

**Activity: Fisheries and Aquatic Resource Conservation**

	2008 Actual	2009 Enacted	2010			Change from 2009 (+/-)
			Fixed Costs & Related Changes* (+/-)	Program Changes (+/-)	Budget Request	
National Fish Hatchery Operations						
(\$000)	45,919	48,649	+822	+800	50,271	+1,622
FTE	361	363	+6	+7	376	+13
Maintenance and Equipment *						
(\$000)	18,561	19,048	-681	0	18,367	-681
FTE	91	91	0	0	91	0
Aquatic Habitat and Species Conservation						
(\$000)	53,720	55,411	+787	+4,000	60,198	+4,787
FTE	272	272	+2	+4	278	+6
Aquatic Invasive Species*						
(\$000)	5,323	5,352	+892	0	6,244	+892
FTE	23	23	0	0	23	0
Marine Mammals						
(\$000)	2,976	3,371	+44	+2,200	5,615	+2,244
FTE	17	17	0	+4	21	+4
<b>Total, Fisheries and Aquatic Resource Conservation</b>						
(\$000)	<b>126,499</b>	<b>131,831</b>	<b>+1,864</b>	<b>+7,000</b>	<b>140,695</b>	<b>+8,864</b>
FTE	<b>764</b>	<b>766</b>	<b>+8</b>	<b>+15</b>	<b>789</b>	<b>+23</b>

\*The FTE increases listed in the FY2010 "Fixed Cost & Related Changes" column represent FTE positions that were funded in FY2009, but due to the late enactment of the 2009 Appropriations Act, will not be filled until FY10. The savings realized in FY09 by not having to pay salaries will be used to fund one-time expenses, such as human capital recruitment costs, supplies, and equipment.

**Summary of 2010 Program Changes for Fisheries and Aquatic Resource Conservation**

Request Component	(\$000)	FTE
• Creating a 21 <sup>st</sup> Century Youth Conservation Corps	+1,300	+7
• Tackling Climate Impacts: National Fish Habitat Action Plan	+2,000	+4
• Klamath Dam Removal Study	+2,000	0
• Stock Assessment/Conservation Management – Polar Bear	+1,700	+1
• Marine Mammals General Program Activities	+500	+3
• Freshwater Mussel Recovery	-500	0
<b>TOTAL Program Changes</b>	<b>+7,000</b>	<b>+15</b>
Internal Transfer – NCTC Literature Research Services (Fixed Cost and Related Changes)	<b>-55</b>	<b>0</b>

**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. 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 linked largely to habitat loss and the impacts of harmful non-native species. Emerging conservation issues such as the anticipated effects of climate change, viral hemorrhagic septicemia virus (VHS), and spring viremia of carp (SVC) pose serious threats to America’s aquatic resources, as well as to the many important recreational and commercial fisheries they support.

The mission of the Service's 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. Since 1871, the Fisheries Program has played a vital role in conserving America's fisheries, and is currently a key partner with States, Tribes, other federal agencies, and private interests in a larger effort to recover and conserve fish and other aquatic resources and to make these available for recreational activities.

The components of the Fisheries program include the National Fish Hatchery System (NFHS), the Fish and Wildlife Conservation program, the Aquatic Invasive Species program, and the Marine Mammals program. Approximately 800 employees are located nationwide in 70 National Fish Hatcheries, 65 Fish and Wildlife Conservation Offices (including a Conservation Genetics Laboratory), one Historic National Fish Hatchery, 9 Fish Health Centers, 7 Fish Technology Centers, the Aquatic Animal Drug Approval Partnership program, Aquatic Invasive Species, and Marine Mammals program offices. Our employees and facilities provide a network unique in its broad geographic coverage, its diverse array of technical and managerial capabilities, and its ability to work across political and program boundaries with national perspectives and to address emerging issues.

Impacts from climate change may increase threats to the nation's fisheries (sea-level rise, altered hydrology, reduced freshwater inflow to estuaries, altered water temperatures, erosion, and habitat loss). These impacts will influence coastal and riverine ecosystems throughout the U.S. The abundance and distribution of fish, wildlife, and plants will likely change in response to these changing habitats. Working with partners, the Fisheries Program will collect, analyze, and disseminate phenological and habitat information, design and implement monitoring programs to evaluate the effectiveness of our conservation activities, and build a stronger scientific capacity to better understand the relationship between fish and wildlife populations, habitat, and people.

Climate change may also increase or decrease precipitation, affecting water supply. Reduced flow and stream levels may exacerbate water quality issues. The Fisheries Program will implement a monitoring program to establish baseline water quality and quantity information and to gauge adaptive management strategies. Treatment by the NFHS of incoming water and effluent used in captive propagation will improve, along with water re-use and conservation technologies to ensure quality hatchery products, enhance stewardship of adjacent streams, and reduce the Service's carbon footprint. Hatchery construction and maintenance projects to improve effluent treatment and water conservation will be implemented to ensure the Service meets or exceeds EPA effluent standards for the protection of ambient water quality.

Challenges to the recovery of threatened and endangered aquatic species are many, and the Fisheries Program addresses them with prioritized cross-programmatic and inter-agency efforts focused on achieving results. In close coordination with the Endangered Species Program, the Fisheries Program currently provides population and habitat assessment and monitoring activities, captive propagation/stocking, and refugia for 57 threatened and endangered species to meet specific tasks prescribed in Recovery Plans. These long-term coordinated efforts have resulted in many successes. However, it is reasonable to assume that additional populations/species will become imperiled in the face of climate change, and the Fisheries Program will use its entire suite of tools to protect our fragile aquatic resources.

The Service's Fisheries Program is working to restore historic lake sturgeon spawning reefs in Michigan's Detroit River as part of a broader attempt to reverse declines in lake sturgeon populations throughout the Great Lakes. Lake sturgeon do not reach sexual maturity until 20 years of age, making them exceptionally susceptible to environmental and human impacts.

Almost all historic spawning sites along the Detroit River have been lost due to development over the last century, but recent efforts to rehabilitate lake sturgeon populations by repairing spawning habitat have shown great success. Lake sturgeon have been documented spawning on reefs restored by the Fisheries Program and its Great Lakes partners. Expanding this habitat restoration program will be critical for restoring lake sturgeon throughout the Great Lakes.

The 95-foot vessel M/V Spencer F. Baird was commissioned in the Great Lakes in 2006 to help restore depleted native lake trout populations, which were nearly wiped out by sea lamprey, overfishing, and pollution. This Service vessel stocks native lake trout and evaluates their performance. The vessel is also used to monitor populations of other Great Lakes species, helping to meet the information and research needs of the Service and its partners, contributing to the Great Lakes ecosystem and economy.

Sound science is the cornerstone of our collective efforts, including the Aquatic Animal Drug Approval Partnership (AADAP) program. The AADAP provides national leadership in bringing essential aquatic animal drugs through the complex FDA approval process on behalf of hundreds of State, Tribal, and private aquaculture entities. The AADAP has been instrumental in developing the data required for the recent (March 2007) approval of the new in-feed antibiotic Aquaflor<sup>®</sup> for use in freshwater-reared salmonids and catfish. AADAP is also a member of a consortium responsible for the January 2007 approval of PEROX-AID<sup>®</sup> for use in a variety of freshwater finfish species, as well as supplemental approvals for Aquaflor<sup>®</sup> (October 2007) and Terramycin<sup>®</sup> 200 for fish (June 2008). These represent the first new drugs approved for aquatic species in over a decade.

In FY 2009, each Service region started developing new 5-year strategic plans for their fisheries programs. These plans contain measurable, region-specific goals and commitments for implementing the Fisheries Program's mission, stepping down from national priorities. These goals and performance targets stem from the first National Fisheries Program Strategic Plan, and improve national program management and budget/performance integration. The Service continues to work closely with federal and State agencies, and our Tribal and NGO partners in developing these strategic planning goals and targets at both the regional and national levels. These coordinated efforts ensure that Service conservation and management activities also complement State Wildlife Action Plans and the National Fish Habitat Action Plan.

The Service's Fisheries Program continues to work with the National Fisheries Friends Partnership to support its mission of aquatic resource conservation. Friends organizations support our mission by providing many vital services to the sites they serve, including community outreach, education and interpretive programming, habitat restoration, special events support, volunteer staffing, and fundraising.

The Fisheries Program is committed to connecting people with nature as it initiates activities and events that reach out to children and adults. The National Fish Hatchery System Volunteer Enhancement Act of 2006 elevates the Fisheries Program's status to be a focal point for aquatic conservation education at both local and national levels. "Friends Group" citizens, provide countless hours of volunteer service to nearby facilities in nearly every facet of facility operation, community outreach, and mission delivery. Also, the Fisheries Program helps organize the annual D.C. National Fishing and Boating Week Youth Fishing Event on the National Mall at Constitution Gardens Pond. This event brings together a wide array of public and private partners to connect urban youth to nature through fishing. Over 300 students in Grades 4-6 participate annually, many of whom have never held a fishing rod. The Fisheries Program will continue its efforts to attract the next generation of conservation professionals.

Working closely with State, Tribal, and nongovernmental organization partners, the Fisheries Program provides recreational opportunities to bring people closer to nature and to each other, while at the same time creating substantial economic benefits for local communities. As part of this effort, the Fisheries Program propagates and stocks fish to mitigate for the loss of recreational fisheries due to federal water development projects. For example, our \$5.4 million rainbow trout mitigation program alone generates an estimated 3,500 retail and related jobs, and every federal dollar invested in the program yields an estimated \$32 in retail sales and \$60 in total economic output. The estimated 3.9 million angler days per year generated by this program<sup>1</sup> – time spent together with friends and family – is priceless.

To propagate nearly 100 species of fish and a growing variety of imperiled native mollusks, amphibians, and plants, it is crucial that the infrastructure and equipment assets be maintained in good working condition. Propagation of non-fish species usually requires substantial renovation of existing assets. Fisheries Program assets and equipment total over \$1.32 billion in value, of which nearly three-fourths are critical water management assets. Without these water assets in proper operating condition, accomplishing the Fisheries Program mission is much more challenging. The average age of National Fish Hatcheries is over 65 years. Some infrastructure, including an array of mission-critical water management assets, is in a condition that potentially could jeopardize captive populations of imperiled species and broodstocks held on our hatcheries. Our facilities are actively implementing energy-saving technologies, including solar power and highly efficient variable speed pumps as the Service moves to become a model for the natural resource agencies in this regard.

In the past ten years, the Fisheries Program has made significant progress in improving its ability to address fisheries challenges by refining the Program's purpose, design, strategic planning process, management, and ability to demonstrate results and accountability. In 2005, the Fisheries Program underwent a rigorous, independent review by the Sport Fishing and Boating Partnership Council. The Council found that the Program was "Effective" in delivering its mission. In 2006, the Fisheries Program underwent a government-wide program review (Program Assessment Rating Tool (PART)) and earned a rating of "Effective," the highest possible rating. The Fisheries Program implemented a number of recommendations from these reviews, and continues improve management, accountability, and mission delivery. The Fisheries Program provides regular updates to the Council on its efforts to address Council recommendations to further improve Program management and responsiveness to resource issues and the needs of the American public.

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<sup>1</sup> U.S. Fish and Wildlife Service. Economic Effects of Rainbow Trout Production by the National Fish Hatchery System, *science and efficiency at work for you*. 2006. 34 pages.

**Use of Cost and Performance Information**

- The Fisheries Program tracks costs through Activity Based Costing, links costs to performance, and uses the information for program management. For example, the program used ABC data to prioritize critical success factors in the initial stages of formulation of the FY 2009 budget.
- The Fisheries Program uses the Fisheries Information System (FIS) and the Fish Passage Decision Support System 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. FIS is working towards additional enhancement to further link information between ECOS databases, expanding consistency & communication between programs, and enhancing potential management applications.
- The Marine Mammal Program seeks efficiencies by implementing Alaskan sea otter, walrus, and polar bear population surveys and assessments of subsistence harvest levels/trends in partnership with the U.S. Geological Survey/Biological Resources Discipline. This information is used to make key cost projections for long-term population status and trends monitoring, and to most efficiently and effectively focus limited fiscal resources to secure vital scientific information to guide resource management of trust Arctic species. Through this approach, the Service has identified 3 of 10 marine mammal stocks that are being managed at self-sustaining levels. In addition, this partnership effort has enhanced the Service's understanding of population trends for 7 of the 10 stocks.
- In FY 2001, the National Fish Hatchery System's deferred maintenance needs were identified at \$305 million. NFHS personnel actively participated in interagency development of standardized terminology for asset management and repair need categorization, and implemented a rigorous 5-Year Condition Assessment process (cycle), to verify and prioritize deferred maintenance needs within the \$1.32 billion NFHS infrastructure. Due to a combination of these processes and completion of high-priority deferred maintenance projects, the deferred maintenance needs were reduced to \$151 million in FY 2008 – a 50% decrease.
- In FY 2006 the NFHS, FWMA, and ANS programs were assessed using a government-wide program assessment rating tool. The Fisheries Program received a rating of Effective, the highest rating possible. The Program has implemented various recommendations from the assessment, however, the Fisheries Program continues to improve program management and enhance all aspects of cost and performance integration.

