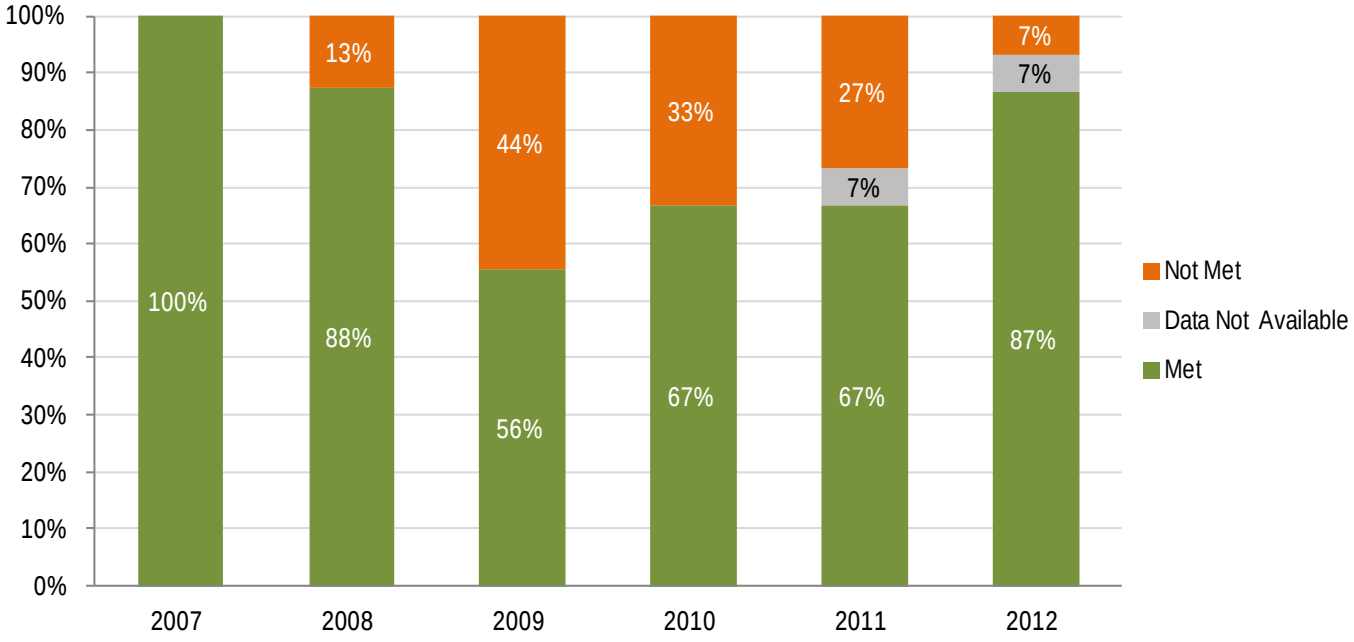
Subobjective: Great Lakes

The Great Lakes National Program Office met 87% (13 of 15) of its performance commitments in 2012. This is a significant accomplishment, with only one measure not meeting its commitment and one indicator not having data by the end of year (Figure 61).

Figure 61: Great Lakes Subobjective Six-Year Trend



FY 2012 ACS Code	Abbreviated Measure Description	Results and Commitment Status = Met; = Indicator/Long-Term (No Commitment); = Not Met; = Measure Did Not Exist; = Data Not Available						Appendix Page Number (D-0)/ Figure Number
		2007	2008	2009	2010	2011	2012	
Subobjective 2.2.4 Improve the Health of the Great Lakes								
GL-433.N11	Improve health–Great Lakes ecosystem (index)	22.7	23.7	23.0	22.7	21.9	23.9	D-46/Fig.62
GL-SP29	Reduce PCBs in Great Lakes fish (cumulative)	6%	6%	6%	6%	44%	43%	D-46
GL-SP31	Number Areas of Concern (AOCs) with all management actions implemented (cumulative)	1	1	1	1	2	2	D-47/Fig.65
GL-SP32.N11	Number cubic yards (millions) of contaminated sediment remediated (cumulative)	4.5	5.5	6.0	7.3	8.4	9.7	D-47/Fig.63
GL-05	Number Beneficial Use Impairments (BUIs) removed			12	12	26	33	D-48/Fig.66
GL-06	Rate of invasive species newly detected in the Great Lakes (avg. since 2010)					0.83	0.80	D-48
GL-07	Response plans established, response exercises, and/or response actions (cumulative)					10	23	D-49
GL-08	Percent of days of the beach season that monitored Great Lakes beaches are open and safe for swimming					62%	94%	D-49
GL-09	Number acres managed for populations of invasive species controlled to a target level. (cumulative)					13,045	31,474	D-50/Fig.67
GL-10	Percent of populations of native aquatic non-threatened and endangered species self-sustaining in the wild. (cumulative)					31%	33%	D-50
GL-11	Acres of wetlands and wetland-associated uplands protected, restored and enhanced. (cumulative)					9,624	65,639	D-51/Fig.68
GL-12	Acres of coastal, upland, and island habitats protected, restored and enhanced. (cumulative)					12,103	28,034	D-51/Fig.69
GL-13	Number of species delisted due to recovery					1	1	D-52
GL-15	Five-year average annual loadings of soluble reactive phosphorus draining from targeted watershed							D-52
GL-16	Percent increase in acres in Great Lakes watershed with USDA conservation practices implemented					62%	70%	D-53/Fig.70

