fish that are safe to eat, water that is safe to drink, and areas that are safe for activities like swimming, surfing, and boating. It means protecting habitats so that native species thrive again. It means that no community suffers disproportionately from pollution, and that the Great Lakes basin is a healthy place for people to live.

This section provides background, an overview of progress, and highlighted projects for each focus area. Appendix A includes additional information pertaining to each of the GLRI Action Plan measures.

[4] Agencies are expected to maintain their base level of Great Lakes ecosystem restoration activities and identify new activities and projects to achieve the environmental results described in the Action Plan.

Focus Area 1: Toxic Substances and Areas of Concern

Background

Though the amount of pollution going into the Great Lakes has been reduced, "legacy contamination" from the past continues to re-circulate in the lakes and remains a public health concern. Contaminant levels have declined over the years, but are still too high in some places to be considered safe for people or wildlife. Residents of urban communities in or near these areas and people throughout the Great Lakes who rely on subsistence fishing as a large component of their diet are particularly at risk from eating contaminated fish. Cleaning up these historically contaminated harbors and rivers opens urban communities to economic development, business growth, increased property values, and expanded tourism. These waterfront communities are important engines for economic growth, and cleaning them up contributes to the region's and nation's prosperity. Areas that were a detriment to economic growth can once again become valuable waterfront economic assets.

Persistent toxic substances continue to be released into the Great Lakes from contaminated sediment, industrial and municipal point sources, the cycling of legacy contamination in the lakes, and nonpoint sources including atmospheric deposition, agricultural and urban runoff, and contaminated ground water. This includes well-known toxicants like mercury, polychlorinated biphenyls, and banned pesticides, as well as chemicals of emerging concern such as pharmaceuticals. Progress in this focus area is critical to public health, and to the health of fish and wildlife.

Reducing Contaminant Exposure of High Risk Populations in the Great Lakes

The Agency for Toxic Substances and Disease Registry and state health departments are working with populations at high risk of exposure to contaminants, such as subsistence anglers, to gather the necessary data to develop and implement public health actions to reduce their risks.

The work being done in this focus area will help keep people and the Great Lakes ecosystem safe from the effects of toxic chemicals. One priority is addressing Areas of Concern (AOCs), places in the Great Lakes with the largest legacies of toxic pollution. The U.S. and Canadian governments have identified 43 such areas: 26 wholly in U.S. waters, 12 wholly in Canadian waters, and five shared by both countries. Two Canadian AOCs and one U.S. AOC have been delisted, leaving 30 existing AOCs in the U.S. or shared with Canada. Each AOC contains up to 14 possible Beneficial Use Impairments. The Great Lakes Legacy Act provides funding for contaminated sediment remediation activities in these AOCs. The GLLA, enacted in 2002 and reauthorized in 2008, is now part of the GLRI. GLLA projects in the AOCs, along with other pollution prevention and reduction projects, will protect human health by reducing the levels of toxins in fish, by safeguarding drinking water, and by assessing and preventing releases of chemicals of emerging concern.

Overall Progress

GLRI partners are aggressively cleaning up long-standing AOCs throughout the Great Lakes. Between 1987 – when the federal government began formally designating AOCs – and 2009, only one AOC was delisted and a total of only 12 BUIs were removed. Since the GLRI was launched three years ago, completing critical projects and monitoring the resulting improvements has resulted in the removal of an additional 21 BUIs at 12 AOCs in Illinois, Indiana, Michigan, New York, and Wisconsin. GLRI partners have initiated hundreds of strategic projects and removed millions of cubic yards of contaminated sediment to achieve this success.

Crucial work has also been done to reduce human exposure to new toxic substances. Agencies worked together using innovative science to develop an early warning system to guard against the potential impacts of chemicals of emerging concern, such as pharmaceuticals and personal care product components, which may threaten human and ecological health in the Great Lakes basin.

These efforts are yielding real results. Communities that experienced restrictions on drinking water, frequent beach closures, restrictions on dredging, and degradation of ecological health worked with GLRI partners to remove these beneficial use impairments. States still issue fish consumption advisories, but as yet another clear sign that cleanups are working, EPA's long-term monitoring shows a consistent downward trend in the concentration of PCBs in Great Lakes fish.

GLRI has advanced efforts to revitalize the riverfront in Buffalo, New York. In July 2012, the U.S. Army Corps of Engineers completed the removal of 550,000 cubic yards of contaminated sediment from the federal navigation channel in the Buffalo River AOC.

GLRI Priority: Accelerating AOC Cleanups

In FY 2012, the Interagency Task Force announced that accelerating AOC cleanups would be one of three GLRI priorities. Agencies subsequently targeted the following AOCs for accelerated efforts in FY 2012:

- Ashtabula River AOC (Ohio) – In FY 2012, agencies identified the last remaining area of sediment contamination, completed remediation design, and initiated contaminated sediment cleanup. In FY 2013, the agencies will finish cleaning up contaminated sediment and will complete all necessary management actions for delisting.
- River Raisin AOC (Michigan) – In FY 2012, GLRI partners completed significant sediment remediation, habitat restoration, and fish passage projects. Additionally, a small area with high levels of PCB contamination was found, and we currently expect cleanup of this area, and all management actions necessary for delisting in the AOC, to be completed in FY 2014.
- Sheboygan River AOC (Wisconsin) – All management actions necessary for delisting will be completed in FY 2013. In order to reach this goal, GLRI partners initiated the cleanup of an estimated 300,000 cubic yards of sediment.
- White Lake AOC (Michigan) – All necessary habitat restoration has been completed and the few remaining management actions necessary for delisting will be completed in FY 2013.

After completing all management actions, GLRI partners will continue monitoring BUI-related information such as fish contaminants and tumors, plant communities, and fish, bird, amphibian and invertebrate populations. These monitoring efforts will determine when conditions in the AOC have improved such that BUIs can be removed and the AOC delisted.

Focus Area 2: Invasive Species

Background

Introduction and establishment of non-native species can significantly undermine Great Lakes protection and restoration. By rapidly reproducing and spreading, invasive species can degrade habitat, harm native species, and jeopardize food webs. The Great Lakes also can act as an invasion pathway, providing opportunities for species to spread to inland lakes, the 31 states in the Mississippi River watershed, and beyond.

The GLRI is supporting federal, state, tribal, and community invasive species prevention and control efforts. Prevention is the most cost-effective approach for dealing with potential invaders, so the GLRI is working to stop new invasions by preventing introductions from canals and waterways, maritime commerce, recreational use, and organisms bought and sold in commerce (*e.g.*, bait and the pet trade).

The GLRI is also supporting the expansion of invasive species control activities throughout the basin. Populations of over 180 non-native species already exist in the Great Lakes. Many of these need to be controlled to maintain conditions for long-term desired species protection and restoration. Although invasive species populations are difficult and potentially impossible to eradicate once established, federal agencies and Great Lakes states and communities are making progress by working together on control plans and on-the-ground actions.

A Promising Monitoring Tool for the Great Lakes: eDNA

The material in organisms that contains the instructions for cellular development is known as DNA. The chemical structure of DNA is the same for all organisms, but differences exist in the order of the DNA building blocks. Unique sequences of these building blocks provide a means to identify individual species which may be present in a particular environment, because organisms release DNA into the environment through skin tissue, mucous, feces, and sperm or eggs. Advanced techniques now allow for the detection of this DNA, referred to as eDNA at low levels in the aquatic environment, which holds great promise for cost-effective monitoring of rare organisms, including the detection of invasive species. For more information, please visit: http://pubs.usgs.gov/fs/2012/3146/.

GLRI partners are applying eDNA technologies in the Great Lakes:

- USACE, with USGS and USFWS support, is working to better understand correlations between detection of eDNA material and actual Asian carp population levels (http://www.asiancarp.us/ecals.htm).
- EPA-funded researchers are reducing the method's analysis time and developing new genetic tools for detecting high-risk invasive fish, mussels, and plants.

Overall Progress

Invasive species prevention, detection, response, and control are central to the GLRI. Public education on invasive species is an important component of invasive species prevention. Through efforts ranging from boat washing stations to billboards and radio ads, it is estimated that the GLRI has provided over

The GLRI supports U.S. Coast Guard and EPA regulatory programs by developing and validating methods to evaluate the performance of ballast water management systems. In 2012, GLRI supported testing of a promising ballast water management system that uses sodium hydroxide (which creates a low pH to kill organisms) followed by carbon dioxide gas to neutralize water prior to discharge. Efforts to ensure rigorous testing of ballast water management systems under "real world" shipboard conditions will help prevent future invasions.

200 million opportunities for the public to view or hear important information about preventing the introduction and spread of invasive species in the Great Lakes basin. The agencies are also verifying improved ballast water treatment technologies to prevent future invasions through this historically common pathway.

Using GLRI funding, state and federal agencies have improved rapid response capabilities by carrying out 15 rapid response actions in the fight against Asian carp and four mock exercises to improve future readiness. Responses actions, which include activities such as chemical treatment, netting, and electrofishing for potential Asian carp, are taken following sufficient eDNA detection, credible reported findings, or electric barrier maintenance outages. States have also updated their State Aquatic Nuisance Species Management Plans to include rapid response capabilities and enhanced early detection monitoring. GLRI partners are also increasing invasive species control efforts, and are now managing over 30,000 additional acres for invasive species throughout the Great Lakes. GLRI partners are implementing strategic invasive species control efforts that establish or take advantage of partnerships that will continue invasive species monitoring, maintenance, and stewardship beyond the duration of individual projects.

Establishing Partnerships for Long-Term Stewardship in the Fight against Invasive Species

Using GLRI funding, landowners and land managers are partnering with local, state, and federal agencies to form Cooperative Weed Management Areas. Cooperative Weed Management Areas are managed by a partnership of community-based organizations that implement invasive species control, monitoring, and continued stewardship efforts. Along the shores of the Great Lakes, the U.S. Forest Service has supported the establishment of six new Cooperative Weed Management Areas and strengthened previously established partnerships.