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

	2008 Actual	2009 Enacted	2010			Change from 2009 (+/-)
			Fixed Costs & Related Changes* (+/-)	Program Changes (+/-)	Budget Request	
National Fish Hatchery Operations (\$000)	45,919	48,649	+822	+800	50,271	+1,622
FTE	361	363	+6	+7	376	+13

\*The FTE increases listed in the FY2010 "Fixed Cost & Related Changes" column represent FTE positions that were funded in FY2009, but due to the late enactment of the 2009 Appropriations Act, will not be filled until FY10. The savings realized in FY09 by not having to pay salaries will be used to fund one-time expenses, such as human capital recruitment costs, supplies, and equipment.

**Summary of 2010 Program Changes for Fisheries and Aquatic Resource Conservation**

Request Component	(\$000)	FTE
• Creating a 21 <sup>st</sup> Century Youth Conservation Corps	+1,300	+7
• Freshwater Mussel Recovery	-500	0
<b>TOTAL Program Changes</b>	<b>+800</b>	<b>+7</b>
Internal Transfer – NCTC Literature Research Services (Fixed Cost and Related Changes)	-21	0

**Justification of 2010 Program Changes**

The 2010 budget request for the National Fish Hatchery System is \$50,271,000 and 376 FTE, a net program change of +\$800,000 and +7 FTE from the 2009 Enacted budget.

**Creating a 21<sup>st</sup> Century Youth Conservation Corps (+\$1,300,000/+7 FTE)**

In FY 2010, the budget includes an increase of \$1,300,000 to support the goal of the President’s Creating a 21<sup>st</sup> Century Youth Conservation Corps initiative. The emphasis will be on using new and creative ways to get our Nation’s youth, specifically under represented groups (e.g., urban, minorities, and women), to get out into nature. With the increased funding, the Fisheries Program will perform approximately 616 more aquatic outreach and education activities and events, host 120,252 more visitors to NFHS facilities, add 16,066 more volunteer hours, and establish 7 (+10%) additional Friends Groups. The Fisheries Program has long been engaged in community level, recreationally-oriented activities that provide hands-on learning experiences for youths that foster an early appreciation for nature. Through our nationwide network of facilities, the Fisheries Program reaches over 30,000 youths annually through a variety of outdoor events from fishing derbies to celebrating Earth Day, National Fishing and Boating Week, and National Hunting and Fishing Day. Our SCEP/STEP program, Tribal YCC projects, and our Biologist-in-Training (BiT) Program complement these early learning experiences to mold future conservation stewards and advance youth into careers in conservation and natural resources management.

The National Fish Hatchery System Volunteer Act of 2006 (Act) elevated the Fisheries Program’s status to be a focal point for aquatic conservation education. Under authority provided by the Act, the Service has undertaken two outdoor classroom pilot projects at National Fish Hatcheries that build on existing programs and expertise, to demonstrate the capabilities of Fisheries facilities to enhance outdoors education, foster stewardship, and better understanding of the work accomplished by our facilities. These projects incorporate enhanced community involvement through local schools, Fisheries Friends Groups and other volunteers, and leverage

contributed funds and services to provide quality outdoor learning experiences for kids and young adults.

Additional funding provided through the Creating a 21<sup>st</sup> Century Youth Conservation Corps Initiative will expand the models of these pilot projects to approximately 14 other Fisheries facilities nationwide within two years, with particular emphasis at facilities located on or near Tribal lands and economically depressed and underserved communities. We will hire seven coordinators with science education and partnership expertise to tailor programs to local communities. When significant volunteer efforts are combined with the outdoor classrooms of our Fisheries facilities and the technical expertise of our staff, the result is youth career and education programs by and for the local communities.

**Freshwater Mussel Recovery (-\$500,000/+ 0 FTE)**

In 2009 Appropriations Act included \$500,000 for freshwater mussel recovery, including work at the White Sulphur Springs National Fish Hatchery (WV). The White Sulphur Springs National Fish Hatchery leads the nation in developing freshwater mussel propagation and culture technology for endangered species restoration and is internationally recognized for its expertise in propagation and recovery of freshwater mussels. Additionally, at the Genoa National Fish Hatchery (WI), over 5.6 million juvenile mussels of 9 species, including 4.2 million 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. Based on this success and higher priority needs, the Service is not requesting this funding for FY 2010.

Program Performance Change Table -- National Fish Hatchery Operations								
Performance Goal	2006 Actual	2007 Actual	2008 Actual	2009 Plan	2010 Base Budget (2009 Plan + Fixed Costs)	2010 President's Budget	Program Change Accruing in 2010	Program Change Accruing in Out-years
<b>Sustaining Biological Communities</b>								
CSF 15.4 Percent of mitigation tasks implemented as prescribed in approved management plans	unk	unk	86% ( 66 of 77 )	86% ( 64 of 74 )	86% ( 64 of 74 )	86% ( 64 of 74 )	0.0% ( 0.0% )	
CSF Total Actual/Projected Expenditures(\$000)	unk	unk	\$23,184	\$26,931	\$26,931	\$27,551	\$620	
CSF Program Total Actual/Projected Expenditures(\$000)	unk	unk	\$20,032	\$23,430	\$23,430	\$23,969	\$539	
Actual/Projected Cost Per Tasks (whole dollars)	unk	unk	\$473,139	\$420,805	\$420,805	\$430,483	\$9,679	
15.4.8 # of aquatic outreach and education activities and/or events	unk	unk	603	1,384	1,384	2,000	616 ( 30.8% )	
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.							
<b>Improve Recreation Opportunities for America</b>								
15.4.12 Total # of visitors to NFHS facilities	1,540,090	2,392,144	2,167,197	2,379,748	2,379,748	2,500,000	120,252 ( 4.8% )	
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.							
CSF 52.1 Number of volunteer hours per year supporting FWS mission activities (GPRA)	2,164,648	2,328,109	1,963,849	2,038,775	2,038,775	2,161,587	122,812 ( 6.0% )	
52.1.2 # of volunteer participation hours are supporting Fisheries objectives for Hatcheries (GPRA)	113,407	117,915	110,690	103,934	103,934	120,000	16,066 ( 13.4% )	
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.							
<b>Advance Modernization for America</b>								
52.1.7 % of NFHS with friends groups	30% ( 24 of 79 )	37% ( 27 of 73 )	36% ( 27 of 74 )	42% ( 31 of 73 )	42% ( 31 of 73 )	52% ( 38 of 73 )	9.6% ( 18.4% )	
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.							

### Program Overview

The NFHS consists of 70 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 capabilities available. These include propagation of healthy and genetically-appropriate aquatic animals and plants to help re-establish wild populations; and scientific leadership in development of aquaculture, genetics, fish nutrition, and disease diagnostic technologies. Working closely with State, Tribal, and nongovernmental organizations, the Program also provides recreational opportunities and conservation and economic benefits for local communities.

To fulfill its long-term commitments, the NFHS worked with external partners to establish five-year (FY 2004-FY 2008) targets for each performance measure outlined in the National Fisheries Program Strategic Plan. Currently, the NFHS is working with the other Fisheries Program entities and its many partners to draft the FY 2009-FY 2013 Fisheries Strategic Plan. Focus areas such as Aquatic Species Conservation and Management, Aquatic Habitat Conservation and Management, Partnerships and Accountability, Leadership in Science and Technology, Public Use, Cooperation with Native Americans, and Workforce Management will remain consistent with the first 5-Year Plan. Performance targets will be set for each performance area, and include imperiled species recovery and development of the Service's Aquatic Animal Drug and Chemical Use Policy.

### **Aquatic Species Conservation and Management**

The Service's NFHS is a key contributor in accelerating the recovery of ESA-listed aquatic species and the restoration of aquatic species whose populations are declining, precluding the need to list. FTCs and FHCs provide the scientific foundation for recovery programs. The AADAP Program works with our many partners to obtain approval of drugs and chemotherapeutants necessary to manage and safeguard critical stocks. NFHS recovery and restoration activities are coordinated with State, federal, Tribal, and private sector partners as prescribed by Recovery Plans and multi-entity fishery management plans.

***Washington State Mass Marking*** - The Fisheries Program views the Washington State Mass Marking as an essential component to science-based management, improving our ability to manage the fishery resources of the Columbia River System. Based on this fundamental component, the Service supports the program through base funding.

***Recovery of Species Listed Under the ESA*** – The NFHS contributes to the recovery of threatened and endangered aquatic species and populations by developing and refining captive propagation techniques; determining impacts of temperature-induced stress related to climate change; developing and maintaining genetically distinct broodstock populations; stocking propagated species into restored habitats; developing non-lethal marking and tagging techniques; providing refugia for populations impacted by wildfire, drought, or other environmental conditions; conducting post-stocking assessments on survival and migration of introduced fish; developing methods to identify and track habitat preference; and many other activities prescribed in Recovery Plans. Climate change will likely impact a number of native aquatic species and 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; and 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 improve our understanding of vulnerable locations and populations, the distribution of emerging aquatic pathogens, and climate-related 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 will 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.

The NFHS fully supports other Service program priorities. Water sources and the associated riparian habitats found on National Fish Hatcheries attract many different bird species and provide critical stopover habitats that they depend on in their annual migrations. Facilities close 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.

*The National Fish Habitat Action Plan*

Modeled after the North American Waterfowl Management Plan – the National Fish Habitat Action Plan was adopted by State and federal agencies in 2006 to protect, restore, and enhance priority aquatic habitats. The Service is a principle federal partner in the Action Plan, and chairs the 19-agency Federal Caucus, which coordinates federal agency involvement. Projects funded under the Action Plan include: restoration of instream and riparian vegetation, treatment of acidic drainage from abandoned mines, removal of barriers such as culverts and old dams, and identification of pristine waters for protection.

### **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 hatchery and fishery management problems that are critical to many restoration and recovery programs. Contributions include genetic analyses, nutrition, reproductive biology, population dynamics, cryopreservation, biometrics, culture technologies, disease diagnostics, aquatic health management, invasive species studies, and availability of critical new aquatic animal drugs.

Fish Technology Centers are well poised to address an array of research topics related to the impact of global climate change. For example, scientists at the Bozeman FTC in Montana are studying the physiological impacts of temperature-induced stress on reproduction and survival of the endangered pallid sturgeon. Scientists at San Marcos FTC in Texas provide management guidance on the effects of reduced stream flow on endangered species, and study invasive species pathways and impacts on native fish populations. The Abernathy FTC in Washington State 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 are working to 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. In 2007, the Fisheries Program established a Memorandum of Understanding (MOU) with the Department of Agriculture that enables the National Fish Hatchery System 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 National Fish Hatchery System, may be transferred to the National Germplasm Repository for long-term storage, or until needed for restoration and recovery.

***Fish Health*** - Increasingly, the Service's FHCs play national and international leadership roles with partners such as the American Fisheries Society's Fish Health Section, the National Oceanic and Atmospheric Administration, the Department of Agriculture's Animal and Plant Health Inspection Service, and the State Department in dealing with diseases of tremendous importance such as VHS. The NFHS' fish health program focuses on: 1) the National Aquatic Animal Health Plan (NAAHP) and Service's Aquatic Animal Health Policy; 2) the National Wild Fish Health Survey (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 and amphibians).

The Aquatic Animal Drug Approval Partnership (AADAP) Program in Bozeman, MT is a partner-based national program established by the NFHS in FY 2004 that provides multi-agency coordination to obtain FDA approval for new aquatic animal drugs and therapeutants. The U.S. aquaculture "industry," which includes federal, State and Tribal natural resource agency facilities, in addition to private-sector facilities, 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 production of healthy animals. In the public sector these drugs are critical to the restoration or recovery 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, our ability to compete with foreign producers that have access to a much broader spectrum of drugs (A.C. von Eschenbach, 2008).<sup>2</sup> 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, and other partners, thereby enabling the submission of consolidated data packages to FDA. In addition, FHCs work with the Service's Environmental Contaminants Program to document potential fish food contamination and possible effects on propagated species.

### **Public Use**

***Recreation*** – The NFHS' role in the restoration of depleted populations of native game fish enhances fishing opportunities for the nation's 58 million recreational anglers. All of this work is in conjunction with State, Tribal, nongovernmental organizations, and partners operating under approved fishery management plans.

A recent report on the economic benefits accrued as a result of the NFHS production of rainbow trout sheds light on the impacts of NFHS on local economies. According to the report, \$5.4

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<sup>2</sup> A.C. von Eschenbach, Report to Congress, Food and Drug Administration Amendments Act of 2007. *Enhanced Aquaculture and Seafood Inspection*. 2008. 20 pages.

million expended by NFHS facilities to grow and stock rainbow trout provided a total economic output of \$325 million. These NFHS activities account for over 3,500 jobs and \$173 million in angling-related sales. Overall, for each taxpayer dollar budgeted for NFHS rainbow trout production, approximately \$32 in retail sales and \$37 in net economic value are generated.

