

Activity: Fisheries and Aquatic Resource Conservation – Current Structure

		2010 Actual	2010 Enacted / 2011 CR	2012			Budget Request	Change From 2011 CR (+/-)
				Fixed Costs & Related Changes (+/-)	Administrative Cost Savings (-)	Program Changes (+/-)		
National Fish Hatchery Operations	(\$000)	54,370	54,370	-77	-1,834	-9,698	42,761	-11,609
	FTE	383	383	-	-	-67	316	-67
Maintenance and Equipment	(\$000)	18,350	18,350	-	-290	-	18,060	-290
	FTE	79	79	-	-	-	79	-
Aquatic Habitat and Species Conservation	(\$000)	61,440	61,440	-39	-1,031	-250	60,120	-1,320
	FTE	285	285	-	-	+5	290	+5
Aquatic Invasive Species	(\$000)	8,244	8,244	-10	-83	+1,045	9,196	+952
	FTE	25	25	-	-	+5	30	+5
Marine Mammals	(\$000)	5,810	5,810	-	-115	+180	5,875	+65
	FTE	21	21	-	-	-	21	-
Total, Fisheries and Aquatic Resource Conservation	(\$000)	148,214	148,214	-126	-3,353	-8,723	136,012	-12,202
	FTE	793	793	-	-	-57	736	-57

Proposed Budget Structure Change:

In response to a recommendation in the Senate Report 111-38 accompanying the 2010 Appropriations Act, the Service proposes to reduce the number of subactivities in Fisheries and Aquatic Resource Conservation to better reflect inherent similarities within the Program.

The Fisheries and Aquatic Resources Conservation Activity currently consists of five subactivities:

- National Fish Hatchery Operations
- Maintenance and Equipment
- Aquatic Habitat and Species Conservation
- Aquatic Invasive Species
- Marine Mammals

The Service proposes to integrate both the Aquatic Invasive Species and the Marine Mammals subactivities into the Aquatic Habitat and Species Conservation subactivity, resulting in three subactivities:

- National Fish Hatchery Operations
- Maintenance and Equipment
- Aquatic Habitat and Species Conservation

This proposal to streamline the Fisheries and Aquatic Resources Conservation budget in 2012 will help simplify the budget structure and improve performance integration. The work conducted under the Aquatic Invasive Species and Marine Mammals subactivities is defined in a similar way to that of Aquatic Habitat and Species Conservation, and includes Habitat Assessment and Restoration and Population Assessment and Cooperative Management.

Fisheries & Aquatic Resource Conservation		Current Subactivities					2011 CR, Total Proposed Structure	2012 Request, Total Proposed Structure	Change From 2011 CR (+/-)
		National Fish Hatchery Operations	Maintenance and Equipment	Aquatic Habitat and Species Conservation	Aquatic Invasive Species	Marine Mammals			
Proposed Subactivities	National Fish Hatchery System Operations	54,370	-	-	-	-	54,370	42,761	-11,609
	Maintenance & Equipment	-	18,350	-	-	-	18,350	18,060	-290
	Aquatic Habitat & Species Conservation	-	-	61,440	8,244	5,810	75,494	75,191	-303
Total, Current Structure		54,370	18,350	61,440	8,244	5,810	148,214	136,012	-12,202

Activity: Fisheries and Aquatic Resource Conservation – Proposed Structure

		2010 Actual	2010 Enacted / 2011 CR	2012			Budget Request	Change From 2011 CR (+/-)
				Fixed Costs & Related Changes (+/-)	Administrative Cost Savings (-)	Program Changes (+/-)		
National Fish Hatchery Operations	(\$000)	54,370	54,370	-77	-1,834	-9,698	42,761	-11,609
	FTE	383	383	-	-	-67	316	-67
Maintenance and Equipment	(\$000)	18,350	18,350	-	-290	-	18,060	-290
	FTE	79	79	-	-	-	79	-
Aquatic Habitat and Species Conservation	(\$000)	75,494	75,494	-49	-1,229	+975	75,191	-303
	FTE	331	331	-	-	+10	341	+10
Total, Fisheries and Aquatic Resource Conservation	(\$000)	148,214	148,214	-126	-3,353	-8,723	136,012	-12,202
	FTE	793	793	-	-	-57	736	-57

Program Overview

America’s fish and aquatic resources are among the world’s richest, and provide substantial social, economic, and ecological benefits to the Nation. However, many aquatic resources are declining at alarming rates despite conservation efforts by the Service and its partners. Almost 400 aquatic species require and receive special protection in some part of their natural or historic range. The reasons for these declines are largely due to habitat loss and the impact of non-native invasive species. Stream fragmentation is one component of habitat loss that has played a major role in the nationwide decline of fish and mussel populations. The introduction and spread of invasive species have significantly impacted the Nation’s ecosystems, and are second only to habitat destruction as a cause of declining biodiversity.

The mission of the Service’s Fisheries and Aquatic Resource Conservation (Fisheries) Program is to:

“Work with partners to restore and maintain fish and other aquatic resources at self-sustaining levels, and to support federal mitigation programs for the benefit of the American public.”

The Service’s Fisheries and Aquatic Resource Conservation (Fisheries) Program is responsible for the implementation of a national program to conserve, restore, and manage fish and aquatic federal trust species and the aquatic communities and habitats upon which they depend. Since 1871, the Fisheries Program has played a vital role providing scientific and

technical expertise in conservation genetics, propagation technology, inventory and monitoring, and habitat improvement. The Program has designed and implemented critical research programs, maintained decision-support systems and databases, and delivered on-the-ground and in-the-water conservation. Using the Strategic Habitat Conservation (SHC) framework, the Fisheries Program focuses its efforts on the geographic areas and species with the greatest conservation needs, and successfully works across geographic and political borders to craft partnerships with states, tribes, other governments, private organizations, and interested citizens.

In the face of impacts such as habitat loss and fragmentation and the introduction of aquatic invasive species, a globally changing environment is influencing coastal and riverine ecosystems throughout the U.S., and in turn, changing the abundance and distribution of fish, wildlife, and plant populations. The resulting sea-level rise, altered hydrology, reduced freshwater inflow to estuaries, higher water temperatures, erosion, and habitat loss pose significant threats to America's aquatic resources. For example, aquatic animal pathogens, such as the viral hemorrhagic septicemia virus (VHS) and chytrid fungus disease, are particularly susceptible to the influence of environmental changes that cause water temperature changes, which in turn threatens recreational and commercial fisheries and poses serious threats to America's amphibian diversity. Additionally, changing environments can be compounded by other stressors such as invasive species, making ecological resiliency more difficult. To address these threats, the Service's highest priority science needs are accurate biological inventory, assessment, modeling, and conservation strategies. Working with partners, the Fisheries Program collects, analyzes, and disseminates aquatic population and habitat information, designs and implements monitoring programs to evaluate the effectiveness of our conservation activities, conducts applied research to better predict population responses to environmental change and proposed management actions, and enhances an already strong scientific capacity to better understand the relationship between fish and wildlife populations, habitats, and people. These activities help the Fisheries Program better understand and address landscape-level issues that threaten the sustainability of the Nation's aquatic resources. Adhering to the SHC framework, the Fisheries Program ameliorates these issues by restoring the connectivity of the Nation's waterways, preventing new infestations of aquatic invasive species, and improving the adaptability and resilience of species and their habitats held in trust by the Service.

Landscape conservation cooperatives (LCCs) are conservation partnerships that provide scientific and technical support at the landscape level for identified priority species or groups of species. The Fisheries Program directly supports the LCC model and works hand-in-hand with the LCCs to restore aquatic resources. For example, the Bozeman Fish Technology Center (FTC) has developed a "living stream" laboratory for collaborative studies under the Great Northern LCC. Scientists there will conduct spawning behavior studies in partnership with USGS, states, and the U.S. Forest Service, focusing on effects of substrate, stream velocities, temperature and other factors of spawning success of species such as the endangered pallid sturgeon. Similarly, scientists at Bozeman FTC are working with partners under the Plains Prairie Pothole LCC to improve models for fish passage and barrier design, focusing research on swimming capabilities of listed fish species at various life stages and under various temperature and stream flow conditions. Through its existing cooperative partnerships (such as the National Fish Habitat Action Plan), wide-ranging programs, and 150 field stations nationwide, the LCCs identify conservation priorities that require Fisheries Program expertise, as well as information needed by the LCC participants to construct landscape and climate models. Working collaboratively within the LCC framework, Fisheries Program scientists and their partners, within the Service, academia, and other agencies, address landscape-scale stressors including habitat fragmentation, genetic isolation, spread of invasive species, and water scarcity—all of which are magnified by accelerating environmental change.

**Fisheries Program and LCCs
(Landscape Conservation Cooperatives)**

The Fisheries Program works with partners to achieve our mission results in restoring, conserving, and protecting self-sustaining populations of aquatic species via cooperative, large-scale ecosystem management through:

- Identification of threats and limiting factors, development of data, expertise, and information on species at risk, and assessment of species and habitat vulnerability.
- Provision of biological data and expertise.
- Collaboration with LCC modelers and others.
- Interpretation of modeling results.
- Propagation of imperiled populations of aquatic species.

Approximately 800 Fisheries Program employees are located nationwide in 154 facilities that include 71 National Fish Hatcheries, 65 Fish and Wildlife Conservation Offices (including the Alaska Conservation Genetics Laboratory), one Historic National Fish Hatchery, nine Fish Health Centers, seven Fish

Technology Centers, the Aquatic Animal Drug Approval Partnership, and the Aquatic Invasive Species and Marine Mammals programs. . The varied Fisheries offices conduct assessments of species, habitats, vectors of invasive species and pathogens, and ecological functions. Our employees provide a network unique in its geographic range, array of technical and managerial capabilities, and ability to work across political and program boundaries. Whether the removal of dams or water diversions to reconnect fragmented habitat; the restoration of degraded riparian and wetland habitat; the identification and control of aquatic nuisance species; or the propagation of an imperiled species, the Fisheries Program and our partners provide services crucial to the survival of aquatic species and their habitats.

In 2010, the Fisheries Program embarked on the development of an updated National Fisheries Program Strategic Plan. Using the cooperative, science-based framework of Strategic Habitat Conservation, each Service Region is developing five-year strategic plans for their Fisheries Programs, resulting in a strategic guide for the program. Planning goals and targets will be developed in close coordination with federal and state agencies, tribes, and other partners. These coordinated efforts will ensure that Service conservation activities complement State Wildlife Action Plans, the National Fish Habitat Action Plan, the National Tribal Natural Resources Strategy, and other conservation efforts and agreements.

The Fisheries Program is committed to six focus areas, each with associated goals, strategies, and performance targets and consistent with the 2004 *Fisheries Program Vision for the Future*:

- Partnerships and accountability
- Aquatic species conservation and management
- Public use
- Cooperation with Native Americans
- Leadership in science and technology
- Workforce management

The Fisheries Program is a key player in the recovery of threatened and endangered aquatic species. In coordination with the Endangered Species Program, the Fisheries Program meets specific tasks prescribed in Recovery Plans by providing population and habitat assessment and monitoring, captive propagation/stocking, applied research, and refugia for 94 threatened and endangered species. For example, the Service's Saratoga National Fish Hatchery is the first hatchery with active captive-rearing for the endangered Wyoming toad. The endangered amphibian, threatened by chytrid fungus disease, is extremely rare and exists only in captivity and at the Mortenson Lake National Wildlife Refuge in Wyoming. Sarasota NFH manages the genetics of the broodstock and produces tadpoles and toadlets for reintroductions, in cooperation with the state and private landowners. Similar long-term coordinated efforts have resulted in many successes; however, it is reasonable to assume that additional species and populations will become imperiled in the face of environmental change and other emerging challenges. The Fisheries Program continues to pursue collaborative opportunities and improve our tools to protect our aquatic resources.

Approximately half of threatened and endangered species are threatened by invasive species such as the large constrictor snakes and Asian carp. The Fisheries Program is taking steps to improve its ability to identify and prevent injurious wildlife from entering the U.S.



Photo by: Miami-Dade County Park & Recreation Dept.

To address the President's "America's Great Outdoors" initiative, Fisheries Friends Groups play a critical role in connecting the public with the Service by coordinating volunteers and businesses at the

community level in support of facility operations, special events such as National Fishing and Boating Week, and outdoor classrooms for youth. In 2010, 4,500 volunteers contributed over 140,000 hours of labor. In 2005, 11 Fisheries Friends Groups were associated with 16 facilities. In just three years the number of formal Fisheries Friends Groups grew to from 11 to 27 groups and the Fisheries facilities with associated groups increased from 16 to 35, or 50% of the Fisheries Program goal of 70 Friends Groups nationally. The National Fisheries Friends Partnership (NFFP) was formed under the authority of the National Fish Hatchery System Volunteer Act of 2006 (Act). In January 2009, the NFFP elected a board of directors from among existing Friends Groups and held its first meeting in conjunction with the Fisheries Friends Group National Meeting in March 2009.

The Fisheries Program fully supports the Secretary's initiative to create a 21st Century Youth Conservation Corps (YCC) and to influence participants to choose conservation careers by emphasizing new and creative ways to get the Nation's youth out into nature, specifically under-represented groups such as those in urban environments, minorities, and women. The Fisheries Program has long been engaged in community-level, recreationally-oriented activities that provide hands-on experiences for youths, foster an early appreciation for nature, and in many cases change lives in the process. Several former Fisheries YCC participants are now employed in the Fisheries Program. Through a nationwide network of facilities, the Fisheries Program reaches over 100,000 youths annually through a variety of outdoor events that include fishing derbies, Earth Day celebrations, National Fishing and Boating Week, and National Hunting and Fishing Day. The Service's SCEP/STEP program, rural and tribal YCC programs, and the Biologist-in-Training Program complement these early learning experiences to steer youth into careers in conservation and natural resources management. In July 2010, Fisheries Program biologists served on the staff of the Boy Scouts of America's Centennial National Jamboree, instructing these future leaders in the Fishing, Fly Fishing, and Fish and Wildlife Conservation merit badges and providing detailed information on the conservation delivery provided by the Fisheries Program. Most of the nearly 45,000 participants visited these venues staffed by the Fisheries Program personnel.

With over 230 formal agreements with indigenous Tribal Nations, the Fisheries Program is unique within the USFWS. Our special relationships in Indian Country have generated tribal YCC projects that employ, educate and train American Indian youth for careers in natural resources management. For many years the Fisheries Program has supported youth employment at the Mescalero Apache tribal hatchery in New Mexico, and has partnered with YCC and AmeriCorps for the last four years. Many of the YCC or AmeriCorps graduates continue to work with the tribe at the hatchery and with the Fish and Wildlife Service. In 2010, the program employed 18 indigenous youth and provided classroom and field training in trail building, spring protection, flood control, and fish hatchery operations and maintenance. Building on the success of this program, Fisheries launched a tribal YCC project during the summer of 2010 at the Creston National Fish Hatchery in Kalispell, MT in cooperation with the Confederated Salish and Kootenai Tribe Department of Natural Resources and the Salish and Kootenai College in Pablo, MT. The project employed 14 youth and two adult leaders from the surrounding Flathead Reservation to carry out projects at the hatchery, on the National Bison Range, and Nine Pipes National Wildlife Refuge. The projects truly change lives by providing a bridge from school to work, and perhaps to a career in natural resource management. Through these projects, the youth honor their elders, traditions, and culture.

In November 2010, and in partnership with the Service's National Conservation Training Center, the Division of Environmental Quality, the Secretary's Office of Youth and Careers, the Bureau of Indian Affairs, the National Park Service, and the Environmental Protection Agency, the Fisheries Program hosted a celebration of the successes of our Native American YCCs. Native youth from these Fisheries YCC and STEP programs joined with tribal elders and statesmen from across Indian Country to discuss the successful engagement of indigenous youth in fish and wildlife activities that lead to advanced education opportunities and identification of natural resource career pathways.

