

Activity: National Wildlife Refuge System

		2010 Actual	2010 Enacted/ 2011 CR	2012 Request				Change from 2011 CR (+/-)
				Fixed Costs & Related Changes (+/-)	Administrative Cost Savings (-)	Program Changes (+/-)	Budget Request	
Wildlife and Habitat Management	(\$000) FTE	230,778 1,360	230,778 1,360	-512 0	-5,734 0	+15,709 +58	240,241 1,418	+9,463 +58
Refuge Visitor Services	(\$000) FTE	79,973 670	79,973 670	100 0	-1,812 0	-640 -17	77,621 653	-2,352 -17
Refuge Law Enforcement	(\$000) FTE	38,684 256	38,684 256	15 0	-1,141 0	0 0	37,558 256	-1,126 0
*Conservation Planning	(\$000) FTE	13,021 87	13,021 87	-3,430 -20	-308 0	-1,000 -1	8,283 66	-4,738 -21
Subtotal, Refuge Operations	(\$000) FTE	362,456 2,373	362,456 2,373	-3,827 -20	-8,995 0	+14,069 +40	363,703 2,393	+1,247 20
Refuge Maintenance	(\$000) FTE	140,349 675	140,349 675	46 0	-3,223 0	+2,000 0	139,172 675	-1,177 0
Total, National Wildlife Refuge System	(\$000) FTE	502,805 3,048	502,805 3,048	-3,781 -20	-12,218 0	+16,069 +40	+502,875 3,068	+70 +20
<i>Other Major Resources: Recreation Fee Program</i>	<i>(\$000) FTE</i>	<i>4,842 29</i>	<i>4,800 29</i>	<i>0 0</i>	<i>0 0</i>	<i>-42 0</i>	<i>4,800 29</i>	<i>-42 0</i>

*Note: The FY 2010 Actual and FY 2011 CR for Conservation Planning include \$3,440,000 and 20 FTE for Land Protection Planning, which the Service requests to be transferred to Land Acquisition for FY 2012.

Program Overview

The Service’s National Wildlife Refuge System (Refuge System) embodies our Nation’s commitment to conserving wildlife populations and biological diversity for the benefit of present and future generations of Americans. The Refuge System comprises more than 150 million acres of land and waters, including nearly 54 million acres of submerged land in five Marine National Monuments. These lands and waters provide habitat for many species of fish, wildlife, and plants, sanctuary for hundreds of threatened and endangered species, and secure spawning areas for native fish. The 553 refuges range from the relatively small, half-acre, Mille Lacs National Wildlife Refuge, encompassing two rocky islands in Minnesota’s Lake District, to the vast Arctic National Wildlife Refuge spanning 19.6 million acres of boreal forest, tundra, and estuary in Alaska. The Refuge System also encompasses 4.2 million acres managed under easement, agreement, or lease, including 38 wetland management districts and 50 wildlife coordination areas. Thus, the Refuge System uses a variety of tools and legal arrangements to protect our Nation’s fish, wildlife, plants, and the habitats on which they depend.

Passage of the National Wildlife Refuge System Improvement Act of 1997 provided the Refuge System with a clear comprehensive mission, which is: “...to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

The Refuge System fulfills its mission through the implementation of programmatic activities in five broad areas; Wildlife and Habitat Management, Visitor Services, Refuge Law Enforcement, Conservation Planning, and Refuge Maintenance. Through these programs, the Refuge System monitors, restores, and protects wildlife, fish, plants and habitat, maintains facilities, supports wildlife-dependent recreation, and conducts other activities to achieve strategic goals.

The programs of the Refuge System support Service goals for resource conservation, protection, recreation, and service to communities. Through the Refuge System, the Service works with other federal agencies and many other partners to conduct vital conservation projects to achieve these goals. For example, the Service is working with the U.S. Geological Survey and other partners to develop best methods to conduct ongoing biological monitoring of wildlife populations and habitat to improve management of Refuge System resources.

The Refuge System is crucial to the President's America's Great Outdoors (AGO) initiative. The Refuge System has unique authorities and flexible programs that can deliver landscape level conservation and at the same time provide compatible outdoor recreation. Millions of acres of refuge lands are owned outright and managed wholly by the Service as core habitat for fish and wildlife. However, to meet the challenge of conserving fish and wildlife populations in a changing environment, the Refuge System also uses easements and partnership programs that protect important habitat features on private land.

At AGO listening sessions and online forums Americans asked for more projects like Montana's Blackfoot Challenge and South Carolina's ACE Basin Project, where conservation is accomplished through community level collaboration, using a network of core protected areas combined with conservation easements. The Refuge System is heeding this request. The recently established Flint Hills Legacy Conservation Area will conserve up to 1.1 million acres of tallgrass prairie in Kansas through voluntary, perpetual conservation easements. These conservation easements will protect habitat for more than 100 species of grassland birds and 500 plant species, and ensure the region's sustainable ranching culture, which directly supports conservation of the tallgrass prairie.

Similarly, the Everglades Headwaters National Wildlife Refuge is now being designed with partners, through a preliminary study, to protect approximately 150,000 acres of important environmental and cultural landscapes in the Kissimmee River Valley south of Orlando, Florida. The proposed Refuge area includes 50,000 acres for potential purchase, from willing sellers, and an additional 100,000 acres that could be protected through conservation easements and cooperative agreements, keeping the land in private ownership. In addition to improving water quality and providing outdoor recreational opportunities, the proposed conservation area and refuge would protect important habitat for 88 federal and state listed species, including the Florida panther, Florida black bear, whooping crane, Everglade snail kite and the Eastern indigo snake. It will also link to approximately 690,000 acres of partner-conserved lands.

Use of Cost and Performance

The Refuge Maintenance program helps achieve the Refuge System mission by supporting a complex infrastructure including habitat, visitor, administrative, and maintenance facilities as well as a fleet of vehicles and heavy equipment necessary to conduct wildlife and habitat management activities and to provide our 44.4 million visitors with wildlife dependent recreation opportunities.

The Refuge System considers costs and benefits when allocating maintenance funding for these assets. Through the Service Asset and Maintenance Management System (SAMMS) the Refuge System identifies assets that can most effectively be maintained by simultaneously applying an Asset Priority Index (API) and a Facility Condition Index (FCI). These two scoring mechanisms along with factors such as critical health and safety components are applied whenever an asset is entered into SAMMS, enabling managers to see where they should apply funding to most efficiently manage the entire asset portfolio. This insight into asset management enables managers to make better cost/benefit decisions about related matters like lease space and new construction projects.

Regular condition assessments of assets and their contribution to the Refuge System mission assure that information used to allocate funding will contribute to effective asset management. By completing assessments for all facilities, the Refuge System improved its ability to provide maintenance, repair, and, where required, replacement costs with greater accuracy. Annual O&M cost data for each asset has been collected since 2005 in the Federal Real Property Profile. Collecting this data has helped us identify opportunities for energy efficiency, downsizing, replacement, and other cost saving measures. Asset managers are also identifying opportunities to employ energy conservation and renewable energy strategies within the Refuge System. Energy conservation and renewable energy opportunities are a regular part of planning and completing deferred maintenance projects.

In addition, in response to Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management, and the Service goal of becoming a Carbon neutral agency, the Service is assessing its energy use and opportunities for investments to boost energy efficiency and implement renewable energy sources in many of its locations. Energy audits will help us identify needed actions and performance measurements such as return on investment, reduced O&M costs, and reduced energy intensity as measured in BTU's/Gross Square foot. The identified needed actions will help us prioritize the actions we will take.

Refuges - Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Program Change Accruing in 2012	Program Change Accruing in Out-years
1.2.1 # of NWRS riparian (stream/shoreline) miles achieving desired conditions (GPRA)	59,125	65,115	310,032	310,003	310,009	310,009	0	
2.0.1 # of NWRS wetland, upland, and coastal/marine acres achieving desired condition (GPRA)	76.77M	87.30M	88.07M	138.48M	89.80M	89.80M	0	
Comments:	With a budget that is effectively flat with the year prior, the net condition of the acreage managed by the Refuge System will not improve much or at all. (Note the large change in FY 2010 was due to the inclusion of the Pacific monuments acreage (~50M acres) which has since been determined to not be in desired condition.)							

Refuges - Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Program Change Accruing in 2012	Program Change Accruing in Out-years
2.10.1 # of NWRs/WMDs with a Comprehensive Conservation Plan completed - cumulative	263	318	430	402	462	454	-8 (-1.7%)	
2.10.3 # of NWRs/WMDs with a Comprehensive Conservation Plan completed (during the year)	55	59	34	44	63	55	-8 (-12.7%)	
Comments:	A funding decrease for Conservation Planning will result in fewer CCPs being completed.							
CSF 11.1 Percent of baseline acres infested with invasive plant species that are controlled (GPRA)	14% (280,961 of 2,015,841)	15% (341,467 of 2,329,450)	6% (146,938 of 2,312,632)	6% (140,935 of 2,508,387)	6% (147,957 of 2,442,235)	6% (147,957 of 2,442,235)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$29,097	\$30,285	\$32,847	\$29,140	\$30,990	\$31,393	\$403	
CSF Program Total Actual/Projected Expenditures(\$000)	\$19,867	\$23,804	\$28,311	\$23,994	\$24,306	\$24,622	\$316	
Actual/Projected Cost Per Acre (whole dollars)	\$104	\$89	\$224	\$207	\$209	\$212	\$3	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant improvement in controlling invasive species in FY12.							
CSF 12.1 Percent of invasive animal species populations that are controlled (GPRA)	7% (302 of 4,493)	6% (283 of 4,387)	8% (298 of 3,900)	7% (285 of 3,844)	8% (292 of 3,849)	8% (292 of 3,849)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$3,167	\$3,490	\$3,032	\$2,738	\$2,841	\$2,878	\$37	
CSF Program Total Actual/Projected Expenditures(\$000)	\$1,609	\$1,868	\$1,796	\$1,616	\$1,637	\$1,658	\$21	
Actual/Projected Cost Per Populations (whole dollars)	\$10,486	\$12,332	\$10,175	\$9,605	\$9,730	\$9,857	\$126	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant improvement in controlling invasive species in FY12.							