**Education** – National Fish Hatcheries are integral parts of the communities in which they are located and NFHS personnel help instill our Nation’s conservation ethic in our youth. National Fish Hatcheries are education centers that provide hands-on experience. For example, fourteen



National Fish Hatcheries and six Fish and Wildlife Conservation Offices in the Southeast Region offer the Biologist-in-Training Program (BiT), designed to guide students through a fun, hands-on exploration of aquatic habitats. In FY 2010, over 30,000 children will participate in a wide range of conservation educational activities provided by NFHS personnel.

**Fisheries Friends Groups** – Fisheries Friends Groups are critical where they exist, connecting the public with the Service by coordinating volunteers and businesses in support of facility operations, special events such as National Fishing and Boating Week, and outdoor classrooms for youth. In 2008, volunteers contributed over 130,000 hours of labor. In FY 2005, 11 formal Fisheries Friends Groups were associated with 16 facilities. In FY 2008, this number grew to 27 groups associated with 35 Fisheries facilities. In September 2008, these groups organized the National Fisheries Friends Partnership (NFFP) under authority of the National Fish Hatchery System 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.

In addition to helping to develop Fisheries Friends Groups, the National Fish Hatchery System has helped create outdoor classrooms specified in the Act. Outdoor Discovery Zone Guidelines were developed and distributed to assist Project Leaders with ideas for hands-on experiences for youth, promoting understanding and conservation of fish and aquatic resources. Two pilot projects are scheduled for completion in FY 2009 - at the Genoa National Fish Hatchery (WI) and at the White Sulphur Springs National Fish Hatchery (WV). 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 the *Fisheries Vision for the Future*, the Service helps mitigate 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. NFHS and Department personnel worked with the U.S. Army Corps of Engineers (Corps) in FY 2008 to reach an agreement for full reimbursement from Corps projects. The Service is optimistic that a partnership between the Service, Corps, and affected States and Tribes will allow the government to efficiently meet its mitigation responsibilities for federal water development projects.

### **2010 Program Performance**

In FY 2010, 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 (Endangered Species Program and Fish and Wildlife Conservation Offices, in particular) partners, the NFHS will implement recovery activities that include propagation and stocking 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 production and release of native trout, other finfish, and imperiled and declining native 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 on the threatened Apache trout, which is 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 the Wolf Creek NFH (KY); propagation and stocking of the endangered Higgins’eye pearly mussel at the Genoa NFH (WI); propagation and stocking of the endangered pallid-sturgeon at the Neosho NFH (MO) and the Natchitoches NFH (LA); captive propagation and stocking of the threatened Lahontan cutthroat trout at the Lahontan NFH (NV); and cutting-edge work on the endangered Texas wild rice and the Texas blind salamander at the San Marcos NFH and Technology Center (TX).
- **Restoration of Depleted, but Non-Listed Species** - These efforts have helped preclude additional ESA listings of species such as Atlantic sturgeon and American shad. Close coordination with our State and Tribal partners will continue on such projects as: propagation and stocking of Chinook, Coho, and steelhead at the Makah NFH and Quinalt NFH (WA), striped bass at the Orangeburg NFH (SC), lake trout at the Iron River NFH (WI); and paddlefish at the Garrison Dam NFH (ND).
- **Science and Technology** - The NFHS’ Fish Health Centers will continue to provide diagnostic support to our National Fish Hatcheries as well as State and Tribal hatcheries, and work with the USDA and the Great Lakes partners on pathogen issues in that area. 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 related to climate change, 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. Finally, FTCs will assist National Fish Hatcheries 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.
- **Education** - The NFHS considers conservation education to be a core value. No greater legacy can be left to future generations than a sense of conservation ethics in our children. In FY 2009, more than 30,000 youths will interact with NFHS personnel at fishing derbies, hatchery tours, and other educational activities. NFHS facilities will continue to be used as “outdoor classrooms” and NFHS personnel will share their varied expertise with an anticipated 2 million visitors. NFHS will work closely with the National Fisheries Friends Partnership Board to implement the National Fish Hatchery System Volunteer Act of 2006.

Program Performance Overview Table -- National Fish Hatchery Operations									
Performance Goal	2005 Actual	2006 Actual	2007 Actual	2008 Plan	2008 Actual	2009 Plan	2010 President's Budget	Change from 2009 Plan to 2010	Long-term Target 2013
<b>Sustaining Biological Communities</b>									
CSF 5.1 Percent of fish species of management concern that are managed to self-sustaining levels, in cooperation with affected States and others, as defined in approved management documents (GPRAs)	30% ( 59 of 199 )	40% ( 70 of 174 )	42% ( 63 of 150 )	28% ( 46 of 164 )	28% ( 46 of 164 )	15% ( 22 of 146 )	15% ( 22 of 146 )	0.0%	15% ( 22 of 146 )
CSF Total Actual/Projected Expenditures(\$000)	unk	\$26,286	\$26,775	unk	\$32,281	\$40,243	\$41,169	\$926	\$44,074
CSF Program Total Actual/Projected Expenditures(\$000)	unk	\$1,099	\$561	unk	\$569	\$761	\$779	\$18	\$834
Actual/Projected Cost Per Species (whole dollars)	unk	\$375,515	\$425,000	unk	\$672,514	\$1,829,238	\$1,871,311	\$42,072	\$2,003,382
5.1.2.3 % of populations of native aquatic non-T&E species that are self-sustaining in the wild, as prescribed in management plans - NFHS (PART)	unk	unk	unk	0% ( 4 of 1,472 )	0% ( 4 of 1,472 )	0% ( 7 of 1,569 )	0% ( 7 of 1,569 )	0.0%	0% ( 7 of 1,569 )
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 (PART)	69% ( 1,173 of 1,698 )	31% ( 473 of 1,515 )	34% ( 540 of 1,589 )	38% ( 557 of 1,472 )	38% ( 557 of 1,472 )	37% ( 580 of 1,569 )	37% ( 580 of 1,569 )	0.0%	37% ( 580 of 1,569 )
CSF Total Actual/Projected Expenditures(\$000)	unk	\$21,280	\$18,753	unk	\$21,790	\$20,496	\$20,967	\$471	\$22,447
CSF Program Total Actual/Projected Expenditures(\$000)	unk	\$3,436	\$3,839	unk	\$4,703	\$4,895	\$5,007	\$113	\$5,361
Actual/Projected Cost Per Populations (whole dollars)	unk	\$44,989	\$34,729	unk	\$36,807	\$35,338	\$36,151	\$813	\$38,702
5.2.1.3 % 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 - NFHS (PART)	unk	unk	unk	1% ( 20 of 1,472 )	1% ( 20 of 1,472 )	2% ( 24 of 1,569 )	2% ( 24 of 1,569 )	0.0%	2% ( 24 of 1,569 )
5.2.2.3 % of populations of native aquatic non T&E species with approved management plans - NFHS (PART)	unk	unk	unk	2% ( 26 of 1,472 )	2% ( 26 of 1,472 )	3% ( 48 of 1,569 )	3% ( 48 of 1,569 )	0.0%	3% ( 48 of 1,569 )
CSF 5.3 Percent of tasks implemented, as prescribed in management plans (PART)	unk	unk	46% ( 1,588 of 3,429 )	52% ( 1,619 of 3,130 )	52% ( 1,619 of 3,130 )	63% ( 2,471 of 3,894 )	63% ( 2,471 of 3,894 )	0.0% ( 0.0% )	63% ( 2,471 of 3,894 )
CSF Total Actual/Projected Expenditures(\$000)	unk	unk	\$61,976	unk	\$64,703	\$67,395	\$68,945	\$1,550	\$73,811
CSF Program Total Actual/Projected Expenditures(\$000)	unk	unk	\$36,006	unk	\$39,168	\$45,632	\$46,682	\$1,050	\$49,976
Actual/Projected Cost Per Tasks (whole dollars)	unk	unk	\$39,028	unk	\$27,198	\$27,274	\$27,902	\$627	\$29,871
5.3.1.3 % of tasks implemented, as prescribed in management plans - NFHS (PART)	unk	unk	69% ( 709 of 1,029 )	23% ( 708 of 3,130 )	23% ( 708 of 3,130 )	29% ( 1,142 of 3,894 )	29% ( 1,142 of 3,894 )	0.0%	29% ( 1,142 of 3,894 )

Performance Goal	2005 Actual	2006 Actual	2007 Actual	2008 Plan	2008 Actual	2009 Plan	2010 President's Budget	Change from 2009 Plan to 2010	Long-term Target 2013
<b>Sustaining Biological Communities</b>									
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)	0.185 ( 184,929,982 of 1,001,592,759 )	0.096 ( 101,665,544 of 1,059,605,059 )	0.118 ( 120,270,843 of 1,015,999,141 )	0.124 ( 125,887,492 of 1,015,999,141 )	0.124 ( 125,887,492 of 1,015,999,141 )	0.119 ( 129,476,777 of 1,087,233,873 )	0.106 ( 118,331,755 of 1,118,111,314 )	-0.013 ( -11.1% )	0.106 ( 118,331,755 of 1,118,111,314 )
CSF 7.12 Percent of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild (PART)	9% ( 38 of 416 )	13% ( 55 of 435 )	10% ( 61 of 595 )	4% ( 26 of 585 )	4% ( 26 of 585 )	9% ( 60 of 639 )	9% ( 60 of 639 )	0.0%	9% ( 60 of 639 )
CSF Total Actual/Projected Expenditures(\$000)	unk	\$34,971	\$34,606	unk	\$36,873	\$42,814	\$43,799	\$985	\$46,890
CSF Program Total Actual/Projected Expenditures(\$000)	unk	\$17,194	\$15,610	unk	\$17,863	\$22,150	\$22,659	\$509	\$24,258
Actual/Projected Cost Per Populations (whole dollars)	unk	\$635,843	\$567,308	unk	\$526,762	\$713,574	\$729,986	\$16,412	\$781,506
7.12.1.3 % of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild - NFHS (PART)	9% ( 38 of 416 )	13% ( 55 of 435 )	10% ( 61 of 595 )	4% ( 22 of 585 )	4% ( 22 of 585 )	3% ( 21 of 639 )	3% ( 21 of 639 )	0.0%	3% ( 21 of 639 )
7.12.2.3 % of populations of aquatic threatened and endangered species (T&E) with known biological status that are self-sustaining in the wild - NFHS (PART)	unk	unk	unk	7% ( 32 of 484 )	7% ( 32 of 484 )	4% ( 21 of 520 )	4% ( 21 of 520 )	0.0%	4% ( 21 of 520 )
7.12.3.3 % of aquatic T&E populations managed or influenced by the Fisheries Program for which current status (e.g., quantity and quality) and trend is known - NFHS (PART)	unk	unk	unk	11% ( 64 of 585 )	11% ( 64 of 585 )	10% ( 67 of 639 )	10% ( 67 of 639 )	0.0%	10% ( 67 of 639 )
7.12.4.3 % of aquatic T&E populations managed or influenced by the Fisheries Program with approved Recovery plans - NFHS (PART)	unk	unk	unk	23% ( 132 of 585 )	23% ( 132 of 585 )	21% ( 135 of 639 )	21% ( 135 of 639 )	0.0%	21% ( 135 of 639 )
7.12.5.3 % of tasks implemented as prescribed in Recovery Plans - NFHS (PART)	unk	unk	52% ( 190 of 368 )	28% ( 294 of 1,050 )	28% ( 294 of 1,050 )	30% ( 390 of 1,286 )	30% ( 390 of 1,286 )	0.0%	30% ( 390 of 1,286 )