Use of Cost and Performance Information

- The Fisheries Program uses the Fisheries Information System (FIS) and the Fish Passage Decision Support System (FPDSS) databases to track priority needs, outcomes, performance, and cost drivers (e.g. populations, fish barriers). In 2006, FIS was integrated into the Service's Environmental Conservation Online System (ECOS) to provide a central data access point, to increase reporting efficiency by sharing data with other FWS databases, and to expand the use of spatial analysis tools. In 2009, a new on-line version of the Fish Distribution Module of FIS was launched to track the distribution of fish and other organisms produced at National Fish Hatcheries to locations in the wild and to other facilities. The new database uses internet-based mapping tools to accurately delineate and track fish distribution. In 2012, FIS and FPDSS are making additional enhancements to further link information among the Service's ECOS databases, resulting in expanded consistency and communication among Service programs and enhanced management applications.
- The Marine Mammal Program seeks efficiencies by implementing manatee, sea otter, walrus, and polar bear population surveys in partnership with the U.S. Geological Survey/Biological Resources Discipline and conducting assessments of subsistence harvest levels for sea otters, walruses, and polar bears in Alaska. This information is used to make key cost projections for long-term population status and trends monitoring, and to effectively focus limited fiscal resources on securing vital scientific information to guide resource management of trust species. With this approach, the Service has identified 4 of 10 marine mammal stocks that are being managed at self-sustaining levels. In addition, the partnership effort has enhanced the Service's understanding of population trends for the remaining 6 stocks.
- The National Fish Hatchery System uses asset information in Service Asset and Maintenance Management System (SAMMS), fish distribution data in FIS, and energy information from the Service's energy database to track the status of its critical water supplies, assess the success of restoration, recovery, and mitigation programs, and target the most probable energy efficiencies. The NFHS's aging stations' water supplies are in poor and occasionally failing condition, while species reared have increased by 60 percent in the last decade. In addition, hatcheries use three times the energy of non-hatchery Service field stations. With recent increase in energy costs, the NFHS faces many opportunities and challenges and relies on several information systems to balance needs and expectations

Activity: Fisheries and Aquatic Resource Conservation
Subactivity: National Fish Hatchery System Operations

		2010 Actual	2010 Enacted / 2011 CR	2012			Budget Request	Change From 2011 CR (+/-)
				Fixed Costs & Related Changes (+/-)	Admin- istrative Cost Savings (-)	Program Changes (+/-)		
National Fish Hatchery Operations	(\$000)	54,370	54,370	-77	-1,834	-9,698	42,761	-11,609
	FTE	383	383	-	-	-67	316	-67

Summary of 2012 Program Changes for National Fish Hatchery System Operations

Request Component	(\$000)	FTE
• Ecosystem Restoration - Bay Delta Ecosystem	+740	+6
• General Program Activities	-500	-4
• National Fish Hatchery Operations	-6,288	-65
• Great Lakes Mass Marking	-1,000	-2
• Scientific Review of Hatcheries in California	-2,150	+0
• Freshwater Mussel Recovery	-500	-2
Program Changes	-9,698	-67
Internal Transfer – Office of the Science Advisor	-109	-

Justification of Program Changes for the National Fish Hatchery System

The 2012 budget request for the National Fish Hatchery System is \$42,761,000 and 316 FTE, a net program change of -\$9,698,000 and -67 FTE from the 2010 Enacted/2011 annualized Continuing Resolution.

Ecosystem Restoration – Bay Delta Ecosystem (+\$740,000/+6 FTE)

Many native aquatic species in the Bay Delta are in trouble. Funding will be used for essential studies to address the impacts of changing habitats on imperiled delta aquatic species, for conservation planning and habitat restoration, and for conservation hatchery operations needed to restore wild populations of imperiled delta species. Additionally, funding ensures that captive populations maintain critical genetic diversity and that multiple populations are maintained as a precaution against catastrophic failure at any one facility. The Service will also use the requested funding to provide leadership in conservation of salmonid restoration, to evaluate the effect of hatchery salmon releases on wild salmon, and to ensure the health of smelt and salmon.

General Program Activities (-\$500,000/-4 FTE)

The Service proposes to eliminate unrequested funding provided for general operations of the National Fish Hatchery System in 2010. The savings are being used to fund other FWS priorities. NFHS funding of high-priority fishery management plan and recovery plan tasks, such as reintroduction of trust species into restored habitats, establishment and maintenance of refugia, enhancement or development of propagation and population monitoring techniques, and genetics work critical to the recovery of these species, will decrease commensurate with the requested level. All NFHS efforts are directed at meeting the Fisheries Program's long-term outcome measures related to self-sustaining populations.

National Fish Hatchery Operations (-\$6,288,000/-65 FTE)

Funding for National Fish Hatchery Operations will be reduced by \$6,288,000 in 2012. This funding is associated with the production of fish for the purpose of mitigating the effects of federal water

development projects. For many years the Service has been working to recover costs from responsible agencies in order to focus its available funding on native fish recovery and restoration. Beginning in FY 2010, the Army Corps of Engineers (Corps) has provided some funding for this purpose. In the FY 2012 President’s budget, the Corps has requested \$3.8 million to fund mitigation fish production. The Service will continue to work with the Corps and other partners, in all budget climates, to determine equitable reimbursable agreements to satisfy these responsibilities. Without these agreements there could be reduction of mitigation activities. . In 2009, mitigation facilities produced a total of 12,786,600 fish and 15,924,000 eyed eggs, which directly supported 3,500 jobs and nearly \$325 million in total economic benefit to local and state economies from Service operated mitigation facilities, as cited in the Service report Economic Effects of Rainbow Trout Production by NFHS.

An example of the activities at a mitigation hatchery includes:



Neosho National Fish Hatchery (NFH) in Missouri is the nation’s oldest operational federal fish hatchery. Established in 1888, the facility and its history are tightly woven into the social and cultural fabric of the Neosho community and southeast Missouri. More than 130 species of cold, cool, and warm water fish have been produced over the years for the purposes of conservation. The facility focuses on paddlefish and lake sturgeon restoration, endangered pallid sturgeon recovery, production of rainbow trout for mitigation of federal water projects, native mussel propagation, and serves as refugia for native Ozark cave fish. With the lack of reimbursable mitigation funding to keep it operational, this iconic center for conservation faces potential closure. Reduced funding would affect more than just the aquatic species produced and sheltered here. Neosho NFH currently hosts 45,000 visitors per year, with an anticipated 100,000 visitors per year expected after the completion of a new visitor’s center in 2010 -- complete with an auditorium and classrooms for purposes of educating local and regional students and the next generation of natural resource conservation professionals. The Hatchery’s Friends Group is among the most active in all of the Service, and in conjunction with the dedicated staff, provides a multitude of tours and information to the public. The hatchery provides total economic benefits of more than \$10 million annually and an estimated 110 jobs from its mitigation stocking program.

NFHS---Youth in the Great Outdoors Initiative

The NFHS plays a significant role in reconnecting people to America's rivers and waterways by working with fisheries facilities, local and metropolitan parks, and other such public outdoor places and urban areas with local communities. FY2010 examples include:

Neosho NFH (MO)

- 210 children participated in Neosho NFH's Annual Kids Fishing, assisted by 70 volunteers from the Friends Group, Lions Club, and local businesses provided fishing opportunities, fishing instruction, educational booths, and prizes.

Chattahoochee Forest NFH (GA)

- 190 disabled children and adults participated in the 16th Annual Special Kids Fishing Rodeo. Over 40 volunteers from the Friends of the Chattahoochee Forest NFH, USFS, and two chapters of Trout Unlimited provided one-on-one assistance to the participants during this event.

Wolf Creek NFH (KY)

- 1,525 children participated in the 24th Annual Catch a Rainbow Kids Fishing Derby. The event, valued at \$51,000 with little to no cost to any one agency or organizations, was possible because of:
 - 191 volunteers total (representing a host of agencies and organizations).
 - 16 major sponsors donating at least \$1,000 (either cash and/or items) along with countless other organizations giving of their time and/or services.



Great Lakes Mass Marking (-\$1,000,000/-2 FTE)

In 2010, Congress provided unrequested funding of \$1.0 million for mass marking of fisheries in the Great Lakes. The Service proposes to eliminate this unrequested funding and use the savings to fund other priorities in the President's Budget. Tagging equipment has been purchased and tagging protocols established, and high priority populations will be tagged in high priority areas of the Great Lakes with existing funding. Remaining funds will be focused on Fisheries Program core priority activities of propagating healthy and genetically-appropriate aquatic animals and plants to help re-establish wild populations without compromising overall performance.

Scientific Review of Hatcheries in California (-\$2,150,000/+0 FTE)

The Service proposes to eliminate this unrequested funding and use the savings to fund other FWS priorities. Using the 2010 funds, the Service plans to complete the review of the Klamath, North Coast, and Central Valley Hatchery Operations in California which will provide recommendations on marking hatchery fish. Lessons learned from this and similar reviews that occurred in the Pacific Northwest will be applied to other National Fish Hatcheries.

Freshwater Mussel Recovery (-\$500,000/-2 FTE)

In 2010 Congress provided unrequested funding to assist the Service in freshwater mussel recovery, which included work at the White Sulphur Springs National Fish Hatchery (WV). The Service proposes to eliminate this unrequested funding and use the savings to fund other FWS priorities. The White Sulphur Springs Hatchery is a national leader in developing freshwater mussel propagation and culture technology for endangered species restoration efforts and is internationally recognized for its expertise in propagation and recovery of freshwater mussels. Additionally, at the Genoa National Fish Hatchery (WI), over one million juvenile mussels of seven species, including federally endangered Higgins-eye and Winged Mapleleaf mussels, have been stocked in native habitats. The initial success of these stockings has been evident through the recovery of over 32,000 sub-adult and adult Higgins-eye mussels of multiple year classes from cage culture production sites in the Mississippi River and the discovery of free living individuals at host fish release sites in Wisconsin and Iowa. Remaining Program funds will be focused on Fisheries Program core priority activities of propagating healthy and genetically-appropriate aquatic animals and plants to help re-establish wild populations without compromising overall performance.

National Fish Hatchery System - Program 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
CSF 5.3 Percent of tasks implemented, as prescribed in management plans	46% (1,588 of 3,429)	76% (2,379 of 3,130)	74% (2,866 of 3,894)	63% (2,453 of 3,906)	52% (2,300 of 4,384)	48% (2,090 of 4,384)	-4% (-210 of 4,384)	
CSF Total Actual/Projected Expenditures(\$000)	\$61,976	\$64,703	\$62,947	\$68,054	\$64,638	\$59,500	(\$5,138)	
CSF Program Total Actual/Projected Expenditures(\$000)	\$36,006	\$39,168	\$40,012	\$43,998	\$44,570	\$45,150	\$579	
Actual/Projected Cost Per Tasks (whole dollars)	\$39,028	\$27,198	\$21,963	\$27,743	\$28,104	\$28,469	\$365	

National Fish Hatchery System - Program 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
5.3.1.3 % of tasks implemented, as prescribed in management plans - NFHS	69% (709 of 1,029)	40% (1,251 of 3,130)	34% (1,339 of 3,894)	36% (1,418 of 3,906)	27% (1,288 of 4,693)	23% (1,080 of 4,693)	-4% (-208 of 4,693)	
Comments	Reductions of -206 less Fisheries Management Plan (FMP) tasks implemented due to less operational funding for mitigation, -3 less FMP tasks implemented due to less General Program Activities (GPA), and an additional +1 FMP task for Bay Delta.							
5.3.7 # of applied aquatic science and technologic tools developed through publications	402	394	311	286	232	233	1	
Comments	Reduction of -1 less applied aquatic science and technological tool developed due to less GPA and an additional +2 applied aquatic science and technological tools developed for Bay Delta.							
5.3.8 # of data-related submissions made to the U.S. Food and Drug Administration (FDA) to complete technical section requirements for the approval of new animal drugs for use in aquatic species for which FDA assigns a Document Control Number.	89	101	97	118	109	108	-1	
Comments	Reduction of -1 less AADAP data-related submission made to the U.S. Food and Drug Administration for the approval of animal drugs used in fish propagation.							
CSF 7.21 Percent of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild	10% (61 of 595)	12% (70 of 585)	11% (70 of 639)	10% (70 of 701)	10% (70 of 689)	10% (70 of 689)	0%	
7.21.5.3 % of tasks implemented as prescribed in Recovery Plans - NFHS	52% (190 of 368)	40% (416 of 1,050)	0% (445 of 1,286)	33% (460 of 1,404)	30% (410 of 1,379)	25% (344 of 1,379)	-5% (-66 of 1,379)	
Comments	A reduction of -66 Recovery Plans tasks implemented due to reduction in operational funding for mitigation in the NFHS, a reduction of -3 less Recovery Plan tasks implemented due to less GPA, and an additional +3 Recovery Plan tasks for Bay Delta.							
CSF 15.4 Percent of mitigation tasks implemented as prescribed in approved management plans	73% (30 of 41)	64% (49 of 77)	76% (56 of 74)	96% (73 of 76)	52% (55 of 105)	20% (21 of 105)	-32% (-34 of 105)	

National Fish Hatchery System - Program 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
CSF Total Actual/Projected Expenditures(\$000)	\$23,147	\$23,184	\$24,029	\$27,489	\$20,980	\$8,115	(\$12,865)	
CSF Program Total Actual/Projected Expenditures(\$000)	\$19,766	\$20,032	\$20,795	\$23,894	\$24,205	\$24,520	\$315	
Actual/Projected Cost Per Tasks (whole dollars)	\$771,573	\$473,139	\$429,086	\$376,564	\$381,460	\$386,419	\$4,959	
15.4.1.3 % of mitigation tasks implemented as prescribed in approved management plans - NFHS	73% (30 of 41)	55% (42 of 77)	61% (45 of 74)	92% (70 of 76)	59% (45 of 76)	14% (11 of 76)	-45% (-34 of 76)	
Comments	A major reduction of -34 mitigation plan tasks implemented due to reduction in operational funding for mitigation in the NFHS.							
15.4.8 # of aquatic outreach and education activities and/or events	n/a	2,020	4,207	5,339	4,027	3,217	-810	
Comments	A major reduction in the number of aquatic outreach and education activities and or events due to a reduction in operational funding for mitigation for the NFHS.							
15.4.12 Total # of visitors to NFHS facilities	2,392,144	2,471,045	1,340,136	2,107,562	1,945,004	1,365,004	-580,000	
Comments	A major reduction in the number of visitors to Hatchery facilities due to a reduction in operational funding for mitigation for the NFHS.							
CSF 18.1 Percent of planned tasks implemented for tribal fish and wildlife conservation as prescribed by tribal plans or agreements	79% (79 of 100)	87% (123 of 142)	65% (351 of 538)	55% (335 of 608)	50% (280 of 555)	50% (277 of 555)	0% (-3 of 555)	
CSF Total Actual/Projected Expenditures(\$000)	\$6,170	\$6,109	\$8,047	\$9,488	\$8,033	\$8,050	\$17	
CSF Program Total Actual/Projected Expenditures(\$000)	\$3,286	\$2,389	\$3,255	\$2,772	\$2,808	\$2,844	\$36	
Actual/Projected Cost Per tasks (whole dollars)	\$78,103	\$49,670	\$22,927	\$28,321	\$28,689	\$29,062	\$373	

National Fish Hatchery System - Program 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
18.1.2 % of planned tasks implemented for tribal fish and wildlife conservation as prescribed by tribal plans or agreements - NFHS	79% (79 of 100)	87% (123 of 142)	31% (165 of 538)	28% (169 of 608)	22% (142 of 643)	22% (139 of 643)	0% (-3 of 643)	
Comments	A reduction of -3 less tribal tasks implemented for fish & wildlife conservation due to less GPA for the NFHS.							

Program Overview

The National Fish Hatchery System (NFHS) consists of 71 National Fish Hatcheries (NFHs), 9 Fish Health Centers (FHCs), 7 Fish Technology Centers (FTCs), one Historic National Fish Hatchery (HNFH), and the Aquatic Animal Drug Approval Partnership (AADAP) Program. These facilities and their highly-trained personnel provide a network unique in national conservation efforts because of the suite of world-class capabilities available and our ability to work with hundreds of state, tribal, non-governmental organizations, and private citizen partners to deliver conservation off federal lands. These capabilities include: propagation of healthy and genetically-appropriate aquatic animals and plants to help re-establish wild populations, leadership in applied research, aquatic animal health diagnostics and assessment, and the development of new animal drugs. Working closely with partners, the NFHS also provides recreational opportunities, conservation, and economic benefits for local communities. Additionally, a small percentage of hatchery facilities produce fish to mitigate the adverse effects of federal water development projects while focusing on native fish recovery and restoration. These facilities contribute 3,500 jobs and nearly \$325 million in total economic benefit to local and state economies as reported in the Service report *Economic Effects of Rainbow Trout Production by NFHS*.

Aquatic Species Conservation and Management

The Service’s NFHS is a key contributor to the recovery of ESA-listed aquatic species and the restoration of aquatic species whose populations are declining. The enormity of the challenge, and the significance of the NFHS’s participation in aquatic species conservation, is indicated by the 128 species propagated in 2009, a 58 percent increase over the 81 species reared eight years earlier. Non-fish species propagation increased from 7 species in 1998 to 47 in 2009, almost a seven fold increase.

The NFHS’s Fish Health and Fish Technology Centers provide the scientific foundation for many recovery programs. The AADAP Program works with many partners in both the public and private sectors to dramatically reduce the cost of FDA approval of drugs and chemotherapeutants necessary to manage and safeguard critical aquatic stocks and support private aquaculture. The NFHS’s recovery and restoration activities are fully coordinated with state, federal, tribal, and private sector partners as prescribed by Recovery Plans and multi-entity fishery management plans.