These GLRI-funded efforts are helping to hold the line on invasive species. In the first three years of the GLRI, no new aquatic invasive species populations have been detected in the Great Lakes. Enhanced prevention, detection, response, and control efforts are increasing the resiliency of native fish and protecting these fish -- and the multi-billion dollar industry surrounding them -- from future threats.

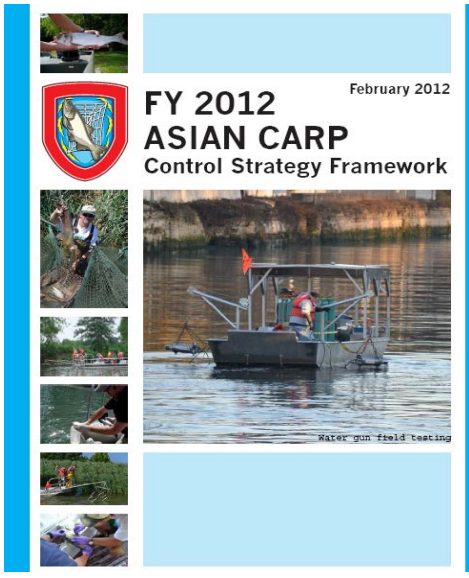
GLRI Priority: Invasive Species Prevention

In FY 2012, the GLRI agencies announced that continuing to prevent invasive species, such as Asian carp, from establishing self-sustaining populations in the Great Lakes would be one of three GLRI priorities. Responding to the immediate threat of invasive Asian carp, the GLRI has supported efforts by the CEQ to coordinate federal, state, provincial and local agencies, and private stakeholders and citizens to successfully keep Asian carp from establishing self-sustaining populations in the Great Lakes.

The GLRI contributes to actions and results under the Asian Carp Control Strategy Framework (http://asiancarp.us/), which focuses on:

- Prevention and development of prevention technologies.
- Monitoring and development of monitoring technologies.
- Development of control technology and impact mitigation.
- Other supporting actions (education, outreach, and regulatory support).

Actions funded in full or in part by GLRI include studying and implementing options or controls that could be utilized to prevent the spread of Asian carp between the Mississippi River Basin and the Great Lakes Basin. Controls already being implemented include: commercial fishing; barrier defense responses; robust monitoring, surveillance, and assessment; deployment of alternative net and trap technologies; telemetry and tagging of surrogate species; and investigation of towboats and barges and as means of transport of Asian carp eggs and larva. Engineering controls are being developed for four critical hydrologic pathways identified in the GLMRIS interim reports. Biological controls such as fish toxicants and attractants are being developed to be used in conjunction with the engineering controls. Prevention activities such as seismic technology and improved traps and nets are also being developed.



Focus Area 3: Nearshore Health and Nonpoint Source Pollution

Background

Most residents and visitors experience the Great Lakes along the shorelines through fishing, swimming, boating, or other forms of recreation. The nearshore also supplies drinking water for municipalities and habitat for many species. Nearshore water quality has, however, become degraded. Increased nutrients, sedimentation, and alteration of nearshore habitat have contributed to excessive growth of *Cladophora* algae, increased incidence of harmful algal blooms, and outbreaks of avian botulism that have significantly altered the ecosystem. *Cladophora* and harmful algal blooms have also caused beach closings. Progress in this focus area is critical – not just because the shoreline is primarily where people enjoy the Great Lakes, but also because degraded water quality in the nearshore can undermine larger lake restoration efforts. Revitalizing the nearshore will have significant economic benefits, including increased property values and expanded tourism.

The projects under way in this focus area will make progress toward reducing sediment and nutrients going into the Great Lakes, and will reduce human health risks and ecosystem degradation posed by bacteria, viruses, pathogens, and other nuisance biological growths. Progress in this GLRI focus area helps to protect drinking water and to improve the recreational opportunities in the Great Lakes. To foster effective restoration or protection of nearshore waters, projects also focus on improving the ability of decision-makers to identify and implement appropriate actions.

Overall Progress

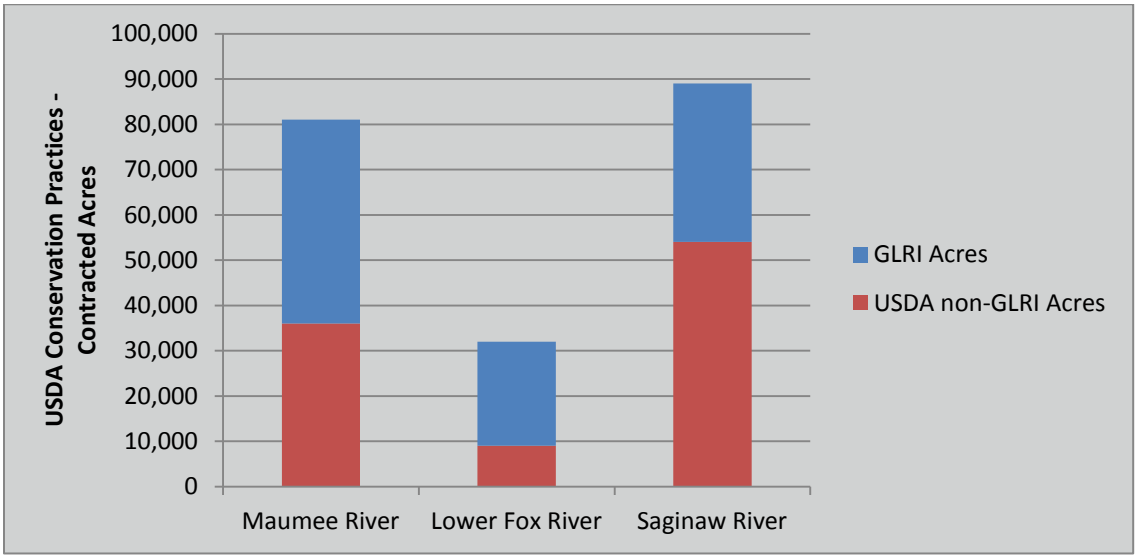
The GLRI is working to improve the health and safety of Great Lakes beaches by reducing or eliminating sources of contamination. Local beach managers have completed standardized assessments of sources, and are now implementing projects to reduce or eliminate contamination at approximately 20 percent of Great Lakes beaches. To better protect public health, the agencies are also improving the testing and modeling methods used in making beach closure decisions. Due in part to these efforts, Great Lakes beaches were open and safe for swimming 93.5 percent of the beach season.

At Woodlawn Beach State Park (New York), a GLRI-funded beach contamination assessment determined that beach sand was acting as a reservoir for *E. coli*, which can threaten public health. The GLRI then funded an implementation project that utilized sand grooming with a tractor. This significantly reduced the number of beach closures, improved water quality, and created jobs and revenue for the Town of Hamburg, New York, which manages the beach.

The GLRI continues to accelerate efforts to reduce erosion, nutrients, and pesticide loadings into the nearshore environment of the Great Lakes. In FY 2012, the GLRI Interagency Task Force announced that reducing phosphorus runoff, which contributes to harmful algal blooms, in three key watersheds would be a top priority. In these watersheds -- the Lower Fox River (Wisconsin), Saginaw River (Michigan), and Maumee River (Ohio, Michigan, Indiana) -- GLRI funding is being used to increase the availability of contracts for agricultural conservation practices to reduce phosphorus runoff on thousands of acres. The GLRI will be developing information over time from implementing these actions.

GLRI Funding Expands Availability of USDA Conservation Contracts in Great Lakes Priority Watersheds

Contracted Acres (FY 2010-2012) as of Oct. 1, 2012



In the three priority watersheds, GLRI agencies are now focusing on particular subwatersheds that are most likely to yield results, implementing targeted actions to achieve them, and monitoring the resulting phosphorus reductions.

GLRI Priority: Monitoring Phosphorus Reductions in Targeted Watersheds

In each of the three priority watersheds, USGS has installed monitoring and measurement equipment to quantify the phosphorus reductions achieved. The photos below show USGS monitoring devices, at the edge of farm fields, which quantify phosphorus losses before and after implementation of agricultural conservation practices in priority watersheds.

Focus Area 4: Habitat and Wildlife Protection and Restoration

Background

The health of Great Lakes habitats and wildlife depends on the protection and restoration of ecosystems, including coastlines, wetlands, rivers, connecting channels, and watersheds. For example, wetlands help cleanse water that sustains wildlife, and coastline dunes can house rare species of plants and animals. Great Lakes habitat losses have led to a degraded food web, compromised biodiversity, and poorly functioning ecosystems. Progress in this focus area is critical to the restoration of the Great Lakes, as proper ecosystem functions provide benefits for humans and wildlife.

Work in this focus area will make significant progress toward restoring the health of Great Lakes habitat. It includes projects that will open miles of rivers for fish passage, lead to the recovery of important plant and wildlife species, and remove habitat-related BUIs in Great Lakes AOCs.

The U.S. Fish and Wildlife Service, the National Park Service, the Animal and Plant Health Inspection Service, and others are protecting the endangered populations of piping plover in the Great Lakes. At Wilderness State Park, the USFWS worked with the state of Michigan to implement recovery efforts to support 3-6 pairs of piping plovers (5-10 percent of the breeding population). Sleeping Bear Dunes National Lakeshore, located nearby, currently has the largest concentration of breeding piping plovers in the Great Lakes basin, and NPS has dedicated more staff for piping plover monitoring and law enforcement efforts there. A pair of piping plovers recently established a nest on the Great Lakes in Illinois for the first time in 30 years, and the APHIS implemented a predator monitoring program to determine proper protection actions. Interagency monitoring and coordination efforts such as these are resulting in smart investments for species conservation.