Performance Goal	2005 Actual	2006 Actual	2007 Actual	2008 Plan	2008 Actual	2009 Plan	2010 President's Budget	Change from 2009 Plan to 2010	Long-term Target 2013
<b>Improve Recreational Opportunities for America</b>									
CSF 15.4 Percent of mitigation tasks implemented as prescribed in approved management plans	unk	unk	73% ( 30 of 41 )	86% ( 66 of 77 )	86% ( 66 of 77 )	86% ( 64 of 74 )	86% ( 64 of 74 )	0.0% ( 0.0% )	86% ( 64 of 74 )
CSF Total Actual/Projected Expenditures(\$000)	unk	unk	\$23,147	unk	\$23,184	\$26,931	\$27,551	\$619	\$29,495
CSF Program Total Actual/Projected Expenditures(\$000)	unk	unk	\$19,766	unk	\$20,032	\$23,430	\$23,969	\$539	\$25,661
Actual/Projected Cost Per Tasks (whole dollars)	unk	unk	\$771,573	unk	\$473,139	\$420,805	\$430,483	\$9,679	\$460,865
15.4.1.3 % of mitigation tasks implemented as prescribed in approved management plans - NFHS (PART)	unk	unk	73% ( 30 of 41 )	83% ( 64 of 77 )	83% ( 64 of 77 )	57% ( 42 of 74 )	57% ( 42 of 74 )	0.0%	57% ( 42 of 74 )
15.4.6.3 % of fish populations at levels sufficient to provide quality recreational fishing opportunities - NFHS (PART)	unk	unk	unk	1% ( 11 of 1,191 )	1% ( 11 of 1,191 )	5% ( 52 of 1,108 )	5% ( 52 of 1,108 )	0.0%	5% ( 52 of 1,108 )
15.4.8 # of aquatic outreach and education activities and/or events	unk	unk	unk	603	603	1,384	2,000	616 ( 30.8% )	2,000
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.								
15.4.11 Pounds per dollar (lbs./\$) of healthy rainbow trout produced for recreation (PART)	unk	0.33	0.33	0.35	0.35	0.35	0.35	0	0.35
15.4.12 Total # of visitors to NFHS facilities	1,653,327	1,540,090	2,392,144	2,167,197	2,167,197	2,379,748	2,500,000	120,252 ( 4.8% )	2,500,000
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.								
CSF 15.8 % of adult Americans participating in wildlife-associated recreation	unk	unk	unk	38% ( 385 of 1,000 )	0.0%	38% ( 385 of 1,000 )			
CSF Total Actual/Projected Expenditures(\$000)	unk	unk	unk	unk	\$71,172	\$71,291	\$72,931	\$1,640	\$78,078
CSF Program Total Actual/Projected Expenditures(\$000)	unk	unk	unk	unk	\$7,834	\$8,655	\$8,854	\$199	\$9,479
Actual/Projected Cost Per Unit (whole dollars)	unk	unk	unk	unk	\$184,861	\$185,171	\$189,430	\$4,259	\$202,800
15.8.10 # of waters where recreational fishing opportunities are provided - NFHS (GPRA)(PART)	unk	unk	221	221	221	221	230	9 ( 3.9% )	230
<b>Advance Modernization of America</b>									
CSF 52.1 Number of volunteer hours per year supporting FWS mission activities (GPRA)	1,404,064	2,164,648	2,328,109	1,963,849	1,963,849	2,038,775	2,161,587	122,812 ( 6.0% )	2,161,587
52.1.2 # of volunteer participation hours are supporting Fisheries objectives for Hatcheries (GPRA)	120,055	113,407	117,915	110,690	110,690	103,934	120,000	16,066 ( 13.4% )	120,000
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.								
52.1.7 % of NFHS with friends groups	34% ( 29 of 86 )	30% ( 24 of 79 )	37% ( 27 of 73 )	36% ( 27 of 74 )	36% ( 27 of 74 )	42% ( 31 of 73 )	52% ( 38 of 73 )	9.6% ( 18.4% )	52% ( 38 of 73 )
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.								
52.1.7.1 # of NFHS facilities with friends groups	29	24	27	27	27	31	38	7 ( 18.4% )	38
Comments:	Hatcheries increase of \$1,300,000 to support the goal of the Administration's Youth and Careers in Nature Initiative.								
52.1.7.2 # of NFHS facilities	86	79	73	74	74	73	73	0	73

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

	2008 Actual	2009 Enacted	2010			Change from 2009 (+/-)
			Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
National Fish Hatchery Maintenance and Equipment (\$000)	17,167	17,654	+181	0	17,835	+181
FTE	91	91	0	0	91	0
Maintenance and Equipment (\$000)	1,394	1,394	-862	0	532	-862
FTE	0	0	0	0	0	0
<b>Total, Maintenance and Equipment (\$000)</b>	<b>18,561</b>	<b>19,048</b>	<b>-681</b>	<b>0</b>	<b>18,367</b>	<b>-681</b>
FTE	91	91	0	0	91	0

**Summary of 2010 Program Changes for Maintenance and Equipment**

Request Component	(\$000)	FTE
Internal Transfer – <b>Sea Lamprey Program Administrative Cost</b> (Fixed Cost and Related Changes)	<b>-862</b>	<b>0</b>
Internal Transfer – <b>NCTC Literature Research Services</b> (Fixed Cost and Related Changes)	<b>-8</b>	<b>0</b>

**Justification of 2010 Program Changes**

The 2010 budget request for Maintenance and Equipment is \$18,367,000 and 91 FTE, a program change of +\$0 and +0 FTE from the 2009 Enacted budget.

**Program Overview**

The Fisheries Program has developed an Asset Management Plan that provides guidance and strategies for managing real and personal property inventories, including the systematic and objective tracking, evaluation, and reporting of asset condition and the prioritization of their management.

The program continues to implement the recommendations made to the Department in the Office of the Inspector General’s December 2001 Advisory Report, “Maintaining the Department of Interior’s Facilities, A Framework for Action.” The report describes the need to reduce deferred maintenance needs, manage facilities proactively, conduct condition assessments, establish performance measures, and implement a facilities management system. 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 comprehensive 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 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**

NFHS mission accomplishments are 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 facility, and regulate the actual rearing or holding environment of fish and other aquatic species. Three-fourths of the NFHS's \$1.38 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 needed repairs as a fraction of the assets' replacement value) for its critical assets of 0.12 ("poor" condition by DOI standards), the NFHS will work to minimize any losses of fish 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, addressing key repair needs, and disposing of assets that are low in priority or excess to the government's needs. Incorporating the condition assessment process ensures that the NFHS's repair needs are objectively determined. 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.

Climate change and increasing energy cost concerns have arisen over the past several years, prompting the FWS 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 has begun analyzing its energy use and has determined that its field stations are intensive users of energy, as indicated by the following:

- The NFHS's real property assets constitute 6.2 percent of all FWS assets by replacement value, yet these assets use 31 percent of all FWS energy use (they use 66 percent of all FWS electricity).
- The average NFHS field station uses 2.3 billion BTUs annually, 3.3 times the 0.713 billion BTU average used by non-NFHS field stations.
- The top 20 percent (16 stations) of the NFHS's 82 field stations use 60 percent of all NFHS energy use!

As NFHS staff continue to analyze FWS energy use data, they recommend the FWS consider the development of energy performance measures reasonably reflective of both energy use by station or program and of actual energy reduction opportunities hinted at by the initial examinations of FWS energy use data. NFHS field stations have multiple and significant conditions for energy reductions through building improvement, use of newly developed technologies, and emplacement of renewable energy systems. As examples, variable frequency drive (VFD) 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 fish hatcheries would 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 has 147 DM projects worth \$25,330,000; nine capital improvement projects worth \$5,309,000; and five energy retrofit/renewable energy projects worth \$636,000 that will be funded through the American Recovery and Reinvestment Act. These projects were selected from the FY 2010-2014 NFHS Deferred Maintenance Plan, will be funded over FYs 2009 and 2010 and will target, for the most part, the NFHS's mission critical assets - its water supplies, rearing units, and water treatment systems. The additional funds will help drop the repair need (as a fraction of the assets' replacement value) of the NFHS's critical assets from 11.4 percent, marginally in poor condition, to 10.2 percent by the end of FY 2010. The long term goal is to get these critical assets into good condition, with a repair need fraction under 5%. To do so, the critical repair need would have to be reduced from the current \$120 million to \$50 million, a reduction of \$70 million. To put the NFHS's water supplies into fully functional condition, then, would require at least \$40 million more than the \$31.3 million provided through the American Recovery and Reinvestment Act, not all of which will target mission critical assets.

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 preventive 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), thus avoiding adding additional projects to the deferred maintenance needs of the NFHS. Increased State and federal requirements for effluent treatment have increased annual maintenance needs (replacing ultraviolet bulbs, screen filters, and valves). Current annual maintenance funding will allow priority preventive maintenance needs to be addressed in a timely manner and reduce the burden on operational budgets. Similarly, critical water assets such as wells and pumps require regular rehabilitation to ensure dependable operation. Existing funding will be used to service critical components such as water pumps at appropriate intervals, reducing the likelihood of pump failure and increasing the life expectancy of pump motors and shafts. Through use of the Service Asset and Maintenance Management System (SAMMS) and comprehensive condition assessment process, the NFHS can plan component renewal and recurring maintenance to enable a more proactive asset management strategy, reduce maintenance needs from becoming more costly deferred maintenance deficiencies, and foster the successful completion of operations.

**Deferred Maintenance** – Three-fourths of the NFHS' \$1.38 billion in assets are mission-critical water management assets, currently in poor condition. Ensuring these properties are fully functional is key to the NFHS's ability to conserve significant fish and other aquatic species, especially in the face of climate change. 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 roughly \$151 million in deferred maintenance needs identified.

Projects are identified and tracked in Service maintenance databases and are prioritized for funding in the NFHS Five-Year Deferred Maintenance Plan. The FY 2010-2014 Plan includes a detailed list of projects to be accomplished during each of those years. Projects are ranked and scored on the following criteria: 1) critical health and safety, 2) critical resource protection, 3) critical mission, and 4) other important needs.

**Equipment: Routine Maintenance, Repair, and Replacement** – NFHS equipment is essential to hatchery operations and consists of over \$35 million worth 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 on time, equipment will remain useable 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 avoid 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.

### **Office Maintenance and Equipment**

The fisheries office maintenance and equipment funds are for the purchase and upkeep of over \$21 million in assets such as boats, vehicles, and sampling equipment. These are critical to the Fisheries Program's mission to restore and maintain native species of fish and other aquatic resources at 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 such that on-the-ground habitat monitoring and assessment can be conducted safely and efficiently.

### **2010 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 FY 2010-2014 NFHS Deferred Maintenance Plan:

- Rehabilitate a solid waste dump site at Lamar NFH (PA) to comply with a safety audit that identified possible access by area children. The project will remove construction debris and bring the site into compliance with local codes.
- Rehabilitate a water alarm system at Abernathy Fish Technology Center (WA) to provide protection for fish held as surrogates for threatened and endangered species in applied research studies. In fall 2005, thousands of fish were lost due to a system failure, impacting research important to the Service, Bonneville Power Administration, and the Independent Scientific Review Panel of the Columbia River Fish and Wildlife Authority.
- Rehabilitate a production pond to conserve water and control weeds at Dexter National Fish Hatchery and Technology Center (NM), as water losses due to seepage in the pond are considerable, affecting the station's mission to culture, propagate, and restore native fishes of the Southwest.
- Replace a portable generator with a permanent backup generator at Garrison Dam NFH (ND), because frequent power interruptions have jeopardized fish health and compromised the Service's ability to produce a healthy product. A recent Pallid Sturgeon Propagation Workgroup pointed to the lack of backup power as a serious threat to this recovery effort.

Presently, several States continue to permit fish culture operations at NFHS facilities only because pollution abatement projects are on schedule in the maintenance or capital improvement plans. Any deviations from those 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. In recent years, documented instances of fish losses, including listed species, have been directly attributable to critical infrastructure failure. A highly dedicated NFHS workforce continues to maximize production of a large variety of aquatic species for restoration, recovery, and mitigation. Rehabilitating or replacing these mission critical assets is necessary for the continued success of meeting program goals, objectives 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 FY 2010, the NFHS is committed to:

- Continuing the second 5-year cycle of assessments by completing Comprehensive Condition Assessment at approximately 20 hatcheries. Additionally, 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. Multiple strategies will be identified and those which pose the greatest fiscal and asset benefit will be implemented. 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**

	2008 Actual	2009 Enacted	2010			Change from 2009 (+/-)
			Fixed Costs & Related Changes* (+/-)	Program Changes (+/-)	Budget Request	
Habitat Assessment and Restoration (\$000)	22,257	22,923	+164	+4,000	27,087	+4,164
FTE	72	72	0	+4	76	+4
Population Assessment and Cooperative Management (\$000)	31,463	32,488	+623	0	33,111	+623
FTE	200	200	+2	0	202	+2
<b>Total, Aquatic Habitat and Species Conservation (\$000)</b>	<b>53,720</b>	<b>55,411</b>	<b>+787</b>	<b>+4,000</b>	<b>60,198</b>	<b>+4,787</b>
FTE	<b>272</b>	<b>272</b>	<b>+2</b>	<b>+4</b>	<b>278</b>	<b>+6</b>

\*The FTE increases listed in the FY2010 "Fixed Cost & Related Changes" column represent FTE positions that were funded in FY2009, but due to the late enactment of the 2009 Appropriations Act, will not be filled until FY10. The savings realized in FY09 by not having to pay salaries will be used to fund one-time expenses, such as human capital recruitment costs, supplies, and equipment.

**Summary of 2010 Program Changes for Fisheries and Aquatic Resource Conservation**

Request Component	(\$000)	FTE
• Tackling Climate Impacts: National Fish Habitat Action Plan	+2,000	+4
• Klamath Dam Removal Study	+2,000	0
<b>TOTAL Program Changes</b>	<b>+4,000</b>	<b>+4</b>
Internal Transfer –NCTC Literature Research Services (Fixed Cost and Related Changes)	-25	0

**Justification of 2010 Program Changes**

The 2010 budget request for Aquatic Habitat and Species Conservation is \$60,198,000 and 278 FTE, a net program change of +\$4,000,000 and +4 FTE from the 2009 Enacted Budget.