Recovery of Species Listed Under the ESA

The NFHS contributes to the recovery of threatened and endangered aquatic species and populations through applied research, captive propagation and refugia, and development of innovative assessment techniques all prescribed in species Recovery Plans. Genetic tools are used to identify populations, determine recovery goals, guide captive propagation programs, and assess population recovery. Captive

propagation techniques, including unique nutritional requirements of listed species, are developed, refined, and implemented. Studies in applied physiology and ecology help address problems related to survival in the wild, such as the impacts of temperature and other factors on reproduction. Other studies help establish basic life history parameters. The development of non-lethal marking and tagging techniques assists in evaluation of propagation programs and enhance adaptive management. Modeling techniques are developed to help link restoration actions to population goals. Hatcheries continue to provide refugia for populations impacted by wildfire, drought, or other environmental conditions. Environmental changes will likely impact a number of native aquatic species, and as the nation's only National fish hatchery system, the NFHS is uniquely and geographically positioned to help address issues that arise as a result of these impacts.

Restoration of Depleted, Non-Listed Species

The NFHS also conserves non-listed species and enhances recreational opportunities through production and stocking of healthy, genetically- appropriate animals to maintain or re-establish wild populations; by providing technical support in areas such as biometrics, nutrition, physiology, and conservation genetics; by supporting fish health, disease diagnostics, treatment, and management; and support for habitat restoration.

Aquatic Habitat Conservation and Management

The NFHS's contribution to habitat conservation is multi-faceted. Monitoring is crucial to our understanding of vulnerable locations and populations, the distribution of emerging aquatic pathogens, and environmental change. One such program is the National Wild Fish Health Survey (NWFHS), a successful partnership between the Service, states, tribes, and NGOs. Enhanced monitoring associated with the NWFHS improve the Service's and its partners' predictions and help direct future species recovery and restoration efforts. Other projects provide "explorer" or research fish to study habitat preferences, population dynamics and interactions, or other requirements of imperiled species. The NFHS also develops innovative technologies to meet EPA and FDA water effluent standards. These activities provide some of the scientific basis for recovery and restoration programs inherent in the National Fish Habitat Action Plan and the Landscape Conservation Cooperatives.

The NFHS also supports nearly all other Service program priorities. Water sources and the associated riparian habitats found on NFHs attract many different bird species and provide critical stopovers on annual migrations. Stations in proximity to the US/Mexico border are especially important, as they are positioned in a major migratory bird flyway. Several ponds at the Williams Creek NFH (AZ) are regularly enhanced to attract waterfowl and other species. Local communities also realize the potential NFHS contributions to bird conservation. For example, local Audubon Society members have erected several covered observation stations around the 2-acre wildlife pond at Uvalde NFH (TX). The wildlife area and other Uvalde NFH ponds are maintained by hatchery staff and provide resting and foraging opportunities to countless migratory birds. Additionally, the NFHS works with the National Wildlife Refuge System to provide aquatic animal population assessment and status.

Leadership in Science and Technology

Science and Technology - The Service's Fish Technology Centers, Fish Health Centers, and the Aquatic Animal Drug Approval Program provide national scientific and technical leadership to solve on-the-ground fishery management problems that are critical to many restoration and recovery programs. Areas addressed involve genetic analyses, nutrition, ecological physiology, reproductive biology, population dynamics and modeling, cryopreservation, biometrics, culture technologies, disease diagnostics, aquatic health management, invasive species studies, and availability of new aquatic animal drugs.

The Fish Technology and Health centers and AADAP are currently collaborating with LCCs, providing applied research support for high priority aquatic conservation issues. Scientists are sharing the results of Fisheries Program modeling projects, proposals, and tools in current use within the framework of the LCCs and SHC. The scientists and staff provide biological expertise and assistance with modeling interpretation, as well as incorporate relevant fisheries data, as appropriate.

Fish Technology Centers address an array of research topics related to altered habitat conditions and population fragmentation, stemming from various factors. For example, scientists at Bozeman FTC (MT) are studying the physiological impacts of temperature-induced stress on reproduction and survival of the endangered pallid sturgeon. Scientists at San Marcos FTC (TX) provide management guidance on the effects of reduced stream flow on endangered species and study invasive species pathways and impacts on native fish populations. Abernathy FTC (WA) is refining methods in remote monitoring technology to track changes in seasonal movement of fish, to identify micro-habitat use, and to monitor population abundance. In addition, FTC geneticists characterize genetic diversity as a basis for management actions. For example, information regarding reduced diversity in threatened bull trout populations, fragmented by dams, will be used to guide conservation and management decisions for bull trout within Mount Rainier National Park (WA).

In additional efforts to conserve genetic diversity, Fish Technology Centers continue to develop and refine technology associated with cryopreservation, or freezing, of reproductive cells (gametes) to assist in restoration and recovery efforts. Efficiencies associated with cryopreservation include reduced space and costs associated with housing live broodstock and substantially fewer constraints associated with obtaining genetically representative specimens at spawning time. In addition, cryopreservation provides a safeguard for preserving genetic diversity. The Fisheries Program established a Memorandum of Understanding (MOU) with the Department of Agriculture that enables the NFHS to transfer cryopreserved gametes for secure archiving within USDA's National Germplasm Repository in Ft. Collins, CO. Under this agreement, representative gametes from fish and other aquatic organisms, collected or held by the NFHS, may be transferred to the National Germplasm Repository for long-term storage or until needed for restoration and recovery.

Aquatic Animal Health – Since Fish Health Centers (FHC) were established, they have been increasingly called upon to provide national and international leadership to the aquatic animal health community, a trend that is anticipated to expand. The centers are critical components of the Service's aquatic animal health program and the overall health of the Nation's aquatic resources. They guide the National Aquatic Animal Health Plan (NAAHP), in partnership with the National Oceanic and Atmospheric Administration and the Department of Agriculture's Animal and Plant Health Inspection Service. FHCs provide expertise to State Department in the trade of live fish products, and to the American Fisheries Society's Fish Health Section in detecting pathogens and infectious diseases. FHCs are the nexus of applied and basic aquatic animal health science for addressing threats to the Nation's wild and cultured fish species, such as the potentially catastrophic VHS virus. The FHCs are also important participants in the new National Aquatic Animal Pathogen Testing Network (NAAPT). In addition, the National Wild Fish Health Survey (NWFHS) maintained by the Service is the preeminent source of information on the status of aquatic animal pathogens in the wild and is widely referenced by our partners nationally.

NFHS's aquatic animal health program is delivered through: 1) the NAAPH and the Service's Aquatic Animal Health Policy, 2) NWFHS, and 3) general aquatic animal health support activities for Service and non-Service facilities (e.g., hatchery inspections, diagnostics of fish and other aquatic organisms including mollusks, amphibians). As the effects of environmental change impact the landscape and our Nation's aquatic species, the potential for introduction or spread of dangerous aquatic pathogens will increase. The Service's aquatic animal health biologists are on the front lines of monitoring and detecting

these pathogens and providing time-sensitive information for fisheries managers to make informed decisions.

The Aquatic Animal Drug Approval Partnership (AADAP) Program in Bozeman, MT is a partner-based national program established by the NFHS in 2004 that provides multi-agency coordination to obtain FDA approval for new aquatic animal drugs and therapeutants. The AADAP Program also leads a coordinated effort to generate critical research data and manage all other aspects of requisite data submissions to FDA in support of these new drug approvals, as well as administer the Service's highly successful National Investigational New Animal Drug (INAD) Program whereby other federal, state, tribal, and private aquaculture programs throughout the U.S. are allowed to use certain needed drugs under limited experimental conditions. The U.S. aquaculture industry, which includes both public sector and private sector programs, has been severely hampered for many years by the paucity of FDA-approved drugs needed to combat diseases in aquatic species and facilitate the efficient management and production of healthy animals.

In the public sector, these drugs are critical to the restoration, recovery, and management of aquatic species (including many threatened or endangered species), mitigation of federal water projects via fish-plantings, and recreational fisheries enhancement through stocking. In the private aquaculture sector, a lack of FDA-approved drugs has reduced production efficiencies, and perhaps even more importantly, America's ability to compete with foreign producers that have access to a much broader spectrum of drugs.¹ This partnership allows the otherwise prohibitive cost of the applied research and development needed for FDA-approval to be shared by the states, tribes, private aquaculture community, pharmaceutical sponsors, and other partners, thereby enabling the submission of consolidated data packages to FDA. AADAP was developed to be proactive and capable of addressing emerging issues related to maintaining the health and fitness of cultured and wild fish populations.

Global environmental change presents a serious, new potential threat to the health and well-being of all aquatic species. The prevalence and severity of animal diseases is strongly correlated with environmental conditions (i.e., potential stressors), and is ever-changing. In poikilothermic aquatic species, water temperature is a critical factor in both pathogen abundance and virulence, as well as host susceptibility. AADAP is uniquely poised to respond to such emerging issues should they arise. Recent new FDA-approvals for the use of Aquaflor[®] (florfenicol), Terramycin[®] 200 for Fish (oxytetracycline), and 35% PEROX-AID[®] (hydrogen peroxide) not only provide both public and private sector U.S. aquaculture programs with critical new management tools, but also highlight the success of these four partnership efforts.

Public Use

Recreation – The NFHS works with state, tribal, nongovernmental organizations, and other partners, operating under approved fishery management plans, to restore depleted populations of native game fish and enhance fishing opportunities for the nation's 58 million recreational anglers.

A peer-reviewed report² on the economic benefits accrued as a result of NFHS production of rainbow trout sheds light on the impacts of the NFHS on local economies and employment. According to the report, \$5.4 million expended by NFHS field stations to grow and stock rainbow trout provide a total economic output of \$325 million. This 60 to 1 return on taxpayer investment directly supports over 3,500

¹ A.C. von Eschenbach, Report to Congress, Food and Drug Administration Amendments Act of 2007. *Enhanced Aquaculture and Seafood Inspection*. 2008. 20 pp.

² U.S. Fish and Wildlife Service. 2006. *Economic Effects of Rainbow Trout Production by the National Fish Hatchery System*. 34 pp.

jobs and \$173 million in angling-related sales. Overall, each dollar budgeted for NFHS rainbow trout production generates approximately \$32 in retail sales and \$37 in net economic value.

Education – National Fish Hatcheries are integral parts of the communities in which they are located and NFHS personnel help instill the Nation’s conservation ethic in our youth. National Fish Hatcheries are education centers that provide hands-on experience and opportunities for discovery. For example, fourteen NFHS and six Fish and Wildlife Conservation Offices in the Southeast Region offer the Biologist-in-Training Program, which is designed to guide students through a fun, hands-on exploration of aquatic habitats. In 2011, over 100,000 children nationwide will participate in a wide range of educational conservation activities provided by NFHS personnel.



To address the mandates specified in the National Fish Hatchery System Volunteer Act of 2006, the NFHS has built outdoor classrooms at several facilities. Outdoor Discovery Zone Guidelines were developed and distributed to provide Project Leaders with ideas for hands-on activities for youth that helps them develop a better understanding of fish and aquatic resources conservation. For example, two pilot projects completed visitor enhancements in 2009 at Genoa NFH (WI) and at White Sulphur Springs NFH (WV). Two others at Uvalde NFH (TX) and at Inks Dam NFH (TX) initiated outdoor discovery zones that included building renovations and trail developments. These projects seek to improve scientific literacy in conjunction with both formal and informal education programs in addition to promoting conservation of aquatic species and cultural resources of the hatcheries.

Mitigation – When federal locks and dams were constructed, Congress and the Federal government committed to mitigate impacts on recreational, commercial, and tribal fisheries. Consistent with the Fisheries Program *Strategic Plan* and *Vision for the Future*, the Service mitigates the adverse effects of federal water development projects while focusing on native fish recovery and restoration. The Service is working to recover costs from responsible agencies. National Fish Hatchery System and Department personnel worked with the U.S. Army Corps of Engineers (Corps) in 2008 to reach an agreement for full reimbursement from Corps projects. The Service is optimistic that the partnership between the Service, the Corps, and affected states and tribes will allow the government to efficiently meet its mitigation responsibilities for federal water development projects and continue to provide over \$300 million in economic benefits to local, tribal, and state economies.

2012 Program Performance

In 2012, the NFHS will continue its multi-faceted efforts to accelerate recovery of listed fish and other native aquatic species. Working with state, tribal, federal, non-governmental, and internal partners (in particular, the Endangered Species Program and Fish and Wildlife Conservation Offices), the NFHS will implement recovery activities that include propagation and stocking of healthy, genetically-sound fish, and providing refugia to populations in distress – tasks prescribed in recovery and fishery management plans. The NFHS will continue to complete recovery and restoration plan tasks, including: 1) improving culture, spawning, and rearing methods; 2) enhancing “wild” attributes to maximize survival of broodstock and progeny; 3) minimizing contaminant risks to human health and successful propagation; 4) developing data required for new animal drug approvals; 5) obtaining information on biological threats to native populations; and 6) propagating genetically fit native aquatic species for reintroduction into restored habitats. High-priority projects include the production and release of native trout, other finfish, and imperiled and declining native amphibian and freshwater mussel species.

The NFHS will continue its work on tasks prescribed in recovery plans to accelerate the recovery of federally-listed fish species. The NFHS will continue its vital role in maintaining the number of threatened and endangered populations that are self-sustaining in the wild, in addition to performing refugia tasks and applied science and technology tasks prescribed in fishery management plans. The

NFHS will work diligently with its partners to provide leadership in such areas as field sampling, water testing, laboratory work, and collaborative development of management strategies to address aquatic pathogens.

Other planned program activities include:

Recovery of Species Listed Under the ESA - National Fish Hatchery System personnel will actively participate on the 5-Year Review Team for the threatened Apache trout, an important step in the process to remove that species from the Endangered Species List. Work will continue on the only captive population of endangered relict darter at Wolf Creek NFH (KY); propagation and stocking of the endangered Higgins' eye pearly mussel at Genoa NFH (WI); propagation and stocking of the endangered pallid-sturgeon at Neosho NFH (MO) and Natchitoches NFH (LA); captive propagation and stocking of the threatened Lahontan cutthroat trout at Lahontan NFH (NV); and, cutting-edge work on the endangered Texas wild rice and the Texas blind salamander at San Marcos NFH and Technology Center (TX). Drought, which may become more severe and increasing demands on water from the Edwards Aquifer, has decreased water flow into the San Marcos River, water that both the Texas wild rice and blind salamander depend on for survival. Our San Marcos facility will maintain Texas wild rice plants and blind salamanders in refugia to provide a backup source of these species if needed and, through research, provide insight into their biology and life history requirements. San Marcos' current research on the Texas blind salamander focuses on predator recognition, which may be important for successful reintroduction. At the Bozeman Fish Technology Center (MT), endangered pallid sturgeon studies will continue to focus on reproduction and growth and the impact of factors such as temperature at various life stages. These studies are directly applicable to sturgeon survival and recruitment, recovery efforts of this species in the Missouri River basin, and the ability of managers to predict and address impacts of environmental change.

Restoration of Depleted, but Non-Listed Species - National Fish Hatchery System efforts have helped preclude additional ESA listings of species such as Atlantic sturgeon and American shad. Close coordination with state and tribal partners will continue on such projects as propagation and stocking of Chinook, coho, and steelhead at Makah NFH and Quinalt NFH (WA); striped bass at Orangeburg NFH (SC); lake trout at Iron River NFH (WI); and paddlefish at Garrison Dam NFH (ND).

Science and Technology - The NFHS' Fish Health Centers will continue to provide diagnostic support to our NFHS as well as to state and tribal hatcheries, and work with the USDA and Great Lakes partners on pathogen issues. In addition, FHC personnel will be working closely with USDA-APHIS and other federal, state, and tribal partners to implement the National Aquatic Animal Health Plan. Fish Technology Centers will continue to provide fishery managers with science support through development of new concepts and techniques to solve specific problems in aquatic restoration and recovery activities. In particular, FTCs will focus on aquatic resources issues, such as effects of water temperature and other factors on species reproduction, growth, and survival. FTCs will expand efforts to characterize genetic diversity as a basis for management decisions, and work to develop models that predict the population response of various management actions, such as habitat restoration to assist NFHS with improved water conservation and treatment technologies.

The Aquatic Animal Drug Approval Partnership (AADAP) will enhance its liaison with the FDA, private drug companies, and public/private partners to facilitate cost-effective aquatic animal drug approvals.

Recreation - The NFHS will continue its long-term efforts with the states and tribes to propagate and stock fish to ensure recreational opportunities. In addition, the NFHS will continue to enhance the experiences for the thousands of visitors to its stations.

Education - The NFHS considers conservation education to be a core value. No greater legacy can be left to future generations than instilling a sense of conservation ethics in our children. In 2012, more than 100,000 youths will interact with NFHS personnel at fishing derbies, hatchery tours, and other educational activities. NFHS field stations will continue to be used as “outdoor classrooms” and NFHS personnel will share their varied expertise with an anticipated 2 million visitors. The NFHS will work closely with the National Fisheries Friends Partnership Board to implement the National Fish Hatchery System Volunteer Act of 2006.