Refuges - Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Program Change Accruing in 2012	Program Change Accruing in Out-years
CSF 13.1 Percent of archaeological sites and historic structures on FWS inventory in good condition	12% (2,858 of 24,098)	14% (2,892 of 20,743)	13% (2,916 of 21,608)	20% (3,335 of 16,812)	18% (3,025 of 16,923)	18% (3,025 of 16,923)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$3,977	\$4,134	\$3,898	\$4,354	\$4,001	\$4,053	\$52	
CSF Program Total Actual/Projected Expenditures(\$000)	\$2,263	\$2,928	\$2,740	\$2,856	\$2,893	\$2,931	\$38	
Actual/Projected Cost Per Unit (whole dollars)	\$1,392	\$1,430	\$1,337	\$1,306	\$1,323	\$1,340	\$17	
Comments:	The Refuge System expects the condition of its archaeological, historical, and cultural holdings to remain the same in FY12.							
CSF 13.2 Percent of collections in DOI inventory in good condition (GPRA)	33% (625 of 1,912)	30% (658 of 2,199)	30% (669 of 2,205)	35% (689 of 1,947)	35% (690 of 1,948)	35% (690 of 1,948)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$2,211	\$2,473	\$2,489	\$2,854	\$2,895	\$2,933	\$38	
CSF Program Total Actual/Projected Expenditures(\$000)	\$1,487	\$1,818	\$1,872	\$2,139	\$2,167	\$2,195	\$28	
Actual/Projected Cost Per Collections (whole dollars)	\$3,537	\$3,758	\$3,720	\$4,142	\$4,196	\$4,250	\$55	
Comments	The Refuge System expects the condition of its archaeological, historical, and cultural holdings to remain the same in FY12.							
15.2.2 % of NWRs/WMDs that have quality hunting programs, where hunting is compatible	95% (365 of 384)	94% (364 of 388)	95% (366 of 385)	75% (291 of 388)	81% (295 of 366)	81% (295 of 366)	0%	
15.2.4 % of NWRs/WMDs that have quality fishing programs, where fishing is compatible	94% (347 of 370)	93% (348 of 374)	93% (347 of 373)	59% (216 of 368)	64% (218 of 341)	64% (218 of 341)	0%	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant and measurable improvements in its Visitor Services or Law Enforcement programs in FY12.							

Refuges - Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Program Change Accruing in 2012	Program Change Accruing in Out-years
15.2.6 % of NWRs/WMDs that have quality wildlife observation programs, where wildlife observation is compatible	95% (466 of 491)	97% (469 of 484)	98% (473 of 483)	73% (353 of 486)	76% (356 of 468)	76% (356 of 468)	0%	
15.2.8 % of NWRs/WMDs that have quality environmental education programs, where interpretation is compatible	80% (375 of 469)	79% (376 of 474)	81% (384 of 473)	58% (278 of 483)	73% (285 of 389)	73% (285 of 389)	0%	
15.2.10 % of NWRs/WMDs with quality interpretative programs that adequately interpret key resources and issues, where interpretation is compatible	88% (427 of 483)	88% (429 of 485)	90% (433 of 482)	63% (309 of 490)	73% (318 of 437)	73% (318 of 437)	0%	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant and measurable improvements in its Visitor Services programs in FY12. The Service has improved and raised our standards on what constitutes "quality" and therefore the percentage of refuges achieving this standard naturally declined. We believe this much more accurately represents the quality of refuge programs.							
15.2.23 Total # of visitors to NWRS - annual	40.30M	41.26M	42.60M	44.48M	43.04M	43.04M	0	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant and measurable improvements in its Visitor Services programs in FY12.							
52.1.1 # of volunteer hours are annually contributed to NWRS	1,307,291	1,389,886	1,382,990	1,449,707	1,299,560	1,299,560	0	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant improvement in its number of volunteers or volunteer hours in FY12.							

Activity: National Wildlife Refuge System
Subactivity: Wildlife and Habitat Management

		2010 Actual	2010 Enacted/ 2011 CR	2012 Request			Change from 2011 CR (+/-)	
				Fixed Costs & Related Changes (+/-)	Admin- istrative Cost Savings (-)	Program Changes (+/-)		Budget Request
Wildlife and Habitat Management	(\$000)	218,859	218,859	-512	-5,734	+15,709	228,322	+9,463
Healthy Habitats & Populations	(\$000)	4,833	4,833	0	0	0	4,833	0
Challenge Cost Share	(\$000)	4,246	4,246	0	0	0	4,246	0
Alaska Subsistence	(\$000)	2,840	2,840	0	0	0	2,840	0
Total, Wildlife and Habitat Management	(\$000)	230,778	230,778	-512	-5,734	+15,709	240,241	+9,463
	FTE	1,360	1,360	0	0	+58	1,418	+58

Summary of 2012 Program Changes for Wildlife and Habitat Management

Request Component	(\$000)	FTE
• Inventory and Monitoring	+8,000	+25
• Ecosystem Restoration Initiative - Chesapeake Bay	+1,460	+1
• Ecosystem Restoration Initiative - Bay Delta Ecosystem	+180	+1
• Ecosystem Restoration Initiative - Gulf Coast Ecosystem	+750	+1
• Palmyra Atoll NWR Rat Eradication	-1,200	0
• General Operations	+6,519	+30
Program Changes	+15,709	+58
Internal Transfer –Office of the Science Advisor		

Justification of 2012 Program Changes for Wildlife and Habitat Management

The 2012 budget request for the Wildlife and Habitat Management (WHM) program is \$240,241,000 and 1,418 FTE, a net program change of +\$15,709,000 and +58 FTE from the 2010 Enacted/annualized 2011 Continuing Resolution.

Inventory and Monitoring Program (+\$8,000,000/+25 FTE)

The requested increase of \$8,000,000 will be used to continue building the landscape scale, long-term inventory and monitoring network that the Service began in 2010. Consistent inventory and monitoring of environmental parameters is critical to meeting the Refuges System's mission and to support adaptation strategies in the face of changing environmental conditions such as sea level rise, drought, shifting patterns of wildlife migration, habitat loss, disease and invasive species that are associated with the effects of climate change and other environmental stressors. A primary emphasis will be working with the Service's Division of Information Resources Technology Management to build a data architecture that can store and serve the necessarily large datasets, and to work on monitoring protocols and guidance. In support of this effort, 25 additional FTE will be added, including data managers, ecologists, biometricians, and field biologists.

In 2012 the Service will use \$1,000,000 of its Refuge Inventory and Monitoring funding for collaboration on land management science priorities at the Department's Climate Science Centers (CSCs). Service participation in and support of the CSCs will help prioritize research topics to address the most pressing management needs and provide an interface to step down broad scale research results to the applied and

adaptive research and monitoring activities of the Landscape Conservation Cooperatives (LCCs), individual Interior bureaus, programs and land managers.

The Service anticipates more than 100 new inventories of fish, wildlife, plants, and their habitats will be completed. These inventories will cover biodiversity, vegetative communities, and the underlying abiotic features that support fish and wildlife populations. Detecting changes in these resources is important to help focus our management decisions at multiple landscape scales and our efforts on those species most in need. The inventories would include cross-program work with Migratory Birds, Endangered Species, Fisheries, and Habitat Conservation. These inventory, monitoring, and data collection efforts would be coordinated with the USGS and data would be shared with the Bureau of Land Management, Bureau of Indian Affairs, the National Park Service and other partners through LCC frameworks.

The Service's Inventory and Monitoring program will complete a series of Water Resource Inventory and Analyses (WRIAs) over the next two years. These WRIAs are critical as the Service works to better understand how water quality and quantity affect wildlife and habitat on refuges. The additional funding requested in FY 2012 will make it possible for the Service to complete the WRIAs on priority National Wildlife Refuges.

The Inventory and Monitoring program will also help the Refuge System realize cost and labor efficiencies by developing standardized databases and monitoring protocols that will be shared across refuges and Regions.

Ecosystem Restoration - Chesapeake Bay (+\$1,460,000/+1 FTE)

The requested funding will be used to improve habitat for priority fish and wildlife through restoration and management on 14 National Wildlife Refuges within the Chesapeake Bay Watershed. Funds also will be used to develop, with partners, plans for watershed based resource protection. Much of the work will be accomplished by expanding effective, existing partnerships, such as those along the Rappahannock River.

Requested funding will support a cross-programmatic partnership approach supported by the North Atlantic and Appalachian LCCs, and specific decision support tools and maps developed for the Chesapeake Bay watershed. These tools will guide conservation actions for habitat restoration, land management, and land acquisition in several high priority sub-watersheds with the goal of sustaining land, water, wildlife, and cultural resources. Priority conservation actions will be responsive to population and habitat models on and off refuges used to determine the ability of Chesapeake Bay lands and waters to conserve priority populations of aquatic species, endangered and threatened species, migratory birds, and other federal trust resources. Priority actions that will be implemented on Refuges and in surrounding communities that support Executive Order 13508, Strategy for Protecting and Restoring the Chesapeake Bay Watershed, include wetland restoration, forest buffers and fish passage/stream restoration.

Ecosystem Restoration – Bay Delta (+\$180,000/+1 FTE)

With this funding the Service will lead wetland and upland restoration in the Bay Delta region. The Service will collaborate with the California LCC and other partners to complete planning, restoration, and management actions to address current ecological issues as well as future impacts to Bay Delta habitats and species.

Ecosystem Restoration – Gulf Coast (+\$750,000/+1 FTE)

This request will support the restoration of key fish and wildlife habitat along the Gulf Coast of Louisiana and Mississippi. There are 10 National Wildlife Refuges along this coast, protecting more than 300,000 acres. These refuges are some of the last havens for species that depend upon habitats in the Mississippi

coastal plain. As a member of the LA/MS Coastal Ecosystem Restoration Working Group, the Service will play a significant role in coastal Louisiana and Mississippi restoration akin to the collaborative role we play in the Everglades restoration.

A detailed scientific assessment of these coastal refuges will enable the Service to determine the restoration measures that will sustain, over the long term, the refuges that Congress has designated. More than five million migratory waterfowl use Gulf coastal marshes to winter, and many of these marshes are on refuge lands. For of the 11 wading bird species that occur in the Southeast, more than 20 percent of the U.S. breeding populations for these species occur in the Gulf Coastal Prairie region. The Gulf coast is also important habitat for many millions more neotropical migratory songbirds and other landbirds. To help ensure effective restoration efforts, the Service will provide technical assistance in migratory bird habitat protection and management. The Service also will contribute to post-restoration and post-management monitoring, to inform subsequent Gulf restoration projects.

Palmyra Atoll NWR Rat Eradication (-\$1,200,000/0 FTE)

In 2010 Congress provided \$1,200,000 to eradicate rats on Palmyra Atoll. This one time eradication project is in the final NEPA stages and will be completed in 2011. No additional funding is requested for this eradication in 2012.

General Operations (+\$6,519,000/+30 FTE)

The Service requests an increase of \$6,519,000 and +30 FTE for general operations in Wildlife and Habitat Management. This increase will enhance management capability on refuges and enable the Refuge System to address the vision of the President's America's Great Outdoors initiative, using the Refuge System's unique authorities and flexible programs to deliver landscape level conservation and provide compatible outdoor recreation.

The requested funding increase for General Operations will enable the Refuge System to hire 30 new temporary FTE to support the Wildlife and Habitat Management program. Studies including the *Independent Evaluation of the Effectiveness of the U.S. Fish and Wildlife Service's National Wildlife Refuge System* (2008) and recommendations from the *Conservation in Action Summit* have stressed the need to hire more biologists to enable the Refuge System to fulfill its mission.

These temporary employees will support habitat restoration projects on refuges. For example we are restoring 540 acres at Grays Lake NWR. This is a cooperative USFWS, Idaho Fish and Game, and BLM Interagency sagebrush and riparian habitat management effort. In addition, the Upper Souris NWR will restore 750 acres of native prairie, and Audubon Wetland Management District will conduct long-term habitat restoration and prevent invasive plants from becoming established on over 240,000 acres of Waterfowl Production Areas in North Dakota.