**Tackling Climate Impacts: National Fish Habitat Action Plan (+\$2, 000,000/+4 FTE)**

The 2010 budget includes an increase of \$2 million to support projects to address the impacts of climate change on fish and other aquatic species and help these species adapt. These activities will respond strategically to climate change by improving fish habitat within the framework of the National Fish Habitat Action Plan (Action Plan). High-priority projects focusing on the habitats of federal trust species will contribute to maintaining healthy fish populations and restoring depleted and listed fishes nationwide. Priority will be given to projects for species most sensitive and vulnerable to the effects of climate change and that focus on geographic areas identified as the highest priority areas for protection, restoration, and enhancement. The Service will identify these priority areas through its network of Landscape Conservation Cooperatives (LCCs), which will work in partnership with the National Fish Habitat Board and each of the National Fish Habitat Partnerships, and will build on the prioritization efforts already begun under the Action Plan. By focusing on the most sensitive species and on landscapes served by LCCs, the Service will spend the requested \$2 million in ways that tie to and complement related climate change activities described elsewhere in our budget justification that involve the National Wildlife Refuge System, State and Tribal grant programs, biological planning and conservation design activities supported through the Office of the Science Advisor, other habitat restoration and

enhancement activities supported through the Partners for Fish and Wildlife program, and other climate change activities that will be undertaken by our Endangered Species, Fisheries and Habitat Conservation, and Migratory Bird programs.

Climate change will affect aquatic habitats by altering water temperature, quantity and timing of flows, and the composition of biological communities, including invasive species and aquatic pathogens. The ability of trust fishes and other aquatic species to adapt to climate-induced changes will depend on the current health of the populations and their habitats. Fish populations that are abundant, genetically diverse, and self-sustaining are more resilient to the effects of climate change. Their continued health depends on intact habitats with good water quantity and quality and connectivity allowing movement and genetic interchange. Conversely, fishes that are depleted in numbers or genetic diversity; lacking in reproductive success; or affected by disease, parasites, or invasive species will be more susceptible to climate effects. These conditions are caused or exacerbated by habitats that are fragmented, dewatered, or otherwise degraded.

Designing and evaluating conservation at landscape scales becomes more critical in the face of ecological stresses driven by climate change. The National Fish Habitat Action Plan presents a rigorous scientific approach to aquatic resource conservation, targeting explicit biological outcomes that can be tested, evaluated and improved in an adaptive process. The National Fish Habitat Board – charged with implementing the Action Plan – has adopted national goals and strategies to maintain or improve aquatic habitat conditions. At a regional scale, Fish Habitat Partnerships prioritize and evaluate conservation strategies and actions to achieve regional and national goals. The Board’s *Framework for Assessing the Nation’s Fish Habitat* provides a consistent national structure for resource assessment, biological planning, and project evaluation.

The Board is made up of 22 national conservation leaders from government, industry, and conservation organizations. The Board has designated 9 Fish Habitat Partnerships – the primary work units of the Action Plan – and 11 others are in development. Designated and “candidate” Fish Habitat Partnerships are active in all 50 States. The Fish and Wildlife Service is a lead federal partner in implementing the Action Plan, with the States and the Association of Fish and Wildlife Agencies in the overall lead.

Since 2006, the Service has implemented 136 on-the-ground, cost-shared projects in 36 States that address priorities of Fish Habitat Partnerships. The Service’s network of 65 Fish and Wildlife Conservation Offices provides scientific and management expertise to deliver the projects in cooperation with States, Tribes, landowners, and conservation organizations. The Service provides funds for the National Fish Habitat Assessment, the first-ever consistent national review of fish habitat condition across multiple scales to be completed in 2010.

An increase of \$2 million for the Action Plan will support projects that respond strategically to climate change by improving fish habitat within the framework of the National Fish Habitat Action Plan (Action Plan). Projects will focus on the restoration, enhancement and protection of habitats for Federal trust fish species by designing and evaluating conservation at landscape scales. This is critical in the face of ecological stresses driven by climate change. The National Fish Habitat Action Plan presents a rigorous scientific approach to aquatic resource conservation, targeting explicit biological outcomes that can be tested, evaluated and improved in an iterative and adaptive process that are effective in providing fish populations that are abundant, diverse, and self-sustaining are more resilient to the effects of climate change.

**Aquatic Habitat and Species Conservation: Tackling Climate Impacts (+2,000,000/ +4 FTE)**

Climate Change Key Performance Measure Name	FY 2009 Plan*	FY 2010-2009 (Variance)	FY 2010 Climate Metric
Number of habitat assessments completed	966	32	998
Number of miles of stream/shoreline restored in U.S.	172	200	372
Number of fish passage barriers removed or bypassed	117	22	139
Number of miles reopened to fish passage	557	76	633
Number of acres reopened to fish passage	15,940	7	15,947

\* Note the FY 2009 Plan numbers will be completed using program dollars, not dollars specifically tied to climate change impacts.

**Klamath Dam Removal Study (+\$2,000,000/+0 FTE)**

The Secretary of the Interior, the State of Oregon and the California Resources Agency have concluded that removal of PacifiCorp’s four Klamath Project Dams may provide potential benefits for fisheries, water and other resources in the Klamath River Basin that outweigh the potential costs, risks, liabilities or other adverse consequences of such a removal. In November 2008, PacifiCorp, federal agencies and the States of California and Oregon agreed that further study by the Secretary is needed to quantify the actual costs, benefits, risks and potential liabilities prior to the removal of the facilities, so that a final decision can be informed by the best available science and engineering. Studies conducted by the Service will be in coordination with the Bureau of Reclamation. The Service and Reclamation will coordinate with BIA, BLM, and NOAA Fisheries to create the information record for the determination. Study topics FWS will be analyzing include impacts of dam removal on fish and wildlife and water quality, and may include changes to the value of commercial and in-river fisheries and changes in non-use values that may be held by the public. The Study will be carried out beginning in early FY 2010 using modeling and other techniques to describe and where possible to quantify the biological responses of species of interest to the alternatives. The increase will fund all aspects of the Service’s study.

In addition, there will be costs associated with public outreach for the determination and the NEPA compliance activities. The FWS and BOR studies to be conducted in 2010 will support a determination by the Secretary in 2012 that is part of two potential settlement agreements. If successfully completed and authorized, these settlements could result in one of the largest river ecosystem restoration efforts in U.S. history, restoring fish passage from the headwaters to the ocean, providing habitat restoration and a sustainable water allocation for ESA-listed fish and other species in Upper Klamath Lake and in the Klamath River, while avoiding otherwise inevitable and costly disputes over water rights, endangered species, tribal trust, and regulatory takings.

## Program Overview

One of the key features of the Fisheries Program is its unique capacity to monitor and assess aquatic populations and their habitats. 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. Monitoring and assessment of aquatic animal populations and their habitats are critical components of the Service's draft Climate Change Strategic Plan and Action Plan. The Service's 65 Fisheries offices focus on monitoring and reversing declines in populations of federal trust aquatic species. Monitoring and assessment actions carried out by fisheries staff are critical to the Service's success in addressing climate change impacts to Service resources. The Service must ensure its investment in monitoring and assessment capacity in order to: (1) understand and address climate change impacts to 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 with information necessary to respond strategically and scientifically, particularly in managing the impacts of climate change.

## Habitat Assessment and Restoration

Fish and Wildlife Conservation Offices 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 impacts of climate change on aquatic species and habitat. The two major focus areas of the Habitat Assessment and Restoration Program are:

*National Fish Habitat Action Plan:* The Service is a partner with States, Tribes, and other stakeholders in implementing the National Fish Habitat Action Plan. The Plan fosters geographically-focused, locally-driven, and scientifically-based partnerships to protect, restore, and enhance aquatic habitats and reverse the decline of fish and aquatic species. The mission of the Action Plan is "to protect, restore, and enhance the nation's fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American people." The Action Plan is non-regulatory and voluntary, and relies upon the energies and expertise of geographically-focused regional Fish Habitat Partnerships (FHPs) dedicated to protecting, restoring, and enhancing fish habitats. Federal funding provided to NFHAP projects are typically leveraged as much as 3 to 1 with partner funding.



Through the National Fish Habitat Action Plan, restoration efforts on South Pine Creek in northeast Iowa have reduced the input of approximately 228 tons of sediment from entering this stream. South Pine Creek is one of just a few streams in the Midwest Driftless Area that contains a self-supporting wild brook trout population.

*National Fish Passage Program:* More than 2.5 million dams and millions of poorly-designed culverts and other in-stream structures impede fish passage throughout our Nation's streams and rivers, contributing to the depletion of native and migratory fish species, including many that are threatened or endangered.

The Program is a voluntary, non-regulatory partnership that works with local communities and partner agencies, in cost-share projects that restore natural flows and fish migration. This collaborative approach exemplifies the spirit of cooperative conservation. Since its inception in 1999, and in collaboration with more than 730 diverse partners, including dam owners, local governments, private landowners, Tribes and others who contribute approximately 60% of total project funds, the Fish Passage Program has removed or bypassed 765 barriers, and restored access to over 10,612 miles of river and 51,361 acres of wetlands for fish spawning and growth. Over the past ten years, more than 85 fish species, many federally and State protected, have benefited from the Program. Most recently, the removal of several culverts restored connectivity in Mill Creek (FL), which helped to create a self-sustaining population of the federally endangered Okaloosa darter, significantly contributing to the recovery of the species.

By strategically removing and bypassing barriers, the Fish Passage Program is achieving habitat restoration results which help restore depleted fish and aquatic species to self-sustaining levels. The Fish Passage Decision Support System (FPDSS) provides a structured decision making tool to the fish passage community (including the Service and other federal, State, and private partners) to identify the best opportunities for habitat restoration. The Program continues to assess and monitor the effectiveness of fish passage improvement projects; inventory priority watersheds to identify fish passage problems; provide project design and engineering technical assistance, and provide training to our partners. The Fish Passage Program can help mitigate impacts of climate change by enhancing stream channels for fish migration and providing refugia.

#### **Population Assessment and Cooperative Management**

Many activities of fisheries biologists are addressed by this element, including the restoration and maintenance of healthy, diverse aquatic species populations. Biologists also monitor and assess aquatic populations and their habitats in order to analyze impacts or trends. Fisheries offices focus on listed and depleted populations of native species, as well as inter-jurisdictional species such as American shad, Atlantic sturgeon, striped bass, and Pacific salmon.

Program biologists strategically focus resources on key watersheds, as determined by the Service and its partners, to identify the needs of priority trust species and their habitats. The Program works across jurisdictional boundaries with other State and federal agencies to develop and implement management plans at the landscape scale to recover populations of species to self-sustaining levels and to preclude listing of depleted species by addressing threats to their sustainability. Fisheries offices evaluate the causes of species decline and limiting factors for aquatic species populations and then implement actions to restore those populations. Their tools include the National Fish Passage Program, and The National Fish Habitat Action Plan, all of which are administered through Fisheries offices.

The Fisheries offices provide leadership in conservation planning and design as well as technical assistance to partners and other Service programs. For example, population surveys are conducted on National Wildlife Refuges to help develop Refuge Comprehensive Conservation Plans. The Fisheries offices support the Endangered Species Program by providing leadership on recovery teams as well as status assessments and data analysis used for management decisions. They work with Habitat Conservation Programs to review hydropower and other development projects for potential impacts to aquatic resources. Through coordinated planning and post-stocking evaluation, Fisheries offices work with the National Fish Hatchery System to implement effective restoration and recovery programs for native fish and mussels. The Program measures the performance of captive propagation programs, works with stakeholders to develop management and restoration plans that define the appropriate use of hatchery fish, and measures progress toward meeting plan objectives.

### **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.<sup>3</sup> 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 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. The Service requests \$12.9 million (\$10.0M Fisheries, \$2.8M NWRS) for this activity in 2010.

### **2010 Program Performance**

In FY 2010, the Fisheries offices will continue their comprehensive efforts 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 for restoration and recovery of the Nation's most precious fisheries. Fisheries offices will use the Fisheries Operational Needs System and Fish Passage Decision Support System to strategically prioritize work activities that will be conducted with requested funding. Expected program performance results include an increase of 26 population assessments completed, 18 technical assistance requests fulfilled, and nine tribal consultations. The funding increase will also accelerate the rate of recovery and restoration of trust fish species and expand recreational fishing opportunities.

### **Information for Restoring America's Fisheries**

Fisheries offices 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 the fish populations. The Service will meet this information need by using the scientific monitoring, assessment and evaluation expertise of the Fisheries offices. For FY 2010, the Service will continue its efforts in close coordination with other Service programs and the State Wildlife Action Plans.

### **Working with Tribes**

Fisheries offices work with Native American Tribes to assess their fish and wildlife resources, develop management plans, actively restore native fish and the habitats they depend on, and evaluate results of fish and wildlife management actions. In FY 2010, 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

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<sup>3</sup> 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.