Overall Progress

GLRI partners are improving habitat for wildlife throughout the Great Lakes basin. Hundreds of barriers have been removed or bypassed in Great Lakes tributaries, making it easier for fish and other aquatic organisms to move freely in almost 1,000 additional river-miles. Approximately 100,000 acres of wetland, coastal, upland and island habitat have been protected, restored, or enhanced. The USFWS monitors populations of native species in the Great Lakes, and results show that these and other USFWS-led actions are increasing self-sustaining populations of native species important to the Great Lakes. Restoration efforts in the Saginaw River watershed, for example, have largely contributed to the now self-sustaining walleye populations in Saginaw Bay, Michigan.

These and other successful efforts to improve habitat are complemented by protection and recovery activities for fish and wildlife populations in the basin. To protect federally listed threatened,


GLRI partners, including the U.S. Geological Survey, NOAA, USFWS, and many others, constructed new fish spawning habitat for lake sturgeon and other native fish in the St. Clair River. Divers observed lake sturgeon spawning on the new rock reef even before construction was complete. The USFWS will continue monitoring the lake sturgeon population at this site to document the project's effectiveness. Monitoring will include measuring adult fish, eggs, larval, and juvenile fish at different times throughout the year to evaluate impacts on all sturgeon life cycle stages. A video of the lake sturgeon spawning on the new reef and more information on the partnership that made this and other restoration efforts possible can be found at http://huron-erie.org/.

endangered, and candidate species in the Great Lakes, the USFWS implements a range of conservation tools in collaboration with GLRI partners. These tools include removing introduced animal predators or invasive plants, conducting surveys, monitoring individual populations, and breeding species in captivity and releasing them into their historic range. In 2011, the USFWS removed the Lake Erie water snake from the federal list of endangered and threatened wildlife. This action was accelerated by GLRI funding for critical monitoring efforts. The USFWS continues to make progress in implementing recovery actions for other listed species.

In an innovative effort to comprehensively and consistently assess the quality and characteristics of Great Lakes coastal wetlands, GLRI partners have evaluated approximately 40 percent of coastal wetlands. This information will greatly improve restoration efforts by establishing a consistent baseline against which to measure successful restoration, and will aid in setting priorities for additional work.

In November 2011, the National Oceanic and Atmospheric Administration, the Red Cliff Band of Lake Superior Chippewa, and others partnered to create Frog Bay Tribal National Park, permanently protecting 88 acres near Bayfield, Wisconsin. The land is home to birds, rare and endangered plants, and large mammals including bobcats, black bears, and wolves. Frog Bay is the first Tribal National Park to be open to the public, and has allowed the Red Cliff community to preserve a rich part of its history and cultural traditions.

Focus Area 5: Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships

Background

Effective accountability tools, monitoring, and assessment are vital for the GLRI to succeed in helping restore the Great Lakes. Measuring indicators of overall ecosystem function provides information decision-makers need to evaluate restoration progress and ecosystem health. Improved knowledge, scientific coordination, and consistency in data collection will support informed decisions and assessments to make future restoration even more effective. The GLRI also supports educating the next generation and enhancing partnerships for restoration.

Overall Progress

In response to the President's call for improved transparency and fiscal stewardship, the federal GLRI partners established accountability mechanisms, management practices, and third-party oversight to effectively manage the GLRI. (Section V includes more information on efforts to ensure accountability.)

GLRI funding continues to be used to enhance existing programs that assess the physical, biological, and chemical integrity of the Great Lakes. These programs, in coordination with complementary state and Canadian programs, help to evaluate the effectiveness of restoration efforts and the overall health of the Great Lakes ecosystem using the best available science. The Cooperative Science and Monitoring Program described in the text box is an example of scientific work funded by the GLRI. The GLRI has been able to leverage resources and establish a large community of partners (see Appendix B) to ensure that these efforts are efficient and effective. A large, diverse group of partners are working together to make the GLRI a successful model of ecosystem restoration, including:

Cooperative Science and Monitoring Initiative for the Great Lakes

The GLRI-enhanced Cooperative Science and Monitoring Initiative coordinates scientific work to support Great Lakes management. Enhanced monitoring and field activities are conducted in one lake each year, tied to needs identified in Lakewide Management Plans. Data collection efforts have included sampling for water quality parameters, fish, lower food web species, nutrients, sediments, and other LaMP identified sampling needs.

Lake Huron, the focus of the Cooperative Science and Monitoring Initiative in 2012, has recently undergone major food web changes -- including reduced algae, zooplankton, and fish populations. Management concerns based on these changes were prioritized by the Lake Huron Binational Partnership. These partners, including NOAA, USGS, EPA, the State of Michigan, Environment Canada, Fisheries and Oceans Canada, and the Ontario Ministry of the Environment, worked together to develop a coordinated, intensive effort to help answer these prioritized management questions.

Cooperative partnerships such as the Cooperative Science and Monitoring Initiative leverage resources and ensure that science activities are prioritized and well-coordinated in order to inform future actions such as fisheries management.

- Sixteen federal agencies
- All eight Great Lakes states
- At least 27 tribes and/or tribal organizations
- Over 70 local governments
- Approximately 45 institutions of higher learning
- Over 70 community organizations

Educating the next generation on the importance of the Great Lakes is vital to the future of the Lakes. Hundreds of educational institutions have already incorporated Great Lakes-specific material into their curricula, and many other educational efforts are underway to help students better understand aquatic ecosystems so that they will be able to make informed decisions as stewards of the Great Lakes.

Education specialists with the Great Lakes Sea Grant Network, supported by the GLRI, have established the Center for Great Lakes Literacy. The principal goal of the Center for Great Lakes Literacy is to develop a more scientifically literate and environmentally responsible citizenry through the incorporation of Great Lakes curriculum and stewardship activities in the classroom. The Center for Great Lakes Literacy hosts an annual Shipboard Science Workshop on the EPA's Great Lakes research vessel, the *R/V Lake Guardian*. In the summer of 2012, the workshop took place on Lake Huron. Fourteen teachers from across the Great Lakes basin worked alongside scientists and learned about the lake's biology, chemistry, and geology. The teachers have since taken this experience back to their classrooms and taught their students to better understand aquatic ecosystems, preparing them to make informed decisions as stewards of the Great Lakes.

Utilizing her experience from the Shipboard Science Workshop on the *R/V Lake Guardian*, one teacher in Wisconsin brought 140 sixth-graders out on Lake Superior to learn about the lake's water quality first-hand. This experience kicked off what will be a year-long, interdisciplinary study of Lake Superior for these students. [Photo credit: Stephanie Francis]

Planned Activities

GLRI Priorities

After receiving positive feedback from stakeholders on the three priorities established in FY 2012, the IATF will continue work on these priorities:

- Accelerate cleanups of AOCs in FY 2013 – 2014:
  - Ashtabula River (Ohio).
  - River Raisin (Michigan).
  - Sheboygan River (Wisconsin).
  - White Lake (Michigan).
  - Deer Lake (Michigan).
  - Manistique River (Michigan).
  - St. Clair River (Michigan).
  - St. Marys River (Michigan).
  - Waukegan Harbor (Illinois).

- Continue to prevent invasive species, such as Asian carp, from establishing self-sustaining populations in the Great Lakes in FY 2013.

- Reduce phosphorus runoff that contributes to harmful algal blooms, which threaten coastal communities' economic well-being and public health in three key watersheds in FY 2013:
  - Lower Fox River (Wisconsin).
  - Saginaw River (Michigan).
  - Maumee River (Ohio, Michigan, Indiana).

Alignment with Updated Great Lakes Water Quality Agreement

On September 7, 2012, Canada and the United States signed a newly amended Great Lakes Water Quality Agreement. First signed in 1972 and last amended in 1987, the GLWQA is a model of binational cooperation. The updated GLWQA facilitates United States and Canadian action on threats to Great Lakes water quality and includes measures to prevent ecological harm. New provisions address the nearshore environment, aquatic invasive species, habitat degradation, and the effects of climate change. The Agreement also supports continued work on existing threats to human health and the environment in the Great Lakes basin such as harmful algal blooms, toxic chemicals, and discharges from vessels. The updated GLWQA expands opportunities for public participation on Great Lakes issues and sets out the United States' and Canada's shared vision for a healthy and prosperous Great Lakes region.

The GLRI agencies are working to ensure that all of their efforts are integrated and aligned with the updated GLWQA.

SECTION V – ACCOUNTABILITY

In response to the President's call for improved transparency and fiscal stewardship, the federal GLRI partners established accountability mechanisms, management practices, and third-party oversight to effectively manage the GLRI.

Great Lakes Accountability System

The 2010 Appropriations Conference Report requires the EPA to develop a process that "*ensures monitoring and reporting on the progress of the Great Lakes Restoration Initiative*." As part of fulfilling that requirement, the EPA has worked with the IATF to develop and operate the Great Lakes Accountability System (GLAS). It functions as a clearinghouse for information on GLRI-funded projects. Primary recipients (*i.e*., organizations that receive GLRI awards directly from federal agencies) and subrecipients (*i.e*., organizations that have been delegated to report on GLRI projects by their primary recipients) report into the GLAS.

The GLRI agencies recognize the need to improve upon the initial version of the GLAS and have begun a process to identify and implement those improvements. As a first step, the agencies have posted additional GLRI project information of appropriate quality and consistency, which the public can access through an interactive map, at www.glri.us.

Consultation with EPA Science Advisory Board

Science is the foundation of the GLRI. To ensure that the GLRI has the best information on the most pressing ecological threats, the EPA charged its Science Advisory Board with establishing an independent panel to review the GLRI Action Plan. The SAB formed a panel of 15 independent scientific experts to review the Action Plan. The SAB held multiple public meetings and posted draft reports for comment before issuing its final report to the EPA in January 2012.