Program Overview

The Wildlife and Habitat Management (WHM) program addresses the ecological condition of Refuge System lands. Refuge lands encompass a wide diversity of habitats including coastal and marine habitats, freshwater wetlands, forests, grasslands, deserts, tundra, and other habitat types. As such, refuge habitat restoration and management needs are as diverse as our lands. Management activities include restoring hydrology, establishing native plants, managing forests and grasslands, manipulating water levels, and controlling invasive plant and animal species. Through these activities the Refuge System conserves, manages and restores fish, wildlife, and plant resources and their habitats at local, landscape, and national scales. These activities provide healthy and productive habitats, reduce non-climate environmental stressors, and develop scientific information needed to inform management decisions. Restored acres provide for the breeding, migratory, and nutritional needs of a wide diversity of wildlife. Habitat restoration and protection on refuges also plays an important role in sequestering carbon.

Much of the conservation work done on refuges is accomplished in partnership with adjacent landowners, local communities, non-government organizations, states, tribes and other federal agencies. Working with partners at landscape scales beyond refuge lands adds to the effective conservation achievements of the Refuge System and allows individual refuges to more effectively respond to environmental stressors. More than 225 organized groups of volunteers, known as Friends groups, help refuges meet public use and resource management goals. Volunteers annually contribute approximately 20 percent of the work hours performed on refuges.

Coordinated inventory and monitoring of biological resources, ecological processes, and components of the physical environment are conducted by the National Resource Program Center. Consistent inventory and monitoring of these parameters are critical to meeting the Refuges System's mission and support adaptation strategies in the face of changing environmental conditions such as sea level rise, drought, shifting patterns of wildlife migration, habitat loss, disease and invasive species. Collected data is crucial for accurate vulnerability assessment to climate change and other environmental stressors, and to guide the development and implementation of adaptive management at the refuge and landscape scale.

Refuge lands provide major societal benefits through ecosystem services such as improved air and water quality, improved groundwater retention, reduced coastal impacts from hurricanes, carbon sequestration, and moderation of flood impacts. These benefits are not only critically important from an ecological perspective but are increasingly valuable as certain environmental markets appropriately value these beneficial services.

The Service manages lands and waters with special designations for their unique values, including 77 Wilderness areas, 13 Wild and Scenic rivers, millions of acres of marine managed areas, and 6 National Monuments, including 5 Marine National Monuments.

The Service works with federal, state, and local partners to complete projects such as:

Rat Island is Officially Rat Free - Rat Island, a remote 6,000 acre island in the Alaska Maritime National Wildlife Refuge (NWR), is now free of rats. The report comes after two years of careful field monitoring on Rat Island, where invasive rats decimated native bird populations by preying on eggs and chicks and altered the native ecosystem in numerous ways. The Rat Island restoration project, for the benefit of native wildlife, is the largest rat eradication ever undertaken in the Northern Hemisphere and the first in Alaska. The eradication of the non-native invasive Norway rats took place in September of 2008 after four years of careful planning. The restoration of the island was accomplished by The Nature Conservancy and the Island Conservation in partnership with the U.S. Fish and Wildlife Service.

Protecting Blanding's turtle at Eastern Massachusetts National Wildlife Refuge Complex - The Blanding's turtle is a medium size, semi-aquatic freshwater turtle that has protected status in most of the 15 New England and Midwestern States in which it occurs. Because they require a variety of wetlands and make frequent seasonal overland movements between wetlands, they suffer mortality from wetland habitat loss and upland landscape fragmentation. Few sites in New England have more than 50 animals. To help maintain this species in Massachusetts, staff and volunteers from the Eastern Massachusetts National Wildlife Refuge Complex have been working closely with many partners to establish this species at the Assabet River NWR as well as to protect existing populations at Oxbow NWR and Great Meadows NWR. At Assabet River NWR, reintroduction efforts began in October 2007, and more than 200 individuals (hatchlings and a few juveniles) have been released to date through partnerships with Oxbow Associates and

Savannah River Ecology Laboratory. Radio telemetry is helping biologists track juvenile turtle movements and providing critical information on home range and habitat preferences.

Nests at Oxbow and Great Meadows NWRs are monitored by Refuge staff and partners, and a portion of hatchlings are collected and raised in captivity by local elementary, middle and high school students for 9 months, providing hatchlings with a "head start" to life. Wild hatchlings suffer nearly 100% mortality in their first year of life because their small size makes them susceptible to predation. However, head-started hatchlings in captivity are kept warm and well-fed, and they quickly increase their size and their chances of survival when released the following year. In 2010 the Service formed a new partnership with Bristol County Agricultural High School in Massachusetts, which provided a head start to Blanding's turtle hatchlings for release at Assabet River NWR. Another new partner, the New England Aquarium, has also made it possible for the Service to determine the gender of some of the head started turtles prior to release, so that the Service can better track gender ratios in this new population.



Researchers Brian Butler of Oxbow Associates and Kurt Buhlman from the Savannah River Ecology Lab, along with Refuge Biologist Stephanie Koch, prepare to release a juvenile Blanding's turtle at Assabet River NWR. A radio has been affixed to the turtle to help refuge staff and partners track the turtle's movements and learn more about its home range and habitat preferences.

Estuary Restoration at Nisqually National Wildlife Refuge - The culmination of ten years of planning and two seasons of construction resulted in the restoration of more than 760 acres of the historic Nisqually Estuary in the Puget Sound. The removal of five miles of dikes restored tidal influence to more than 21 miles of historic tidal sloughs and channels that had been absent for more than 100 years. This is the largest estuary restoration project in the Pacific Northwest and the top priority for recovering threatened Chinook salmon in the watershed. It is considered an important step in the recovery of the Puget Sound ecosystem, providing crucial habitat for juvenile salmon and many migratory birds. Preliminary fish monitoring led by the Nisqually Indian Tribe has already documented use of the site by juvenile salmonids.

The Nisqually Tribe has also restored an additional 140 acres of estuary and 50 acres of forested riparian habitat within the delta on tribal lands managed cooperatively by the refuge under a

unique agreement. The estuary restoration was accomplished through an expansive partnership effort, led by the Refuge, Ducks Unlimited, and the Nisqually Indian Tribe, and assisted by numerous federal, state, and local partners. Partners contributed technical assistance and more than \$5 million in grant funding. More than 500 local school children planted native riparian species in partnership with local watershed environmental education organizations. The project will also enhance 240 acres of freshwater wetlands managed to benefit wintering waterfowl and other waterbirds. The USGS is leading a large monitoring effort to support adaptive management, evaluate the project, and provide management information for other restoration projects.

Conservation and Recovery of the threatened Piping Plover in the Great Plains/Prairie Potholes Landscape - Since the mid-1990s, protection and monitoring of the threatened Piping Plover has been achieved through a cooperative partnership over a 10,000 square mile area stretching across nesting habitat from central North Dakota through eastern Montana. Four national wildlife refuges, five wetland management districts, a Nature Conservancy preserve and 180 farmers and ranchers partner to monitor and protect plovers in the alkali lakes, a major breeding site and critical habitat for this threatened shorebird. The Great Plains plover population declined largely due to the lack of reproductive success from nest predation and loss of habitat. Each breeding season, a team of technicians protects and monitors the success of the plovers by surveying 150 lakes and wetlands, locating nests, applying predator enclosures and monitoring the plovers' breeding success. These efforts are thought to have stabilized the declining plover population in the Great Plains. Continued monitoring, nest and habitat protection are vital to Piping Plover recovery. In addition, data gathered may show changes in the distribution patterns of the plovers and their nesting chronology as a result of climate change.

Critical research on a rare, secretive species at Big Oaks Refuge – The Northern Crawfish Frog population appears to be declining throughout most of its range. However, little is known about this species because it spends 11 and one half months a year living in crayfish burrows, and therefore is seldom seen, or heard, outside of its two week long breeding season. In collaboration with Indiana State University, Indiana University School of Medicine, and the Indiana Department of Natural Resources, Big Oaks National Wildlife Refuge, which holds the easternmost population of these frogs, has developed a state of the art research program. Projects included examining population dynamics and species occupancy; density dependence in tadpole development; habitat selection; developing an adaptive management framework to examine the impacts of prescribed fire and aerial herbicide application; and examining environmental covariates of frog behavior. Field work consisted of call surveys, radio-telemetry, raising tadpoles in natural and artificial environments, and applying management treatments such as prescribed fire and herbicide treatment.

Hail Cove Restoration and Living Shoreline Project at Eastern Neck National Wildlife Refuge - Prior to restoration, only a narrow 30 foot long isthmus was protecting the head of Hail Creek on Eastern Neck NWR, on Maryland's eastern shore. It has some of the most significant submerged aquatic vegetation (SAV) beds found on or near the refuge. This habitat, which was being threatened by erosion from wind and waves, is important to wintering waterfowl and serves as a nursery area for fish and shellfish. The project consisted of building high energy breakwaters at the mouth of Hail Cove, reinforcing the isthmus, and establishing an oyster reef within the cove. This major project would not have been successful without its 15 partners. Partners included the State, nonprofit organizations, corporations, and local schools. The partnership protected more than 2,000 linear feet of tidal shoreline and restored more than 800 linear feet of shoreline, planted nearly an acre of tidal marsh and beach habitat, created 7.5 acres of shallow water habitat, protected 108 acres of SAV beds, and protected 432 acres of coastal wetlands. This project

contributes to the restoration of the Chesapeake Bay Watershed by reducing erosion and sedimentation, and protecting habitats for keystone species such as the American black duck, oyster, and blue crab. This project also helps to improve water quality within the Chesapeake Bay.

Refuge Wildlife and Habitat Management

The Wildlife and Habitat Management program includes management of a broad array of fish, wildlife, plants, and habitat management and restoration on millions of acres of refuge lands every year. Through the Refuge System the Service conserves key habitats across broad landscapes spanning all four North American migratory bird flyways, providing protected areas across the entire range of many endangered species, and conserving expansive marine and Arctic ecosystems. Effective management of the Refuge System will be critical to support adaptation by fish, wildlife, and plants to changing environmental conditions driven by the changing climate system and other environmental stressors.

Management activities include restoring wetlands, riparian areas, and uplands; conserving, maintaining, and restoring coastal, estuarine, and marine ecosystems; managing extensive wetland impoundments and other bodies of water; managing vegetative habitats through farming, prescribed burning, mowing, haying, grazing, forest harvest or selective forest thinning; and control and management of invasive plants and animals. Such activities are carried out with operational funding, particularly for managing extensive wetland impoundments requiring water management facilities, such as dikes, levees, pumps, spillways, and water level control structures. Water resources are vitally important to wildlife and their habitats, making water rights protection and adjudication an ever increasing endeavor as demand for water grows. Management actions for wildlife populations include reintroducing imperiled species, erecting nest structures, controlling predators, banding and radio tracking wildlife, and inventorying and monitoring species and habitats.