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.

#### **National Fish Habitat Action Plan**

The Service will continue its role as a lead federal partner in the National Fish Habitat Action Plan (Action Plan), a partnership-based strategy to maximize the impact of conservation efforts to protect, restore, and enhance aquatic habitats. Primary leadership of the Action Plan is by the States through the Association of Fish and Wildlife Agencies.

In 2009, the Service will continue to support local conservation projects that address priorities of regional-scale Fish Habitat Partnerships in coordination with the National Fish Habitat Board. Service staff work with AFWA, NOAA, and USGS to assist the Board in its role to promote, oversee, and coordinate implementation of the Action Plan.

The Service will implement 52 Action Plan projects in 26 States in 2009. Service funds of \$2.7 million will be matched by \$4.7 million from partners. At least 70% of project funds will be used for on-the-ground habitat activities. Accomplishments will be reported in the Fisheries Information System. All projects address priorities of the six Fish Habitat Partnerships recognized by the Board as of October 2009:

- Southeast Aquatic Resources Partnership
- Eastern Brook Trout Joint Venture
- Mat-Su Basin Salmon Conservation Partnership
- Driftless Area Restoration Effort
- Southwest Alaska Salmon Conservation Partnership.

Three additional Fish Habitat Partnerships will be established in 2009 with financial assistance from the Service. They are:

- Desert Fish Habitat Partnership
- Midwest Glacial Lakes Partnership
- Hawaii Fish Habitat Partnership.

Fisheries Program field staff will provide essential help in development and operation of the Fish Habitat Partnerships, and will conduct field studies to evaluate and measure the outcomes of on-the-ground habitat projects.

The Service anticipates that 32 habitat assessments will be completed for native trust species, including the restoration of 200 miles of stream and riparian habitat, 22 barriers removed opening 66 miles of stream habitat and restoration and enhancement of 7 acres of wetland habitat for aquatic species.

The 52 fish habitat projects that will be implemented in 2009 include:

- In Elk Creek, Chippewa County, Wisconsin, the Service and partners will restore 4,000 feet of brook trout habitat on private lands. The project will install weirs, logs, and deflectors to stabilize banks and create pools and overhead cover. The project will expand an existing quality fishery for brook trout, and will serve as a demonstration for local schools.

- On Little Laurel Run, Preston County, West Virginia, the Service and partners will restore acidified stream flows and remove storm-generated logjams to enhance 2 miles of habitat to restore a depleted population of brook trout.
- In Tampa Bay, Florida, the Service and partners will restore seagrass to provide nurseries for juvenile fish, crabs, and shrimp, as well as provide habitat for the endangered Florida manatee. Seagrasses help improve water quality, serving as a biological filter and anchoring sediments.
- On Panther Creek, Washington, the Service and partners will expand the habitat available to a depleted population of westslope cutthroat trout by 1.2 miles by replacing a culvert that is a complete barrier to migration.
- On Wasilla Creek, Alaska, the Service and the Matanuska-Susitna Borough will re-open 15 miles of stream habitat by replacing a culvert that is a barrier to juvenile Coho salmon and Dolly Varden trout.

### **National Fish Passage Program**

Through the use of the Fish Passage Decision Support System (FPDSS), in FY 2010 Fisheries offices will continue to identify and target priority areas which provide the best opportunities restore access to fish habitat. This program will continue to provide immediate fish population growth which in turn precludes the listing of fish species and significantly contributes to species recovery and restoration. Continued support will ensure the National Fish Passage Program's ability to contribute to Fisheries Program performance goals.

Fish passage projects identified in the Fisheries Operational Needs System (FONS) that may be funded in FY 2010 include:

- In Wisconsin, fish passage, including native brook trout, is currently blocked by a poorly-installed perched culvert on Troutmere Creek. This tributary to the Marengo River is within the Bad River watershed. The stream is connected to Lake Superior and has potential for coaster brook trout restoration.
- In Washington, the final phase of multi-year effort to restore access and instream function in Beaver Creek, a tributary to the Methow River near Winthrop, WA will be completed. This project will remove a fish passage barrier which will provide complete access to the entire watershed for all species and life history stages.
- In West Virginia, we will provide upstream passage and open 100 miles of habitat for American eels by designing and the construction of upstream eelways at two dams on the Potomac River.
- On the mainstem of the Gunnison River in Colorado, fish passage to approximately 20 miles of upstream habitat will be restored. The Hartland Diversion Dam was constructed early in the 20th century to divert water for irrigation in the Gunnison Basin. It has blocked 20 miles of fish movement to and from their spawning and forage habitats since that time. Opening the barrier to passage will provide continuous fish passage through about 70 mi of the Gunnison River. Passage has already been provided into the Gunnison River from the Colorado River.

Program Performance Overview Table - Fish and Wildlife Management Assistance									
Performance Goal	2005 Actual	2006 Actual	2007 Actual	2008 Plan	2008 Actual	2009 Plan	2010 President's Budget	Change from 2009 Plan to 2010	Long-term Target 2013
<b>Sustaining Biological Communities</b>									
CSF 5.1 Percent of fish species of management concern that are managed to self-sustaining levels, in cooperation with affected States and others, as defined in approved management documents (GPRA)	30% ( 59 of 199 )	40% ( 70 of 174 )	42% ( 63 of 150 )	28% ( 46 of 164 )	28% ( 46 of 164 )	15% ( 22 of 146 )	15% ( 22 of 146 )	0.0%	15% ( 22 of 146 )
CSF Total Actual/Projected Expenditures(\$000)	unk	\$26,286	\$26,775	unk	\$32,281	\$40,243	\$41,169	\$926	\$44,074
CSF Program Total Actual/Projected Expenditures(\$000)	unk	\$18,788	\$21,573	unk	\$23,195	\$28,997	\$29,664	\$667	\$31,757
Actual/Projected Cost Per Species (whole dollars)	unk	\$375,515	\$425,000	unk	\$672,514	\$1,829,238	\$1,871,311	\$42,072	\$2,003,382
5.1.1 % of fish species of management concern that are managed to self-sustaining levels, in cooperation with affected States and others, as defined in approved management documents (GPRA)	30% ( 59 of 199 )	40% ( 70 of 174 )	42% ( 63 of 150 )	28% ( 46 of 164 )	28% ( 46 of 164 )	15% ( 22 of 146 )	15% ( 22 of 146 )	0.0%	15% ( 22 of 146 )
5.1.2.6 % of populations of native aquatic non-T&E species that are self-sustaining in the wild, as prescribed in management plans - FWMA (PART)	unk	16% ( 224 of 1,411 )	25% ( 347 of 1,414 )	23% ( 338 of 1,472 )	23% ( 338 of 1,472 )	26% ( 409 of 1,569 )	26% ( 409 of 1,569 )	0.0%	26% ( 409 of 1,569 )
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 (PART)	69% ( 1,173 of 1,698 )	31% ( 473 of 1,515 )	34% ( 540 of 1,589 )	38% ( 557 of 1,472 )	38% ( 557 of 1,472 )	37% ( 580 of 1,569 )	37% ( 580 of 1,569 )	0.0%	37% ( 580 of 1,569 )
CSF Total Actual/Projected Expenditures(\$000)	unk	\$21,280	\$18,753	unk	\$21,790	\$20,496	\$20,967	\$471	\$22,447
CSF Program Total Actual/Projected Expenditures(\$000)	unk	\$12,161	\$11,020	unk	\$11,415	\$9,957	\$10,186	\$229	\$10,904
Actual/Projected Cost Per Populations (whole dollars)	unk	\$44,989	\$34,729	unk	\$36,807	\$35,338	\$36,151	\$813	\$38,702
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 (PART)	69% ( 1,173 of 1,698 )	31% ( 473 of 1,515 )	34% ( 540 of 1,589 )	36% ( 537 of 1,472 )	36% ( 537 of 1,472 )	35% ( 556 of 1,569 )	35% ( 556 of 1,569 )	0.0%	35% ( 556 of 1,569 )
5.2.2.6 % of populations of native aquatic non T&E species with approved management plans - FWMA (PART)	56% ( 955 of 1,698 )	163% ( 777 of 477 )	58% ( 821 of 1,426 )	52% ( 761 of 1,472 )	52% ( 761 of 1,472 )	51% ( 793 of 1,569 )	51% ( 793 of 1,569 )	0.0%	51% ( 793 of 1,569 )
CSF 5.3 Percent of tasks implemented, as prescribed in management plans (PART)	unk	unk	46% ( 1,588 of 3,429 )	52% ( 1,619 of 3,130 )	52% ( 1,619 of 3,130 )	63% ( 2,471 of 3,894 )	63% ( 2,471 of 3,894 )	0.0% ( 0.0% )	63% ( 2,471 of 3,894 )
CSF Total Actual/Projected Expenditures(\$000)	unk	unk	\$61,976	unk	\$64,703	\$67,395	\$68,945	\$1,550	\$73,811
CSF Program Total Actual/Projected Expenditures(\$000)	unk	unk	\$12,268	unk	\$12,672	\$10,024	\$10,255	\$231	\$10,978
Actual/Projected Cost Per Tasks (whole dollars)	unk	unk	\$39,028	unk	\$27,198	\$27,274	\$27,902	\$627	\$29,871
5.3.1.6 % of tasks implemented, as prescribed in management plans - FWMA (PART)	unk	unk	37% ( 879 of 2,400 )	38% ( 1,197 of 3,130 )	38% ( 1,197 of 3,130 )	34% ( 1,329 of 3,894 )	34% ( 1,329 of 3,894 )	0.0%	34% ( 1,329 of 3,894 )
CSF 7.12 Percent of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild (PART)	unk	13% ( 55 of 435 )	10% ( 61 of 595 )	4% ( 26 of 585 )	4% ( 26 of 585 )	9% ( 60 of 639 )	9% ( 60 of 639 )	0.0%	9% ( 60 of 639 )
CSF Total Actual/Projected Expenditures(\$000)	unk	\$34,971	\$34,606	unk	\$36,873	\$42,814	\$43,799	\$985	\$46,890
CSF Program Total Actual/Projected Expenditures(\$000)	unk	\$13,621	\$14,463	unk	\$14,127	\$15,378	\$15,732	\$354	\$16,842
Actual/Projected Cost Per Populations (whole dollars)	unk	\$635,843	\$567,308	unk	\$526,762	\$713,574	\$729,986	\$16,412	\$781,506
7.12.1.6 % of populations of aquatic threatened and endangered species (T&E) that are self-sustaining in the wild (PART)	unk	unk	unk	1% ( 4 of 585 )	1% ( 4 of 585 )	6% ( 39 of 639 )	6% ( 39 of 639 )	0.0%	6% ( 39 of 639 )
7.12.2.6 % of populations of aquatic threatened and endangered species (T&E) with known biological status that are self-sustaining in the wild - FWMA (PART)	unk	unk	unk	12% ( 60 of 484 )	12% ( 60 of 484 )	8% ( 41 of 520 )	8% ( 41 of 520 )	0.0%	8% ( 41 of 520 )
7.12.3.6 % of aquatic T&E populations managed or influenced by the Fisheries Program for which current status (e.g., quantity and quality) and trend is known - FWMA (PART)	19% ( 77 of 416 )	51% ( 300 of 592 )	50% ( 296 of 589 )	41% ( 239 of 585 )	41% ( 239 of 585 )	41% ( 260 of 639 )	41% ( 260 of 639 )	0.0%	41% ( 260 of 639 )