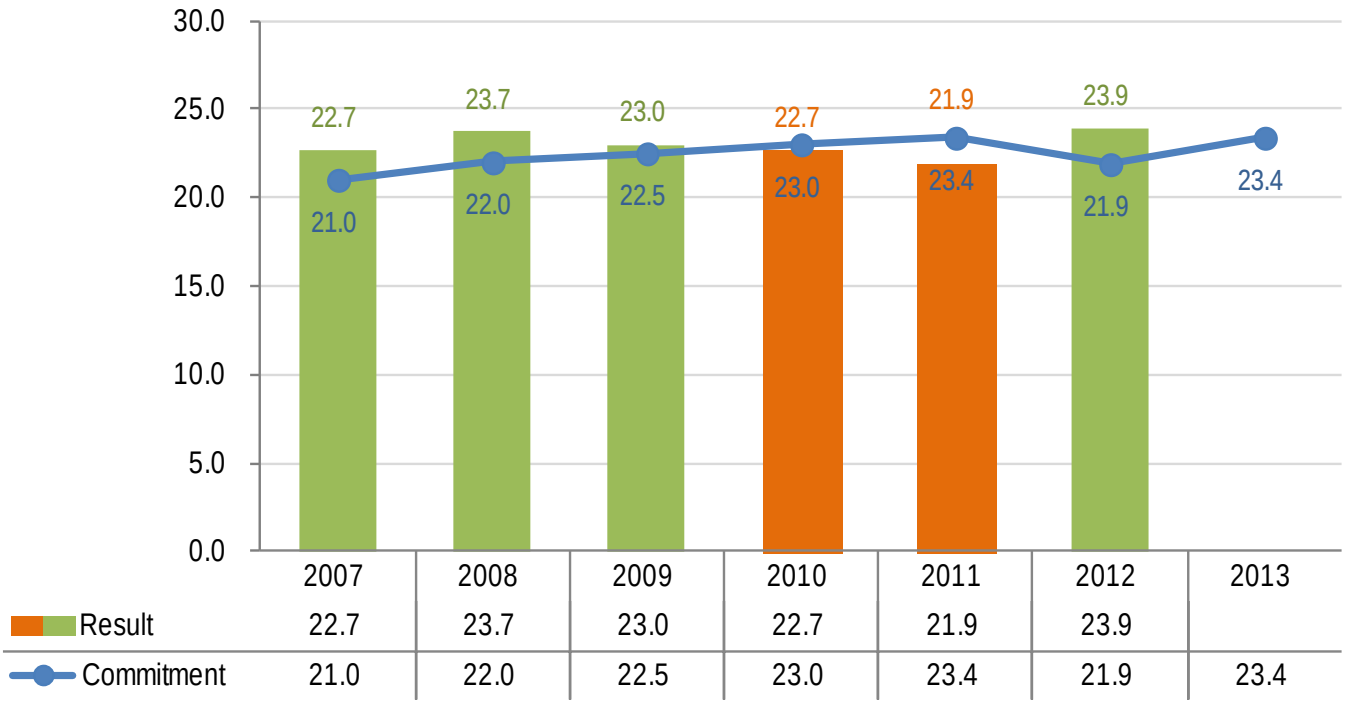
As the largest surface freshwater system on the face of the earth, the Great Lakes ecosystem holds the key to the quality of life and economic prosperity for tens of millions of people. U.S. President Barack Obama and EPA Administrator Lisa Jackson, in collaboration with 15 other federal agencies, have made restoring the Great Lakes a national priority. Congress appropriated $300 million for the Great Lakes Restoration Initiative (GLRI) for FY 2012.

FY 2012 Performance Highlights and Management Challenges

One of the Great Lakes National Program's key strategic targets assesses the overall progress U.S. environmental programs are making in protecting and restoring the chemical, physical, and biological integrity of the Great Lakes ecosystem. This is measured using the Great Lakes Index, a tool for assessing the overall condition of the Great Lakes that is based on a set of selected ecosystem indicators (i.e., coastal wetlands, phosphorus concentrations, Areas of Concern [AOCs], sediment contamination, benthic health, fish tissue contamination, beach closures, drinking water quality, and air toxics deposition). Improvements in the Great Lakes Index measures would indicate that fewer toxins are entering the food chain, ecosystem and human health are better protected, fish are safer to eat, water is safer to drink, and beaches are safer for swimming.