Maintaining functional habitat requires invasive species management, including preventing the introduction and spread of invasive species, and controlling or eradicating invasive species where they are established. Integrated pest management techniques are used wherever feasible with mechanical removal or herbicides sometimes needed for extensive infestations. Rapid response and eradication of emerging invasive species populations is attempted where possible to limit establishment, and range expansion. Early eradication prevents the need for more costly ongoing treatments, which are inevitably required once invasive species become established. Environmental change is projected to exacerbate infestations, as rapidly changing ecological conditions are expected to favor invasive species, making early detection and rapid response even more critical.

The Service manages wilderness areas to preserve their natural and undeveloped character, and manages wild and scenic rivers to protect their outstanding values. The Service also reviews projects under the National Historic Preservation Act (NHPA). NHPA reviews typically include field surveys, archaeological investigations, and site evaluations. The Refuge System employs a majority of the Service's cultural resource specialists and provides compliance reviews for projects funded by other programs.

Healthy Habitats & Populations

The Healthy Habitats & Populations program investigates and cleans up environmental contaminants on refuges; manages mineral resources during all phases of exploration, drilling, production, clean-up and restoration; and addresses wildlife diseases found on refuges, such as chronic wasting disease. Reducing these stressors is a key component of supporting fish and wildlife adaptation across the Refuge System.

Managing the extraction of oil, natural gas, and other mineral resources continues to be a challenge for refuges, as more than one-fourth (155 refuges) of all refuges have mineral extraction activities within

their boundaries. Past and current activities include exploration, drilling and production, pipelines and hard rock mining, all of which have a direct impact on wildlife and their habitat. This program funds the management and oversight of mineral activities to ensure refuge resources are protected and that Best Management Practices are employed during resource extraction.

Alaska Subsistence

The Alaska Subsistence program manages subsistence uses by rural Alaskans on 237 million acres of federal lands by coordinating the regulation and management of subsistence harvests among five Federal bureaus (the U.S. Fish and Wildlife Service, the National Park Service, the Bureau of Land Management, the Bureau of Indian Affairs, and the U.S. Forest Service), and the Alaska Department of Fish and Game, to providing technical and administrative support for ten rural Regional Advisory Councils. The Service’s Fisheries and Refuge program staff manage subsistence fisheries and wildlife harvests in season and conduct fish and wildlife population assessments on National Wildlife Refuges to ensure that population objectives are met and provide for long-term subsistence harvests.

2012 Program Performance

The 2012 budget request will be used to build upon the landscape scale, long-term, inventory and monitoring program that began in 2010. This program will contribute to the success of the Landscape Conservation Cooperatives and provide critical information for planning and management decisions in the context of changing environmental conditions. With this funding the Refuge System will be able to complete additional inventory and monitoring actions; a critical first step for the Refuge System to more effectively help species and habitats adapt to environmental changes.

In addition, the Refuge System intends to restore tens of thousands of wetland, open water, and upland acres. These activities not only benefit wildlife and habitat, but also support high-quality, wildlife-dependent recreation opportunities for more than 44.4 million annual visitors.

The Refuge System will continue traditional management activities, such as water level manipulation, prescriptive grazing, and selective timber harvesting. In FY 2012, the Refuge System will treat nearly 275,000 acres infested with invasive plants. Invasive species management includes the continuing operation of five Invasive Species Strike Teams operating across the country and focusing on early detection and rapid response to recently established infestations.

NWRS - Wildlife and Habitat Management - Performance Change Table

	2007	2008	2009	2010	2011	2012	Program Change Accruing in 2012	Program Change Accruing in Out-years
Performance Goal	Actual	Actual	Actual	Actual	Plan	PB		
1.2.1 # of NWRS riparian (stream/shoreline) miles achieving desired conditions (GPRA)	59,125	65,115	310,032	310,003	310,009	310,009	0	
2.0.1 # of NWRS wetland, upland, and coastal/marine acres achieving desired condition (GPRA)	76.77M	87.30M	88.07M	138.48M	89.80M	89.80M	0	

NWRS - Wildlife and Habitat Management - Performance Change Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Program Change Accruing in 2012	Program Change Accruing in Out- years
Comments:	With a budget that is effectively flat with the year prior, the net condition of the acreage managed by the Refuge System will not improve much or at all. (Note the large change in FY 2010 was due to the inclusion of the Pacific monuments acreage (~50M acres) which has since been determined to not be in desired condition.)							
CSF 11.1 Percent of baseline acres infested with invasive plant species that are controlled (GPRA)	14% (280,961 of 2,015,841)	15% (341,467 of 2,329,450)	6% (146,938 of 2,312,632)	6% (140,935 of 2,508,387)	6% (147,957 of 2,442,235)	6% (147,957 of 2,442,235)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$29,097	\$30,285	\$32,847	\$29,140	\$30,990	\$31,393	\$403	
CSF Program Total Actual/Projected Expenditures(\$000)	\$19,867	\$23,804	\$28,311	\$23,994	\$24,306	\$24,622	\$316	
Actual/Projected Cost Per Acre (whole dollars)	\$104	\$89	\$224	\$207	\$209	\$212	\$3	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant improvement in controlling invasive species in FY12.							
CSF 12.1 Percent of invasive animal species populations that are controlled (GPRA)	7% (302 of 4,493)	6% (283 of 4,387)	8% (298 of 3,900)	7% (285 of 3,844)	8% (292 of 3,849)	8% (292 of 3,849)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$3,167	\$3,490	\$3,032	\$2,738	\$2,841	\$2,878	\$37	
CSF Program Total Actual/Projected Expenditures(\$000)	\$1,609	\$1,868	\$1,796	\$1,616	\$1,637	\$1,658	\$21	
Actual/Projected Cost Per Populations (whole dollars)	\$10,486	\$12,332	\$10,175	\$9,605	\$9,730	\$9,857	\$126	
Comments:	With an effectively flat budget, the Refuge System will not be able to make significant improvement in controlling invasive species in FY12.							

Activity: National Wildlife Refuge System
Subactivity: Visitor Services

		2010 Enacted/ 2011 CR	2012 Request				Change from 2011 CR (+/-)	
			2010 Actual	Fixed Costs & Related Changes (+/-)	Admin- istrative Cost Savings (-)	Program Changes (+/-)		Budget Request
Refuge Visitor Services	(\$000)	74,861	74,861	0	-1,812	+360	73,409	-1,452
Volunteer Partnerships	(\$000)	2,708	2,708	0	0	-1,000	1,708	-1,000
Challenge Cost Sharing Partnerships	(\$000)	2,404	2,404	100	0		2,504	+100
Total, Refuge Visitor Services	(\$000)	79,973	79,973	100	-1,812	-640	77,621	-2,352
	FTE	670	670	0	0	-17	653	-17
<i>Other Major Resources:</i>	<i>(\$000)</i>	<i>4,800</i>	<i>4,800</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4,800</i>	<i>0</i>
<i>Recreation Fee Program</i>	<i>FTE</i>	<i>28</i>	<i>28</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>28</i>	<i>0</i>

Summary of 2012 Program Changes for Visitor Services

Request Component	(\$000)	FTE
• Ecosystem Restoration Initiative - Chesapeake Bay	+360	0
• Volunteers	-1,000	-17
Program Changes	-640	-17

Justification of 2012 Program Changes

The 2012 budget request for the Visitor Services program is \$77,621,000 and 653 FTE, a net program change of -\$640,000 and -17 FTE from the 2010 Enacted/annualized 2011 Continuing Resolution.

Ecosystem Restoration - Chesapeake Bay (+\$360,000/+0 FTE)

In support of the America’s Great Outdoors initiative, the Service will implement increased interpretive and educational operations on refuges in the Chesapeake Bay, which will enable the Service, along with the National Park Service, the National Oceanographic and Atmospheric Administration, and others to expand public access to the Bay, better connect residents of the Bay with the health of their Bay, and to improve wildlife-dependent activities on refuge lands and waters. These improvements will expand environmental education to reconnect America’s youth to our lands, waters, and rich diversity of regional species.

Volunteers (-\$1,000,000/-17 FTE)

The Service proposes to eliminate this FY 2010 unrequested funding for Visitor Services in 2012, and use the savings to fund higher priorities in the Service’s budget.

Program Overview

The focus of Refuge System Visitor Services is to welcome and orient Refuge System visitors, support Friends groups and volunteer initiatives, and conserve cultural, historic, and archaeological resources throughout the Refuge System. The Refuge System Improvement Act of 1997 (Improvement Act) clarified that providing wildlife-dependent recreation is a prominent and important goal for the Refuge System, recognizing the importance of a close connection between wildlife resources, the American

character, and the need to conserve wildlife for future generations of Americans. The Refuge System embraces the Improvement Act and weaves its mandates into its daily work to provide greater access to Refuge System lands, when public uses are appropriate and compatible with the purpose for which a refuge was established.

The Refuge System's priority, "big six," public uses are hunting, fishing, wildlife photography, wildlife observation, environmental education, and interpretation. The Refuge System Visitor Services program also includes cultural resource protection and interpretation, an accessibility program, volunteers and Friends programs, special use permits, recreation fees, concessions management, and a host of other activities designed to welcome and orient visitors to the Refuge System.

The Visitor Services program creates quality experiences for the American public with its knowledgeable staff, and through interpretive signs and brochures. Visitor Services programs contribute to fulfilling the goal of America's Great Outdoors Initiative, to reconnect Americans, especially children, to America's rivers and waterways, landscapes of national significance, ranches, farms and forests, great parks, and coasts and beaches. This funding will also assist the Service in making sure that facilities are safe and accessible. The Visitor Services program also manages recreation fees to provide the government with a fair return on investments and visitors with exceptional value. Local communities enjoy quality wildlife-dependent recreational experiences on refuges and in most locations some visitors make a personal commitment to meeting the Refuge System's mission. These visitors become part of the refuge volunteer program. The Service had more than 44.4 million annual Refuge System visitors in FY 2010; more than 2.4 million came to hunt, 7.1 million to fish, and 27.5 million to observe wildlife from trails, auto tour routes, observation towers, decks, and platforms. In addition, 5.8 million visitors came to photograph wildlife, while more than 650,000 participated in environmental education activities.

Visitor Services components include:

- **Refuge Visitor Services** - This component includes the salary and base funding that supports recreational activities, with priority given to wildlife dependent recreation as required by the Improvement Act. The Refuge System provides wildlife-dependent recreation that is compatible with the purposes for which a particular refuge was established. Non-wildlife dependent recreation (e.g. swimming, horseback riding, etc.) is considered to be a lower priority and must be determined to be both appropriate and compatible with the Refuge System mission and individual refuge purposes to be allowed on a refuge. Interpretive activities include interpretive programs, tours, staffed and un-staffed exhibits and workshops to learn about bird watching and natural resource management programs. Environmental education involves structured classroom or outdoor activities that help provide awareness and direct connections with wildlife and natural resource issues. Teacher workshops, which are particularly effective at reaching local school districts, provide a service that teachers can use in developing course materials and instruction for their students. The Visitor Services Program also funds staff that review projects funded or permitted by the Service for compliance with the National Historic Preservation Act (NHPA). The NHPA regulatory reviews may include field surveys, archaeological investigations, site evaluations, and mitigation. The Refuge System employs a majority of the Service's cultural resource specialists and provides compliance reviews for projects funded by other programs, such as permits and grants issued by the Ecological Services program.