Performance Goal	2005 Actual	2006 Actual	2007 Actual	2008 Plan	2008 Actual	2009 Plan	2010 President's Budget	Change from 2009 Plan to 2010	Long-term Target 2013
7.12.4.6 % of aquatic T&E populations managed or influenced by the Fisheries Program with approved Recovery plans - FWMA (PART)	78% ( 323 of 416 )	81% ( 477 of 592 )	81% ( 480 of 589 )	69% ( 401 of 585 )	69% ( 401 of 585 )	57% ( 365 of 639 )	57% ( 365 of 639 )	0.0%	57% ( 365 of 639 )
7.12.5.6 % of tasks implemented as prescribed in Recovery Plans - FWMA (PART)	unk	unk	47% ( 368 of 782 )	32% ( 338 of 1,050 )	32% ( 338 of 1,050 )	38% ( 489 of 1,286 )	38% ( 489 of 1,286 )	0.0%	38% ( 489 of 1,286 )
CSF 12.2 Number of aquatic invasive species populations controlled/managed - annual	unk	unk	14	14	14	11	11	0	11
CSF Total Actual/Projected Expenditures(\$000)	unk	unk	\$16,276	unk	\$18,098	\$18,578	\$19,005	\$427	\$20,347
CSF Program Total Actual/Projected Expenditures(\$000)	unk	unk	\$11,865	unk	\$3,161	\$1,264	\$1,293	\$29	\$1,385
Actual/Projected Cost Per Populations (whole dollars)	unk	unk	\$1,162,537	unk	\$1,645,257	\$1,688,923	\$1,727,768	\$38,845	\$1,849,708
12.2.3 # of aquatic invasive species populations controlled/managed (annually) - FWMA	11	8	14	14	14	11	11	0	11
12.2.6 # of activities conducted to support the management/control of aquatic invasive species - FWMA (PART)	175	42	150	43	43	256	256	0	256
<b>Improve recreational Opportunities for America</b>									
CSF 15.4 Percent of mitigation tasks implemented as prescribed in approved management plans	unk	unk	73% ( 30 of 41 )	86% ( 66 of 77 )	86% ( 66 of 77 )	86% ( 64 of 74 )	86% ( 64 of 74 )	0.0% ( 0.0% )	86% ( 64 of 74 )
CSF Total Actual/Projected Expenditures(\$000)	unk	unk	\$23,147	unk	\$23,184	\$26,931	\$27,551	\$619	\$29,495
CSF Program Total Actual/Projected Expenditures(\$000)	unk	unk	\$621	unk	\$833	\$1,565	\$1,601	\$36	\$1,714
Actual/Projected Cost Per Tasks (whole dollars)	unk	unk	\$771,573	unk	\$473,139	\$420,805	\$430,483	\$9,679	\$460,865
15.4.1.6 % of mitigation tasks implemented as prescribed in approved management plans - FWMA (PART)	unk	unk	unk	18% ( 14 of 77 )	18% ( 14 of 77 )	30% ( 22 of 74 )	30% ( 22 of 74 )	0.0%	30% ( 22 of 74 )
15.4.6.6 % of fish populations at levels sufficient to provide quality recreational fishing opportunities - FWMA (PART)	unk	unk	unk	24% ( 282 of 1,191 )	24% ( 282 of 1,191 )	58% ( 644 of 1,108 )	58% ( 644 of 1,108 )	0.0%	58% ( 644 of 1,108 )

**Activity: Fisheries and Aquatic Resource Conservation**  
**Subactivity: Aquatic Invasive Species**

		2008 Actual	2009 Enacted	2010			Change from 2009 (+/-)
				Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
State Plans/NISA Implementation	(\$000)	2,819	2,833	+15	0	2,847	+14
	FTE	12	12	0	0	12	0
Prevention	(\$000)	1,434	1,442	+7	0	1,449	+7
	FTE	6	6	0	0	6	0
Control and Management	(\$000)	1,070	1,077	+870	0	1,947	+870
	FTE	5	5	0	0	5	0
<b>Total, Aquatic Invasive Species</b>	<b>(\$000)</b>	<b>5,323</b>	<b>5,352</b>	<b>+892</b>	<b>0</b>	<b>6,244</b>	<b>+892</b>
	<b>FTE</b>	<b>23</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>0</b>

**Summary of 2010 Program Changes for Aquatic Invasive Species**

Request Component	(\$000)	FTE
Internal Transfer – Sea Lamprey Program Administrative Cost (Fixed Cost and Related Changes)	+862	0

**Justification of 2010 Program Changes**

The 2010 budget request for the Aquatic Invasive Species (AIS) Program is \$6,244,000 and 23 FTE, a program change of +\$0 and +0 FTE from the 2009 Enacted budget.

**Internal Transfer**

**Sea Lamprey Administrative Costs (+\$862,000)**

The Service, in partnership with the Department of Fisheries and Oceans Canada and the Great Lakes Fishery Commission, conducts a program to control invasive sea lamprey in the Great Lakes. Sea lampreys are a non-native parasitic species that have had a tremendous negative impact to economically valuable Great Lakes fish populations. The Service Fisheries Program controls sea lamprey numbers by trapping spawners, treating tributary streams with lampricide, releases of sterile male lamprey, and other techniques. The transfer of funding from subactivity FWCO Maintenance and Equipment to AIS Control and Management represented a technical correction. In FY 2008, the Fisheries Program reorganized its funding into six new subactivities that matched focus areas within the Fisheries Strategic Plan. At that time, sea lamprey funding was placed in 1322 rather than the more appropriate subactivity 1343. Most of the funding is used for program management, not maintenance or equipment. This funding transfer corrects the misalignment from last year.

**Program Overview**

Impacts caused by the introduction and spread of aquatic invasive species (AIS) are among the primary reasons for the decline of native populations and their habitats. It is estimated that more than 50,000 non-indigenous species have invaded the United States and their ecological damages

and control costs total more than \$120 billion per year<sup>4</sup>. The impacts from AIS are particularly acute because they remain persistent in the environment and spread widely even after the source is abated and/or pathways are interrupted. Without prevention and management, AIS populations grow and spread, and damages accelerate over time. Nearly half of the imperiled species in the United States are threatened by non-indigenous invasive species; this threat is second only to habitat loss for its effect on biodiversity<sup>5</sup>.

Invasive species pathways are not always obvious. Many problematic species, diseases and parasites have been transferred to new locations as undetected and unintentional hitchhikers. Because the non-native species are not readily detected in aquatic environments, their presence is often not realized until they have already become established and their impacts to native species are difficult to determine.

The Service's AIS Program contributes to maintaining sustainable native populations and recovering threatened and endangered populations by preventing the introduction and spread of aquatic invasive species, monitoring habitats to determine the distribution of invasive species, rapidly responding to new invasions, and controlling established invaders. The Aquatic Invasive Species Program is committed to the implementation of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (as amended by the National Invasive Species Act of 1996) and the Injurious Wildlife Provisions of the Lacey Act.

The Service's work with aquatic invasive species will be entering new territory. As the effects of climate change take affect, it is likely that aquatic species may need to move and adapt to new habitat and possibly compete with species at that new site. Service managers will need to reexamine the current definition of an aquatic invasive species.

The AIS subactivity is comprised of three program elements: State Plans/NISA Implementation, Prevention, and Control and Management.

### **State Plans/NISA Implementation**

The Service implements and meets its mandates under the National Invasive Species Act (NISA) by funding the implementation of State/Interstate/Tribal Aquatic Nuisance Species Management (ANS) Plans that have been approved by the ANS Task Force; providing resources and support to the six Regional Panels of the ANS Task Force; providing operational functions of the ANS Task Force; and implementing prevention and control activities of NISA through the Fisheries and Aquatic Resource Conservation Program in the Service Regions.

### **Prevention**

The Service implements activities to prevent the introduction, spread, and establishment of aquatic invasive species. These activities include: implementing HACCP (Hazard Analysis & Critical Control Points) plans to identify potential points of species introduction and define actions that reduce the risk of spreading invasive species



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<sup>4</sup> Pimentel, D., Lach, L., Zuniga, R., Morrison, D., 2005. Environmental and economic costs associated with introduced non-native species in the U.S. Manuscript, 1–28. Update on the environmental and economic costs associated with alien-invasive species in the U.S. *Ecological Economics* 52:273-288.

<sup>5</sup> 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.

through specific pathways; evaluating species for possible addition to the list of injurious wildlife under the Lacey Act; conducting detection and monitoring surveys for species such as round gobies, zebra mussels, and Asian carp in conjunction with routine field work. The Service also leads the implementation of “Stop Aquatic Hitchhikers!<sup>TM</sup>” and “Habitattitude<sup>TM</sup>”, 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 prevention behaviors. Other efforts such as the 100<sup>th</sup> Meridian Initiative, seek to stop the movement of AIS species, particularly zebra mussels, at the 100<sup>th</sup> meridian.

### **Control/Management**

In conjunction with the ANS Task Force and multiple state, industry, and federal partners, the Service has led and will continue to lead the development and implementation of plans to control and manage established aquatic invasive species. The Service currently leads the implementation of the Asian carp, ruffe, brown treesnake, Caulerpa, and mitten crabs national species management plans.

### **2010 Program Performance**

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In FY 2010, as described below, the Service, building on accomplishments in FY 2008 and anticipated accomplishments in FY 2009, plans to: (1) work with additional State and Tribal partners to implement new State/Interstate ANS management plans; (2) continue actions that prevent the introduction and spread of aquatic invasive species; and (3) engage in new collaborative activities to control and manage existing populations.

The Service works with multiple State, interstate, and Tribal partners to implement ANS Task Force-approved ANS management plans. In FY 2009 and FY 2010, the Service will work with additional States to facilitate the development of new ANS plans or the revision of existing ANS management plans and will also work collaboratively to drive social marketing campaigns down to the community level to help embed the prevention behaviors into the social fabric of communities across the country. There are currently 31 ANSTF approved State and interstate plans up from 10 in 2001 and 18 in 2006, showing significant progress in developing a comprehensive national approach to managing the Nation’s aquatic invasive species problem. A key premise under the National Invasive Species Act is that the states must be a strong partner in implementing a national AIS program.

To prevent the introduction and spread of aquatic invasive species in FY 2007 and FY 2008, the Service implemented HACCP plans at Fisheries field stations in all Service Regions to minimize the risk of the spread of aquatic invasive species; conducted surveys for early detection of aquatic invasive species; expanded the number of partners in the “Stop Aquatic Hitchhikers!<sup>TM</sup>” and “Habitattitude<sup>TM</sup>” social marketing campaigns; completed a number of regionally significant rapid response planning exercises to prepare for and build capacity regionally to respond to the next invader; and less than a week after the detection, initiated an effort with over 120 volunteers and over 200 hours of labor to rapidly respond to and eradicate a population of purple loosestrife in Alaska, thereby protecting hundreds of wetland acres from potential infestation. In FY 2010, the Service will increase the implementation of HACCP plans at Service field stations and by our State and Tribal partners by conducting regional workshops, which will reduce the risk of introducing new AIS; conduct injurious wildlife evaluations for additional species; continue current and initiate new detection and monitoring surveys to identify new introductions or range expansions of AIS.

The recent arrival of quagga mussels to the Southwest illustrates the potential for the AIS problem to continue growing. In less than two years since their discovery in Lake Mead, quagga mussels now extend through large portions of the Colorado River and into southern California, bringing with them the propensity to clog water systems and damage aquatic ecosystems. In addition, zebra mussels also were found recently in several western States. In 2009, AIS staff is working through the Western Regional Panel and other stakeholders to develop an action plan for quagga and zebra mussels. This action plan is key to successfully preventing the spread of these mussels and controlling and managing them in infested areas. Plan implementation is slated for 2010.

In conjunction with multiple partners, the Service has completed National Management and Control Plans for Asian carps and New Zealand mudsnails. On some, ANSTF has asked the FWS to lead implementation. In FY 2010, the Service will work to continue collaborative and innovative efforts with States and other ANSTF members to implement priority prevention, control, and research actions identified in these plans to control and manage these invaders such as ruffe, quagga/zebra mussels, Asian carp, and New Zealand mudsnails.

**Activity: Fisheries and Aquatic Resource Conservation**  
**Subactivity: Marine Mammals**

		2008 Actual	2009 Enacted	2010			Change from 2009 (+/-)
				Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
Stock Assessment/Conservation Management	(\$000)	2,719	3,112	+42	+2,200	5,354	+2,242
	FTE	16	16	0	+4	20	+4
Cooperative Agreements	(\$000)	257	259	+2	0	261	+2
	FTE	1	1	0	0	1	0
<b>Total, Marine Mammals</b>	<b>(\$000)</b>	<b>2,976</b>	<b>3,371</b>	<b>+44</b>	<b>+2,200</b>	<b>5,615</b>	<b>+2,244</b>
	FTE	17	17	0	+4	21	+4

**Summary of 2010 Program Changes for Marine Mammals**

Request Component	(\$000)	FTE
• Stock Assessment/Conservation Management - Polar Bears	+1,700	+1
• Stock Assessment/Conservation Management - Manatees	+175	+1
• Stock Assessment/Conservation Management - National Coordination and Permits	+325	+2
<b>Total, Program Changes</b>	<b>+2,200</b>	<b>+4</b>
Internal Transfer – NCTC Literature Research Services (Fixed Cost and Related Changes)	-1	0

**Justification of 2010 Program Changes**

The 2010 budget request for the Marine Mammal Program is \$5,615,000 and 21 FTE, a net program change of +\$2,200,000 and +4 FTE from the 2009 Enacted budget.

With the requested increase, the Marine Mammal Program will enhance its capability to address its increasing workload and management challenges associated with the effects of climate change and other actions. Expected increase in workload includes additional incidental take authorizations; population surveys; stock assessment reporting; litigation support; stranding response; and partnerships. The population of northern sea otters in Washington State has been increasing. To reflect the sustainability of this increasing population, in FY 2010, the program will include the Washington State stock of northern sea otters in our performance measures as a self-sustaining population, thereby increasing the number of marine mammals achieving a self-sustaining population level from three in FY 2009 to four in FY 2010.