From a baseline score of 20 in 2002, the Great Lakes Index increased from a score of 21.9 in 2011 to 23.9 in 2012 (Subobjective 4.3.3) (Figure 62). Although trend data indicate that the index score decreased in 2010 and 2011, this was not necessarily due to worsening environmental conditions over the long term, but rather an adjustment to one of eight index components—beach closures.[19]

Figure 62: Improve the Health of the Great Lakes Ecosystem on a 40-Point Scale by Fiscal Year (GL-433.N11)



	2007	2008	2009	2010	2011	2012	2013
Result	22.7	23.7	23.0	22.7	21.9	23.9	
Commitment	21.0	22.0	22.5	23.0	23.4	21.9	23.4

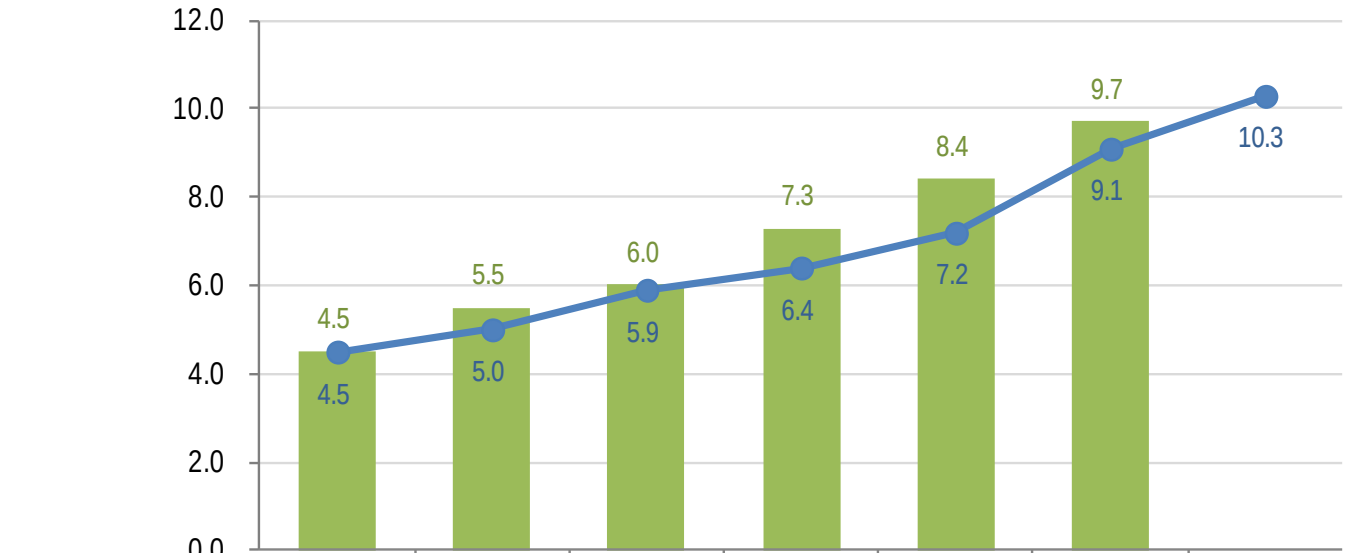
[19] The reporting standard used in 2010 (when 62% of Great Lakes beaches were reported as open more than 95% of the swimming season) was more rigorous than that used in 2009 (when 82% of beaches were reported open), which caused the beach closure component of the index to drop. While this gave the appearance that beach conditions—and therefore the Great Lakes' general health—were deteriorating, approximately the same number of beaches did not meet the 95% threshold in 2010 as in 2009. Prior to 2010, states had reported all nonmonitored beaches as open and safe for swimming for 100% of the beach season, thus raising the number of beaches "open more than 95% of the swimming season" and increasing the percentage. Starting in FY 2012, the beach closure component of the index only includes monitored beaches and is consistent with the national beach program measure.

The results of analyses reported in FY 2012 indicated that average long-term total PCB concentrations in whole Great Lakes top predator fish at sites in each Great Lake declined more than 42% between 2000 and 2010, meeting the target for declines in concentration trends (40%). EPA base programs and GLRI projects, including Great Lakes Legacy Act sediment remediation, contribute to continued progress under this long-term measure (SP-29).

PCBs were banned in the 1970s and continue to degrade. Contaminated sediment remediation (under the Legacy Act and Superfund) is removing additional PCBs from the environment. Based on Lake Michigan data, current concentrations in whole body lake trout are approximately six times the wildlife protection value (0.16 parts per million [ppm]), and the majority of sport fish collected from Lake Michigan fall into the one meal per month consumption advice category (.21–1.0 ppm) for protection of human health.