While suggesting ways to strengthen the scientific underpinnings of the GLRI, the panel concluded[5]:

> *The SAB supports the basic premise that enough is known about the issues confronting the Great Lakes, as well as the underlying causes and potential remedies, to implement initial remedial activities, , and agrees that the Action Plan identifies the important actions that should be undertaken. Although a transparent framework describing the scientific justification for the Action Plan is lacking, the SAB notes the Action Plan is*

[5] The final report and the official agency response can be found at: http://yosemite.epa.gov/sab/sabproduct.nsf/fedrgstr_activites/Review%20of%20GLRI%20Action%20Plan?OpenDocument

consistent, for the most part, with previous plans and strategies and reflects a continuation of collaborative planning in the region. This continuity in planning is good, but such consistency does not guarantee sufficiency. The SAB provides recommendations for improvement in a number of areas.

The IATF is actively considering the SAB's recommendations and efforts are underway to develop a draft adaptive science-based framework for Great Lakes restoration by spring of 2013.

SECTION VI – FINANCIAL REPORTING

From FY 2010 to FY 2012, the EPA has been appropriated approximately $1.073 billion in GLRI funds. The agencies that receive GLRI funds use multiple funding mechanisms, including interagency agreements, fund transfers, competitive grants, and capacity-building grants to states and tribes to support effective project implementation.

Great Lakes restoration projects can have implementation schedules that allow for project completion over the course of several years. Much of the funding has been directed toward on-the-ground restoration projects that have major expenditures during as many as three succeeding construction seasons. The agencies are making their best efforts to accelerate expenditures and results.[6] The GLRI agencies are working toward solutions that expedite work, obligations, and expenditures while assuring the sound management of funds. The EPA, for example, is taking steps to increase the Agency's emphasis on the importance of prompt and appropriate drawdowns of funding, including enhanced monitoring of award recipients, more contacts with award recipients by federal project officers, and holding recipients to work plan commitments. Other federal agencies have been asked to implement similar efforts for their own GLRI funding.

Table 1 and Chart 2 provide information on FY 2010, FY 2011, and FY 2012 GLRI funding by focus area. Tables 2 - 4 provide information on FY 2010, FY 2011, and FY 2012 GLRI funding by agency.

Table 1 – GLRI FY 2010 - FY 2012 Focus Area Allocations as of Oct. 10, 2012

Focus Area	FY 2010	FY 2011	FY 2012
Toxic Substances and Areas of Concern	$146,946,000	$100,400,000	$106,300,000
Invasive Species	$60,265,000	$57,500,000	$57,500,000
Nearshore Health and Nonpoint Source Pollution	$97,331,000	$49,250,000	$54,800,000
Habitat and Wildlife Protection and Restoration	$105,262,000	$63,000,000	$57,300,000
Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships	$65,196,000	$29,250,000	$23,600,000
TOTAL	$475,000,000	$299,400,000	$299,500,000[7]

[6] EPA provides Congress and the Administration with quarterly financial updates on obligation and expenditure rates under the GLRI.

[7] Rounded from the actual FY 2012 GLRI appropriation of$299,520,000.

Chart 2 – GLRI FY 2010 - FY 2012 Focus Area Allocations as of Oct. 10, 2012

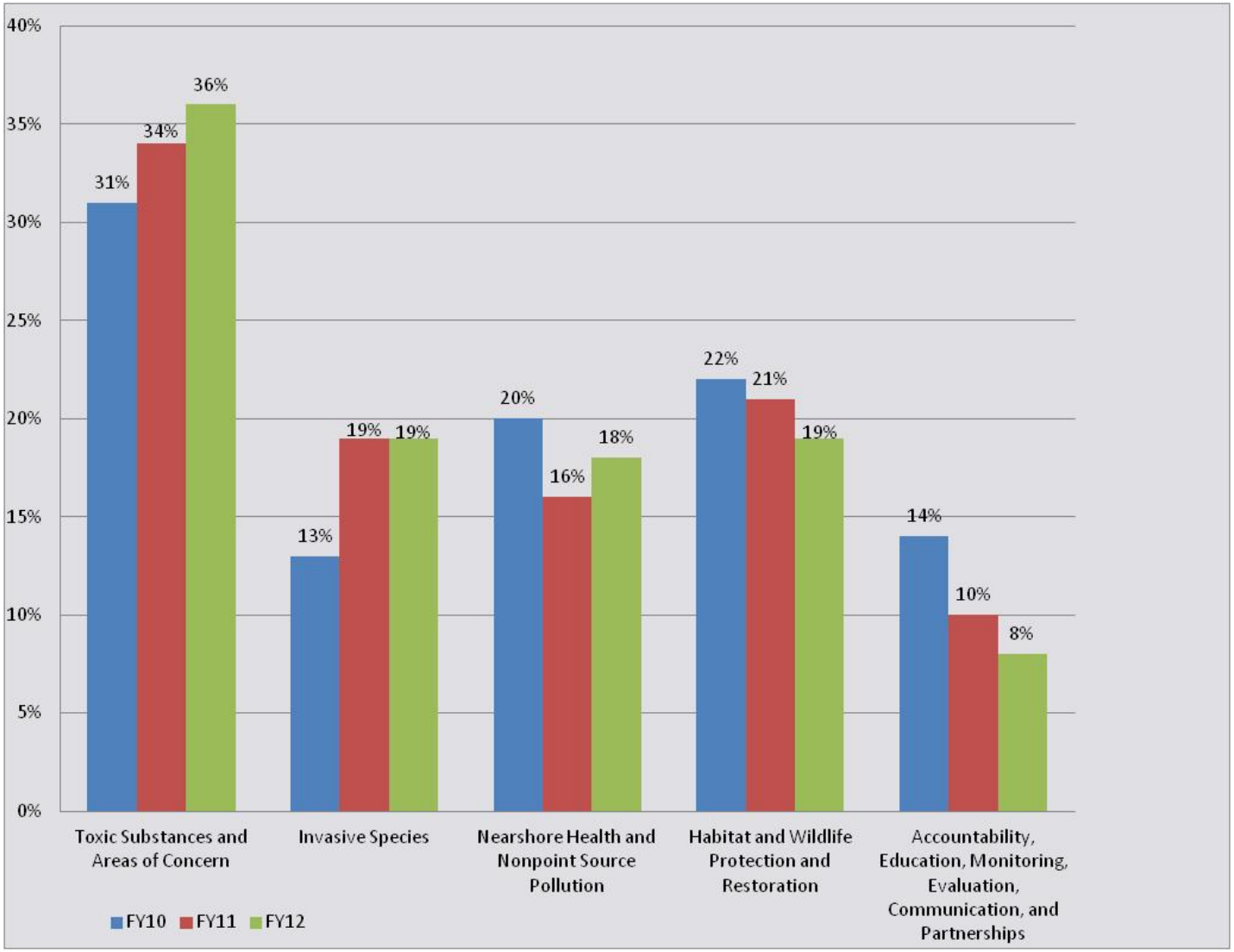


Table 2 – GLRI FY 2010 Agency Funding as of Oct. 10, 2012

Agency	FY 2010 President's Budget	FY 2010 Actual Allocation[8]	FY 2010 Total Obligations
DHS - USCG	$6,850,000	$6,350,000	$6,350,000
DOC - NOAA	$32,170,000	$30,536,774	$30,536,774
DOD - USACE	$45,896,000	$49,586,678	$49,455,028
DOI - BIA	$3,000,000	$3,416,000	$3,416,000
DOI - NPS	$10,450,000	$10,505,000	$10,479,525
DOI - USFWS	$57,501,000	$69,348,690	$69,348,690
DOI - USGS	$14,980,000	$23,717,195	$23,717,195
DOT - FHWA	$2,500,000	$2,500,000	$2,500,000
DOT - MARAD	$3,000,000	$4,000,000	$4,000,000
HHS - ATSDR	$5,500,000	$5,500,000	$5,500,000
USDA - APHIS	$3,000,000	$1,884,768	$1,884,727
USDA - NRCS	$33,642,000	$34,092,000	$34,092,000
USDA - USFS	$15,058,000	$15,458,000	$15,458,000
Subtotal	$233,547,000	$256,895,105	$256,737,939
EPA, DOS-GLFC, DOS-IJC, and Misc. IAs	$241,453,000	$218,104,895[9]	$217,743,549
FY 2010 GLRI Total	$475,000,000	$475,000,000	$474,481,488

[8] Federal agencies work collaboratively to ensure that GLRI funding is used for the highest priority Great Lakes projects. The 'Actual Allocations' reflect adjustments made to address emerging priorities (e.g., keep Asian carp from becoming established in the Great Lakes) and to maximize environmental outcomes.

[9] Components are: (i) grants totaling $164,740,459 (including grants to the Great Lakes Fishery Commission and the International Joint Commission, organizations identified in the FY 2010 President's Budget); (ii) GLNPO support costs (payroll, travel, general expenses, and working capital) totaling $13,154,350; (iii) contracts and miscellaneous interagency agreements (each less than $1 million) totaling $40,208,880; and (iv) $1,206 of de-obligated funds.

Table 3 – GLRI FY 2011 Agency Funding as of Oct. 10, 2012

Agency	FY 2011 President's Budget	FY 2011 Actual Allocation[10]	FY 2011 Total Obligations
DHS-USCG	$2,216,867	$2,724,700	$2,724,700
DOC-NOAA	$15,426,627	$18,289,090	$18,289,090
DOD-USACE	$23,615,181	$31,424,680	$31,424,680
DOI-BIA	$2,771,084	$6,316,032	$6,316,032
DOI-NPS	$4,659,855	$4,861,269	$4,861,269
DOI-USFWS	$32,488,747	$48,690,188	$48,690,188
DOI-USGS	$10,282,386	$14,531,602	$14,531,602
DOT-FHWA	$1,385,542	$1,218,000	$1,218,000
DOT-MARAD	$2,632,530	$2,694,600	$2,694,600
HHS-ATSDR	$3,048,193	$2,195,661	$2,195,661
USDA-APHIS	$1,662,651	$636,724	$636,724
USDA-NRCS	$18,312,434	$16,787,976	$16,787,976
USDA-USFS	$8,160,843	$8,889,772	$8,889,772
Subtotal:	$126,662,940	$159,260,294	$159,260,294
EPA, DOS-GLFC, DOS-IJC, and Misc. IAs	$173,337,060	$140,139,706[11]	$140,064,421
FY 2011 GLRI Total	$300,000,000	$299,400,000	$299,324,715

[10] Federal agencies work collaboratively to ensure that GLRI funding is used for the highest priority Great Lakes projects. The 'Actual Allocations' reflect adjustments made to address emerging priorities (e.g., keep Asian carp from becoming established in the Great Lakes) and to maximize environmental outcomes.