National Fish Hatchery System - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF 5.1 Percent of fish species of management concern that are managed to self-sustaining levels, in cooperation with affected States, tribes, and others, as defined in approved management documents (GPRA)	42% (63 of 150)	29% (48 of 164)	12% (17 of 146)	8% (16 of 211)	8% (16 of 213)	8% (16 of 213)	0%	8% (17 of 211)
CSF Total Actual/Projected Expenditures(\$000)	\$26,775	\$32,281	\$35,697	\$32,848	\$33,275	\$33,707	\$433	\$35,814
CSF Program Total Actual/Projected Expenditures(\$000)	\$561	\$569	\$932	\$707	\$716	\$726	\$9	\$726
Actual/Projected Cost Per Species (whole dollars)	\$425,000	\$672,514	\$2,099,797	\$2,052,986	\$2,079,674	\$2,106,710	\$27,036	\$2,106,710
CSF 5.2 Percent of populations of native aquatic non-T&E species managed or influenced by the Fisheries Program for which current status (e.g., quantity and quality) and trend is known	34% (540 of 1,589)	40% (592 of 1,472)	34% (526 of 1,569)	32% (502 of 1,565)	32% (502 of 1,580)	32% (499 of 1,580)	0% (-3 of 1,580)	30% (466 of 1,565)
CSF Total Actual/Projected Expenditures(\$000)	\$18,753	\$21,790	\$20,686	\$22,946	\$23,244	\$23,406	\$161	\$21,858
CSF Program Total Actual/Projected Expenditures(\$000)	\$3,839	\$4,703	\$4,788	\$5,582	\$5,654	\$5,728	\$74	\$5,728
Actual/Projected Cost Per Populations (whole dollars)	\$34,729	\$36,807	\$39,328	\$45,709	\$46,303	\$46,905	\$602	\$46,905

National Fish Hatchery System - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF 5.3 Percent of tasks implemented, as prescribed in management plans	46% (1,588 of 3,429)	76% (2,379 of 3,130)	74% (2,866 of 3,894)	63% (2,453 of 3,906)	52% (2,300 of 4,384)	48% (2,090 of 4,384)	-4% (-210 of 4,384)	61% (2,388 of 3,906)
CSF Total Actual/Projected Expenditures(\$000)	\$61,976	\$64,703	\$62,947	\$68,054	\$64,638	\$59,500	(\$5,138)	\$67,984
CSF Program Total Actual/Projected Expenditures(\$000)	\$36,006	\$39,168	\$40,012	\$43,998	\$44,570	\$45,150	\$579	\$45,150
Actual/Projected Cost Per Tasks (whole dollars)	\$39,028	\$27,198	\$21,963	\$27,743	\$28,104	\$28,469	\$365	\$28,469
5.3.1.3 % of tasks implemented, as prescribed in management plans - NFHS	69% (709 of 1,029)	40% (1,251 of 3,130)	34% (1,339 of 3,894)	36% (1,418 of 3,906)	27% (1,288 of 4,693)	23% (1,080 of 4,693)	-4% (-208 of 4,693)	27% (1,041 of 3,906)
5.3.7 # of applied aquatic science and technologic tools developed through publications	402	394	311	286	232	233	1	286
5.3.8 # of data-related submissions made to the U.S. Food and Drug Administration (FDA) to complete technical section requirements for the approval of new animal drugs for use in aquatic species for which FDA assigns a Document Control Number.	89	101	97	118	109	108	-1	101

National Fish Hatchery System - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF 5.5 Conservation and Biological Research Facilities Improvement: Overall condition of NFHS buildings and structures (as measured by the FCI) that are mission critical and mission dependent (as measured by the API) with emphasis on improving the condition of assets with critical health and safety needs (GPRA)	0.118 (120M of 1,015M)	0.114 (120M of 1,057M)	0.106 (115M of 1,087M)	0.098 (128M of 1,305M)	0.114 (153M of 1,345M)	0.114 (153M of 1,345M)	0.000	0.098 (128M of 1,305M)
CSF 7.21 Percent of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild	10% (61 of 595)	12% (70 of 585)	11% (70 of 639)	10% (70 of 701)	10% (70 of 689)	10% (70 of 689)	0%	9% (66 of 701)
7.21.5.3 % of tasks implemented as prescribed in Recovery Plans - NFHS	52% (190 of 368)	40% (416 of 1,050)	0% (445 of 1,286)	33% (460 of 1,404)	30% (410 of 1,379)	25% (344 of 1,379)	-5% (-66 of 1,379)	23% (322 of 1,404)
CSF 12.2 Number of aquatic invasive species populations controlled/managed - annual	14	11	11	14	14	14	0	11
CSF Total Actual/Projected Expenditures(\$000)	\$16,276	\$18,098	\$19,435	\$16,861	\$17,080	\$17,302	\$222	\$13,595
CSF Program Total Actual/Projected Expenditures(\$000)	\$521	\$169	\$560	\$347	\$351	\$356	\$5	\$356
Actual/Projected Cost Per Populations (whole dollars)	\$1,162,537	\$1,645,257	\$1,766,840	\$1,204,351	\$1,220,008	\$1,235,868	\$15,860	\$1,235,868
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%	13% (2,917 of 21,608)

National Fish Hatchery System - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF Total Actual/Projected Expenditures(\$000)	\$3,977	\$4,134	\$3,898	\$4,354	\$4,001	\$4,053	\$52	\$3,908
CSF Program Total Actual/Projected Expenditures(\$000)	\$311	\$323	\$346	\$369	\$374	\$379	\$5	\$379
Actual/Projected Cost Per Unit (whole dollars)	\$1,392	\$1,430	\$1,337	\$1,306	\$1,323	\$1,340	\$17	\$1,340
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%	30% (667 of 2,205)
CSF Total Actual/Projected Expenditures(\$000)	\$2,211	\$2,473	\$2,489	\$2,854	\$2,895	\$2,933	\$38	\$2,835
CSF Program Total Actual/Projected Expenditures(\$000)	\$65	\$50	\$40	\$65	\$66	\$66	\$1	\$66
Actual/Projected Cost Per Collections (whole dollars)	\$3,537	\$3,758	\$3,720	\$4,142	\$4,196	\$4,250	\$55	\$4,250
CSF 15.4 Percent of mitigation tasks implemented as prescribed in approved management plans	73% (30 of 41)	64% (49 of 77)	76% (56 of 74)	96% (73 of 76)	52% (55 of 105)	20% (21 of 105)	-32% (-34 of 105)	49% (37 of 76)
CSF Total Actual/Projected Expenditures(\$000)	\$23,147	\$23,184	\$24,029	\$27,489	\$20,980	\$8,115	(\$12,865)	\$14,297
CSF Program Total Actual/Projected Expenditures(\$000)	\$19,766	\$20,032	\$20,795	\$23,894	\$24,205	\$24,520	\$315	\$24,520
Actual/Projected Cost Per Tasks (whole dollars)	\$771,573	\$473,139	\$429,086	\$376,564	\$381,460	\$386,419	\$4,959	\$386,419
15.4.1.3 % of mitigation tasks implemented as prescribed in approved management plans - NFHS	73% (30 of 41)	55% (42 of 77)	61% (45 of 74)	92% (70 of 76)	59% (45 of 76)	14% (11 of 76)	-45% (-34 of 76)	14% (11 of 76)
15.4.8 # of aquatic outreach and education activities and/or events		2,020	4,207	5,339	4,027	3,217	-810	838
15.4.12 Total # of visitors to NFHS facilities	2,392,144	2,471,045	1,340,136	2,107,562	1,945,004	1,365,004	-580,000	624,468

National Fish Hatchery System - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF 15.5 Recreation-related/Public Use Facilities Improvement: Overall condition of both NWRS and NFHS buildings and structures (as measured by the FCI) with emphasis on improving the condition of assets with critical health and safety needs (GPRA)	0.120 (52M of 42M)	0.090 (25M of 275M)	0.088 (25M of 283M)	0.082 (25M of 306M)	0.103 (33M of 316M)	0.103 (33M of 316M)	0.000	0.088 (27M of 306M)
CSF 15.8 Percent of adult Americans participating in wildlife-associated recreation	n/a	38% (385 of 1,000)	38% (87M of 229M)	38% (87M of 229M)	38% (87M of 229M)	38% (87M of 229M)	0%	38% (87M of 229M)
CSF Total Actual/Projected Expenditures(\$000)	n/a	\$71,172	\$64,685	\$69,384	\$70,286	\$71,199	\$914	\$71,199
CSF Program Total Actual/Projected Expenditures(\$000)	n/a	\$7,834	\$7,879	\$9,274	\$9,394	\$9,516	\$122	\$9,516
Actual/Projected Cost Per Unit (whole dollars)	n/a	\$184,861	\$1	\$1	\$1	\$1	\$0	\$1
CSF 18.1 Percent of planned tasks implemented for tribal fish and wildlife conservation as prescribed by tribal plans or agreements	79% (79 of 100)	87% (123 of 142)	65% (351 of 538)	55% (335 of 608)	50% (280 of 555)	50% (277 of 555)	0% (-3 of 555)	46% (281 of 608)
CSF Total Actual/Projected Expenditures(\$000)	\$6,170	\$6,109	\$8,047	\$9,488	\$8,033	\$8,050	\$17	\$8,166
CSF Program Total Actual/Projected Expenditures(\$000)	\$3,286	\$2,389	\$3,255	\$2,772	\$2,808	\$2,844	\$36	\$2,844
Actual/Projected Cost Per tasks (whole dollars)	\$78,103	\$49,670	\$22,927	\$28,321	\$28,689	\$29,062	\$373	\$29,062

National Fish Hatchery System - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
18.1.2 % of planned tasks implemented for tribal fish and wildlife conservation as prescribed by tribal plans or agreements - NFHS	79% (79 of 100)	87% (123 of 142)	31% (165 of 538)	28% (169 of 608)	22% (142 of 643)	22% (139 of 643)	0% (-3 of 643)	20% (119 of 608)

Activity: Fisheries and Aquatic Resource Conservation
Subactivity: Maintenance and Equipment

		2010 Actual	2010 Enacted / 2011 CR	2012			Budget Request	Change From 2011 CR (+/-)
				Fixed Costs & Related Changes (+/-)	Admin- istrative Cost Savings (-)	Program Changes (+/-)		
National Fish Hatchery Maintenance and Equipment	(\$000)	17,818	17,818	-	-277	-	17,541	-277
	FTE	79	79	-	-	-	79	-
FWCO Maintenance and Equipment	(\$000)	532	532	-	-13	-	519	-13
	FTE	0	0	-	-	-	0	-
Total, Maintenance and Equipment	(\$000)	18,350	18,350	-	-290	-	18,060	-290
	FTE	79	79	-	-	-	79	-

Justification of Program Changes for Maintenance and Equipment

The 2012 budget request for Maintenance and Equipment is \$18,060,000 and 79 FTE, no net program change and +0 FTE from the 2010 Enacted/2011 annualized Continuing Resolution.

Program Overview

The Fisheries Program has developed an Asset Management Plan that guides program management of its \$1.63 billion in essential real and personal property inventories, including the systematic and objective tracking, evaluation, reporting of asset condition, and the prioritization of their management. Using the Service Asset and Maintenance Management System (SAMMS), an integrated web-based information system, the Fisheries Program standardizes asset management, corroborates deferred maintenance needs with objective condition assessment data, identifies short- and long-term maintenance needs, and initiates analyses of annual operating and maintenance expenditures. Comprehensive, proactive asset management is essential to ensure water flows, thereby sustaining captive aquatic populations necessary to meet recovery, restoration, and mitigation objectives and tribal trust responsibilities identified in Recovery Plans and Fishery Management Plans.

National Fish Hatchery System Maintenance and Equipment

The ability of the National Fish Hatchery System to accomplish its mission is largely determined by the condition of key assets associated with water delivery, aquatic species culture, and effluent management. These assets include those that directly deliver and treat the water delivered to and discharged from the station, and regulate the actual rearing or holding environment of fish and other aquatic species. Three-fourths of the NFHS’s \$1.63 billion of real property assets are mission-critical. The NFHS has embraced the Office of the Inspector General’s recommendations on facilities maintenance, as well as Department asset management initiatives, and has developed asset performance measures and a sound strategy for ensuring its crucial assets are kept fully functional. The Departmental standard is that mission critical assets be maintained in “good” condition. With a current facility condition index (FCI, or the repairs as a fraction of the assets’ replacement value) for its critical assets of 9.11 percent (“fair” condition by DOI standards), the NFHS works diligently to minimize fish losses associated with water supply failures, especially those involving threatened or endangered species.

The NFHS uses the Service's Asset Management Plan and Regional Asset Business Plans to manage its assets, address key repair needs, and dispose of assets that are low in priority or excess to the government's needs. A rigorous Condition Assessment process ensures that the NFHS's repair needs are determined objectively. With a primary goal of ensuring that the NFHS's critical assets are in fully operational condition, attention to both annual maintenance (regular servicing of water supply components), and deferred maintenance (outstanding repair needs of these vital assets) is necessary.

Environmental and increasing energy cost concerns have arisen over the past several years, prompting the Service to track energy use by station and to some extent by asset, and providing the impetus for honest and thorough consideration of what these data indicate.

- The NFHS's real property assets constitute 7.6 percent of all Service assets by replacement value, yet account for 31 percent of all Service energy use.
- The average NFHS field station uses 2.3 billion BTUs annually, over 3 times the 0.7 billion BTU average used by non-NFHS field stations.
- Sixteen of the NFHS's 82 field stations account for 60 percent of all NFHS energy use.

Our stations provide tremendous opportunity to reduce the Service's and the Department's carbon footprint. NFHS staff is developing energy performance measures reasonably reflective of both energy use by station or program and actual energy reduction opportunities. NFHS field stations may significantly reduce energy consumption through building renovations, new technologies, and emplacement of renewable energy systems. As examples, variable frequency drive water pumps offer electrical use reductions of 50 percent when pump speeds are dropped by only 20 percent, while micro-hydro turbines emplaced in water lines at certain fish hatcheries could provide all the electricity some stations need. Further analysis of the NFHS's greatest energy using stations, along with the metering to provide asset electrical use, also promise significant efficiencies that could help these energy intensive programs reduce their carbon footprints.

The NFHS had 147 Deferred Maintenance (DM) projects (\$25,330,000), 9 capital improvement projects (\$5,309,000), and 5 energy retrofit/renewable energy projects (\$636,000) that were funded through the American Recovery and Reinvestment Act. These projects, selected from the 2010-2014 NFHS Deferred Maintenance Plan, targeted the NFHS's mission critical assets - its water supplies, rearing units, and water treatment systems. These projects not only employed hundreds of local contractors and workers, but kept the repair need (as a fraction of the assets' replacement value) of the NFHS's critical assets under 10 percent, indicating fair condition, through the end of 2010. The long-term goal is to get these critical assets into good condition with a repair need under 5%, as water supply failures continue to impact significant fish production programs at several stations.

The NFHS Maintenance Budget has three components: 1) Annual Maintenance, 2) Deferred Maintenance, and 3) Equipment Repair and Replacement.

Annual Maintenance - Properly managed, annual preventive maintenance is the most logical and cost-effective way to address emerging maintenance issues as they occur. NFHS annual maintenance funds pay salaries of maintenance employees, ensure timely upkeep of hatchery real property and equipment, purchase maintenance-related supplies (e.g., lumber, pipe, paint, tools, filters), and replace small equipment (generally less than \$5,000). Current annual maintenance funding will allow priority preventive maintenance needs to be addressed. Similarly, critical water assets such as wells and pumps require regular care to ensure dependable operation. Existing funding will be used to service such components at appropriate intervals, reducing the likelihood of pump failure and increasing the life expectancy of pump motors and shafts. Through use of SAMMS and condition assessments, the NFHS can plan recurring maintenance to enable more proactive asset management, reduce maintenance needs

from becoming more costly deferred maintenance deficiencies, and foster successful operations and mission delivery.

Deferred Maintenance – Three-fourths of the NFHS’s \$1.63 billion in assets are mission-critical water management assets, and they are currently in fair condition, based on the 9.11 percent repair need for action identified previously. Ensuring these properties are fully functional is key to the NFHS’s ability to conserve significant fish and other aquatic species. Deferred maintenance projects, directed at the repair, rehabilitation, or replacement of constructed assets, target assets used for restoration, recovery, and recreation. The NFHS focuses on high-priority mission-critical water management projects and human health and safety projects, in order to maintain current efficiencies (including reduced losses) in fish production and attention to safety issues. The NFHS currently has identified \$152 million in deferred maintenance needs.

The National Fish Hatchery System has developed a 5-Year Deferred Maintenance/Construction Plan, which provides the projects of greatest need in priority order with focus first on critical health and safety and critical resource protection. The NFHS has undertaken an intense effort originating in the field to develop this list. Limited modifications to the list will occur as it is annually reviewed and updated, with the addition of a new fifth year, and submission to the Congress.

Equipment: Routine Maintenance, Repair, and Replacement – NFHS equipment is essential to hatchery operations and consists of over \$35 million of machinery (fish pumps, tractors, loaders, backhoes, riding mowers), fish transports (trucks, tanks, oxygen containment), standard vehicles (pickups, sedans, vans), and tools (table saws, welders, and hand-held power tools). With proper operation by trained and qualified operators, and with scheduled maintenance completed and documented in a timely manner, equipment will remain safe, operating condition for the foreseeable future. Proper maintenance of equipment includes both short- and long-term storage.