A Refuge System Visitor Service employee is bird watching with elementary students. The Service will continue youth oriented activities such as guided bird watching under this budget request.

- **Visitor Facility Enhancements** - This element includes the development and rehabilitation of small outdoor facilities that support quality visitor services programs on refuges. Parking areas at trailheads, wildlife observation platforms, kiosks, fishing piers, interpretive signs, trails, and boardwalks are all examples of such enhancements.
- **Volunteers and Community Partnerships**- This element encompasses activities directed by the Volunteer and Community Partnership Enhancement Act of 1998. Annually, volunteers contribute nearly 20 percent of the work hours performed on refuges. More than 225 non-profit groups, or Friends groups, assist refuges in meeting visitor services and natural resource management goals. Managing a refuge's partnership with the Friends and Volunteers Program requires developing projects and activities suitable for volunteers; maintaining communication and an organizational framework to ensure that partner's skill sets are matched to appropriate jobs; and training and outfitting volunteers with the proper equipment to perform quality work in a safe manner. In addition, Friends and Volunteers facilitate "big six" activities, as well as educate interested youth on the importance of conservation.

Welcoming and Orienting Visitors

The Refuge System clearly identifies all wildlife refuges that are open to the public, and ensures that visitors understand who we are, what we do, and how to enjoy their visits to refuges. Welcoming and orienting visitors provides a unique brand identity that helps the public distinguish between the Service, including the Refuge System, and other land management entities. This identity recognition can be heightened through clear and accurate signage, brochures, interpretive materials, uniforms, adequate and accessible recreational facilities, and knowledgeable staff or volunteers available to answer questions and describe the role of an individual refuge within the context of the Refuge System's mission.

Providing Quality Wildlife-Dependent Recreation and Education Opportunities

Opportunities for compatible wildlife-dependent recreation (wildlife observation, hunting, fishing, nature photography, environmental education, and interpretation) are provided and evaluated by visitor

satisfaction surveys to ensure that we offer quality experiences for the public to enjoy America's wild lands, fish, wildlife, and plants. When recreational activities are managed according to the principles of sound fish and wildlife management and administration on National wildlife refuges, they stimulate stewardship and a conservation ethic within the public.

Quality interpretation and environmental education programs engage the public in, and increase community support for, the conservation mission of the Refuge System; making fish, wildlife, plants, and wildlife habitat relevant, meaningful, and accessible to the American public; and helping teachers, students and visitors understand serious threats to wildlife and wildlife resources including sea level rise, drought, shifting patterns of wildlife migration, habitat loss, disease and invasive species that are associated with the effects of climate change and other environmental stressors

Birding programs and festivals generate significant revenue and create jobs for local economies, as documented in the Refuge System's Banking on Nature 2006 study. A recent report shows that one of every five Americans watches birds, and that birdwatchers contributed \$36 billion to the U.S. economy in 2006, the most recent year for which economic data are available. The report, Birding in the United States: A Demographic and Economic Analysis, shows that total participation in bird watching is strong at 48 million, and remaining at a steady 20 percent of the U.S. population since 1996. In partnership with Cornell Lab of Ornithology, the National Fish and Wildlife Foundation, and several retail companies, the Birder-friendly Refuge System Incentives Program was launched in late 2010 to share existing, successful birding program elements among field stations and improve recreation opportunities for visitors who connect to nature and conservation through bird watching. More than 500 sets of binoculars, 100 spotting scopes, hundreds of backpack kits and GPS units, and thousands of field guides to loan to visitors and school groups were distributed to 100 Refuge System units through this initiative. Birds and birding programs have also been catalysts for offering more citizen science opportunities on refuges. Public monitoring programs such as "The Big Sit!", and the Christmas Bird Count for Kids, targeted at families and youth, are increasing in quality and quantity annually.

Let's Move Outside! promotes outdoor activities and encourages people, particularly children, to take advantage of the national wildlife refuges, national parks, national forests and other public lands throughout the United States. First Lady Michelle Obama has been a key leader behind this effort. The program engages young people in educational programs and self-guided exploration on America's public lands and waters. The activities promise to be fun, healthy and family friendly. The Service system is supporting this effort by looking for ways to attract more children to its wildlife refuges.

More than 650,000 students and teachers annually visit National wildlife refuges, which provide substantial environmental education programs that introduce young people to the precepts of natural resource conservation and the idea of natural resources as a career path. Moreover, youth are hired on scores of National wildlife refuges through term and seasonal jobs, often through the collaboration of the Service with nongovernmental organizations whose mission is to reach diverse audiences. The Service also works in partnership with a range of citizen science programs that engage young people in natural resource programs that not only heighten scientific knowledge nationwide, but also raise the awareness of young people from diverse backgrounds about the importance of natural resource protection.

The visitor facility enhancement program supports the development, rehabilitation, and construction of facilities such as parking areas at trailheads, wildlife observation platforms, kiosks, and other projects that are necessary for interpretation and environmental education on refuges.

The Refuge System continues to support volunteers and Friends groups through on-site training, mentoring, workshops, and awards. New efforts are underway to build a suite of Refuge System citizen science programs for participation by Friends organizations, volunteers, and visitors. These programs offer volunteers and visitors new, meaningful opportunities to contribute data that will help the Service manage habitat.

Moreover, wildlife-dependant recreation also addresses the concern of childhood obesity and the health benefits associated with getting children and families outdoors. The American people, especially children, spend less time playing outdoors than any previous generation. Recent research shows that our Nation's children are suffering from too much time inside. Children today spend an average of 6.5 hours per day with television, computers and video games. In fact, a child is six times more likely to play a video game than to ride a bike. What does this mean? If children are raised with little or no connection to nature, they may miss out on the many health benefits of playing and exploring outdoors. Nature is important to children's development; intellectually, emotionally, socially, spiritually, and physically.

Children, who play outdoors regularly enjoy better motor skills, physical fitness and general health.

- Children who interact with nature have better cognitive and creative skills than their more housebound counterparts.
- Interaction with the environment can help children deal with stress.
- Children with symptoms of ADHD may have their symptoms and need for medication alleviated through regular outdoor interactions.
- Children who interact regularly with nature tend to show improved academic test scores.

“If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in.” – Rachel Carson USFWS

Interpreting and Protecting Cultural and Historic Resources

The Refuge System protects many significant cultural and archaeological sites. As a part of the Visitor Services Program, the Service ensures that significant cultural and historic resources are protected, experienced by visitors, and interpreted in accordance with authorizing legislation and policies. The Refuge System has identified more than 20,000 archaeological and historical sites (areas with physical evidence of human habitation) within its borders to date, with more likely yet to be discovered. The Refuge System museum collections consist of approximately 6.2 million objects maintained in Service facilities or on loan to more than 200 non-federal repositories, such as qualified museums and academic institutions, for scientific study, public viewing, and long-term care.

Youth in America's Great Outdoors

Under this initiative, the Refuge System offers public service opportunities; supports science based education and outdoor learning laboratories, and engages young Americans in wildlife-dependent recreation such as hunting, fishing, wildlife observation, and wildlife photography. Hundreds of National wildlife refuges offer employment, education and recreation opportunities that connect youth with the outdoors. These connections foster understanding and appreciation of the need to conserve America's natural resources. These youth programs also provide opportunities to educate youth about career opportunities and promote public service as part of a lifelong commitment to natural resource conservation. These programs are managed through mentoring and partnerships with Friends organizations, volunteers, educational institutions, and local conservation organizations.

Refuges offer multiple entry points to connect children and youth with nature and develop interest in a career in natural resource management. Specific programs benefiting from this funding include:

Environmental Education which involves more than 650,000 students and teachers, providing outdoor laboratories that adhere to curriculum standards.

Wildlife-Dependent Recreation programs, such as hunting, fishing, wildlife observation, and photography offer outstanding opportunities for youth to enjoy the natural world and build stronger relationships with their families, peers, and communities.

Youth Conservation Corps which provides opportunities for young adults from varied backgrounds to work together on conservation projects, such as maintenance and construction, habitat management, and visitor services. Enrollees learn about potential career opportunities and are offered guidance and training.



Volunteer and Community Service Programs, which involve tens of thousands of Americans each year on refuges. Our volunteers work with school and youth groups and support organizations, such as the Scouts. Volunteers often serve as important role models and mentors for our Nation's youth.

Student Temporary Employment Program (STEP), which is designed to introduce talented students to the advantages and challenges of working for the Federal Government, combining academic study with actual work experience on a refuge.

The Student Career Experience Program (SCEP) was established to recruit high quality employees into Federal Service, to support equal employment opportunity objectives, to provide exposure to public service, and to promote education.

Student Conservation Association (SCA), which works with refuges to offer conservation internships and summer trail crew opportunities. The SCA focuses on developing conservation and community leaders while accomplishing important work supporting our mission.

2012 Program Performance

The 2012 budget request will allow the Refuge System to continue to welcome more than 44.4 million visitors to enjoy educational and interpretive programs, hunting, fishing, wildlife observation, and photography. Funding will be used to develop visitor programs, materials, and services that improve upon visitor satisfaction rates, which are currently at 85 percent. Satisfaction rates will soon be reassessed with a comprehensive new survey.

Refuge System staff aim to train and supervise approximately 30,000 volunteers that contribute more than 1.3 million hours to conservation and recreation programs. The Refuge System will continue to support training programs for volunteer coordinators and provide support for refuges working with Friends organizations. In addition, the Refuge System will provide support for the many Friends groups across the country that help each refuge meet its mission.

Performance changes are displayed in the Refuges – Performance Overview table.

Activity: National Wildlife Refuge System
Subactivity: Refuge Law Enforcement

		2010 Enacted/ 2011 CR	2012 Request				Change from 2011 CR (+/-)
			2010 Actual	Fixed Costs & Related Changes (+/-)	Admin- istrative Cost Savings (-)	Program Changes (+/-)	
Refuge Law Enforcement (\$000)	37,109	37,109	15	-1,141	0	35,983	-1,126
Safe Borderlands (\$000)	1,000	1,000	0	0	0	1,000	0
IMARS (\$000)	575	575	0	0	0	575	0
Total, Refuge Law Enforcement (\$000)	38,684	38,684	15	-1,141	0	37,558	-1,126
FTE	256	256	0	0	0	256	0

Justification of 2012 Program Changes

The 2012 budget request for the Refuge Law Enforcement program is \$37,558,000 and 256 FTE, a net program change of \$0 and 0 FTE from the 2010 Enacted/annualized 2011 Continuing Resolution.

Program Overview

The Refuge System employs a professional cadre of law enforcement officers dedicated to natural resource protection and public safety. Refuge law enforcement officers also contribute to community policing, environmental education and outreach, protection of native subsistence rights, as well as other activities supporting the Service’s conservation mission. Refuge law enforcement officers are routinely involved with the greater law enforcement community in cooperative efforts to combat the Nation’s drug problems, addressing border security issues, and other pressing challenges.