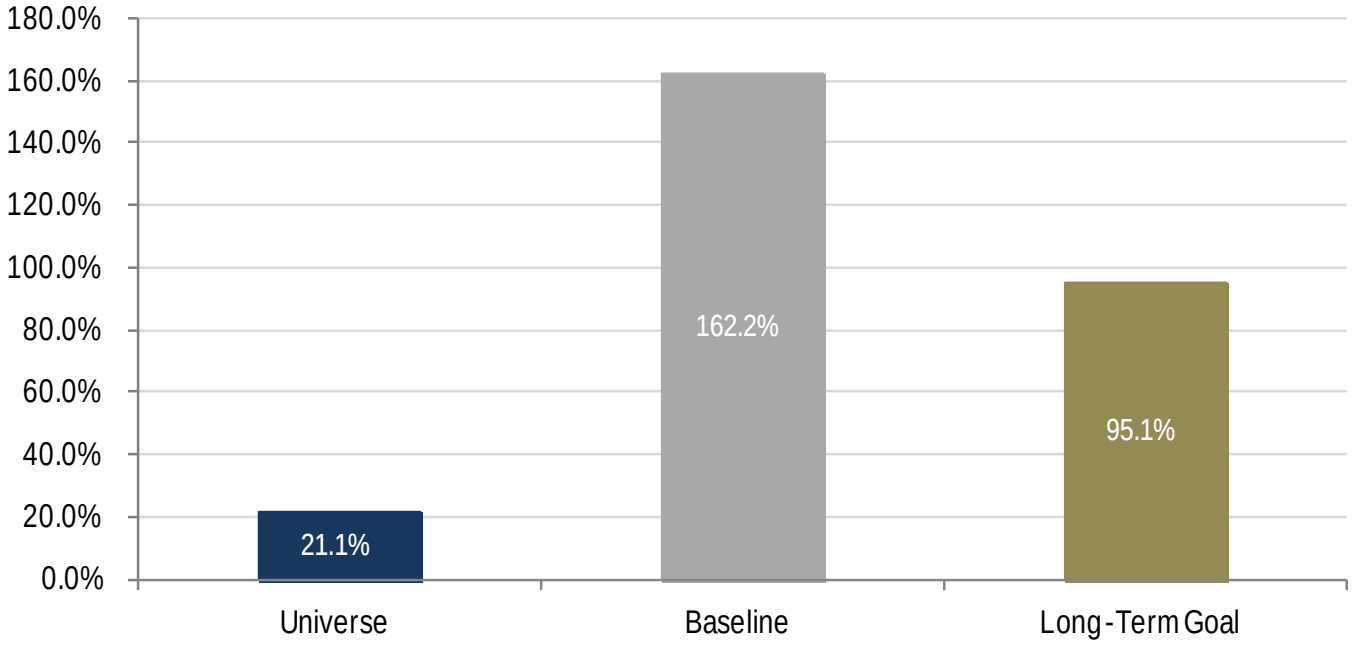
A prominent source of pollution in the Great Lakes is contaminated sediments. From 1997 through calendar year 2011, EPA and its partners have remediated approximately 9.7 million cubic yards of contaminated sediment from the Great Lakes basin. In calendar year 2011 (for FY 2012 reporting), approximately 1.3 million cubic yards were remediated through various federal and state authorities, including the Great Lakes Legacy Act (366,000 cubic yards); Superfund (45,000 cubic yards); Superfund Natural Resource Damage Assessment (347,000 cubic yards); Army Corps of Engineers (577,000 cubic yards); and Wisconsin/EPA Toxic Substance Control Act (18,000 cubic yards). This is the sixth consecutive year that the Great Lakes National Program Office has met its commitments for this measure (SP-32) (Figure 63). GLRI has achieved approximately 95% of its 2015 goal of removing 10.2 million cubic yards of contaminated sediments. The volume of sediments remediated to date represents about 21% of the estimated universe of contaminated sediments in the Great Lakes basin (Figure 64).

Figure 63: Cubic Yards of Remediated Sediment by Fiscal Year (GL-SP32.N11)



	2007	2008	2009	2010	2011	2012	2013
Result	4.5	5.5	6.0	7.3	8.4	9.7	
Commitment	4.5	5.0	5.9	6.4	7.2	9.1	10.3