**Stock Assessment/Conservation Management - Polar Bears (+1,700,000/+1 FTE)** – The Marine Mammal Program will intensify work with partners to prepare, review, and publish key stock assessments, conservation plans, and incidental take regulations. Polar bear surveys will increase 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 also augment its efforts working with industry to minimize potential impacts of expanding offshore and terrestrial oil and gas activities on polar bear populations, by providing technical assistance and incidental take authorizations pursuant to the Marine Mammals Protection Act (MMPA). In addition to meeting demands for environmental reviews and federal approvals for exploration and development, this support will extend to planning for conflict avoidance.

The Service will also initiate bilateral planning initiatives with Russia for the shared Chukchi Sea polar bear population. The increased funds will enable the Service to start planning for vital resource management with our Alaska Native partners, Government of the Russian Federation, and Chukotka (Russia) representatives as called for by the U.S. – Russia Polar Bear Management and Conservation Agreement. The requested funds will enable the Service to more effectively participate on a joint committee to uphold and implement the United States obligations pursuant to the bilateral agreement for the Conservation and Management of the Alaska – Chukotka Polar bear population. This effort will bolster scientific data, conservation planning, and collaborative adaptive management for polar bear. With intensified efforts in the future, the Service will be better positioned to deliver conservation results as climate change continues to unfold.

**Stock Assessment/Conservation Management - Manatees (+\$175,000/+1 FTE)** – The Service has no dedicated marine mammal funding for manatee conservation and management in either Florida or Puerto Rico. The Service has used limited existing Endangered Species Act recovery dollars to implement priority actions addressing the population limiting factors that affect manatees throughout its range, and to look for opportunities to work with partners in carrying out these activities.

Funding and an FTE specifically directed towards addressing issues under the MMPA will be additive to ongoing funding under Endangered Species accounts. The funding will complement actions the Service has initiated to address potential loss of warm water areas and mortality (water craft collisions), which are the two major impacts to manatees, and to enhance research efforts on the status and trends of the species, e.g., a threats analysis and efforts to better define optimum sustainable population. This would enhance the Service's efforts to conserve manatees, both in Florida and in Puerto Rico, and expand upon our use of the management tools provided under the MMPA.

**Stock Assessment/Conservation Management - Headquarters Support (+\$325,000/+2 FTE)** – The Marine Mammal Program will expand its capability to address an increasing workload and provide enhanced support to the Regional and Field offices. This will include development and coordination of additional regulations, guidance, and policies in an effort to streamline workload and improve national consistency and coordination. The program will also provide funds to support a dedicated marine mammal permits biologist to address a mandated but unfunded permit workload. These additional FTEs will strengthen the Service's ability to become more proactive in exploring and pursuing conservation opportunities that will benefit the species we manage and provide additional support to Service field biologists.

Program Performance Change Table - Marine Mammals								
Performance Goal	2006 Actual	2007 Actual	2008 Actual	2009 Plan	2010 Base Budget (2009 Plan + Fixed Costs)	2010 President's Budget	Program Change Accruing in 2010	Program Change Accruing in Out-years
<b>Sustaining Biological Communities</b>								
CSF 9.1 Percent of marine mammals achieving optimal sustainable populations (GPRA)	40% ( 4 of 10 )	40% ( 4 of 10 )	67% ( 6 of 9 )	30% ( 3 of 10 )	30% ( 3 of 10 )	40% ( 4 of 10 )	10.0% ( 33.3% )	
CSF Total Actual/Projected Expenditures(\$000)	\$5,082	\$3,050	\$3,548	\$4,744	\$4,744	\$6,471	\$1,727	
CSF Program Total Actual/Projected Expenditures(\$000)	\$18	\$33	\$19	\$88	\$88	\$90	\$2	
Actual/Projected Cost Per Populations (whole dollars)	\$1,270,419	\$762,491	\$1,182,520	\$1,581,481	\$1,581,481	\$1,617,855	\$36,374	
9.1.1 % of marine mammals achieving optimal sustainable populations (GPRA)	40% ( 4 of 10 )	40% ( 4 of 10 )	67% ( 6 of 9 )	30% ( 3 of 10 )	30% ( 3 of 10 )	40% ( 4 of 10 )	10.0% ( 25.0% )	
Comment	In FY 2010 the Service will add the Washington State stock of northern sea otter to reflect the sustainability of this increasing population."							

Note: Optimum Sustainable Population (OSP) is a specific term in the MMPA and achieving OSP is a goal; however, in this table, optimal sustainable population refers to a population that is self-sustaining, not a population that is at OSP. In FY 2010, due to the increasing population, the Washington Stock of northern sea otters is considered to be at a self-sustaining level.

**Program Overview**

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.

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 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 bear, Pacific walrus, three stocks of northern sea otter in Alaska, the northern sea otter population in Washington State, and the southern sea otter stock in California, 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, consultation, and cooperation with other Federal agencies (including NMFS, the Marine Mammal Commission, and USGS), State Governments, Alaska Native Organizations (ANOs), scientists from numerous institutions and organizations, industry groups, nongovernmental organizations, and others. Through active collaboration and coordination, we

are able to enhance the effectiveness of our 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 status and trends;
- develops and implements management plans and habitat conservation strategies;
- promulgates and implements incidental take regulations;
- 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); and,
- develops and supports U.S. bi-lateral and multi-lateral efforts and agreements for the conservation and management of marine mammal species.

The Service works with ANOs to assess subsistence harvest, determine sustainability of harvests, and gather biological information from harvested animals. This collaborative effort 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 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 is working with its ANO partners and others to incorporate enforceable harvest management mechanisms in the reauthorization of the MMPA.

The Marine Mammal subactivity is comprised of two program 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 Alaska. In FY 2009 limited funding was directed to support these activities for southern sea otter in California and northern sea otter in Washington State. A relatively small balance of program funds is used for national coordination in the Washington Office. In Alaska, the program addresses population monitoring and assessment, monitoring and recording harvest information, cooperative activities with Alaska Natives, and development of international agreements for marine mammal populations shared with Canada and Russia. In California and Washington, the program uses funds to monitor and assess sea otter population status and health. Additional conservation work on marine mammal stocks outside Alaska (particularly manatees in Florida and Puerto Rico) is pursued with Ecological Services funding, primarily through endangered species recovery efforts. Funding for sea otters in California from FY 2008 and 2009 is in addition to traditional expenditures under Ecological Services. The Service accomplishes much of our priority work through partnerships with other Federal, State, Tribal, and private agencies.

**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 our 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.

**2010 Program Performance**

In FY 2010, the Service will continue to monitor status and trends of marine mammal populations in Alaska and to implement the polar bear and walrus incidental take regulations related to oil and gas industry activities in the seas and coastal areas of Alaska. The Service will also continue cooperative agreements with ANO and international partners. In FY 2010, as described below, the Service plans to build upon accomplishments in FY 2008 and those that are anticipated in FY 2009 to:

- address increasing challenges of climate change impacts on polar bears and implement provisions incidental take regulations related to oil and gas industry activities in the Chukchi and Beaufort Seas;
- continue analyses of the data gathered during range-wide surveys for Pacific walrus to improve knowledge of its population trends and focus field survey efforts to sea otters and polar bears;
- engage in collaborative activities with Russian partners related to conservation and management of the Bering/Chukchi Seas polar bear population; and
- maintain current stock assessment reports through reviews and updates required under the MMPA for all 10 marine mammal stocks managed by the Service.

The Service plans to continue the new support provided in FY 2009 for management and conservation of sea otters in California and Washington. Workload 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 and domestic animal activities within the sea otters' ranges. Funding and a dedicated FTE in both States allows for an increase in the amount of time and effort that can be devoted to these issues, and allows the Service to take proactive steps to improve conservation and management of sea otters in California and Washington. In addition, the budget request allows the Service to address increasing workload, costs, and litigation specific to the MMPA affecting sea otters in California and Washington.

The Service plans to increase support for management and conservation of manatees in Florida and Puerto Rico by dedicating marine mammal funds for the first time to these efforts. This increased support is in addition to amounts already expended for the species under Ecological Services, and is intended to improve the Services' ability to monitor the status and trends of these species and bolster additional management opportunities.

**Cooperative Agreements**

In FY 2010, the Service will continue cooperative agreements of reduced scope with the Alaska Nanuuq Commission, the Eskimo Walrus Commission, and a coalition of Native marine mammal commissions interested in sea otters, for monitoring and management of polar bears, Pacific walruses, and northern sea otters, respectively, through base funds. These cooperative

agreements pertain to harvest monitoring, traditional knowledge surveys, and biological monitoring and sampling.

### **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 in the Beaufort (August 2006) and Chukchi (June 2006) Seas and adjacent coasts of Alaska. The regulations ensure that the total anticipated taking will have a negligible impact on the species and will not have an immitigable adverse impact on the availability of such species for Alaska Native subsistence purposes. In FY 2010, under the requested funding level, the Service will issue annual Letters of Authorization (LOAs) to numerous Industry operators that describe permissible methods of take, measures to ensure the least practicable impact on the species and subsistence, and requirements for monitoring and reporting under these regulations.

### **Status and Trends of Marine Mammal Populations**

In FY 2010, we will seek collaborative opportunities with partners and stakeholders to conduct surveys and track status and trends of the 10 marine mammal stocks managed by the Service. 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 focus field efforts to support strategically selected sea otter and polar bear surveys as well as supporting surveys of sea otters in California and Washington and manatees in Florida and Puerto Rico. The Service will maintain current stock assessment reports through reviews and updates required under the MMPA for all 10 marine mammal stocks managed by the Service.

### **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 FY 2007, Congress enacted legislation to implement this treaty to address concerns regarding illegal and unquantified harvest of bears in Russia as well as unrestricted harvest in Alaska. In FY 2008, the Service began assessing the implementation priority elements of the agreement with limited available base funds in consultation with our Russian Native and Government partners, and Alaska Native partners. In FY 2009, the Service continued implementation as feasible through cooperative efforts and the joint committee established by the treaty. The Service intends to initiate the planning for resource management with our Alaska Native partners, Government of the Russian Federation, and Chukotka (Russia) representatives as called for in this bilateral agreement.

Program Performance Overview Table - Marine Mammals									
Performance Goal	2005 Actual	2006 Actual	2007 Actual	2008 Plan	2008 Actual	2009 Plan	2010 President's Budget	Change from 2009 Plan to 2010	Long-term Target 2013
<b>Sustaining Biological Communities</b>									
CSF 9.1 Percent of marine mammals achieving optimal sustainable populations (GPRA)	40% ( 4 of 10 )	40% ( 4 of 10 )	40% ( 4 of 10 )	67% ( 6 of 9 )	30% ( 3 of 10 )	30% ( 3 of 10 )	40% ( 4 of 10 )	10.0% ( 33.3% )	40% ( 4 of 10 )
CSF Total Actual/Projected Expenditures(\$000)	unk	\$5,082	\$3,050	unk	\$3,548	\$4,744	\$6,471	\$1,727	\$6,928
CSF Program Total Actual/Projected Expenditures(\$000)	unk	\$18	\$33	unk	\$19	\$88	\$90	\$2	\$96
Actual/Projected Cost Per Populations (whole dollars)	unk	\$1,270,419	\$762,491	unk	\$1,182,520	\$1,581,481	\$1,617,855	\$36,374	\$1,732,038
9.1.1 % of marine mammals achieving optimal sustainable populations (GPRA)	40% ( 4 of 10 )	40% ( 4 of 10 )	40% ( 4 of 10 )	67% ( 6 of 9 )	30% ( 3 of 10 )	30% ( 3 of 10 )	40% ( 4 of 10 )	10.0% ( 25.0% )	40% ( 4 of 10 )
9.1.1.1 # marine mammals with optimal sustainable population (GPRA)	4	4	4	6	3	3	4	1 ( 25.0% )	4
Comment	In FY 2010 the Service will add the Washington State stock of northern sea otter to reflect the sustainability of this increasing population.*								
9.1.1.2 total # marine mammal populations (GPRA)	10	10	10	9	10	10	10	0	10
9.1.2 # of marine mammal stocks with voluntary harvest guidelines	2	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	3	3	3	2	2	0	2
9.1.4 # of marine mammal stocks with incidental take regulations that require mitigating measures	2	2	2	3	3	3	3	0	3
9.1.5 # of current marine mammal stock assessments	6	4	4	7	3	10	10	0	10
9.1.6 % of populations managed or influenced by the Marine Mammal Program for which current population trend is known	60% ( 6 of 10 )	60% ( 6 of 10 )	50% ( 5 of 10 )	80% ( 8 of 10 )	70% ( 7 of 10 )	70% ( 7 of 10 )	70% ( 7 of 10 )	0.0%	70% ( 7 of 10 )
9.1.6.1 # of marine mammals with known population trends	6	6	5	8	7	7	7	0	7
9.1.6.2 total # of marine mammal populations	10	10	10	10	10	10	10	0	10

Note: Optimum Sustainable Population (OSP) is a specific term in the MMPA and achieving OSP is a goal; however, in this table, optimal sustainable population refers to a population that is self-sustaining, not a population that is at OSP. In FY 2010, due to the increasing population, the Washington Stock of northern sea otters is considered to be at a self-sustaining level.

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