While the Refuge System continues to improve its law enforcement operations through the hiring and training of full-time officers, dual-function officers continue to play a critical role in meeting law enforcement needs. Dual-function officers dedicate 25 to 50 percent of their time to law enforcement activities and spend the balance of their time on traditional conservation and wildlife dependent recreation programs. The Refuge System began to reduce dependency on dual function officers in 2002 to improve effectiveness and efficiency of refuge law enforcement operations. As the Refuge System loses dual function officers, full time officers need to be added which will allow current dual function officers to focus on their primary duties. Refuges also rely on partnerships through Memorandums of Understanding with local, county, state, and other federal agencies for mutual law enforcement assistance for the purpose of protecting lives, property, and resources.

The Refuge System has also instituted a Zone System to provide critical law enforcement planning, deployment, and support to multiple wildlife refuges with maximum efficiency through experienced officers. A Zone Officer provides refuges within his or her designated zone with technical assistance on law enforcement, institutes reliable record keeping and defensible reviews, enhances training, and promotes communication and coordination with other law enforcement agencies.

The Refuge System remains concerned about the situation on the southwest border, and directed a significant portion of previous funding increase to regions with refuges located along the border. These management increases continue to enhance the law enforcement programs within the regions, including all of our officers along the southwest border.

Refuge Law Enforcement

This component provides funding for the Refuge Law Enforcement Program and the Service's Emergency Management Program. The Emergency Management Program funds emergency managers, zone officers, regional refuge law enforcement chiefs, field officers, training, equipment, and supplies. Officers play an integral part of the Department-wide strategy of drug interdiction and marijuana eradication on public lands. The Refuge System applies various operational activities to combat illegal marijuana cultivation on refuge lands such as aircraft usage, training, equipment, and any associated environmental clean-up activities. Listed below is one example of a Refuge Law Enforcement success story:

Marijuana Eradication on National Wildlife Refuge Lands - Region 1 officers, in conjunction with partner agencies, eradicated 3,216 marijuana plants on 11 locations in FY 2010 resulting in 3 arrests of Mexican nationals on Refuge lands. Overall plant numbers are down from previous years, but the number of armed growers is increasing. With the three arrests made this summer, five firearms were discovered (shotguns, rifles, and handguns). These actions were taken by Refuge Law Enforcement in coordination with various law enforcement agencies, including DEA, Washington State Patrol, and various County Sheriff Offices and Task Forces.

Incident Management Analysis Reporting System (IMARS)

The Refuge Law Enforcement program is working with the DOI to develop and implement the Department-wide Incident Management Analysis Reporting system (IMARS). The program will document all law enforcement related incidents occurring on refuges, and will be accessible at all levels of the organization. It will track not only different types of crimes, but also locations, which will allow the Service to be proactive in crime prevention. This information is necessary to prioritize law enforcement officer needs and to deploy officers where they are needed in emergencies.



Refuge Law Enforcement officers enforce the law and assist with public outreach programs such as refuge-sponsored hunting safety courses.

The budget request includes \$575,000 for the completion and implementation of IMARS. Several years in the making, IMARS will allow for more effective law enforcement through more accurate data reporting, tracking of trends, and information sharing.

2012 Program Performance

The Division of Refuge Law Enforcement will continue to pursue its goal of protecting human lives, wildlife, and properties. The FY 2012 budget request will support 256 FTE within the Refuge Law Enforcement program. These officers will provide for the security and safety of 44.4 million refuge visitors and employees, government property, and the wildlife and habitats the Refuge System strives to protect. Refuge officers anticipate documenting more than 50,000 natural, cultural, and heritage resource crimes, in addition to more than 48,000 other crimes such as drug abuse, burglary, assaults, and even murders.

Refuge Law Enforcement will continue to help monitor approximately 33,200 conservation easement contracts with non-federal landowners, with a goal of ensuring that the terms are met on at least 95 percent of the contracts.

Activity: National Wildlife Refuge System
Subactivity: Conservation Planning

		2010 Actual	2010 Enacted/ 2011 CR	2012 Request			Change from 2011 CR (+/-)	
				Fixed Costs & Related Changes (+/-)	Administrative Cost Savings (-)	Program Changes (+/-)		Budget Request
Refuge Planning (\$000)		8,597	8,597	10	-308	-1,000	7,299	-1,298
*Land Protection Planning (\$000)		3,440	3,440	-3,440	0	0	0	-3,440
Comprehensive Conservation Plans (\$000)		984	984	0	0	0	984	0
Total, Conservation Planning (\$000)		13,021	13,021	-3,430	-308	-1,000	8,283	-4,738
FTE		87	87	-20	0	-1	66	-21

*Note: The FY 2010 Actual and FY 2011 CR for Conservation Planning include \$3,440,000 and 20 FTE for Land Protection Planning, which the Service requests to be transferred to Land Acquisition for FY 2012.

Summary of 2012 Program Changes for Conservation Planning

Request Component	(\$000)	FTE
• Refuge Planning	-1,000	-1
Program Changes	-1,000	-1
Internal Transfer – Land Protection Planning	-3,440	-20

Justification of 2012 Program Changes

The 2012 budget request for the Conservation Planning program is \$8,283,000 and 66 FTE, a net program change of -\$1,000,000 and -1 FTE from the 2010 Enacted/annualized 2011 Continuing Resolution.

Refuge Planning (-\$1,000,000/-1 FTE)

The Service proposes to eliminate this FY 2010 unrequested funding for Conservation Planning in FY 2012, and use the savings to fund higher priorities in the Service’s budget.

Land Protection Planning (-\$3,440,000/-20 FTE)

Land Protection Planning directly supports the Refuge System’s Land Acquisition program. In the FY 2012 budget request, \$3,440,000 and 20 FTE will be funded under Land Acquisition Appropriation instead of Conservation Planning within the Resource Management Appropriation.

Program Overview

The Service is proposing to fund Land Protection Planning under the Land Acquisition account. Therefore, this discussion addresses only the Refuge Planning and Comprehensive Conservation Planning components.

Refuge management plans and Comprehensive Conservation Plans (CCPs) are developed for individual refuges by conservation planners with input from the public, states, tribes, and other partners. These funds support development of CCPs as well as the refuge system’s geographic information system capability and other related decision support tools.

The Improvement Act (Act) mandated that a CCP must be completed within 15 years for every refuge in existence at the time that the Act was passed, on October 9, 1997. There were then 551 units of the refuge system, including wetland management districts, at the time of the passage of the Act. Since then, Congress has mandated that the Service also complete CCPs for three newly established field stations before the 2012 deadline. Thus, 554 field stations require completed CCPs by 2012. Through the end of FY 2010, the Service has completed 402 CCPs and has started work on another 125. The CCPs ensure that each refuge unit is comprehensively managed to fulfill the purpose(s) for which it was established. Developing a CCP facilitates decision making regarding issues such as allowable wildlife dependent recreation, the construction of facilities, and the development of biological programs. Refuges engaged in the CCP process will increasingly turn to Landscape Conservation Cooperatives (LCCs) during this process. As LCCs build capacity to inform management decision with model projections, CCPs will incorporate consideration of sea level rise, drought, shifting patterns of wildlife migration, habitat loss, disease, and invasive species that are associated with the effects of climate change and other environmental stressors. Moreover, the process of completing a CCP also helps refuge managers address any existing or proposed conflicting uses.

Once a refuge finishes its CCP, it may develop subsequent step-down management plans to meet the CCP's goals and objectives. Issues addressed by these step-down management plans include habitat management, visitor services, fire management, wildlife inventorying and monitoring, and wilderness management plans. Completed CCPs allow refuge managers to implement resource management actions that support States Wildlife Action Plans, improving the condition of habitats at a landscape scale and benefiting wildlife. Refuge personnel also have the ability to improve and increase wildlife-dependent recreation opportunities which are critical to connecting people, particularly children, with nature.

The Refuge System uses CCP development as the primary method to conduct citizen-centered government. Developing these long-term plans relies on public participation and input. Local communities, state conservation agencies, and other partners help guide refuge management through the development of each CCP. Diverse private organizations, such as the National Rifle Association, Defenders of Wildlife, and many others, also participate in the CCP planning process to complete projects.

In 2010, the Service completed a \$5.3 million infrastructure project, partially funded by the American Recovery & Reinvestment Act, to construct a gravity-fed irrigation system that will benefit the long term health of wintering wildlife by dispersing concentrations of elk and bison, thus reducing the risk of disease transmission. It will also reduce reliance on the Refuge's current supplemental feeding program. Also in 2010, the Refuge began work on its CCP that will build on the elk and bison plan and address other aspects of Refuge management for the next 15 years. The CCP is scheduled to be completed in 2012.

Comprehensive Conservation Plan at Ohio River Islands National Wildlife Refuge - The Ohio River Islands Refuge consists of all or part of 22 islands and three mainland tracts in the Ohio River; encompassing over 3,200 acres, four states, three regions, and nearly 400 river miles, all within one of the Nation's busiest waterways. One of the major issues discovered as the Refuge began the CCP process was that, despite previous outreach efforts; public awareness of the Refuge was extremely low. The Refuge uses the CCP not just as a tool to help manage the Refuge, but as an opportunity to reach out to many people and explain what a refuge is, what its values and resources are, and the recreational opportunities it had to offer. During public scoping, open houses and public information meetings were held at 18 locations throughout Pennsylvania, Ohio, Kentucky, and West Virginia. Meetings were advertised locally through news releases, paid advertisements, radio broadcasts, and through the Ohio River Islands NWR

mailing list. An "Issues Workbook" was developed and mailed to a diverse group of over 1,200 people, given to people who attended a public meeting, and distributed to anyone who requested one. Through the workbook, the Refuge asked for public input on the issues and possible action options, on the things people valued most about the Ohio River, on their vision for the future of the natural resources; and on the Service's role in helping to conserve, protect, and enhance fish and wildlife and their habitats. Today, the refuge is better known by the public, has a better relationship with the state agencies, and is better understood by the Service's Regional Office.

Ecoregion Coordination Meeting at the Wichita Mountains National Wildlife Refuge – Three comprehensive conservation plans (CCP) have been initiated using a landscape scale approach in an effort to effectively plan for the long-term fulfillment of the National Wildlife Refuge System mission. The process used by Bosque Del Apache NWR, Texas Midcoast NWR Complex, and Wichita Mountains NWR planning teams included, hosting ecoregion-wide coordination meetings with federal, state, and local natural resource agencies, non-profit organizations, and other stakeholders. Approximately a dozen to two dozen participants attended each meeting. Attendees identified ecoregion-wide conservation issues, described management actions undertaken to address those issues, assessed the effectiveness of management actions, and identified priority issues for each Refuge to consider in their plan. By undertaking such efforts, planning teams identified new collaborative opportunities, refreshed existing partnerships, and were able to assess their refuges' contribution to the larger conservation effort underway within the ecoregion.