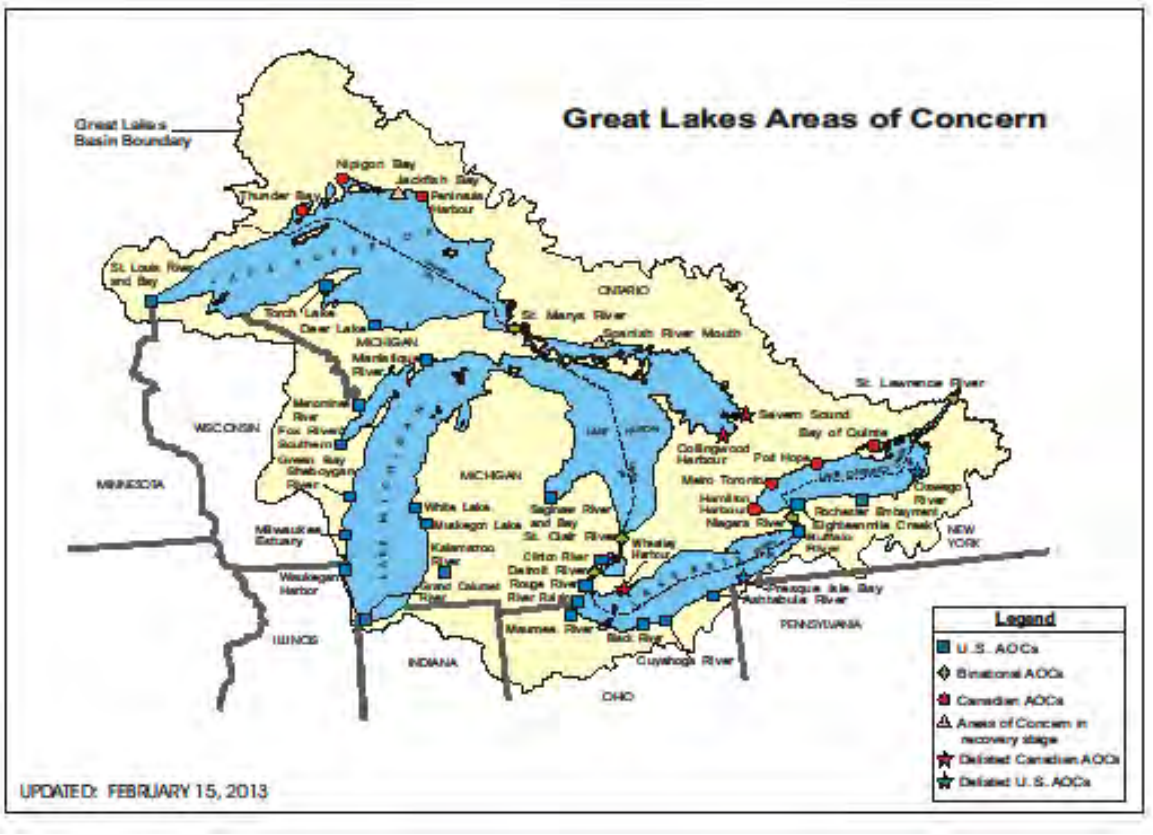
Figure 64: Cubic Yards of Remediated Sediment as a Percent of Universe, Baseline, and Long-Term Goal (GL-SP32.N11)



A key indicator for the Great Lakes National Program Office is to implement all management actions necessary for delisting AOCs[20] within the Great Lakes basin. A delisting indicates that the AOC meets the public's vision for that area and that it is no longer among the most polluted areas in the Great Lakes. The first two AOCs for which all management actions were completed were Oswego River/Harbor and Presque Isle Bay. In January 2013, EPA and its partners completed all management actions at their third AOC (Sheboygan River), thus falling slightly short of their commitment to complete all management actions for a cumulative total of three AOCs through FY 2012 (SP-31) (Figure 65). Unexpected additional work was needed at the Sheboygan AOC, delaying the completion of the management actions there. The Presque Isle Bay AOC was formally delisted in February 2013.