The NFHS equipment funds pay for maintenance, repair, and replacement of equipment. Replacement generally targets items with a value between \$5,000 and \$30,000, and includes passenger vehicles. More expensive equipment is identified for purchase in the Five-Year Deferred Maintenance Plan. To minimize the need to purchase expensive specialized equipment, the NFHS works closely with the National Wildlife Refuge System to accomplish certain projects. In the event of scheduling conflicts, specialized equipment is leased from the private sector and Refuge-based equipment operators are loaned to hatcheries for the duration of the project, saving the Service considerable funds.

Fish and Wildlife Conservation Office Maintenance and Equipment – Fish and Wildlife Conservation Office maintenance and equipment funds are for the purchase and upkeep of over \$21 million in assets such as boats, vehicles, and sampling equipment. This equipment is essential for inventory and monitoring of native species, and critical to the Service’s mission to restore native aquatic populations to self-sustaining levels. Fisheries offices use SAMMS to provide a comprehensive understanding of preventive maintenance needs and accomplishments. SAMMS also identifies mobile equipment replacement needs so that field work can be conducted safely and efficiently.

2012 Program Performance

The requested funding will enable the NFHS to continue to work on its repair needs involving mission critical water management assets by implementing the following highly-ranked projects from the 2012-2016 NFHS Deferred Maintenance Plan:

- Several projects to replace the deteriorated water delivery system at Jordan River NFH (MI). The deficiencies in the water delivery system were identified in a 2009 Comprehensive Condition Assessment. Completion of this project will improve and increase the hatchery’s ability to

produce lake trout of sufficient quality and quantity to meet the U.S. v. Michigan Consent Decree, and will support the \$4-\$6 billion lake trout fishery.

- Rehabilitate the nearly 50 year old water tower at Gavins Point NFH (SD) and rehabilitate well pumps to ensure consistent water to endangered pallid sturgeon and other fish species. The deficiencies were identified during the 2008 Comprehensive Condition Assessment.
- Replace 12 raceway shelters at Dwight D. Eisenhower NFH (VT) that provide Atlantic salmon protection from UV damage due to exposure to sunlight, predation, disease contamination, and prevent fish from jumping out of raceways. This project was identified during a 2009 Comprehensive Condition Assessment.
- Rehabilitate well and generator at Dexter NFH and Tech Center (NM) to ensure reliable and continuous supply of water necessary to maintain healthy captive fish populations and the survival of 17 threatened and endangered fish species reared for recovery activities; propagation, reintroduction, research, and refugium populations in New Mexico, Arizona, Colorado, Utah, and Texas.

Presently, several states continue to permit fish culture operations at NFHS facilities only because pollution abatement projects are proposed in the maintenance or capital improvement plans. Any deviations from those proposed schedules could lead to a reduction of production for Atlantic salmon and other imperiled species. All the critical maintenance issues that directly deal with human health and safety, water delivery, water treatment (both influent and effluent), fish culture, and efficient discharge are high priorities for the NFHS. Water supply line failures have caused fish losses or seriously impacted production programs, such as the recent water line ruptures at Alchesay NFH (AZ), requiring the early stocking of most fish and seriously impacting local tribal economies that rely on these production programs. A dedicated NFHS workforce continues to maximize production of a large variety of aquatic species for restoration, recovery, and mitigation. Rehabilitating or replacing critical assets is necessary to meet program goals and the expectations of the Service's many partners and stakeholders in aquatic resource conservation.

Addressing critical maintenance needs will help the NFHS meet Facility Condition Index performance targets. Furthermore, the continuance of a dedicated approach to conducting condition assessments has directly contributed to increasing the credibility of NFHS repair needs identified for essential assets.

In 2012, the NFHS is committed to:

- Continuing the second 5-year cycle of assessments by completing Condition Assessments at approximately 20 hatcheries. Efforts will continue to improve the assessment program by implementing knowledge gained in the first 5-year cycle, using SAMMS to improve the efficiency of the data storage and retrieval system, and increasing the reliability of data used to effectively and efficiently meet DOI and NFHS maintenance goals and objectives.
- Implementing an Asset Management Plan and Asset Business Plan that outlines proactive strategies to maintain assets for their efficient, safe use. Critical water management assets in poor or marginal condition will continue to be the primary focus of NFHS asset management efforts, while energy use reduction will target the NFHS's greatest users and those improvements with the shortest payback periods. Additionally, Asset Business Plans developed by each Program at the Regional level will continue to be implemented, ensuring essential Service uniformity in managing its crucial assets.

Activity: Fisheries and Aquatic Resource Conservation
Subactivity: Aquatic Habitat and Species Conservation

		2010 Actual	2010 Enacted / 2011 CR	2012			Budget Request	Change From 2011 CR (+/-)
				Fixed Costs & Related Changes (+/-)	Admin- istrative Cost Savings (-)	Program Changes (+/-)		
Habitat Assessment and Restoration	(\$000)	27,061	27,061	-44	-375	+740	27,382	+321
	FTE	112	112	-	-	+5	117	+5
Population Assessment and Cooperative Management	(\$000)	34,379	34,379	+5	-656	-990	32,738	-1,641
	FTE	173	173	-	-	-	173	-
Aquatic Invasive Species	(\$000)	8,244	8,244	-10	-83	+1,045	9,196	+952
	FTE	25	25	-	-	+5	30	+5
Marine Mammals	(\$000)	5,810	5,810	-	-115	+180	5,875	+65
	FTE	21	21	-	-	-	21	-
Total, Aquatic Habitat and Species Conservation	(\$000)	75,494	75,494	-49	-1,229	+975	75,191	-303
	FTE	331	331	-	-	+10	341	+10

Summary of 2012 Program Changes for Aquatic Habitat and Species Conservation

Request Component	(\$000)	FTE
Ecosystem Restoration - Chesapeake Bay:		
• Habitat Assessment and Restoration	+1,430	+3
• Aquatic Invasive Species	+145	+1
Ecosystem Restoration - Bay Delta Ecosystem:		
• Habitat Assessment and Restoration	+310	+2
• Population Management and Cooperative Management	+310	+2
Other Program Changes:		
• Habitat Assessment and Restoration - Fish Passage Improvements	+1,000	0
• Habitat Assessment and Restoration - Klamath Dam Removal Study	-2,000	0
• West Virginia Fisheries Resource Office	-1,300	-2
• Aquatic Invasive Species – Asian Carp	+2,900	+4
• Aquatic Invasive Species Control and Management – Lake Tahoe	-2,000	0
• Marine Mammals – Polar Bear	+380	0
• Marine Mammals - Sea Otter and Stellar Sea Lion Conservation in Alaska	-200	0
Program Changes	+975	+10
Internal Transfer – Office of the Science Advisor	-147	-

Justification of 2012 Program Changes

The 2012 budget request for Aquatic Habitat and Species Conservation is \$75,191,000 and 341 FTE, a net program change of +\$975,000 and +10 FTE from the 2010 Enacted/2011 annualized Continuing Resolution.

Ecosystem Restoration – Chesapeake Bay**Fisheries/Habitat Assessment and Restoration (+\$1,430,000/+3 FTE)**

The Fisheries Program will develop and expand monitoring and evaluation tools such as population assessment and population habitat models, priority actions called for in Executive Order 13508 *Strategy for Protecting and Restoring the Chesapeake Bay Watershed*. These will be used to forecast changes in land use, environment, and threats to fish, wildlife, and habitats, and determine population status and trends of priority aquatic species. The Service will also be able to evaluate the results of management actions and habitat restoration resource outcomes on these priority species. Threats to the health, survival, reproduction, and growth of priority species from non-point sources of nutrients from agricultural activities, dams and diversions will be identified and addressed.

The Service will also focus on damage to habitat from impervious surfaces, invasive species, contaminants and pathogens. Funding will be leveraged with existing National Fish Habitat partnerships within the watershed and the National Fish Passage and National Wild Fish Health Survey programs, and with local communities and conservation organizations. Partnerships will address habitat protection and restoration, dam removals/culvert replacements to restore stream connectivity and allow fish passage, and freshwater and estuarine habitat restoration. High quality spawning and rearing habitat for indicator species (Eastern Brook Trout, American Eel, River Herring, Atlantic Sturgeon, etc.) in priority areas within the watershed will be targeted for conservation attention. The National Wild Fish Health survey will be expanded to monitor the health of fish and wildlife populations in the watershed. It also will assess the effectiveness of the total maximum daily load levels set by the EPA and states in terms of fish and wildlife population response, and to help inform the Bay Program STAR team in developing appropriate adaptive responses.

Fisheries/Aquatic Invasive Species (+\$145,000/+1 FTE)

Additional funding will be used for increased monitoring and assessment to prevent both intentional and unintentional introductions of aquatic invasive species. Once detected, rapid response teams will be initiated to eradicate new infestations of invasive species before they can become established. These teams offer a unique opportunity to enlist community members in work to protect their most precious resources from the threat of injurious invaders. For species where eradication is not feasible, methods to control and manage the species to prevent further spread will be explored. Increased education and outreach efforts will be undertaken to help the public understand the ecological and economic damage caused by the spread of aquatic invasive species.

Ecosystem Restoration – Bay Delta Ecosystem**Fisheries/Habitat Assessment and Restoration (+\$310,000/+2 FTE)**

The Service coordinates and implements habitat restoration work in the Bay Delta and upstream to help recover delta smelt and wild salmon populations. Funding is needed for the Service to collaborate with our partners to implement LCC plans to address invasive species, contaminants and other stressors that could be preventing recovery of delta smelt and other native fish. The Service would complete habitat assessments, remove or bypass barriers, reopen miles of stream and restore fish passage, restore stream/shoreline habitat, and survey for early detection and rapid response to the threats posed by aquatic invasive species.

Fisheries/Population Assessment and Cooperative Management (+\$310,000/+2 FTE)

Funding will improve our knowledge of delta smelt and other imperiled fish life histories. Research is vital to understanding how invasive species, contaminants, habitat fragmentation and other stressors prevent recovery of imperiled species. Research would also focus on the critical need for population genetics studies. This information is essential for the successful science and outcome driven implementation of the California LCC.

Other Program Changes**Habitat Assessment and Restoration – Fish Passage Improvements (+\$1,000,000/+0 FTE)**

The additional \$1.0 million in funding for the National Fish Passage Program (NFPP) will be used to implement critical barrier removal or bypass projects that will reconnect important waterways and habitats for fish and other aquatic species. The Fisheries Program will assist local communities with the planning and implementation of the projects.

Projects implemented could be small-scale and community-based, such as:

- The design and creation of a fishway channel along the Boise River in Boise, the most populated city in Idaho; and,
- The removal of two low-head dams on Baldwin Creek, a tributary to the Rocky River just west of Cleveland, Ohio, in a local metro park.

Or, large-scale ecosystem projects such as:

- The Penobscot River Restoration Project, which will reconnect over 1000 miles of historic spawning habitats, important to the recovery of endangered Atlantic salmon.

Projects are collaborative efforts with local communities and parks, which not only provide benefits for the aquatic species, but to the local and surrounding communities as well, by improving water quality and increasing recreational opportunities, such as fishing and kayaking.

The President's "America's Great Outdoors" initiative of 2010 is focused on reconnecting the American people to the outdoors through community level conservation. This increase in the NFPP will allow the program to boost its already established local community efforts in connecting communities to the outdoors as well as reconnecting America's rivers and waterways. Because restoring fragmentation provides increased recreational opportunities, healthier waters, and aquatic species resiliency to environmental pressures such as environmental change and urbanization; reconnecting fragmented aquatic systems is a vital component in reconnecting the American people to the outdoors.

Klamath Dam Removal/Sedimentation Studies (-\$2,000,000/-0 FTE)

Funding for the Klamath Dam Removal Studies will be reduced by \$2,000,000. In 2008, PacifiCorp, federal agencies, and the States of California and Oregon agreed that further study by the Secretary was needed: (1) to quantify the actual costs, benefits, risks and potential liabilities prior to the removal of PacifiCorp's four Klamath dams; and (2) to ensure that the benefits for fisheries, water and other resources outweigh any adverse consequences of such a removal. In FY 2010 the Service received \$2million to analyze the impacts of dam removal on fish and wildlife, water quality, the value of commercial and in-river fisheries, and non-use values that may be held by the public. Funding was maintained in the FY 2011 President's Budget for these same purposes. Full funding in these two budget years would allow for the Secretary's determination to be made in 2012, eliminating the need for additional funds.

West Virginia Fisheries Resource Office (-\$1,300,000/-2 FTE)

The Service proposes to eliminate unrequested funding provided to establish a West Virginia Fisheries Resource Office to focus on aquatic species restoration and management in the Appalachian Highlands. The Service will use a portion of the Northeast Region's annual base funding to support the West Virginia Fisheries Resource Office.

Aquatic Invasive Species – Asian Carp (+\$2,900,000/+4 FTE)

Funding is needed to urgently address the threat of bighead and silver carp to the Great Lakes and its \$7 billion fishery. The migration of Asian carp through the upper Mississippi River Basin is one of the most acute threats facing the Great Lakes. Pre-emptive actions to prevent Asian carp from establishing populations will be essential for achieving the aquatic natural resource goals. This budget proposal will accomplish key actions for the Service through the Aquatic Nuisance Species Task Force's National Asian Carp Management and Control Plan and the 2011 Asian Carp Coordination Committee's Strategy Framework. With these funds, the Service can implement designed approaches intended to minimize the range expansion and population growth of these two aquatic nuisance species by conducting the necessary surveys and risk assessments needed to identify and respond to threats.



Photo of Asian Carp by USFWS

As part of this proposal, funding of \$1,000,000 and an increase of 4 FTEs will be used to operate an environmental DNA (eDNA) technology lab at the La Crosse Fish Health Center. eDNA, is a surveillance method whereby suspended DNA in the aquatic environment is used to confirm the presence of organisms present in low numbers and possibly "invisible" to traditional sampling methods. The Service will process and analyze samples from the Chicago Area Waterway System (CAWS) and Great Lakes using a risk-based sampling design it has developed with our partners. Operational funding in FY 2012 assumes that start up costs will be funded in FY2011 through the Great Lakes Restoration Initiative. The funding request will support the implementation of a science-based eDNA sampling program targeting prioritized pathways and biological hotspots most susceptible to new introductions or range expansions of Asian carp in the Great Lakes. The surveillance program will build upon the existing capacity at the Fisheries Program's Fish and Wildlife Conservation Offices.

In addition to eDNA, \$1,900,000 will be used for early detection, monitoring, rapid response, rapid assessment, and risk assessment. The work of the eDNA technology laboratory will be enhanced by traditional gear sampling such as gill netting, electrofishing, sonar, and trawls as part of a comprehensive surveillance and monitoring program for Asian carp species in the Great Lakes. Funds will also support rapid response actions on nascent Asian carp populations that may be discovered either within the Great Lakes or in locations at risk during high water events at inter-basin flood connections. This work will include Incident Command System training (mock exercises), material acquisition (e.g., rotenone purchase and storage), environmental compliance, and ensure highly trained staff are available during rapid response actions. With its partners, the Service will also conduct risk assessments and pursue rapid assessment actions if bighead or silver carp are collected either above the electrical barrier system (in the CAWS) or within the Great Lakes, and data will be provided to decision-makers to determine next steps to pursue.

Aquatic Invasive Species Control Quagga and Zebra Mussels (-\$2,000,000/-0 FTE)

The Service received unrequested funding in 2010 to control quagga and zebra mussels and respond to the western mussel invasion. The Service proposes to reduce this funding and use the savings to fund other FWS priorities. Protocols and decontamination washing stations around Lake Tahoe were established and

operational in 2010 but will no longer be funded by the Service. Specifically, the number of surveys conducted for early detection and rapid response would be reduced by 16 reductions, as well as boat inspections in the Lake Tahoe area, which could increase the probability of these mussels invading the Lake. Seven tasks within the *Quagga-Zebra Mussel Action Plan for Western U.S. Waters (QZAP)* would not be funded. This will impact the expansion of early detection monitoring in western waters and impair the development and execution of an effective region-wide watercraft and equipment inspection and decontamination program. Finally, use of genetic testing within the Service will decrease, potentially impacting the number of areas identified positive for these mussels.

The Service will continue core priority activities such as education of the public on their involvement to keep invasive species from spreading and implementation of state invasive species management plans.

Marine Mammals - Polar Bear (+\$380,000/+0 FTE)

The increase will address urgent needs to conserve and manage polar bears. Sea ice retreat is exceeding projections, and conflicts between people and polar bears are increasing as bears spend more time on land. In Alaska, coastal villages are strapped to deal with greater numbers of bears on land in the late summer and fall. Villages across the North Slope are experiencing environmental impacts to wildlife, habitats, and the subsistence culture. These villages require assistance from the Service, but the Service’s ability to address this emerging issue is constrained due to limited staff presence on the North Slope. The increase will enable the Service to modestly increase our presence on the North Slope to provide village support and bolster polar bear conservation action in a rapidly changing Arctic.