2012 Program Performance

Comprehensive Conservation Planning and other Refuge planning efforts, guide the decisions of the Service for Refuge System management. CCPs also provide an opportunity for the public to engage in the decision making process. In 2012, the Service plans to complete 55 CCPs and start four new efforts.

NWRS - Conservation Planning - Performance Change Table

Performance Goal	2007	2008	2009	2010	2011	2012	Program Change Accruing	Program Change Accruing in
	Actual	Actual	Actual	Actual	Plan	PB	in 2012	Out-years
2.10.1 # of NWRs/WMDs with a Comprehensive Conservation Plan completed - cumulative	263	318	430	402	462	454	-8 (-1.7%)	n/a
2.10.3 # of NWRs/WMDs with a Comprehensive Conservation Plan completed (during the year)	55	59	34	44	63	55	-8 (-12.7%)	n/a
Comments:	A funding decrease for Conservation Planning will result in fewer CCPs being completed.							

Activity: National Wildlife Refuge System
Subactivity: Refuge Maintenance

		2010 Actual	2010 Enacted/ 2011 CR	2012 Request			Change from 2011 CR (+/-)	
				Fixed Costs & Related Changes (+/-)	Admin- istrative Cost Savings (-)	Program Changes (+/-)		Budget Request
Maintenance Support	(\$000)	55,123	55,123	0	-1,980	0	53,143	-1,980
Annual Maintenance	(\$000)	27,581	27,581	46	-402	0	27,225	-356
Small Equipment and Fleet Management	(\$000)	5,981	5,981	0	-87	0	5,894	-87
Heavy Equipment Management	(\$000)	5,783	5,783	0	-83	0	5,700	-83
Deferred Maintenance	(\$000)	39,765	39,765	0	-581	+2,000	41,184	+1,419
Deferred Maintenance WO/RO Support	(\$000)	6,116	6,116	0	-90	0	6,026	-90
Total, Refuge Maintenance	(\$000)	140,349	140,349	46	-3,223	+2,000	139,172	-1,177
	FTE	675	675	0	0	0	675	0

Summary of 2012 Program Changes for Refuge Maintenance

Request Component	(\$000)	FTE
• Annual Maintenance	-2,000	-2
• Youth Conservation Corps	+2,000	+2
• Deferred Maintenance	+2,000	0
Program Changes	+2,000	0

Justification of 2012 Program Changes

The 2012 budget request for the Refuge Maintenance program is \$139,172,000 and 675 FTE, a net program change of +\$2,000,000 and +0 FTE from the 2010 Enacted/annualized 2011 Continuing Resolution.

Annual Maintenance (-\$2,000,000/-2 FTE)

The Service proposes to decrease the annual maintenance budget by \$2,000,000 and shift a portion of these funds from preventative type maintenance to addressing larger deferred maintenance projects.

Annual Maintenance - Youth Conservation Corps (+\$2,000,000/+2 FTE)

An increase of \$2,000,000 in annual maintenance will be devoted to Youth Conservation Corps programs that will allow the Refuge System to hire and train students to assist with routine maintenance or improvement of facilities. Under this initiative, the Service will build upon existing proven programs with new and creative approaches to offer public service opportunities, support science-based education and outdoor learning laboratories, and engage young Americans in wildlife-dependent recreation such as hunting, fishing, wildlife observation, and wildlife photography. Hundreds of national wildlife refuges offer employment, education and recreation opportunities that connect youth with the outdoors. These connections foster understanding and appreciation of the need to conserve America’s natural resources. These youth programs also provide opportunities to educate youth about career opportunities and promote public service as part of a lifelong commitment to natural resource conservation. These programs are often managed cooperatively with Friends organizations, volunteers, educational institutions, and local conservation organizations.

Refuges offer multiple entry points to connect children and youth with nature and develop interest in a career in natural resource management. Specific programs that will benefit from this requested funding increase include Environmental Education, Wildlife-Dependent Recreation, Youth Conservation Corps, Volunteer and Community Service Programs, Volunteer and Community Service Programs, Student Temporary Employment Program, The Student Career Experience Program, and the Student Conservation Association, as described in the Visitor Services Section.

Deferred Maintenance (+\$2,000,000/+0 FTE)

An increase of \$2,000,000 for deferred maintenance will allow the Refuge System to complete approximately eleven additional critical health and safety or mission critical deferred maintenance projects in FY 2012.

Program Overview

The Refuge Maintenance Program supports a complex infrastructure including habitat management; visitor, administrative, and maintenance facilities; and a fleet of vehicles and heavy equipment necessary to conduct wildlife and habitat management activities. Infrastructure, such as the road system, provides access to Refuge System lands for more than 44 million visitors. The facility infrastructure is valued at nearly \$23 billion.

Nationwide portfolio of Refuge System constructed facility assets as of October 1, 2009

Asset Groupings	Asset Count		Replacement Value		Deferred Maintenance	
	Number	% of Total	\$ millions	% of Total	\$ millions	% of Total
Roads Bridges and Trails	4,045	9%	4,414	19%	457	17%
Public Use Roads	8,259	20%	6,738	30%	1,072	41%
Irrigation, Dams, and Other Water Structures	12,249	29%	7,479	33%	398	15%
Buildings (admin, visitor, housing, maintenance, storage, etc)	5,549	13%	2,432	10%	388	15%
Other Structures (visitor facilities, radio systems, fencing, others)	12,524	29%	1,774	8%	308	12%
Total	42,626	100%	22,837	100%	2,623	100%

Sufficiently maintained facility and equipment assets enable the Refuge System to accomplish habitat management, refuge operations, and visitor services goals. Without sufficient maintenance, much needed wildlife management facilities such as water control structures for wetlands or breeding facilities for endangered species will not operate properly; office and maintenance buildings needed to conduct core refuge operations will not be functional; and roads, trails and other facilities will be inadequate to allow access for management purposes or for visitation by the public. Without Annual and Deferred Maintenance, wildlife and habitat management activities such as mowing fields to enhance habitat, removing unwanted woody vegetation from wetland impoundments, and controlling invasive plants and animals, could not be completed, which will negatively impact the quality of wildlife habitat and reduce wildlife populations.

Adequately maintained facility and mobile equipment assets enable the Service to achieve its conservation mission. The Service uses a strategic, portfolio based approach to manage these assets in a manner that informs decision making and maximizes efficient and effective mission delivery with an

emphasis on health and safety needs and long-term protection of our investments. To further this goal the Service strives to accurately:

- account for what we own;
- determine the costs to operate and maintain each individual asset;
- track the condition of assets;
- plan and prioritize budgets to include disposal of any unneeded assets; and
- understand and plan life cycle costs for both existing and proposed new assets.

Using principles embodied in Executive Order 13327, Federal Real Property Asset Management, the Department's Capital Asset and Investment Control policy, and the Department's guidance for deferred maintenance and capital improvement plans, the Service is managing its portfolio of facility and mobile equipment assets in a manner that focuses on accomplishing our legislative mission using the most cost effective means possible. Developing a full inventory of what the Service owns, understanding annual Operations and Maintenance costs, and regularly assessing the condition of assets and their contribution to our mission, all contribute to effective management of our assets. In managing our assets, we also strive for environmentally friendly and sustainable business practices and seek mechanisms for reducing energy use and applying renewable energy strategies.

To apply available resources in the most cost effective manner we are taking the following actions:

For constructed facility assets:

- Focus available resources on the highest priority needs in 5 year plans
- Strengthen our use of mission dependency identification to assure that the most critical facility assets receive priority for funding
- Apply standard facility design components to reduce the costs of project design
- Minimize facility development where feasible in accomplishing mission goals
- Manage and replace assets taking into account life-cycle management needs
- Apply energy conservation and renewable energy options to lower long-term operating costs
- Seek innovative new options and authorities for constructing and managing facility assets
- Work with partners to maximize the conservation benefits of facility assets

For mobile equipment assets:

- Reduce petroleum consumption for vehicles
- Increase our use of alternate fuel vehicles
- Use equipment sharing across multiple locations where feasible
- Use equipment rental where more cost effective than ownership
- Provide reliable transportation and equipment to the full range of permanent and temporary staff as well as volunteers and cooperators
- Provide safety training to maximize safe operation

In addition to achieving performance targets for assets using the Facility Condition Index (FCI), proper support of Refuge System infrastructure is critical to achieving other performance targets for the entire range of mission accomplishments. These include wetland restoration, wildlife monitoring, and providing recreational opportunities for the public. The Service uses the FCI, which is a measure of the ratio of the repair to the replacement costs for each asset, in combination with the Asset Priority Index (API), which indicates the relative importance of an asset to accomplishing our mission, to prioritize the use of maintenance funding. The Service continues to prioritize maintenance needs through improved data,

which underlies development of five year budget plans. The FCI for conservation/water management facilities, for example, is currently 0.05, which industry standards rate as acceptable condition. The Refuge System is using its Service Asset and Maintenance Management System (SAMMS) to document assessments, facility maintenance histories, and maintenance schedules to improve its overall FCI and to reduce out year project costs.

Energy conservation, reduction of energy costs and application of renewable energy sources is a current priority associated with management of Refuge System facility assets. Approximately \$8,000,000 was devoted to renewable energy measures in the American Recovery and Reinvestment Act of 2009 (ARRA). As ARRA and deferred maintenance projects are completed, sustainable energy measures are incorporated to reduce annual Operations and Maintenance costs and to help reduce our dependence upon petroleum based energy. These efforts also reduce the carbon footprint of the Refuge System in furtherance of goals established in the Service's draft Climate Change Strategic Plan.



Pictured above is a wind turbine and solar array at Eastern Neck National Wildlife Refuge in Maryland, which provides the renewable energy necessary for one of the refuge office buildings to approximate zero net energy use. Pictured below is an electric vehicle in use at Chincoteague National Wildlife Refuge.



The Service is using financial and performance data to improve its management of facility infrastructure and its mobile equipment fleet. The Service has developed an asset management plan to aid in management of our assets, based on workload drivers including General Services Administration useful life standards, geographic location, utilization patterns, interagency equipment sharing agreements, and generally accepted asset management principles.

Most of the 5,000 vehicles used on refuges are four wheel drive trucks and utility vehicles used for fire fighting, wildlife and habitat surveys, transporting equipment and tools to remote sites, and law enforcement. Considering approximately 90% of refuge roads are gravel or native surface, much of the vehicle use is on gravel roads. Extensive off-road use is also required. Thousands of refuge volunteers rely on refuge vehicles to accomplish their volunteer tasks. Agricultural, earthmoving, and construction equipment are used to maintain wetland impoundments and roads; enhance areas for wildlife habitat; control invasive plants; and maintain and construct modest visitor facilities such as boardwalks, observation platforms, tour routes, and nature trails. Smaller, specialized equipment such as all-terrain vehicles, aircraft, boats, small tractors, and snowmobiles are needed to access remote or rugged areas. Vehicles are also crucial on most refuges for law enforcement, public safety and wildlife surveys.



Most vehicles used on refuges are four wheel drive trucks and utility vehicles used for fire fighting, wildlife and habitat surveys, transporting equipment and tools to remote sites, and for law enforcement.