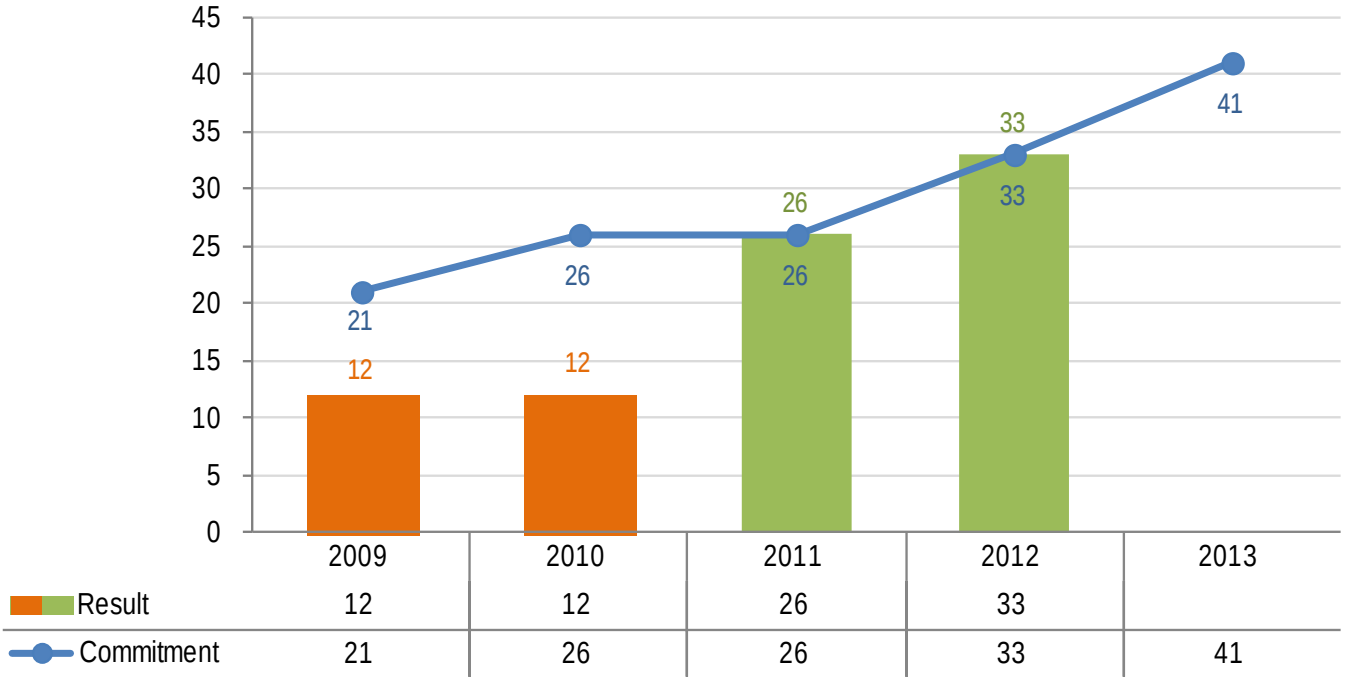
[20] The U.S.-Canada Great Lakes Water Quality Agreement (Annex 2 of the 1987 Protocol) defines AOCs as "geographic areas that fail to meet the general or specific objectives of the agreement where such failure has caused or is likely to cause impairment of beneficial use of the area's ability to support aquatic life." More simply put, an AOC is a location that has experienced environmental degradation.

Figure 65: Great Lakes Areas of Concern (AOCs)



For the second consecutive year, the Great Lakes Program met its commitment to reduce the number BUIs at Great Lakes AOCs. Under the GLRI, EPA collaborated extensively with state and federal partners to conduct projects supporting the removal of 33 impairments (Figure 66), such as restrictions on drinking water consumption (or drinking water taste and odor) at Grand Calumet River AOC; aesthetics at Kalamazoo River AOC, River Raisin AOC, and St. Clair River AOC; eutrophication at White Lake AOC; added costs to agriculture and industry at St. Clair River AOC; and degradation of benthos at White Lake AOC.

Figure 66: Beneficial Use Impairments Restored by Fiscal Year (GL-05)



	2009	2010	2011	2012	2013
Result	12	12	26	33	
Commitment	21	26	26	33	41

One of the key goals of the GLRI[21] is to reduce the number of invasive species entering the Great Lakes Basin. Although 10 new species were detected between 2000 and 2009, no new species have been detected since then (GL-6). The program also measures the number of acres managed for populations of invasive species that are controlled to a specific target level. More than 31,000 acres were managed in FY 2012, which is significantly above the annual commitment of 2,600 acres (GL-9) (Figure 67). 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.

EPA collaborated with and funded a number of other federal agencies[22] to protect, restore, and enhance more than 65,000 acres of wetlands and wetland-associated uplands across the Great Lakes Basin (GL-11) (Figure 68). This was well above the FY 2012 commitment of 11,000 acres. Some of the most significant completions received funding from the Bureau of Indian Affairs (BIA) for restoring wild rice and other cultural wetland resources across the basin. The unprecedented level of funding capitalized on a backlog of projects and appears to have achieved economies of scale due to significantly larger projects. In addition, the Great Lakes Program and its partners protected, restored, and enhanced more than 28,000 acres of coastal, upland, and island habitats in FY 2012. These results were well above of the Agency's commitment of 15,000 acres (GL-12) (Figure 69).

[21] See http://greatlakesrestoration.us/pdfs/glri_actionplan.pdf).

[22] Bureau of Indian Affairs, U.S. Fish and Wildlife Service, National Park Service, Forest Service, National Oceanic and Atmospheric Agency, and the U.S. Army Corps of Engineers.