Marine Mammals - Sea Otter and Seller Sea Lion Conservation in Alaska (-\$200,000/+0 FTE)

The Service proposes to eliminate unrequested funding provided for general operations of the Marine Mammals Program in 2011.. Cooperative Agreements with Alaska Native Organizations (ANOs) under section 119 of the Marine Mammal Protection Act are a priority for the Service and this dedicated funding supported specific agreements for sea otters, walruses, and polar bears. The Service continues to evaluate the most effective and fair means to distribute these limited funds through cooperative agreements with ANOs.

Aquatic Habitat and Species Conservation - Program 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
CSF 5.1 Percent of fish species of management concern that are managed to self-sustaining levels, in cooperation with affected States, tribes, and others, as defined in approved management documents (GPRA)	42% (63 of 150)	29% (48 of 164)	12% (17 of 146)	8% (16 of 211)	8% (16 of 213)	8% (16 of 213)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$26,775	\$32,281	\$35,697	\$32,848	\$33,275	\$33,707	\$433	
CSF Program Total Actual/Projected Expenditures(\$000)	\$21,573	\$23,195	\$25,202	\$24,259	\$24,574	\$24,894	\$319	

Aquatic Habitat and Species Conservation - Program 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
Actual/Projected Cost Per Species (whole dollars)	\$425,000	\$672,514	\$2,099,797	\$2,052,986	\$2,079,674	\$2,106,710	\$27,036	
5.1.3 # of habitat assessments completed	2,182	1,262	1,971	1,465	1,074	1,077	3	
Comments	Reduction in -2 habitat assessments due to GPA and increases of +1 habitat assessments for Bay Delta and +4 habitat assessments for Chesapeake Bay.							
5.1.10 # miles of stream/shoreline restored in U.S.	315	258	233	358	127	128	1	
Comments	A minimum increase of +1 mile of stream/shoreline restored for Bay Delta Ecosystem requested funding increase.							
5.1.11 # of fish passage barriers removed or bypassed	73	96	160	170	107	126	19	
Comments	A reduction in -2 less barriers removed or bypassed due to GPA and increases of +18 barriers removed or bypassed for Fish Passage, +1 barrier removed or bypassed for Bay Delta Ecosystem, and +2 barriers removed or bypassed for Chesapeake Bay.							
5.1.12 # of miles reopened to fish passage - FWMA	1,023	732	1,220	1,602	1,306	1,404	98	
Comments	An increase of +95 miles reopened for the Fish Passage increase, +1 mile reopened for the Bay Delta Ecosystem increase, and +2 miles reopened for the Chesapeake Bay increase.							
5.1.13 # of acres reopened to fish passage - FWMA	1,232	29,345	25,277	23,319	1,221	1,321	100	
Comments	An increase of +100 acres reopened to fish passage for the Fish Passage requested funding increase.							
CSF 5.2 Percent of populations of native aquatic non-T&E species managed or influenced by the Fisheries Program for which current status (e.g., quantity and quality) and trend is known	34% (540 of 1,589)	40% (592 of 1,472)	34% (526 of 1,569)	32% (502 of 1,565)	32% (502 of 1,580)	32% (499 of 1,580)	0%	
CSF Total Actual/Projected Expenditures(\$000)	\$18,753	\$21,790	\$20,686	\$22,946	\$23,244	\$23,406	\$161	

Aquatic Habitat and Species Conservation - Program 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
CSF Program Total Actual/Projected Expenditures(\$000)	\$11,020	\$11,415	\$10,388	\$10,745	\$10,885	\$11,027	\$142	
Actual/Projected Cost Per Populations (whole dollars)	\$34,729	\$36,807	\$39,328	\$45,709	\$46,303	\$46,905	\$602	
Comments								
5.2.1.6 % of populations of native aquatic non-T&E species managed or influenced by the Fisheries Program for which current status (e.g., quantity and quality) and trend is known - FWMA	34% (540 of 1,589)	39% (568 of 1,472)	32% (506 of 1,569)	28% (481 of 1,708)	28% (481 of 1,723)	28% (478 of 1,723)	0% (-3 of 1,723)	
Comments: A reduction of -3 less native aquatic populations with known current status and trends due to GPA.								
5.2.2.6 % of populations of native aquatic non T&E species with approved management plans - FWMA	58% (821 of 1,426)	55% (816 of 1,472)	52% (813 of 1,569)	48% (820 of 1,708)	48% (820 of 1,723)	47% (817 of 1,723)	0% (-3 of 1,723)	
Comments: A reduction of -3 less native aquatic populations with approved management plans due to GPA.								
5.2.4 # assessments completed	991	3,933	2,807	2,895	2,310	2,313	3	
Comments: A reduction of -3 less population assessments completed due to GPA and increases of +1 population assessments completed for the Bay Delta Ecosystem increase and +5 population assessments completed for the Chesapeake Bay increase.								
CSF 5.3 Percent of tasks implemented, as prescribed in management plans	46% (1,588 of 3,429)	76% (2,379 of 3,130)	74% (2,866 of 3,894)	63% (2,453 of 3,906)	52% (2,300 of 4,384)	48% (2,090 of 4,384)	-4% (-210 of 4,384)	
CSF Total Actual/Projected Expenditures(\$000)	\$61,976	\$64,703	\$62,947	\$68,054	\$64,638	\$59,500	(\$5,138)	
CSF Program Total Actual/Projected Expenditures(\$000)	\$12,268	\$12,672	\$11,272	\$11,229	\$11,375	\$45,150	\$579	
Actual/Projected Cost Per Tasks (whole dollars)	\$39,028	\$27,198	\$21,963	\$27,743	\$28,104	\$28,469	\$365	
Comments								

Aquatic Habitat and Species Conservation - Program 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
5.3.1.6 % of tasks implemented, as prescribed in management plans - FWMA	37% (879 of 2,400)	47% (1,481 of 3,130)	39% (1,527 of 3,894)	46% (1,870 of 4,085)	35% (1,703 of 4,872)	35% (1,701 of 4,872)	0% (-2 of 4,872)	
Comments	A decrease of - 4 FMP tasks implemented due to GPA and an increase of +2 FMP tasks implemented due to the Chesapeake Bay increase.							
CSF 7.21 Percent of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild	10% (61 of 595)	12% (70 of 585)	11% (70 of 639)	10% (70 of 701)	10% (70 of 689)	10% (70 of 689)	0%	
7.21.5.6 % of tasks implemented as prescribed in Recovery Plans - FWMA	47% (368 of 782)	47% (496 of 1,050)	0% (505 of 1,286)	41% (573 of 1,404)	36% (490 of 1,379)	36% (492 of 1,379)	0% (2 of 1,379)	
Comments	An increase of +2 Recovery Plan tasks implemented due to the Bay Delta Ecosystem requested funding increase.							
CSF 12.2 Number of aquatic invasive species populations controlled/managed - annual	14	11	11	14	14	14	0	
CSF Total Actual/Projected Expenditures(\$000)	\$16,276	\$18,098	\$19,435	\$16,861	\$17,080	\$17,302	\$222	
CSF Program Total Actual/Projected Expenditures(\$000)	\$11,865	\$3,161	\$1,642	\$1,451	\$1,469	\$1,489	\$19	
Actual/Projected Cost Per Populations (whole dollars)	\$1,162,537	\$1,645,257	\$1,766,840	\$1,204,351	\$1,220,008	\$1,235,868	\$15,860	
Comments	A -2 reduction in the number of activities conducted to support the management and control of aquatic invasive species due to GPA in AIS.							
12.2.6 # of activities conducted to support the management/control of aquatic invasive species - FWMA	150	1,670	303	269	148	146	-2	
Comments	A -2 reduction in the number of activities conducted to support the management and control of aquatic invasive species due to GPA in AIS.							
12.2.9 # of risk assessments conducted to evaluate potentially invasive aquatic species - annual	41	57	56	60	45	46	1	

Aquatic Habitat and Species Conservation - Program 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	An increase of +1 in the number of risk assessments conducted due to the Asian Carp requested funding increase in AIS.							
12.2.11 # of surveys conducted for baseline/trend information for aquatic invasive species	420	405	682	457	285	286	1	
Comments	An increase of +1 in the number of surveys conducted for baseline and trend information due to the Chesapeake Bay requested funding increase in AIS.							
12.2.12 # of surveys conducted for early detection and rapid response for aquatic invasive species	496	541	638	270	169	154	-15	
Comments	Increases of +1 surveys for Bay Delta Ecosystem, +1 surveys for Chesapeake Bay, and +1 surveys for Asian Carp; however, decreases of -16 surveys due to lose of Quagga/Zebra mussels funding in AIS and -2 surveys for GPA in AIS.							
12.2.14 # of partnerships established and maintained for invasive species tasks	283	883	523	469	305	307	2	
Comments	An increase of +2 invasive species partnerships established and maintained due to the Chesapeake Bay requested funding increase.							

Program Overview

The Fisheries Program monitors and assesses aquatic populations and their habitats to inform our resource management decisions. A 2008 report by a U.S. Geological Survey-led team examined the status of North America’s freshwater fishes and documented a substantial decline among 700 fishes.³ Sea-level rise, temperature elevations, and precipitation changes are devastating the nation’s fisheries. The Service’s ability to respond to these impacts is hampered by a severe lack of basic population-level data. Monitoring and assessment of aquatic animal populations and their habitats are important components of the Service’s Strategic Plan for Climate Change. Monitoring and assessment carried out by the 65 Fish and Wildlife Conservation Offices (FWCOs) are critical to the Service’s success in addressing environmental impacts to Service trust resources. Continued vigilance in monitoring and assessment is necessary in order to: 1) understand and address environmental impacts on fisheries; 2) identify sensitive aquatic ecosystems, key processes, and critical information gaps; 3) understand current condition (including information about the existing stresses) to establish baselines for trend analyses; and 4) implement management plans and actions, including projects funded through the National Fish Habitat Action Plan and the National Fish Passage Program. These data will provide the Service and its partners

³ Jelks, H.L., S.J. Walsh, N.M. Burkhead, S.Contreras-Balderas, E. Díaz-Pardo, D.A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J. J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. 2008. Conservation status of imperiled North American freshwater and diadromous fishes. *Fisheries* 33(8):372–407.

with information necessary to respond to environmental impacts strategically, scientifically, and successfully.

Habitat Assessment and Restoration Program Overview

Fish and Wildlife Conservation Office biologists work closely with federal, state, tribal, and NGO partners to manage habitats important to native federal trust populations at national, regional, and local scales. Core activities in this area are: assessment of a habitat's ability to support healthy and self-sustaining aquatic populations, identification of important fish habitat needs, removal or bypass of artificial barriers to fish passage, installation of fish screens, in-stream and riparian habitat enhancement projects, monitoring and evaluation of projects, and mitigation of environmental impacts on aquatic species and habitat.

As their habitat conservation role continues to expand, the Fisheries Program works to meet the increasing demand for habitat assessment services provided by FWCOs. This need for aquatic habitat assessment will continue to grow as a result of the expanding network of Landscape Conservation Cooperatives, the increase of environmental impacts on freshwater and coastal systems, and resource shifts towards habitat management programs in partnering fisheries agencies across the country.⁴

Two major Habitat Assessment and Restoration programs implemented through the FWCOs are:

National Fish Habitat Action Plan: The Service partners with states, tribes, and other stakeholders in implementing the National Fish Habitat Action Plan (NFHAP). The NFHAP fosters locally-driven and scientifically-based partnerships to protect, restore, and enhance aquatic habitats and reverse the decline of fish and aquatic species. The NFHAP's mission and goals are realized through the efforts of its Fish Habitat Partnerships, which are formed around geographic areas, keystone species, or system types as a way to consolidate fish habitat management and funding. Service funds for NFHAP projects are leveraged as much as 3 to 1 with partner funding.



In addition to providing leadership at the regional and national level, the Service also provides technical assistance and expertise to NFHAP partners. For example, the Service uses the Fish Passage Decision Support System (FPDSS) to assist Fish Habitat Partnerships by providing critical data and analytical tools to support strategic planning.

National Fish Passage Program: The Nation's rivers and waterways are a series of fragmented systems with more than 6 million dams and poorly-designed culverts that are at the root cause. These barriers impede aquatic species movement and the movement of flowing water, which contribute to the depletion of native aquatic species, many of which are listed as threatened or endangered, as well as declining recreational opportunities for the American people such as fishing and canoeing. The National Fish Passage Program (NFPP) is a voluntary, non-regulatory partnership that works with local communities and partner agencies to restore America's fragmented rivers and waterways. The NFPP is a collaborative approach that, since its inception in 1999, has collaborated with more than 700 diverse partners, including private landowners, tribes, and community organizations and governments, to remove or bypass more than 900 barriers, and reconnect over 16,000 miles of river and 80,556 wetland acres for aquatic species resulting in increased resiliency to environmental pressures and urbanization. Furthermore, most NFPP

⁴ Jackson, J.R., J.C. Boxrucker, D.W. Willis. 2004. Trends in agency use of propagated fishes as a management tool in inland fisheries. American Fisheries Society Symposium 44:121-138.

funding is used for on-the-ground projects that increase recreational fishing opportunities, stimulate local economies and provide jobs.

The NFPP restores aquatic connectivity and depleted fish and aquatic species by supporting the use and continued development of strategic applications such as the FPDSS. The FPDSS uses structured decision making to identify the best opportunities for successful population restoration through barrier removal. FPDSS features the most comprehensive inventory of fish passage barriers in the country, yet the effort to expand the inventory of barriers continues as data needs have significantly increased. The system has become a significant tool for determining optimal strategies for mitigating environmental impacts through restoring aquatic connectivity.

The NFPP supports the only system of comprehensive fish passage engineering and technical assistance capacity in the country. The fish passage engineers and technical specialists funded by the NFPP ensure that fish passage projects are implemented efficiently and successfully. In recent years, demand for their services by many programs within the Service and by countless partners has increased dramatically. In 2010 the Service in partnership with the University of Massachusetts established the nation's first graduate degree program in fish-passage engineering.

Okaloosa Darter Swimming in Historic Habitat

Because of conservation efforts of the Fisheries Program's National Fish Passage Program and our partners, the Service proposed downlisting the Okaloosa darter from endangered to threatened status. Known only in six stream systems in Choctawhatchee Bay bayous in Florida, most of this habitat is under the management of Eglin Air Force Base.

Working in partnership with Eglin AFB, the Service has:

- Removed five barriers and modified many culverts
- Reopened 30 miles of upstream habitat for the darter
- Restored over 8,200 ft of stream
- Accomplished a significant number of recovery plan tasks
- Eliminated 98% of the erosion occurring in darter

2012 Program Performance – Habitat Assessment and Restoration

In 2012, the FWCOs will continue their comprehensive efforts through the National Fish Habitat Action Plan and National Fish Passage Program to assess the condition of aquatic habitats and populations, restore physical condition and fish passage, reverse declines in populations of federal trust aquatic species, manage subsistence fisheries in Alaska, provide technical assistance to Native Americans, and cooperatively develop and implement plans to restore and recover of the Nation's fisheries. The FWCOs will use the Fisheries Operational Needs System and the FPDSS to strategically prioritize work activities. FWCO biologists will continue to identify and target priority areas which provide the best opportunities to restore connectivity to fish habitat and increase fish species' resiliency.

Population Assessment and Cooperative Management Program Overview

Many FWCO activities focus on populations, primarily the inventory, monitoring, management, restoration and maintenance of healthy diverse aquatic species populations. This information forms the critical building blocks of accurate recovery and fisheries management plans, as well as the baseline data essential for managers to make informed decisions. The development and implementation of fisheries management plans for federal trust species is a principle function of the Service's system of 65 FWCO offices. Some of the species in greatest need of additional resources dedicated to population assessment include American shad, Atlantic sturgeon, and striped bass as well as depleted or listed populations of native species such as brook trout, Pecos bluntnose shiner, and Atlantic salmon.

FWCOs evaluate the causes of species decline, determine the limiting factors for aquatic populations, and implement actions to restore those populations. They work on a landscape scale across jurisdictional boundaries with state and federal agencies, and Tribal Nations to restore fish and other aquatic populations to self-sustaining levels and to preclude ESA listing.

Other Service programs and external partners depend on FWCOs to provide leadership in conservation planning and design as well as technical assistance. For example, they conduct population surveys on National Wildlife Refuges to help develop Refuge Comprehensive Conservation Plans. They support the Endangered Species Program by leading recovery teams and status assessments. They review development projects for potential impacts to fisheries resources. Through coordinated planning and post-stocking evaluation, FWCOs work with the National Fish Hatchery System to implement effective restoration and recovery programs for native fish and mussels. FWCOs monitor captive propagation programs, work with stakeholders to develop management and restoration plans that define the appropriate use of hatchery fish, and measure progress toward meeting plan objectives.