The Refuge Maintenance sub-activity includes six program elements, as described below.

Refuge Maintenance Support

Refuge Maintenance Support includes salaries and associated funding for maintenance staff at refuge field stations. Maintenance staff support all refuge programs both indirectly, by maintaining functional facilities and reliable equipment, and directly, by performing tasks such as mowing fields to enhance habitat, removing unwanted woody vegetation from wetland impoundments, and controlling invasive plants. Ongoing maintenance of visitor facilities including roads, trails, and a variety of small facilities, needed to provide visitors with appropriate access to refuge lands, is vital to enabling a positive experience for more than 44 million annual visitors.



Refuge Maintenance Support and Annual Maintenance include funding for refuge staff to maintain and repair assets and equipment necessary for wildlife habitat management activities.

Annual Maintenance

Annual maintenance encompasses all ongoing non-staff expenditures needed to keep our facility portfolio and mobile equipment fleet functioning for its intended purpose. Annual maintenance includes such items as utilities, custodial care, and snow removal for offices, administrative, and visitor center buildings. Annual maintenance involves repairing system failures in the year they occur, and includes preventive and cyclic maintenance, and purchasing maintenance supplies. Preventive maintenance; including scheduled servicing, repairs, and parts replacement; results in fewer breakdowns and is required to achieve the expected life of facilities and equipment. Cyclic maintenance is preventive maintenance scheduled in periods greater than one year. Annual maintenance allows scheduled replacement of small equipment, defined as equipment of less than \$5,000 in value, and addresses problems cost-effectively, before they grow in expense. The Youth Conservation Corps, a temporary employment program for high school youth, is also included under this category since much of their work supports annual maintenance.

Small Equipment and Fleet Management

This program element, formerly named Equipment Replacement, facilitates the acquisition, repair, and disposal of equipment valued from \$5,000 to in excess of \$25,000 including passenger vehicles and pickup trucks. The Small Equipment and Fleet Management program element also includes a rental and leasing program that provides a cost-effective alternative to purchasing equipment, particularly for short-term needs. In many cases, renting or leasing allows refuge staff to complete vital projects while limiting the maintenance cost of the equipment fleet.

Funds in this program element optimize the management of equipment to meet mission needs, environmental mandates, and to serve as an example for the efficient use of public assets. Because it is difficult to access remote and rough terrain, the Service needs a wide variety of vehicles and equipment to achieve our mission. This includes about 4,500 small equipment items including all terrain vehicles,

boats and motors, pumps, generators, trailers, and similar equipment. Most of the 5,000 refuge vehicles are used for fire fighting, wildlife and habitat surveys, transporting equipment to remote work sites, and transporting volunteers. About 1,500 units of agricultural equipment are used to manage habitats, maintain roads and levees and preclude growth of undesirable vegetation.

This program element's name was changed in FY 2011 to more accurately reflect the objectives of the program. In the past, the Service required a refuge to trade in an old vehicle or equipment to get a new vehicle or equipment. That policy has been abandoned because it creates inefficiencies in fleet management. Some refuges retained old equipment because they could only acquire new equipment if they had old equipment that needed to be replaced. This practice was not only an inefficient use of the Service's equipment and vehicle fleet, but it also posed potential environmental hazards and safety risks for Service employees.

Inventory of Refuge System Small Equipment and Vehicles as of September 30, 2008

Small Equipment / Vehicles	Total Units	Original Cost (\$000s)	Current Replacement Value (\$000s)	# Units Exceeding GSA Useful Life	% Units Exceeding GSA Useful Life
Agricultural Implements	1,487	\$19,563	\$22,815	615	41%
Heavy Equip. Attachments	103	\$1,388	\$1,597	13	13%
Trailers	1,498	\$20,257	\$23,817	500	33%
Off Road Utility Vehicles	1,386	\$10,921	\$12,284	237	17%
Boats/Motors	915	\$21,726	\$26,717	322	35%
Pumps/Power Units	424	\$5,666	\$6,900	224	53%
Motor Vehicles - Sedans	111	\$2,784	\$3,055	50	45%
Motor Vehicles - Trucks	4,217	\$100,656	\$114,577	2,031	48%
MV - Heavy Duty Trucks	721	\$48,379	\$60,226	413	57%
Total	10,862	\$231,344	\$271,993	4,405	38%

Heavy Equipment Management

This program element, formerly named Heavy Equipment Replacement, facilitates the acquisition, repair, and disposal of Heavy equipment which is any equipment item exceeding \$25,000 in replacement cost, excluding passenger vehicles and light trucks. This program element also includes a rental and leasing program to provide a cost-effective alternative to purchasing equipment. Equipment rental allows completion of vital projects while limiting the size and cost of the heavy equipment fleet.

Heavy Equipment Management funds are used to optimize the management of equipment to meet mission needs, environmental mandates, and to serve as an example for the efficient use of public assets. The Refuge System owns more than 2,700 heavy equipment assets with a combined replacement value of about \$205 million. The Refuge System depends on reliable heavy equipment since 3.5 million acres are managed each year through water control, tillage, mowing, invasive species control, or farming for habitat management, wildfire prevention, and other goals. Providing access to refuge lands and facilities by maintaining a variety of access roads is vital to all aspects of refuge land management. Visitor programs rely on heavy equipment for maintenance of roads, trails, boat ramps, and facilities, as well as enhancing habitat for wildlife in particular areas.

Inventory of Refuge System Heavy Equipment as of September 30, 2008

Heavy Equipment	Total Units	Original Acquisition Cost (\$000s)	Current Replacement Value (\$000s)	# Units Exceeding GSA Useful Life	% Units Exceeding GSA Useful Life
Crawler Dozer	395	\$34,869	\$44,459	212	54%
Four Wheel Drive Loaders	183	\$12,694	\$16,168	100	55%
Backhoe/Loaders	280	\$14,706	\$17,674	101	36%
Excavators	128	\$17,712	\$21,250	37	29%
Motor Grader	214	\$18,582	\$23,398	116	54%
Skid Steer/ Compact Track	177	\$6,158	\$6,856	19	11%
Specialty Tracked	103	\$10,488	\$12,664	29	28%
Agricultural Tractors	996	\$42,598	\$51,806	571	59%
Cranes	24	\$1,961	\$2,776	20	83%
Forklifts	154	\$3,918	\$4,978	74	48%
Other (Rollers, Skidders)	57	\$2,085	\$2,881	30	52%
Total	2,711	\$165,777	\$204,914	1,309	46%



The Refuge System regularly uses heavy equipment such as road graders to maintain roads and bull dozers to create and maintain wildlife habitats such as wetlands.

Deferred Maintenance Projects

Deferred Maintenance projects include repair, rehabilitation, disposal, and replacement of facilities. Only those projects that have already been delayed beyond their scheduled maintenance or replacement date are included in Deferred Maintenance. Projects that have not reached their scheduled date are not included in Deferred Maintenance. Major building components such as roofs have a scheduled replacement date. If funds are not available for the component to be replaced as scheduled, the project falls into the Deferred Maintenance category. The Service maintains an inventory of Deferred Maintenance and capital improvement needs for all field stations, consistent with Federal Accounting Standards. Available funds are directed to the highest priority projects based upon Facility Condition Index (FCI), a ratio of repair to replacement cost, and Asset Priority Index (API), an indicator of individual assets' contribution to the refuge system mission, in accordance with the DOI guidance on Deferred Maintenance and capital improvement plans. Ranking scores are currently derived from ten DOI-wide priority ranking factors. The Deferred Maintenance category funds both Service engineers and temporary staff working on Deferred Maintenance projects.

In addition to the Deferred Maintenance budget, the Refuge Roads program provides \$29,000,000 per year from the Federal Highway Administration to assist in maintaining refuge public use roads (defined as public roads, bridges, and parking areas). This program is reauthorized every 5 years and is currently pending reauthorization.

Deferred Maintenance Backlog Reported in CFO Audit (\$000s)

Year	DM Backlog	Increase/Decrease
2002	1,300,000	NA
2003	1,180,000	-120,000
2004	1,510,500	330,500
2005	2,040,500	530,000
2006	1,530,774	-509,726
2007	2,482,589	951,815
2008	2,495,752	13,163
2009	2,710,783	215,031
2010	2,706,402	-4,381

Factors Contributing to Increases in the Deferred Maintenance Backlog

The Refuge System Deferred Maintenance backlog has increased significantly since 2002. Increases are due to:

- Implementing the Service's condition assessment program which has resulted in the addition of new findings
- Completing a detailed road inventory by the Federal Highway Administration
- Inflation
- Natural disaster damages
- Increased number of assets and value of the Service's property asset portfolio
- Aging facility and mobile equipment assets

Regional and Central Support

The regional and central office support element includes management and coordination of the facility and equipment maintenance and improvement effort at the regional and National level. Primary support activities include:

- Management and technical support for implementing the Service Asset and Maintenance Management System (SAMMS) through maintaining and refining software, managing databases and servers, providing support via a help desk, and training personnel to use the software.
- Completing condition assessments of 20 percent of capitalized facilities at field stations each year to ensure that real property data is accurate and complete every five years. This program supports decision making for facility management, and provides technical support and short term assistance for deferred maintenance projects.
- Developing and implementing 5-year maintenance plans, including coordinating and reporting on project completions.
- Planning and implementing major maintenance and capital improvement efforts including development of budget plans, monitoring annual O&M costs, executing completion of deferred maintenance and related costs, coordinating energy conservation initiatives, prioritizing needs across multiple field locations, responding to major health and safety issues, and identifying and disposing of assets that are not mission dependent.

- Managing a heavy equipment program including operator safety training, budget planning, consolidated purchasing of replacement equipment, and coordination of equipment rental.

2012 Program Performance

The 2012 budget request will support maintenance staffing for field stations, as well as provide annual preventive maintenance, including funds for supplies and materials. These funds will allow the Refuge System to repair facilities and equipment, and perform most regular annual maintenance on schedule.

The budget will also support replacement of mobile equipment assets and allow initiation of approximately 225 deferred maintenance projects which will improve the condition of Service assets as measured by the FCI. These funds will allow the Refuge System to fund projects to repair facilities and equipment within the year in which deficiencies occur and perform cyclical maintenance on schedule, ensuring that cyclic projects do not become deferred maintenance.

The Refuge System will use its ongoing condition assessment program to focus maintenance activities on highest priority needs. By completing an assessment of all facilities every 5 years, the Refuge System will improve its ability to provide maintenance, repair, and where required, replacement costs with greater accuracy. The Refuge System will also continue use of the SAMMS database to reduce these costs through improved management.

The Refuge System will continue to use maintenance funding to support refuge operations. The facilities and equipment utilized on refuges contribute to wildlife and habitat management goals, and help maintain the vast majority of Refuge System acreage in desirable condition. Maintenance funding will also support Visitor Services by enabling visitors to access refuge lands and ensuring the safety of observation decks, trails, hunting blinds, fishing piers, and more. These facilities will help provide more than 44.4 million visitors with high quality, wildlife-dependent recreation opportunities.

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