[11] Components are: (i) grants totaling $56,384,782 (including funding for the Great Lakes Fishery Commission and the International Joint Commission, organizations identified in the FY 2011 President's Budget); (ii) GLNPO support costs (payroll, travel, general expenses, and working capital) totaling $13,646,692; and (iii) contracts and miscellaneous interagency agreements (each less than $1 million) totaling $70,108,231.

Table 4 – GLRI FY 2012 Agency Funding as of Oct. 10, 2012

Agency	FY 2012 Initial Allocation[12]	FY 2012 Actual Allocation[13]	FY 2012 Total Obligations
DHS-USCG	$2,700,000	$2,710,000	$2,710,000
DOC-NOAA	$13,300,000	$15,618,223	$15,618,223
DOD-USACE	$44,000,000	$34,259,694	$34,159,694
DOI-BIA	$4,200,000	$4,718,840	$4,718,840
DOI-NPS	$3,400,000	$3,369,509	$3,369,509
DOI-USFWS	$44,600,000	$44,651,309	$43,631,309
DOI-USGS	$10,700,000	$12,848,361	$12,431,961
DOT-FHWA	$1,200,000	$1,221,000	$1,221,000
DOT-MARAD	$2,400,000	$2,446,927	$2,446,927
HHS-ATSDR	$2,200,000	$2,200,000	$2,200,000
USDA-APHIS	$1,100,000	$1,134,000	$1,134,000
USDA-NRCS	$24,200,000	$24,185,426	$24,185,426
USDA-USFS	$6,700,000	$6,718,080	$6,718,080
Subtotal:	$160,700,000	$156,081,369	$154,544,969
EPA, DOS-GLFC, DOS-IJC, and Misc. IAs	$138,820,000	$143,438,631[14]	$119,358,456
FY 2012 GLRI Total	$299,520,000	$299,520,000	$273,903,425

[12] These figures are from the FY 2013 President's Budget. The FY 2012 President's Budget did not identify proposed agency funding levels.

[13] Federal agencies work collaboratively to ensure that GLRI funding is used for the highest priority Great Lakes projects. The 'Actual Allocations' reflect adjustments made to address emerging priorities (e.g., keep Asian carp from becoming established in the Great Lakes) and to maximize environmental outcomes.

[14] Components are: (i) grants totaling $50,502,000 (including funding for the Great Lakes Fishery Commission and the International Joint Commission, organizations identified in the President's Budget); (ii) GLNPO support costs (payroll, travel, general expenses, and working capital) totaling $13,539,600; and (iii) contracts and miscellaneous interagency agreements (each less than $1 million) totaling $79,397,031.

APPENDIX A – GLRI ACTION PLAN MEASURES OF PROGRESS

The GLRI is showing real progress in achieving the goals, objectives, and Measures of Progress in the Action Plan. Efforts to prevent invasive species from entering the lakes, rebuild habitat, clean up toxics and toxic hot spots, reduce polluted runoff, and track progress are succeeding. This success will carry forward as the full ecological benefits of individual projects will continue into the future.

Of the 28 Action Plan Measures of Progress, 15 are also measures under the Government Performance and Results Act, which has a process to adjust performance targets collaboratively with the Office of Management and Budget. Any adjustments resulting from this process are indicated in the EPA's annual Performance Plan, Performance Reports, and Congressional Justification; they are indicated below as updates to the targets in the Action Plan. The remaining 13 Action Plan measures have not been adjusted and are measured against the original targets in the Action Plan. Explanations give further detail on the feasibility of meeting these original targets in light of any additional information now available or funding delays affecting the field season.

Measures of Progress and performance targets to characterize outcomes and outputs were developed using best professional judgment. As data continue to become available, it may be necessary to revise Measures of Progress and performance targets to accurately portray the performance of the GLRI. Approximately 87 percent (13/15) of GPRA measures were met for FY 2012. Factoring in the additional Action Plan measures, approximately 64 percent (18/28) of all GLRI measures were met for FY 2012. Data are unavailable at this time to report against four Measures of Progress. Of the six Measures of Progress that were not met, five are measured against original Action Plan targets for which adjustments may be appropriate (4.1, 4.2, 4.4, 4.8, and 4.9).

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
1.1 Number of Areas of Concern in the Great Lakes where all management actions necessary for delisting have been implemented (cumulative). [1] *Also a measure under GPRA	Baseline: 1 FY10: 1 FY11: 1 FY12: 3 FY13: 4	FY12: 2 FY11: 2	Oswego River/Harbor AOC (baseline) & Presque Isle Bay AOC (FY11) Unexpected field conditions occurred at White Lake AOC (Michigan), Sheboygan River AOC (Wisconsin), River Raisin AOC (Michigan), and Ashtabula River AOC (Ohio) that caused slight project delays. We expect Presque Isle Bay AOC will be formally delisted in FY13, after the completion of all management actions in FY11.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
1.2 Area of Concern Beneficial Use Impairments removed (cumulative). [1] *Also a measure under GPRA	Baseline: 12[2] FY10: 20 FY11: 26 FY12: 33[3] FY13: 41	FY12: 33 FY11: 26	FY12: 7 **BUIs:** 'Restrictions on Drinking Water' BUI at Grand Calumet River AOC (5/5/12); 'Aesthetics' BUI at Kalamazoo River AOC (5/15/12), River Raisin AOC (5/15/12), and St. Clair River AOC (7/2/12); 'Eutrophication' BUI at White Lake AOC (4/24/12); 'Added Costs to Agriculture or Industry' BUI at St. Clair River AOC (6/5/12); 'Degradation of Benthos' BUI at White Lake AOC (6/5/12). FY11: 12 **BUIs:** 'Restrictions on Drinking Water' BUI at Rochester Embayment AOC (11/3/10) and Detroit River AOC (7/9/11); 'Beach Closing' BUI at Kalamazoo River AOC (3/3/11), Lower Menominee AOC (3/3/11), and Waukegan Harbor AOC (9/28/11); 'Restrictions on Dredging' BUI at St. Clair River AOC (3/3/11), Muskegon Lake AOC (9/26/11), and White Lake AOC (9/30/11); 'Added Costs to Agriculture or Industry' BUI at Rochester Embayment AOC (7/9/11) and Grand Calumet River AOC (9/30/11); 'Eutrophication' BUI at Deer Lake AOC (9/26/11); and 'Bird or Animal Deformities' BUI at Deer Lake AOC (9/26/11). FY10: 2 **BUIs:** Tainting of Fish and Wildlife' BUI at St. Clair River AOC (11/17/09) and 'Beach Closing' BUI at Manistique River AOC (5/5/10). The original baseline has been corrected to indicate 12 BUIs. This brings the cumulative total to 33 BUIs removed.
1.3 Beneficial Use Impairment delisting project starts at Areas of Concern (cumulative).	Baseline: 0 FY10: 60 FY11: 80 FY12: 110 FY13: 140	FY 12: 151 FY11: 88	BUI removal projects are being implemented throughout the Great Lakes basin in every state with an Area of Concern remaining (Illinois, Indiana, Ohio, Michigan, Minnesota, New York, and Wisconsin).