FWCOs are the critical infrastructure in the fight against the spread of aquatic nuisance species. These offices implement the Aquatic Invasive Species program at the field level and reclaim habitats overrun with non-native species and suppress invasive species, such as sea lamprey in the Great Lakes and Lake Champlain.

The Service's trust responsibilities to tribes are fulfilled in large part through FWCOs that work with tribal resource agencies to provide technical assistance, engage in cooperative management, and achieve common fish conservation goals. FWCOs are among the Fisheries Program facilities which are successfully using the Youth Conservation Corps program to provide jobs for Native American youth while encouraging them to pursue careers in natural resources conservation.

Alaska Subsistence Management Program: More than 135,000 people in over 270 communities in rural Alaska are entitled to subsistence fish, hunt, and trap on federal lands. Across Alaska, the average subsistence harvest is approximately 375 pounds of food per person, or 50 million pounds of food per year. Replacing subsistence harvested foods with store-bought foods would cost \$270 million.⁵ The Alaska Fisheries Subsistence Management Program provides a direct benefit to rural subsistence users on more than 237 million acres of federal lands, encompassing 66% of Alaska's lands and 52% of Alaska's rivers and lakes.

The Service is the lead federal agency in administering the program for the Department of the Interior and the Department of Agriculture. Since 1999, the Service's Office of Subsistence Management has implemented an annual regulatory program and a fisheries monitoring program, supported ten Regional Advisory Councils, and has provided administrative and technical support to five federal agencies and the Federal Subsistence Board. The Subsistence Management Program operates with strong stakeholder participation by rural residents and the State of Alaska.

2012 Program Performance - Population Assessment and Cooperative Management

Information for Restoring America's Fisheries: FWCO field staff will continue efforts to restore populations of commercially and recreationally valuable species of native fish. Of the 1,531 fish populations for which the Service has management authority, 80% lack some key scientific assessment data. Over 400 of these fish populations are classified as threatened or endangered, 474 as depleted (including candidate species and those proposed for listing under the Endangered Species Act), and 325 are of unknown status. Information on population trends shows that 17% are declining and 25% are stable or increasing, but trends are unknown for 58% of fish populations. The Service will meet this information need by using the scientific monitoring, assessment, and evaluation expertise of the FWCOs. For 2012, the Service will bolster its efforts in close coordination with other Service programs.

⁵ Fall, J. A., D. Caylor, M. Turek, C. Brown, J. Magdanz, T. Krauthoefer, J. Heltzel, and D. Koster. 2007. Alaska Subsistence Salmon Fisheries 2005 Annual Report. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 318, Juneau, Alaska.

Working with Tribes: FWCO field staff will continue working with tribes to assess and manage their fish and wildlife resources on tribal lands. Service fisheries biologists develop management plans, restore native fish and fish habitats, and evaluate results of fish and wildlife management actions. In 2012, these efforts include implementing the 2000 Consent Decree to manage fish stocks in the Great Lakes with five Chippewa/Ottawa Tribes and the State of Michigan, working with the White Mountain Apache Tribe to delist Apache trout, and working with tribes to evaluate big game herds such as deer, elk, and pronghorn antelope on tribal lands in Wyoming and Montana. The Service will encourage tribal youth to explore careers in the fisheries conservation field, through expanding its Youth Conservation Corps programs (YCC), in order to promote the growth of conservation expertise within tribal communities and to increase ethnic and cultural diversity within the fisheries management profession.

Aquatic Invasive Species Program Overview

The introduction and establishment of invasive species have significantly impacted the health of our native species and ecosystems, and is considered to be second only to direct habitat destruction in the U.S. as the cause of declining biodiversity. Nearly half of the imperiled species in the United States are threatened by non-indigenous invasive species,⁶ and it has been estimated that the economic and ecologic impacts total more than \$120 billion per year.⁷

Aquatic invasive species (AIS) are especially troublesome as they are not readily detected, their pathways are not always obvious, their impacts to native species and habitats can be difficult to determine, and they are difficult to eradicate once they become established. AIS impacts are particularly acute because they remain persistent and spread widely even after the source is abated or pathways are interrupted. Even in the Great Lakes, where invasive mussels have been present since the 1980s, new problems and impacts caused by AIS continue to be identified. Recent University of Michigan studies, for example, reveal changes due to invasive mussels at every level of the Great Lakes ecosystem.⁸ It is prudent to expect that environmental impacts will provide AIS with new vectors. Without prevention and management; AIS populations will continue to grow and expand, with damages accelerating over time.

Zebra and quagga mussels are among the most economically and ecologically damaging aquatic invasive species. They are notorious for colonizing water supply pipes, thus impacting public water delivery systems, hydroelectric power generation, fire protection, and irrigation systems and requiring costly removal maintenance. In aquatic habitats, they are known to negatively impact aquatic biodiversity and water quality and reduce food sources for native species. The direct economic costs from these mussels for eastern North America are estimated at \$100 million per year; the economic costs of further spread in the west may far exceed that. For example, should quagga mussels become established in Lake Tahoe, California, they could cause an annual loss of \$22 million to the region.

In 2010, funding was received to respond to the Western mussel invasion, which provided for inspection and decontamination stations on the roads leading into the Lake Tahoe Region; mussel prevention, containment, control, and education efforts identified in Aquatic Nuisance Species Task Force (ANSTF) - approved State/Interstate ANS plans; and nine other projects which addressed the top three priorities of the *Quagga-Zebra Mussel Action Plan for Western U.S. Waters (QZAP)*.

⁶ Wilcove, D.S., Rothstein, D., Bubow, J., Phillips, A., Losos, E., 1998. Quantifying threats to imperiled species in the United States. *Bioscience* 48(8): 607-615.

⁷ Pimentel, D., Lach, L., Zuniga, R., Morrison, D., 2005. Update on the environmental and economic costs associated with alien-invasive species in the U.S. *Ecological Economics* 52:273-288.

⁸ Erickson, J. 2009. Great Lakes: 'Amazing Change'. *Michigan Today*, 7/21/2009. <http://michigantoday.umich.edu/2009/07/story.php?id=7510&tr=y&auid=5077806>

In states where the mussels had not yet been detected, early-detection monitoring serve as a safeguard for identifying new infestations, which could be used as a quick response to prevent further spread and impact by containing, controlling or eradicating the invasion at its earliest stage. In states where the mussels had already been discovered, those activities help prevent further spread of the mussels into uninfested waters within the remainder of the state. The Service also enhanced its genetic testing capacity at its Fish Technology and Fish Health Centers to increase the number of samples collected and analyzed as part of a region-wide surveillance and early detection program.

The Fisheries Program's Aquatic Invasive Species biologists also work extensively with partners. Watercraft inspections help ensure that boats are properly decontaminated, thus eliminating the primary pathway for spreading these invasive mussels. Outreach helps generate the public awareness and behavior change needed to prevent the spread mussels through recreational activities, such as boating.

The Service's AIS Program contributes to the conservation of trust species and their habitats by preventing the introduction and spread of AIS, monitoring habitats to determine the distribution of invasive species, rapidly responding to new invasions, and controlling established invaders. For instance, the AIS Program helped develop the Hazard Analysis & Critical Control Point Planning (HACCP) manual for natural resource pathways and the HACCP American Society for Testing and Materials (ASTM) international standard. The program provides HACCP training at the National Conservation Training Center, at other Service facilities, and for partners throughout the U.S. This training is used at Service facilities such as hatcheries, where HACCP protocols are implemented to help prevent the spread of AIS during the propagation and release of target aquatic species, and is being incorporated by states in their general environmental permitting processes to manage invasive species.

The AIS Program also supports the Injurious Wildlife Provisions of the Lacey Act through an ongoing process of evaluating species and possibly listing them as injurious through the rulemaking process. Injurious wildlife are species that are injurious or potentially injurious to the interests of human beings, agriculture, horticulture, forestry, wildlife, or wildlife resources of the United States. An injurious wildlife listing prohibits the species from being imported or transported across state lines without a permit. Currently, numerous species of fishes and large constrictor snakes are being evaluated. The Service is also conducting a review of how to improve the injurious wildlife listing process in general to make it more effective at preventing invasions from occurring.

The interaction of environmental change and invasive species adds another level of complexity. This interaction may create new pathways of spread, compromise the capacity of native organisms to compete with existing invaders (e.g., native salmon preyed upon by introduced bass and walleye), and may cause shifts that favor the distributions and behavioral timing of invasive species (e.g., invasive plants that start to grow earlier than native plants). With its nationwide distributed network of AIS expertise and close links to state AIS managers, the AIS Program is uniquely positioned to focus and leverage its efforts with those of many external partners to address the complex challenges forthcoming to AIS management.

The AIS program is composed of three elements: State Plans/National Invasive Species Act of 1996 (NISA) Implementation, Prevention, and Control and Management.

State Plans/NISA Implementation

The AIS Program implements the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) (as amended by NISA), a landmark law that created the Aquatic Nuisance Species Task Force (ANSTF) and gave the Service several critical national leadership roles, including: co-chairing and administering the ANSTF, supporting the six ANSTF Regional Panels, providing grants for State/Interstate/Tribal ANS Management Plans (State Plans), and implementing a national AIS program of prevention and control activities through the Fisheries and Aquatic Resource Conservation Program in the Service Regions.

Prevention

The old proverb “an ounce of prevention is worth a pound of cure” resonates particularly well when addressing invasive species. The single most cost-effective strategy to protect the nation’s wildlife and their habitats from invasive species is to prevent new introductions; this is the primary focus of the Service’s AIS Program from a programmatic and budgetary perspective. The alternative, control, is extremely costly and the conservation community has limited tools for long-term management of AIS once they become established.

The Service has a broad array of programs that support efforts to prevent introductions and contain invasive species. Two cornerstones of the Service’s prevention efforts are: 1) a comprehensive behavioral compliance framework that combines voluntary and regulatory tools, and 2) proactive pathway management that includes risk assessment tools, voluntary codes of conduct for different industry sectors and risk mitigation tools.

The national “Stop Aquatic Hitchhikers!” campaign is an example of the voluntary side of the comprehensive behavioral compliance framework that targets aquatic recreational users and engages them to become part of the solution by cleaning their equipment every time they leave the water. This behavioral change campaign has broken new ground for the Service because it relies upon partners to help spread the prevention message and actively involves citizens to address this global threat. Currently, 955 organizations have joined the campaign - including 80 state fish and wildlife, parks and recreation, agriculture and environmental protection agencies, 250 businesses, and many conservation and watershed protection organizations.



**STOP AQUATIC
HITCHHIKERS!™**

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

Control/Management

For AIS that have already become established, there are often opportunities to prevent further spread or lessen their impacts through various control and management techniques. These measures are best accomplished using an integrated pest management approach. In some cases, containment of damage can buy time while new control methods are developed that offer hope for eradication, as recently experienced with the chronic invasion by (*Spartina spp*) in Washington State. Because AIS do not always behave as they do in their native habitats, research is often needed before effective control and management measures can be implemented. Although prevention remains a priority, the AIS Program also focuses on control and management to meet its objectives for protection of native fish and wildlife resources and their associated recreational and economic benefits. In conjunction with the ANSTF and multiple state, industry, and federal partners, the Service will continue to lead the development and implementation of plans to control and manage established AIS. The Service currently leads the implementation by providing staffing and funding support to the Asian carp, ruffe, brown tree snake, *Caulerpa* (a seaweed), and mitten crabs national species management plans, and has leveraged these efforts by actively involving communities, expertise, skills, and resources of the people within the local area to manage these invasive species. The western U.S. focused Quagga/Zebra Mussel Action Plan is also a programmatic priority for implementation.

2012 Program Performance – Aquatic Invasive Species

In 2012, the Aquatic Invasive Species program will focus new funding on minimizing the range expansion and population growth of bighead and silver carp in the Great Lakes. FWS will continue to implement activities to prevent the introduction, spread, and establishment of AIS. These activities included implementing HACCP plans in all Service Regions to identify potential points of species introduction and define actions that reduce the risk of spreading invasive species through specific pathways, conducting surveys for early detection of AIS in conjunction with routine field work, working with the Aquatic Nuisance Species Task Force on collaborative efforts, improving the injurious wildlife

listing process to better address prevention of invasive species, and completing regionally significant rapid response planning exercises to prepare for and build capacity regionally to respond to the next invader. The Service also led the implementation of “Stop Aquatic Hitchhikers!” and “Habitattitude™”—two social marketing campaigns designed to unify government and interested parties to speak with one voice and to empower target audiences to become part of the solution by promoting their prevention behaviors. In 2012, the Service, through the Strategic Habitat Conservation lens, will use the Fisheries Operations Needs System (FONS) to strategically prioritize work activities that prevent the introduction, spread, and establishment of aquatic invasive species.

Overview – Marine Mammals

Marine mammals are a resource of great aesthetic, economic, cultural, and recreational significance. These prominent species occupy the upper trophic levels of the world’s oceans and coastal waters, and provide valuable insight into the health and vitality of these global ecosystems. These species are significant functioning elements in each of their unique ecosystems and serve as sentinels that can provide key understanding of the effects of a variety of environmental impacts on these ecosystems. The Service can learn more about the effects of global changes on the environment by understanding the health and dynamics of marine mammal populations that depend on these environments through regular monitoring. Marine mammal conservation efforts of the Service are especially timely in the Arctic, where sea ice retreat resulting from warmer global temperatures affects the survival strategies of polar bears and walrus. Sea-level rise and an increase in water temperature can impact marine mammals in other areas by altering their habitat (e.g., loss of sea grasses and other habitat structure), as well as disrupting fundamental physiological processes (e.g., interfere with thermoregulation). The Service is engaged in several efforts to better understand the effects of sea-level rise and other environmental impacts on public trust species. In particular, the Service is involved in: cooperative studies to understand population trends of marine mammals in Alaska, Florida, and along the Pacific Coast; aerial surveys to monitor population distribution, abundance, status, and trends and to track changes in baseline information to help us better understand the effects of sea ice retreat, particularly on ice-dependent marine mammals; coordination with the oil and gas industry to gain information on the location and frequency of sightings for both polar bears and walrus, as well as identifying the location and use of polar bear dens; and cooperative efforts with Alaskan Native subsistence hunters. These efforts provide key information that inform the focus and efforts of Landscape Conservation Cooperatives (LCCs).

The United States provides leadership in the protection and conservation of the marine environment and marine mammals through research and management programs that have been active for decades. One of the most important statutory authorities for conserving and managing marine mammals is the Marine Mammal Protection Act (MMPA). The MMPA assigns the Department of the Interior responsibility for the conservation and management of polar bears, walrus, sea and marine otters, three species of manatees, and dugongs. This responsibility has been delegated to the Service. Under the MMPA, marine mammal populations, and the health and stability of marine ecosystems upon which they depend, are required to be maintained at, or returned to, healthy levels. The Service’s Marine Mammal Program acts to manage and conserve polar bears, Pacific walrus, northern sea otters in Alaska, northern sea otters in Washington State, southern sea otters in California, and West Indian manatees in Florida and Puerto Rico, as well as support recovery of the federally listed polar bear, southwest Alaska distinct population segment of the northern sea otter, southern sea otter, and the West Indian manatee in Florida and Puerto Rico.

The Service recognizes that meeting our mandate for the conservation of marine mammal species requires communication and cooperation with other federal agencies (including the National Marine Fisheries Service, the Marine Mammal Commission, and the U.S. Geological Survey), state governments, Alaska Native Organizations (ANOs), scientists from numerous institutions and organizations, industry groups, non-governmental organizations, and others. Through active collaboration and coordination, the Service

is able to enhance the effectiveness of the implementation of the MMPA and achieve its goal of Optimum Sustainable Population for marine mammal stocks.

To carry out its responsibilities, the Service:

- Prepares, reviews, and revises species management plans and stock assessments;
- Conducts and supports a variety of biological investigations, scientific research, and studies with management applications;
- Assesses population health, status, and trends;
- Provides support for rescue and rehabilitation of stranded marine mammals;
- Develops and implements management plans and habitat conservation strategies;
- Promulgates and implements various regulations as necessary, including incidental take regulation and authorizations;
- Conducts harvest monitoring projects for Alaska species;
- Implements the Marking, Tagging, and Reporting Program for polar bears, walruses, and northern sea otters harvested by Alaska Natives;
- Implements the 1973 International Agreement on the Conservation of Polar Bears between the U.S., Canada, Russia, Norway, and Denmark (for Greenland);
- Implements the Agreement Between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska-Chukotka Polar Bear Population; and,
- Develops and supports U.S. bi-lateral and multi-lateral efforts and agreements for the conservation and management of marine mammal species.

The Marine Mammal program is comprised of two elements: Stock Assessment/Conservation Management, and Cooperative Agreements.