Figure 67: Acres Managed for Populations of Invasive Species Controlled to a Target Level by Fiscal Year (GL-09)

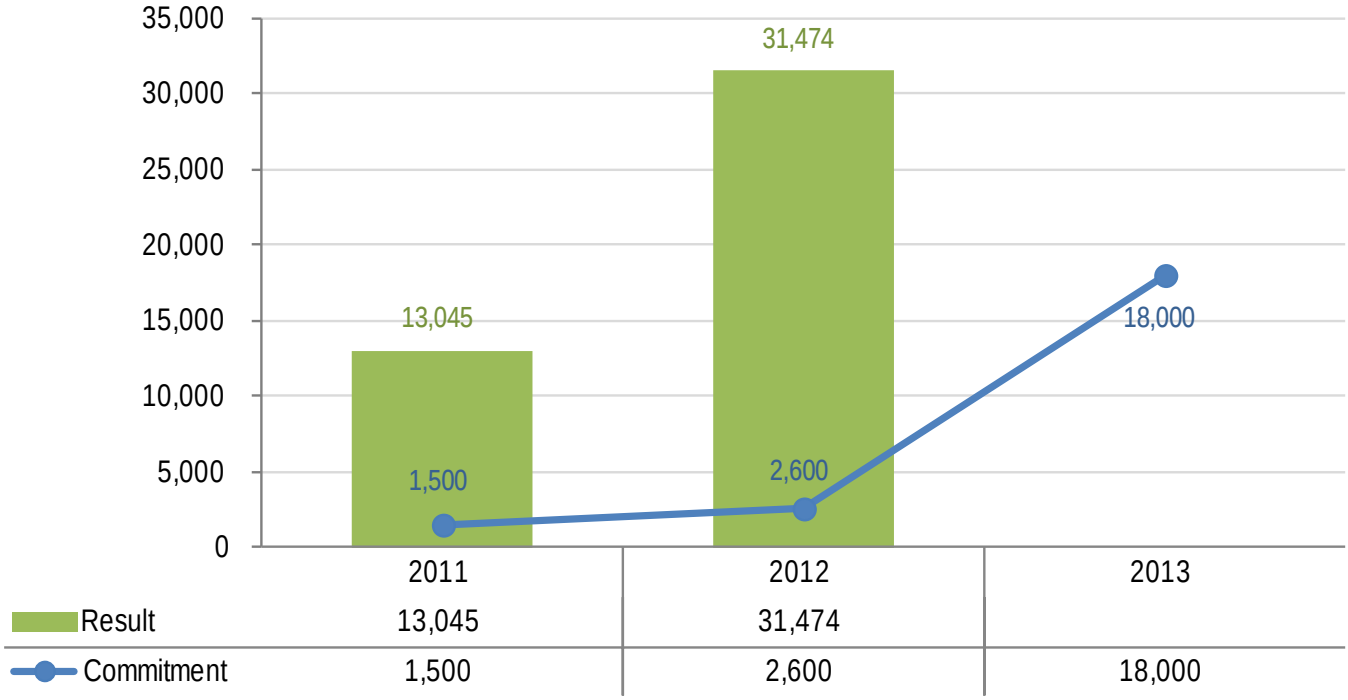


Figure 68: Wetland and Upland Acres Protected, Restored, and Enhanced by Fiscal Year (GL-11)