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
1.4 Cubic yards (in millions) of contaminated sediment remediated in the Great Lakes (cumulative). [1] *Also a measure under GPRA	Baseline: 5.5 FY10: 6.3 FY11: 8.0[3] FY12: 9.1[3] FY13: 10.3[3]	FY12: 9.7 FY11: 8.4	From 1997 through calendar year 2011, the EPA and its partners have remediated approximately 9.7 million cubic yards of contaminated sediment from the Great Lakes basin. In calendar year 2011 (for FY12 reporting), approximately 1.3 million cubic yards were remediated through various federal and state authorities: <u>Great Lakes Legacy Act</u> - West Branch Grand Calumet River Phase 1; Grand Calumet River AOC (Indiana); 69,189 cy - West Branch Grand Calumet River Phase 2; Grand Calumet River AOC (Indiana); 140,003 cy - Lincoln Park Phase 1; Milwaukee Estuary AOC (Wisconsin); 93,483 cy - Division Street Outfall; Muskegon Lake AOC (Michigan); 43,459 cy - St. Marys River MGP Site; St. Marys River AOC (Michigan); 19,566 cy <u>U.S. Army Corps of Engineers Strategic Navigation Dredging</u> - Buffalo River; Buffalo River AOC (New York); 508,000 cy - River Raisin; River Raisin AOC (Michigan); 68,751 cy <u>Superfund</u> - Sheboygan River; Sheboygan River AOC (Wisconsin); 44,978 cy <u>Superfund/Natural Resource Damages</u> - Fox River; Lower Green Bay and Fox River AOC(Wisconsin); 347,467 cy <u>WDNR/U.S. EPA Toxic Substances Control Act</u> Hayton Area Remediation Project; non-AOC (Wisconsin); 18,300 cy
1.5 Pollution (in million pounds) collected through prevention and waste minimization projects in the Great Lakes basin (cumulative). [1]	Baseline: 0 FY10: 10 FY11: 15 FY12: 25 FY13: 35	FY12: 394.9 FY11: 182.5	All states in the Great Lakes basin (with the exception of Ohio) have now passed e-waste recycling laws that require manufacturers to accept used electronic equipment. The passage of these laws (after the development of the Action Plan) has resulted in achievements for this measure far exceeding targets. As a result, we expect to continue to greatly exceed targets in future years. Additionally, the Action Plan Objectives related to this measure have been met.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
1.6 Cumulative percentage decline for the long term trend in average concentrations of PCBs in Great Lakes fish. [1] *Also a measure under GPRA	Baseline: 0% FY10: 34% FY11: 37% FY12: 40% FY13: 43%	FY12: 42.8% FY11: 44%	The cumulative percentage decline for the long term trend in average concentration of total PCBs in Great Lakes whole fish, using the year 2000 as a baseline for each Great Lake is: Lake Superior: 36.9% Lake Michigan: 57.7% Lake Huron: 40.5% Lake Erie: 39.3% Lake Ontario: 37.5% Percent decline based on exponential trend. Annual percent declines are not appropriate because each Great Lake is unique with distinct growth rates, food webs, and chemical integrity. Even/odd year data by Lake are not comparable over a 2 year period. Additional information is available at: http://www.epa.gov/glnpo/monitoring/fish/
2.1 Rate of nonnative species newly detected in the Great Lakes ecosystem (species/year). [1] *Also a measure under GPRA	Baseline: 1.0[2] FY10: 1.3 FY11: 1.0[3] FY12: 0.8[3] FY13: 0.8[3]	FY12: 0.77 FY11: 0.83	No new aquatic species were detected in 2011-2012. Ten species have been detected over the 13 year period (2000 – 2012) resulting in the invasion rate of 0.77 species/year. Note that NOAA scientists have since reclassified the detection dates of 3 species based on a reassessment and categorization of available data. This alters the pre-GLRI baseline rate of invasion from 1.3 species per year (13 species from 2000-2009) to 1.0 species per year (10 species from 2000-2009).
2.2 Acres managed for populations of invasive species controlled to a target level (cumulative). *Also a measure under GPRA	Baseline: 0 FY10: 1,000 FY11: 1,500 FY12: 15,500[3] FY13: 34,000[3]	FY12: 31,474 FY11: 13,045	This result is higher than anticipated. The unprecedented level of funding for invasive species work capitalized on a backlog of projects and appears to have achieved economies of scale due to significantly larger projects becoming fully operational this field season. Additionally, management efforts that involved comprehensive surveillance of large acreages with targeted treatment follow-up came to fruition this field season. Invasive species for which acreage is managed include: Japanese knotweed, lyme grass, invasive strains of *Phragmites*, purple loosestrife, and spotted knapweed, among others.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
2.3 Number of multi-agency plans established, mock exercises to practice rapid responses carried out under those plans, and/or actual rapid response actions (cumulative). *Also a measure under GPRA	Baseline: 0 FY10: 4 FY11: 4[3] FY12: 12[3] FY13: 26[3]	FY12: 23 FY11: 8	Plans have been updated for four states, 15 rapid response actions have been conducted, and four mock exercises to practice rapid responses were performed.
2.4 Number of recreation and resource users (in millions) contacted on best practices that prevent the introduction and spread of invasive species (cumulative).	Baseline: 0 FY10: 1 FY11: 1.75 FY12: 4.75 FY13: 7.25	FY12: 230.5 FY11: 129.5	This overarching measure was developed to track overall progress toward the innovative work of improving invasive species education/outreach, which is still in the early stages of development for addressing most invasive species vectors. Many of these efforts are funded through competitive grant offerings and include a combination of the best-designed projects that maximize both the breadth of public reached (typically non-interactive outreach such as billboards, radio, TV, etc.) and also directly target the more active resource users. The number of contacts is derived from recipient reports based on industry standards for applicable media. Results for this measure have greatly exceeded targets because of a number of successful projects that have employed non-interactive techniques such as billboards, radio, and TV, which have reached wide numbers of potential recreation and resource users. As a result, we expect to continue to greatly exceed targets in future years.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
3.1 Five year average annual loadings of soluble reactive phosphorus from tributaries draining targeted watersheds (percent reduction). [1] *Also a measure under GPRA	Baseline: N/A FY10: 0% FY11: 0%[3] FY12: 0.5%[3] FY13: N/A[3]	FY12: Data Not Available FY11: Data Not Available	Data do not yet exist – but are being developed – to determine whether targets are being met. Improved phosphorus data are now being collected in all five targeted watersheds (Fox, Saginaw, Maumee, St. Louis, and Genesee) to better estimate annual average loadings of soluble reactive phosphorus (SRP). However, the current measure tracks changes in the five-year average annual loadings of SRP, and sufficient historical data do not currently exist to allow for calculation of 5-year averages through the 2010 water year for the Saginaw, Genesee, and St. Louis Rivers. Some historical data reflecting five years or more of sampling do exist for the Fox and Maumee Rivers, allowing for loads to be estimated. While data are available, the assessment of these 5-year average annual loadings illustrate the inherent problems with tracking changes to SRP loadings from tributaries, given the yearly variability of rainfall and other climatic factors; therefore, results of this measure may not indicate a trend from year to year. For example, when comparing the 2003-2007 baseline from the Maumee River to the 5-year rolling averages from 2005-2009 and 2006-2010, SRP loadings changed from a 3.8% increase to a 3.4% reduction. Similarly, when comparing the 2003-2007 baseline from the Fox River to the 5-year rolling averages from 2004-2008 and 2005-2009, SRP loadings changed from a 3.6% increase to a 15.8% reduction. Because of the reasons identified above, we do not anticipate being able to report on this measure in future years. A revised phosphorus measure will be developed for the 2015 Action plan and reporting thereafter.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
3.2 Percent of days of the beach season that the Great Lakes beaches monitored by state beach safety programs are open and safe for swimming.[1] [Original Action Plan language: 'Percentage of beaches meeting bacteria standards 95% or more of beach days.'] *Also a measure under GPRA	Baseline: 92%[3] FY11: N/A[3] FY12: 90%[3] FY13: 90%[3]	FY12: 93.5% FY11: Not Applicable	The measure language, beginning with FY12 reporting, has been updated from the original Action Plan language to better capture the health of monitored beaches, and is consistent with the national coastal and Great Lakes beach measure. FY12 FY11 Illinois 90.2% 87.7% Indiana 85.4% 82.5% Michigan 96.8% 96.8% Minnesota 96.2% 98.9% Ohio 82.4% 82.3% Wisconsin 94.4% 92.2% Pennsylvania 98.5% 98.9% New York 91.1% 88.5% Basin-wide 93.5% 92% To calculate, the number of beach days not under an action (monitored beaches) is divided by the number of swim season beach days (monitored beaches). Data is only available and reported in the year after it is collected. The states' 2011 data (used for FY12 reporting) can be accessed at: http://water.epa.gov/type/oceb/beaches/2011_season.cfm
3.3 Extent (sq. miles) of Great Lakes Harmful Algal Blooms (percent reduction). [1]	Baseline: N/A FY10: 0% FY11: 4% FY12: 7% FY13: 8%	FY12: Data Not Available FY11: Data Not Available	At the time this metric was developed, there was no consistently applied methodology in place for providing the necessary data. An EPA-funded project is working to generate a baseline and 2008-2012 inventory of the extent and duration of harmful algal blooms using satellite imagery and other data including field information, tested algorithms, and agency collaborations. This project will also document and share standard operating procedures so that a consistently applied methodology can be used to continue harmful algal bloom extent and duration mapping after the project is completed. For FY12 reporting, preliminary data has been developed for the Western Basin of Lake Erie; we expect final data for Lake Erie, Green Bay, and Saginaw Bay to be available for FY13 reporting.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
3.4 Annual number of days U.S. Great Lakes beaches are closed or posted due to nuisance algae. [1]	Baseline: 200 FY10: 200 (0% imp.) FY11: 192 (4% imp.) FY12: 186 (7% imp.) FY13: 184 (8% imp.)	FY12: Data Not Available FY11: Data Not Available	At the time this metric was developed, there was no formal mechanism in place for reporting beach closures or advisories issued due to the presence of nuisance algae. Efforts to develop a formal mechanism resulted in a voluntary reporting field in the national monitoring database which has not resulted in sufficient data. Because Beach Act requirements only specify monitoring and reporting on bacterial levels, it has not been possible to include a mandatory field concerning nuisance algae in the national monitoring database. We expect this limitation to continue, and we do not anticipate being able to report on this measure in future years.