Stock Assessment/Conservation Management

The majority of the Service's marine mammal funding is provided for stock assessment, conservation, and management activities. In 2010, funding was directed to support these activities for all 10 marine mammal stocks under the management jurisdiction of the Service in four geographic areas: Alaska, the Pacific Northwest, the California Coast, and Florida and Puerto Rico. These funds are primarily used by the Service to monitor and assess population status and health of marine mammals. In Alaska, the program also uses some of these funds to address monitoring and recording of harvest information, cooperative activities with Alaska Natives, and development of international agreements for marine mammal populations shared with Canada and Russia. A small balance of program funds is used for national coordination and guidance in the Washington Office. Much of the Service's priority work is accomplished through partnerships with other federal, state, tribal, and private agencies. Additional conservation work on listed marine mammal stocks is pursued with Ecological Services funding, primarily through endangered species recovery efforts.

Cooperative Agreements

Section 119 of the MMPA authorizes the Service to enter into cooperative agreements with Alaska Native Organizations to conserve marine mammals and provide for co-management of subsistence use by Alaska Natives. The purpose of the agreements is to develop capability in the Alaska Native community to actively manage subsistence harvest, and collect information on subsistence harvest patterns and harvested species of marine mammals. Efforts pursued under this program element enhance communications with Alaska Native communities and allow the initiation of projects with the potential to gather information critical for developing long-term conservation strategies and to significantly increase our collective understanding of marine mammals. The Service works with ANOs to assess subsistence harvest, determine sustainability of harvests, and gather biological information from harvested animals.

2012 Program Performance – Marine Mammals

In 2012, the Marine Mammal Program will continue to monitor marine mammal populations under the management jurisdiction of the Service. We will seek collaborative opportunities with partners and stakeholders to conduct surveys and track status and trends of the marine mammal managed by the Service. The Service will maintain current stock assessment reports through reviews and updates required under the MMPA for all 10 marine mammal stocks. The Marine Mammal Program will further enhance its capability to address an increase in workload and management challenges associated with the effects of environmental change and other actions. Workload increases include incidental take authorizations, population surveys, stock assessment reporting, stranding response, partnerships, and litigation support specific to the MMPA. In 2012, as described below, the Service plans to build upon 2010 accomplishments and those that are anticipated in 2011.

Stock Assessment/Conservation Management for Sea Otters, Polar Bears, and Walruses in Alaska: In Alaska, the Service will continue to monitor populations of northern sea otters, Pacific walruses, and polar bears. The 2012 funding will allow surveys and population assessments to continue for northern sea otters in Alaska. Survey efforts for polar bears will be increased on the North Slope of Alaska and Canada and in the south Beaufort Sea to determine distribution and abundance, document changing habitat use, and evaluate how sea ice reduction and other factors such as prey availability affect the status and trends of polar bear populations. These data will also fuel a new and robust population demographics and harvest model that will enable resource managers to better understand risks and consequences of various Alaska Native subsistence harvest options on polar bear populations. The Service will continue collaborative efforts with Russian colleagues to analyze the range-wide survey data collected on Pacific walrus and will also collaborate with USGS and private industry to track walrus movements in the Chukchi Sea. The Service will work with our partners to address the increased number of walrus haulouts that are forming in previously unused and unprotected coastal areas. The Service will also work to address urgent needs regarding increasing presence of polar bears on land, and the potential for human/bear interactions, due to sea ice retreat. With these efforts, the Service will be in a better position to deliver conservation results for all three species.

Managing Marine Mammal Incidental Take: The Service promulgated comprehensive regulations under the MMPA to authorize incidental taking of polar bear and Pacific walrus in the course of oil and gas industry (Industry) operations (i.e., exploration) in the Chukchi Sea and adjacent western coast of Alaska in June of 2006) and is working to promulgate renewal of regulations for Industry operations (exploration, development, and production) in the Beaufort Sea and adjacent northern coast of Alaska (existing regulations expire August 2011). The regulations ensure that the total anticipated taking will have a negligible impact on the species and will not have an unmitigable adverse impact on the availability of such species for Alaska Native subsistence purposes. In 2012, at the requested funding level, the Service will continue to implement these regulations through the issuance of annual Letters of Authorization (LOAs) to numerous Industry operators. The LOAs describe permissible methods of take, measures to ensure the least practicable impact on the species and subsistence, and requirements for monitoring and reporting.

The Service will also augment its efforts working with industry to minimize potential impacts of expanding offshore and terrestrial oil and gas activities on polar bear and walrus populations by providing technical assistance and incidental take authorizations pursuant to the MMPA. In addition to meeting demands for environmental reviews and federal approvals, this support will extend to planning for conflict avoidance.

Polar Bear Bilateral Agreement: On October 16, 2000, U.S. and Russia signed a bilateral agreement for the Conservation and Management of the Alaska–Chukotka Polar Bear population. In 2007, Congress enacted legislation to implement this treaty intended to address concerns regarding illegal and

unquantified harvest of bears in Russia as well as unrestricted harvest in Alaska. In 2012, the Service will continue efforts on the bilateral planning initiatives with Russia for the shared Chukchi Sea polar bear population. The 2012 funds will enable the Service to plan vital resource management efforts with Alaska Native partners, Government of the Russian Federation, and Chukotka (Russia) representatives as called for in bilateral agreement and to effectively participate on a joint committee to uphold and implement the United States obligations pursuant to this agreement. This effort will bolster scientific data, conservation planning, and collaborative adaptive management for polar bear.

Cooperative Agreements: In 2012, the Service will continue cooperative agreements with the Alaska Nanuq Commission, the Eskimo Walrus Commission, and the Alaska Native Sea Otter Co-management Committee for monitoring and management of polar bears, Pacific walrus, and northern sea otters, respectively, through base funds. These cooperative agreements pertain to harvest monitoring, traditional knowledge surveys, and biological monitoring and sampling. Collaborative effort on these issues provides the Service with important information on the health and status of populations of marine mammals subject to Alaska Native subsistence harvest. Furthermore, the Service works with Alaska Native organizations (ANOs) to develop and implement voluntary marine mammal harvest guidelines. Both the Service and ANOs recognize the importance of maintaining sustainable marine mammal populations to meet Alaska Native subsistence, cultural, and economic needs. Because the MMPA does not provide a mechanism for regulating subsistence harvest of marine mammals unless a stock becomes depleted, the Service and ANOs strive to ensure harvests are conducted in a biologically sound manner. The Service will continue working with its ANO partners and others to incorporate enforceable harvest management mechanisms in the reauthorization of the MMPA.

Status and Trends of Marine Mammal Populations for Sea Otters in California and Washington State: The Service, in cooperation with our partners, will continue to support the management and conservation of sea otters in California and Washington. Service efforts for both populations involve preparation of stock assessment reports, periodic population surveys, recovery and disease monitoring of stranded animals, and monitoring of the populations' overall health, size, and interactions with human activities within the sea otters' ranges. In addition, the Service will work to finalize a determination on the southern sea otter translocation program in accordance with a Settlement Agreement that stipulates deadlines for specific actions until completion of the final determination by the end of 2012.

Stock Assessment/Conservation Management for Manatees in Florida and Puerto Rico: In 2012, the Service will continue to support management and conservation of manatees in Florida and Puerto Rico. Funding in this area complements efforts funded through Endangered Species accounts. The Service will work with partners to monitor the status and trends of this species and implement priority conservation actions, such as mitigating potential loss of warm water habitat in Florida and minimizing watercraft collisions throughout its range. The Service will enhance research efforts on the status and trends of the species (*e.g.*, improved aerial surveys, updated demographic modeling) and also focus on enhancing and creating habitat. This would strengthen the Service's efforts to conserve manatees, both in Florida and in Puerto Rico, and to develop regulations and other management tools under the MMPA.

Aquatic Habitat and Species Conservation - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF 5.1 Percent of fish species of management concern that are managed to self-sustaining levels, in cooperation with affected States, tribes, and others, as defined in approved management documents (GPRA)	42% (63 of 150)	29% (48 of 164)	12% (17 of 146)	8% (16 of 211)	8% (16 of 213)	8% (16 of 213)	0%	8% (17 of 211)
CSF Total Actual/Projected Expenditures(\$000)	\$26,775	\$32,281	\$35,697	\$32,848	\$33,275	\$33,707	\$433	\$35,814
CSF Program Total Actual/Projected Expenditures(\$000)	\$21,573	\$23,195	\$25,202	\$24,259	\$24,574	\$24,894	\$319	\$24,894
Actual/Projected Cost Per Species (whole dollars)	\$425,000	\$672,514	\$2,099,797	\$2,052,986	\$2,079,674	\$2,106,710	\$27,036	\$2,106,710
5.1.3 # of habitat assessments completed	2,182	1,262	1,971	1,465	1,074	1,077	3	955
5.1.10 # miles of stream/shoreline restored in U.S.	315	258	233	358	127	128	1	162
5.1.11 # of fish passage barriers removed or bypassed	73	96	160	170	107	126	19	111
5.1.12 # of miles reopened to fish passage - FWMA	1,023	732	1,220	1,602	1,306	1,404	98	880
5.1.13 # of acres reopened to fish passage - FWMA	1,232	29,345	25,277	23,319	1,221	1,321	100	5,198
CSF 5.2 Percent of populations of native aquatic non-T&E species managed or influenced by the Fisheries Program for which current status (e.g., quantity and quality) and trend is known	34% (540 of 1,589)	40% (592 of 1,472)	34% (526 of 1,569)	32% (502 of 1,565)	32% (502 of 1,580)	32% (499 of 1,580)	0% (-3 of 1,580)	30% (466 of 1,565)

Aquatic Habitat and Species Conservation - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF Total Actual/Projected Expenditures(\$000)	\$18,753	\$21,790	\$20,686	\$22,946	\$23,244	\$23,406	\$161	\$21,858
CSF Program Total Actual/Projected Expenditures(\$000)	\$11,020	\$11,415	\$10,388	\$10,745	\$10,885	\$11,027	\$142	\$11,027
Actual/Projected Cost Per Populations (whole dollars)	\$34,729	\$36,807	\$39,328	\$45,709	\$46,303	\$46,905	\$602	\$46,905
5.2.1.6 % of populations of native aquatic non-T&E species managed or influenced by the Fisheries Program for which current status (e.g., quantity and quality) and trend is known - FWMA	34% (540 of 1,589)	39% (568 of 1,472)	32% (506 of 1,569)	28% (481 of 1,708)	28% (481 of 1,723)	28% (478 of 1,723)	0% (-3 of 1,723)	26% (446 of 1,708)
5.2.2.6 % of populations of native aquatic non T&E species with approved management plans - FWMA	58% (821 of 1,426)	55% (816 of 1,472)	52% (813 of 1,569)	48% (820 of 1,708)	48% (820 of 1,723)	47% (817 of 1,723)	0% (-3 of 1,723)	48% (815 of 1,708)
5.2.4 # assessments completed	991	3,933	2,807	2,895	2,310	2,313	3	1,642
CSF 5.3 Percent of tasks implemented, as prescribed in management plans	46% (1,588 of 3,429)	76% (2,379 of 3,130)	74% (2,866 of 3,894)	63% (2,453 of 3,906)	52% (2,300 of 4,384)	48% (2,090 of 4,384)	-4% (-210 of 4,384)	61% (2,388 of 3,906)
CSF Total Actual/Projected Expenditures(\$000)	\$61,976	\$64,703	\$62,947	\$68,054	\$64,638	\$59,500	(\$5,138)	\$67,984
CSF Program Total Actual/Projected Expenditures(\$000)	\$12,268	\$12,672	\$11,272	\$11,229	\$11,375	\$45,150	\$579	\$11,523
Actual/Projected Cost Per Tasks (whole dollars)	\$39,028	\$27,198	\$21,963	\$27,743	\$28,104	\$28,469	\$365	\$28,469
5.3.1.6 % of tasks implemented, as prescribed in management plans - FWMA	37% (879 of 2,400)	47% (1,481 of 3,130)	39% (1,527 of 3,894)	46% (1,870 of 4,085)	35% (1,703 of 4,872)	35% (1,701 of 4,872)	0% (-2 of 4,872)	33% (1,347 of 4,085)

Aquatic Habitat and Species Conservation - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF 7.21 Percent of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild	10% (61 of 595)	12% (70 of 585)	11% (70 of 639)	10% (70 of 701)	10% (70 of 689)	10% (70 of 689)	0%	9% (66 of 701)
7.21.5.6 % of tasks implemented as prescribed in Recovery Plans - FWMA	47% (368 of 782)	47% (496 of 1,050)	0% (505 of 1,286)	41% (573 of 1,404)	36% (490 of 1,379)	36% (492 of 1,379)	0% (2 of 1,379)	32% (443 of 1,404)
CSF 9.1 Percent of marine mammals achieving optimal sustainable populations	40% (4 of 10)	30% (3 of 10)	40% (4 of 10)	40% (4 of 10)	40% (4 of 10)	30% (3 of 10)	-10% (-1 of 10)	40% (4 of 10)
CSF Total Actual/Projected Expenditures(\$000)	\$3,050	\$3,548	\$5,230	\$5,540	\$5,612	\$4,264	(\$1,348)	\$5,685
9.1.1 % of marine mammals achieving optimal sustainable populations	40% (4 of 10)	30% (3 of 10)	40% (4 of 10)	40% (4 of 10)	40% (4 of 10)	30% (3 of 10)	-10% (-1 of 10)	40% (4 of 10)
9.1.2 # of marine mammal stocks with voluntary harvest guidelines	2	2	2	2	2	2	0	2
9.1.3 # of cooperative agreements with Alaska Natives for marine mammal management and monitoring	3	3	2	3	3	3	0	3
9.1.4 # of marine mammal stocks with incidental take regulations that require mitigating measures	2	3	3	3	3	3	0	3
9.1.5 # of current marine mammal stock assessments	4	3	10	9	9	10	1	10

Aquatic Habitat and Species Conservation - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
9.1.6 % of populations managed or influenced by the Marine Mammal Program for which current population trend is known	50% (5 of 10)	70% (7 of 10)	70% (7 of 10)	70% (7 of 10)	70% (7 of 10)	70% (7 of 10)	0%	70% (7 of 10)
CSF 12.2 Number of aquatic invasive species populations controlled/managed - annual	14	11	11	14	14	14	0	11
CSF Total Actual/Projected Expenditures(\$000)	\$16,276	\$18,098	\$19,435	\$16,861	\$17,080	\$17,302	\$222	\$13,595
CSF Program Total Actual/Projected Expenditures(\$000)	\$11,865	\$3,161	\$1,642	\$1,451	\$1,469	\$1,489	\$19	\$1,489
Actual/Projected Cost Per Populations (whole dollars)	\$1,162,537	\$1,645,257	\$1,766,840	\$1,204,351	\$1,220,008	\$1,235,868	\$15,860	\$1,235,868
12.2.6 # of activities conducted to support the management/control of aquatic invasive species - FWMA	150	1,670	303	269	148	146	-2	120
12.2.9 # of risk assessments conducted to evaluate potentially invasive aquatic species - annual	41	57	56	60	45	46	1	30
12.2.11 # of surveys conducted for baseline/trend information for aquatic invasive species	420	405	682	457	285	286	1	165
12.2.12 # of surveys conducted for early detection and rapid response for aquatic invasive species	496	541	638	270	169	154	-15	285
12.2.14 # of partnerships established and maintained for invasive species tasks	283	883	523	469	305	307	2	362

Aquatic Habitat and Species Conservation - Program Performance Overview Table

Performance Goal	2007 Actual	2008 Actual	2009 Actual	2010 Actual	2011 Plan	2012 PB	Change from 2011 to 2012 PB	Long Term Target 2016
CSF 15.4 Percent of mitigation tasks implemented as prescribed in approved management plans	73% (30 of 41)	64% (49 of 77)	76% (56 of 74)	96% (73 of 76)	52% (55 of 105)	20% (21 of 105)	-32% (-34 of 105)	49% (37 of 76)
CSF Total Actual/Projected Expenditures(\$000)	\$23,147	\$23,184	\$24,029	\$27,489	\$20,980	\$8,115	(\$12,865)	\$14,297
CSF Program Total Actual/Projected Expenditures(\$000)	\$621	\$833	\$696	\$356	\$360	\$24,520	\$315	\$365
Actual/Projected Cost Per Tasks (whole dollars)	\$771,573	\$473,139	\$429,086	\$376,564	\$381,460	\$386,419	\$4,959	\$386,419
CSF 18.1 Percent of planned tasks implemented for tribal fish and wildlife conservation as prescribed by tribal plans or agreements	79% (79 of 100)	87% (123 of 142)	65% (351 of 538)	55% (335 of 608)	50% (280 of 555)	50% (277 of 555)	0% (-3 of 555)	46% (281 of 608)
CSF Total Actual/Projected Expenditures(\$000)	\$6,170	\$6,109	\$8,047	\$9,488	\$8,033	\$8,050	\$17	\$8,166
CSF Program Total Actual/Projected Expenditures(\$000)	\$884	\$1,036	\$923	\$1,236	\$1,252	\$2,844	\$36	\$1,269
Actual/Projected Cost Per tasks (whole dollars)	\$78,103	\$49,670	\$22,927	\$28,321	\$28,689	\$29,062	\$373	\$29,062