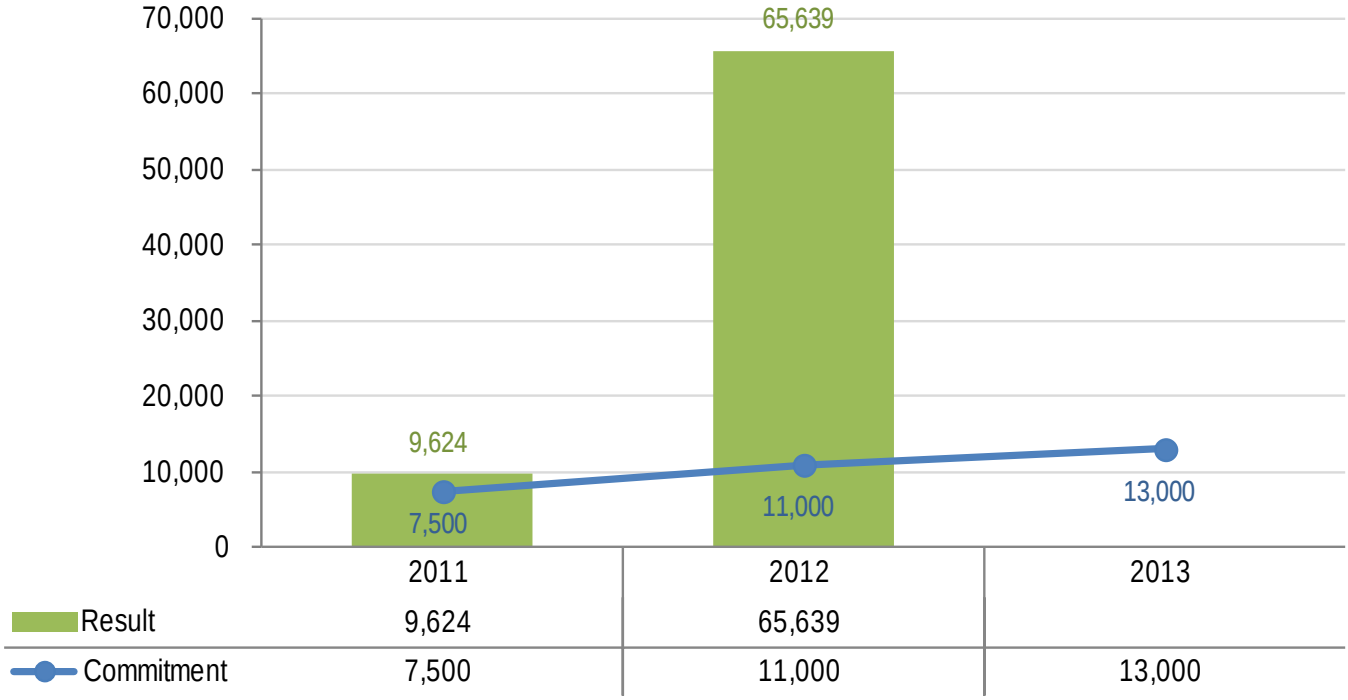
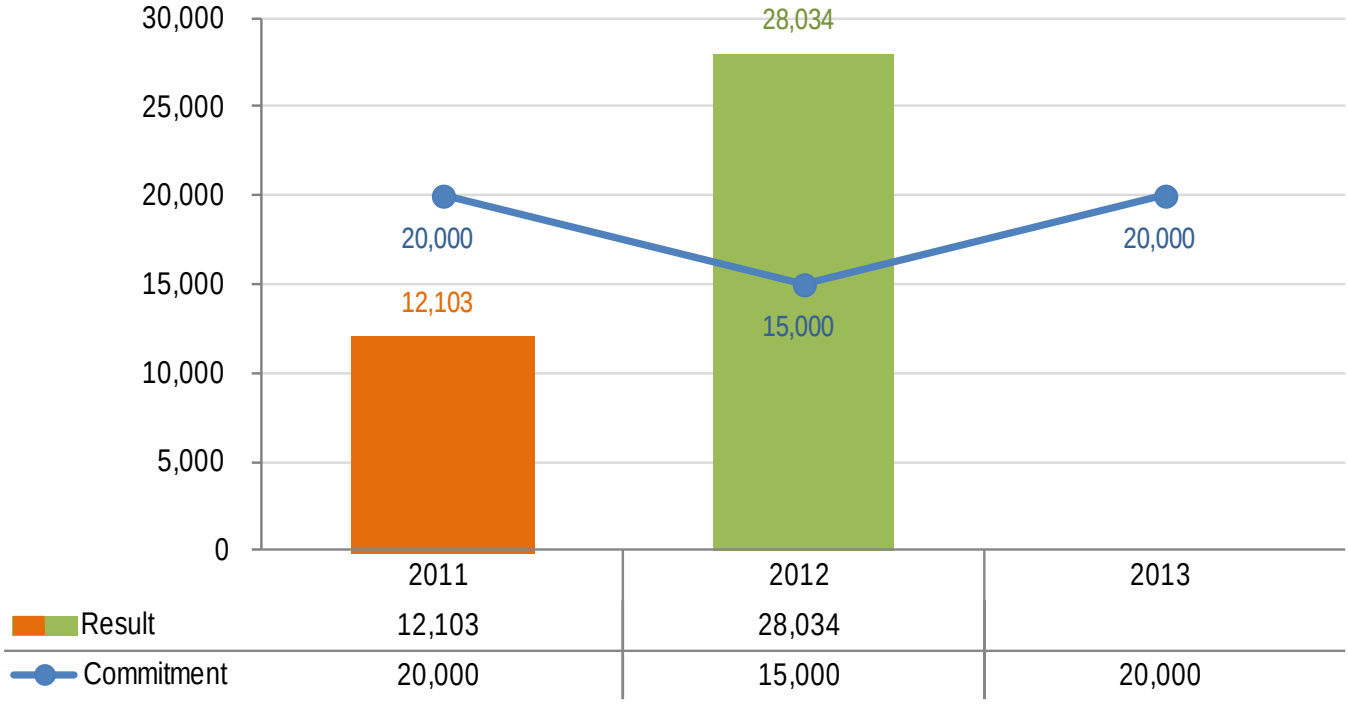


Figure 69: Coastal, Upland, and Island Acres Protected, Restored, and Enhanced by Fiscal Year (GL-12)



In FY 2012, approximately 280,000 acres in the Great Lakes watershed were put into U.S. Department of Agriculture (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) (Figure 70). The significant increase in FY 2012 is a combined result of greater funding (base USDA programs and GLRI) and increased participation in Natural Resource Conservation Service (NRCS) programs. [23]

[23] The acres tracked in this measure are not cumulative but are for new conservation practices implemented in a given fiscal year. The percent increase will vary considerably from year to year due to funding, the conservation universe, and the difficulty of conservation practices.

Figure 70: Great Lakes Acres with USDA Conservation Practices by Fiscal Year (GL-16)