3.5 Annual volume of sediment deposition in defined harbor areas (Toledo Harbor) in targeted watersheds (millions of cubic yards). [1]	Baseline: 1 FY10: 1 (0% imp.) FY11: 0.99 (1% imp.) FY12: 0.99 (1% imp.) FY13: 0.98 (2% imp.)	FY12: Data Not Available FY11: Data Not Available	There are inherent problems with tracking annual changes to this level of precision, given the yearly variability of sediment loads due to rainfall and other climatic factors. We did not fully recognize the difficulty in addressing these factors at the time this measure was developed.
3.6 Acres (in thousands) in Great Lakes watershed with USDA conservation practices implemented to reduce erosion, nutrients and/or pesticide loading under Farm Bill Programs. [1] *Also a measure under GPRA	Baseline: 165 FY10: 168.3 (2% imp.) FY11: 168.3 (2% imp.)[3] FY12: 178.2 (8% imp.)[3] FY13: 198 (20% imp.)[3]	FY12: 279.7 (70% imp.) FY11: 268.1 (62% Imp.)	In FY12, 279,706 acres in the Great Lakes watershed were put into USDA conservation practices to reduce erosion, nutrients and/or pesticide loadings under Farm Bill programs. This represents a 70% increase over the baseline of 165,000 acres (based on FY 2008 data). The significant increase in FY12 is a combined result of greater funding (base USDA programs and GLRI) and increased participation in NRCS programs. It is important to note that the acres tracked in this measure are not cumulative, rather, this measure tracks new conservation practices implemented in a given fiscal year. Therefore, the percent increase will vary considerably from year to year due to funding, total acres available for conservation, and the difficulty of implementing conservation practices.
4.1 Miles of rivers reopened for fish passage (cumulative).	Baseline: 0 FY10: 1,000 FY11: 1,500 FY12: 2,500 FY13: 3,500	FY12: 890 FY11: 315	Projects working toward this measure are under way. These projects often include a design phase prior to implementation. The EPA did not fully factor the design phase into initial development of targets for this measure, which has resulted in a delay in achieving targets. For example, a dam removal project will not claim river miles reopened until deconstruction of the dam is fully complete, which will often not occur in the first phase of the project. We expect to continue to be delayed in achieving the targets in the Action Plan.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
4.2 Number of fish passage barriers removed or bypassed (cumulative).	Baseline: 0 FY10: 100 FY11: 150 FY12: 250 FY13: 350	FY12: 162 FY11: 31	Projects working toward this measure are under way. These projects often include a design phase prior to implementation. The EPA did not fully factor the design phase into initial development of targets for this measure, which has resulted in a delay in achieving targets. For example, a dam removal project will not claim removal of a fish passage barrier until deconstruction of the dam is fully complete, which will often not occur in the first phase of the project. We expect to continue to be delayed in achieving the targets in the Action Plan.
4.3 Number of species delisted due to recovery (cumulative). [1] *Also a measure under GPRA	Baseline: 0 FY10: 0 FY11: 0[3] FY12: 1 FY13: 2[3]	FY12: 1 FY11: 1	Lake Erie water snake (FY11) Achieving the FY13 target is dependent on recovery of the federally threatened Pitcher's Thistle in the Great Lakes (targeted for delisting in the GLRI Action Plan). Pitcher's Thistle recovery is dependent on controlling a recently discovered pest (a weevil, *Larinus planus*) which feeds on the seeds of the Pitcher's Thistle. Research is currently underway to assess the management and control of this new threat.
4.4 Percent of recovery actions implemented for priority listed species (cumulative). [1]	Baseline: 0 FY10: 16% (68/414) FY11: 33% (138/414) FY12: 51% (211/414) FY13: 67% (277/414)	FY12: 22% (92/414) FY11: 15.7% (65/414)	To protect threatened, endangered, and candidate species, the USFWS, in collaboration with partners, implements recovery actions identified in species-specific recovery plans. Recovery actions include a range of conservation tools, including habitat protection and acquisition, removing introduced animal predators or invasive plants, conducting surveys, monitoring individual populations, and breeding species in captivity and releasing them into their historic range. While over 90 recovery actions have been completed to date, we have not executed the anticipated number of recovery actions (landowner agreements, in this case) for the Pitcher's Thistle plant. Each landowner agreement executed for a listed species counts as an implemented, ongoing, or completed recovery action toward this metric. The availability of landowner agreements fluctuate annually and may not be available in a given year for a particular species due to timing, location, etc. For these reasons, we expect to continue to be delayed in achieving the targets in the Action Plan.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
4.5 Percent of populations of native aquatic non-threatened and endangered species self-sustaining in the wild (cumulative). [1] *Also a measure under GPRA	Baseline: 27% (39/147) FY10: 33% (48/147) FY11: 33% (48/147)[3] FY12: 33% (48/147)[3] FY13: 34% (50/147)[3]	FY12: 33% (48/147) FY11: 31% (46/147)	Fish passage and habitat improvement projects completed on the Shiawassee and Cass Rivers in the Saginaw River watershed, Michigan, have largely contributed to self- sustaining walleye populations in Saginaw Bay. Actions have been taken which we believe will increase the percentage of populations self-sustaining in the wild; however, this environmental indicator will require additional time for the impacts to affect species populations. Populations are making significant progress, but the full impacts of our efforts will not be fully known for several years.
4.6 Number of acres of wetlands and wetland-associated uplands protected, restored and enhanced (cumulative). *Also a measure under GPRA	Baseline: 0 FY10: 5,000 FY11: 5,000[3] FY12: 11,000[3] FY13: 68,000[3]	FY12: 65,640 FY11: 9,624	The EPA collaborated with and funded the BIA, USFWS, NPS, USFS, NOAA, and USACE to meet this measure. The agencies protected, restored, or enhanced these acres across the Great Lakes basin. Some of the most significant completions received funding from the BIA for restoring wild rice and other cultural wetland resources across the basin. This result is higher than anticipated. The unprecedented level of funding capitalized on a backlog of projects and appears to have achieved economies of scale due to significantly larger projects.
4.7 Number of acres of coastal, upland, and island habitats protected, restored and enhanced (cumulative). *Also a measure under GPRA	Baseline: 0 FY10: 15,000 FY11: 15,000[3] FY12: 15,000[3] FY13: 33,000[3]	FY12: 28,030 FY11: 12,103	The EPA collaborated with and funded the BIA, USFWS, NPS, USFS, NOAA, and USACE to meet this measure. The agencies protected, restored, or enhanced these acres across the Great Lakes basin. This result is higher than anticipated. The unprecedented level of funding capitalized on a backlog of projects and appears to have achieved economies of scale due to significantly larger projects.
4.8 Percent of U.S. coastal Great Lakes wetlands assessed (cumulative).	Baseline: 0% FY10: 20% FY11: 40% FY12: 60% FY13: 80%	FY12: 40% FY11: 19.6%	A previous collaborative effort between the U.S. and Canada under the Great Lakes Wetlands Consortium yielded a basin-wide digital coastal wetland inventory of all the Great Lakes coastal wetlands classified using the Great Lakes Wetlands Consortium classification scheme. These 2,768 digital sites were reviewed for wetland assessment site selection, and certain sites were rejected based on feasible size and characteristic criteria, resulting in 628 U.S. sites currently scheduled for assessment. These sites will statistically represent all Great Lakes coastal wetlands. In FY11 and FY12, approximately 250/628 (39.8%) were assessed. The delay in receiving FY10 funds has put us a year behind schedule in achieving our targets; as a result, we expect to achieve 100% assessed in FY15 rather than FY14.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
4.9 Number of habitat-related Beneficial Use Impairments removed from the 27 U.S. Areas Of Concern so impaired (cumulative). [1]	Baseline: 3[2] FY10: 9 FY11: 12 FY12: 18 FY13: 24	FY12: 3 FY11: 3	Significant actions and improvements are under way in removing habitat-related BUIs from AOCs across the basin. There are 49 habitat-related BUIs remaining at 27 AOCs. The assessments required to verify these improved conditions generally take years to complete before BUIs can be removed. We did not fully recognize this delay at the time the targets were established. Additionally, sediment remediation may need to occur on site before habitat restoration work begins, which can create a habitat restoration time lag at certain AOCs. We expect to continue progress in removing BUIs and delisting AOCs. The baseline for this measure has been adjusted to three habitat-related BUIs removed at two AOCs. We expect the reasons identified above to affect our ability to meet out-year targets for this measure (habitat-related BUIs).
5.1 Improvement in the overall aquatic ecosystem health of the Great Lakes using the Great Lakes 40-point scale. [1] *Also a measure under GPRA	Baseline: 20 FY10: 23 FY11: 23.4 FY12: 21.9[3] FY13: 23.4[3]	FY12: 23.9 FY11: 21.9	The increase in the Great Lakes Index score to 23.9 is a result of an adjustment to one of the eight index components – beach closures. In FY11, the index decreased in value primarily due to a more rigorous standard of beach closure reporting by the states that did not necessarily indicate deteriorating conditions in the Great Lakes. In FY12, the index has increased in value primarily to adjust for this change. The beach closure component of the index has been revised to be consistent with the national beach program measure and the revised Great Lakes beach program measure under the GLRI Action Plan (measure 3.2, above). This revision more closely reflects impacts to human health and the new standard of reporting by the states. As reported in FY12, 93.5% of days of the beach season that the Great Lakes beaches monitored by state beach safety programs were open and safe for swimming.
5.2 Number of priority LaMP projects that are completed (cumulative).	Baseline: 0 FY10: 10 FY11: 12 FY12: 15 FY13: 18	FY12: 17 FY11: 16	Lakewide Management Plans continue to serve a critical role in protecting and restoring the Great Lakes ecosystem. Seventeen priority LaMP projects were completed in FY12. Some of these projects included completion of the Lake Superior Chemical Milestones Report, development of a Lake Erie LaMP Forum website, Green Marina projects in Lake Michigan, and a plankton assessment of the St. Lawrence River.

Action Plan Measure of Progress	Performance Targets	Results	Explanation / Additional Information
5.3 Number of educational institutions incorporating new or existing Great Lakes protection and stewardship criteria into their broader environment education curricula (cumulative).	Baseline: 0 FY10: 0 FY11: 2 FY12: 6 FY13: 10	FY12: 351 FY11: 52	Progress has greatly exceeded targets for this measure. This success is attributed to a relatively small number of very successful projects such as the Shipboard Science Workshop described in the textbox for Focus Area 5 under Section IV Program Accomplishments and Planned Activities. We expect to continue to greatly exceed targets in future years as these projects continue. We now project to achieve over 500 institutions by 2015.

[1]Results from this Action Plan measure are achieved through GLRI funding as well as other non-GLRI federal and/or state funding.

[2] Original baseline from the Action Plan has been updated.

[3] This target has been adjusted from the Action Plan. This Measure of Progress in the Action Plan is also a measure under the GPRA.

APPENDIX B – ORGANIZATIONS RECEIVING GLRI FUNDING

The following is a full list of partner organizations and stakeholders receiving funding to protect and restore the Great Lakes (http://glri.us). In addition, many more entities identified projects to fulfill the Action Plan, but these projects could not be supported with available funding.

GLRI Funding Recipients

1854 Treaty Authority (Inter-Tribal Agency)

Alger Conservation District

Alliance for the Great Lakes

Alliance of Rouge Communities

Bad River Band of the Lake Superior Tribe of Chippewa Indians of Wisconsin

Bad River Watershed Association

Bay Mills Indian Community, Michigan

Bayfield County Land and Water Conservation Department

Bay-Lake Regional Planning Commission

Bird Studies Canada

Bois Forte Band (Nett Lake) of Minnesota Chippewa Tribe, Minnesota

Brown County

Buffalo Audubon Society

Buffalo Niagara Riverkeeper

Buffalo State College

Calhoun Soil Conservation District

Cedar Tree Institute

Center for Transformation of Waste Technology

Central Michigan University

Chagrin River Watershed Partners Inc.

Chicago Park District

City of Chicago

City of Hancock

City of Ishpeming

City of Kenosha

City of Macomb Public Works

City of Marquette

City of Marysville

City of Monroe

City of Port Huron

City of Rochester

City of Rochester Hills

City of Toledo

City of Trenton

City of Troy

City of Whitehall

Clarkson University

Clean and Healthy New York Inc.

Cleveland Metroparks

Cleveland Museum of Natural History

Cleveland-Cuyahoga County Port Authority

Clinton River Watershed Council

Columbus Zoo

Community Action Duluth

Community Foundation of St. Clair County

Consensus Lake Association

Conservancy for Cuyahoga Valley National Park

Conservation Resource Alliance

Conservation Technology Information Center

Cornell University

Cuyahoga County Board of Health

Cuyahoga County Engineer's Office

Cuyahoga Soil and Water Conservation District

Delta Institute

Department of Agriculture-Animal and Plant Health Inspection Service

Department of Agriculture-Cooperative State Research, Education, and Extension Service

Department of Agriculture-Natural Resources Conservation Service

Department of Agriculture-U.S. Forest Service

Department of Commerce-National Oceanic and Atmospheric Administration

Department of Defense-U.S. Army Corps of Engineers

Department of Health and Human Services-Agency for Toxic Substances and Disease Registry

Department of Homeland Security-U.S. Coast Guard

Department of Interior-Bureau of Indian Affairs

Department of Interior-National Park Service

Department of Interior-U.S. Fish and Wildlife Service

Department of Interior-U.S. Geological Survey

Department of Transportation-Federal Highway Administration

Department of Transportation-Maritime Administration

Detroit Zoo

Door County Soil and Water Conservation Department

Downriver Community Conference

Ducks Unlimited Inc.

Environment Canada

Environmental Solutions & Innovations Inc.

Erie County

Erie County Conservation District

Erie-Western Pennsylvania Port Authority

Finger Lakes Association

Fond du Lac Band of Minnesota Chippewa Tribe, Minnesota

Forest County Potawatomi Community, Wisconsin

Forest Preserve District of Cook County

Friends of the Detroit River

Friends of the Forest Preserves

Girard Township

Grand Portage Band of Minnesota Chippewa Tribe, Minnesota

Grand Traverse Band of Ottawa and Chippewa Indians, Michigan

Grand Traverse Bay Watershed Initiative

Grand Traverse Conservation District

Grand Traverse Regional Land Conservancy

Grand Valley State University

Great Lakes Commission

Great Lakes Fishery Commission

Great Lakes Indian Fish and Wildlife Commission (Inter-Tribal Agency)

Great Lakes Observing System Regional Association

Great Lakes United

Great Lakes WATER Institute, University of Wisconsin-Milwaukee

Groundwork Milwaukee Inc.

Health Research Inc.

Ho-Chunk Nation of Wisconsin

Hope College

Houghton Keweenaw Conservation District

Huron Pines Resource Conservation and Development Council

Huron Soil and Water Conservation District

Huron-Clinton Metropolitan Authority

Illinois Department of Natural Resources

Illinois Department of Public Health

Illinois Department of Transportation

Indiana Department of Environmental Management

Indiana Department of Natural Resources

Indiana State University

Indiana University

Institute for Agriculture and Trade Policy

International Joint Commission

Iroquois National Wildlife Refuge

Izaak Walton League of America

Jefferson County Soil and Water Conservation District

Kalamazoo Nature Center Inc.

Kenosha County Division of Parks

Keweenaw Bay Indian Community, Michigan

Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin

Lac du Flambeau Band of Lake Superior Chippewa Indians of Wisconsin

Lake County Forest Preserve District

Lake County Health Department and Community Health Center

Lake County Stormwater Management Commission

Lake Metroparks

Lake Superior Center

Les Cheneaux Watershed Council

Little River Band of Ottawa Indians, Michigan

Little Traverse Bay Bands of Odawa Indians, Michigan

Lorain County

Loyola University of Chicago

Macatawa Area Coordinating Council

Macomb County

Macomb County Health Department

Manitowoc County Soil and Water Conservation

Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan (Gun Lake)

Menominee Indian Tribe of Wisconsin

Metropolitan Mayors Caucus

Michigan Department of Agriculture

Michigan Department of Community Health

Michigan Department of Environmental Quality

Michigan Department of Natural Resources

Michigan Sea Grant

Michigan State University

Michigan Tech Research Institute

Michigan Technological University

Michigan Wildlife Conservancy

Mille Lacs Band of Minnesota Chippewa Tribe, Minnesota

Milwaukee Metropolitan Sewerage District

Minnesota Department of Health

Minnesota Department of Natural Resources

Minnesota Land Trust

Minnesota Pollution Control Agency

Minnesota Trout Unlimited

Model Forest Policy Program Inc.

Montclair State University

Montezuma National Wildlife Refuge

Morton Arboretum

Muskegon County Soil Conservation District

Muskegon River Watershed Assembly

National Academy of Sciences

National Parks of Lake Superior Foundation

National Pollution Prevention Roundtable

National Wild Turkey Federation

National Wildlife Federation

Nelson Institute Center for Climatic Research, University of Wisconsin-Madison

New York Department of Environmental Conservation

New York State Education Department

New York State Office of Parks, Recreation and Historic Preservation

New York State Pollution Prevention Institute - Rochester Institute of Technology

Niagara County Soil and Water Conservation District

Northeast Michigan Council of Governments

Northeast Ohio Regional Sewer District

Northeast Recycling Council Inc.

Northeastern Ohio Medical University

Northeast-Midwest Institute (Great Ships Initiative)

Northern Illinois University

Northland College

Northwest Indiana Regional Development Authority

Northwest Regional Planning Commission

Nottawaseppi Huron Band of the Potawatomi, Michigan (formerly the Huron Potawatomi, Inc.)

NSF International

Oconto County Land Conservation Division

Ohio Department of Fish and Wildlife

Ohio Department of Health

Ohio Department of Natural Resources

Ohio Environmental Council

Ohio Environmental Protection Agency

Oneida Tribe of Indians of Wisconsin

Ottawa County

Ottawa Soil and Water Conservation District

Outagamie County

Ozaukee County

Park District of Highland Park

Partners For Clean Streams Inc.

Paul Smith's College of Arts and Sciences

Pennsylvania Department of Environmental Protection

Pennsylvania Fish & Boat Commission

Pennsylvania Game Commission

Pigeon River Interagency Drain Drainage Board

Pokagon Band of Potawatomi Indians, Michigan and Indiana

Portland State University

Product Stewardship Institute Inc.

Purdue University

Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin

Regional Science Consortium

River Alliance of Wisconsin

Riveredge Nature Center

Rochester Institute of Technology

Saginaw Bay Land Conservancy

Saginaw Chippewa Indian Tribe of Michigan

Saint Regis Mohawk Tribe, New York (formerly the St. Regis Band of Mohawk Indians of New York)

Sault Ste. Marie Tribe of Chippewa Indians of Michigan

Save The Dunes Conservation Fund Inc.

Science Museum of Minnesota

Shedd Aquarium Society

Smithsonian Conservation Biology Institute, Migratory Bird Center

Sokaogon Chippewa Community, Wisconsin

Southeast Michigan Council of Government

Southwest Michigan Land Conservancy

SRC Inc.

St. Clair County Drain Commissioner

St. Croix Chippewa Indians of Wisconsin

Stockbridge Munsee Community, Wisconsin

SUNY College of Environmental Science and Forestry

SUNY Research Foundation

Superior Watershed Partnership

The Nature Conservancy

The Ohio State University

The Ozaukee Washington Land Trust Inc.

The Pennsylvania State University

The Ridges Sanctuary

The Stewardship Network

Tip of the Mitt Watershed Council

Town of West Seneca

U.S. Environmental Protection Agency

University of Illinois at Chicago

University of Illinois at Urbana Champaign

University of Iowa

University of Michigan

University of Michigan, School of Natural Resources and Environment

University of Minnesota

University of Notre Dame

University of Rhode Island

University of Rochester

University of South Dakota

University of Toledo

University of Wisconsin

University of Wisconsin - Green Bay

University of Wisconsin - Madison

University of Wisconsin - Milwaukee

University of Wisconsin - Oshkosh

University of Wisconsin - Superior

University of Wisconsin, Center for Limnology

Upper Peninsula Resource Conservation and Development Council

Urban Ecology Center Inc.

Village of Campbellsport

Village of Egg Harbor

Village of Lake Bluff

Village of Lake Linden

Village of Mount Pleasant

Village of Shorewood

Waukegan Harbor AOC Citizens Advisory Group

Wayne County

Wayne State University

Western Pennsylvania Conservancy

Western Reserve (Chagrin River) Land Conservancy

White House Council on Environmental Quality

Wildlife Forever

Wisconsin Department of Health and Family Services

Wisconsin Department of Natural Resources

Wisconsin Department of Transportation

Wisconsin Tribal Conservation Advisory Council Inc.

Wyoming County Soil and Water Conservation District