

## Hatchery Operations and Maintenance

		FY 2005 Actual	FY 2006 Enacted	FY 2007			Change From 2006 (+/-)
				Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
<b>Hatchery Operations and Maintenance</b>							
Hatchery Operations	\$(000)	38,181	40,661	+636*	+3,241	44,538	+3,877
	FTE	364	364			364	0
Hatchery Maintenance	\$(000)	18,783	16,528	+91	-32	16,587	+59
	FTE	93	93			93	
<b>Total, Hatchery Operations &amp; Maintenance</b>	<b>\$(000)</b>	<b>56,964</b>	<b>57,189</b>	<b>+727</b>	<b>+3,209</b>	<b>61,125</b>	<b>+3,936</b>
	<b>FTE</b>	<b>457</b>	<b>457</b>		<b>0</b>	<b>457</b>	<b>0</b>

\* This reflects a permanent internal transfer not reflected in the Department of the Interior's support table. The Service's 2007 budget request includes this technical adjustment to correctly reflect this transfer.

### Summary of FY 2007 Program Changes for Hatchery Operations and Maintenance

Request Component	Amount	FTE
Program Changes		
• Hatchery Operations General Program Activities	+1,873	0
• Hatchery Operations Fish Health/Whirling Disease	+1,473	0
• Hatchery Operations Program Management Savings	-105	0
• Hatchery Maintenance Program Management Savings	-32	0
<b>Total, Program Changes</b>	<b>+3,209</b>	<b>0</b>

The FY 2007 budget request for Hatchery Operations and Maintenance is \$61,125,000 and 457 FTEs, a net program increase of \$3,209,000 from the FY 2006 enacted level.

### Program Overview

The Fish and Wildlife Service's National Fish Hatchery System (NFHS) works with partners to restore and maintain fish and other aquatic resources at self-sustaining levels, and to support Federal mitigation programs for the benefit of the American public. The Service, through the NFHS is the national leader in many aspects of aquatic species culture and management, including propagation and rearing techniques, genetics and broodstock management, refugia, nutrition, fish health, and research. The NFHS is particularly focused on the restoration/recovery of imperiled species. Innovation, the development of new scientific technologies, and continual adaptation to new and evolving needs have enabled the Service to pioneer fish culture techniques and methodologies for a variety of imperiled species such as Apache and Gila trout, Atlantic sturgeon, pallid sturgeon, bonytail, Colorado pikeminnow, and razorback sucker, amongst many. The hatchery system's diversity, integration, and broad expertise also helps the Service contribute to cooperative, ecosystem-based projects that recover aquatic species other than fish, such as endangered native mussels, the Wyoming toad, and Texas wild rice. The Fish and Wildlife Service hatcheries also serve local communities by providing public outreach and educational programs that foster aquatic resource conservation as well as provide far-reaching economic benefits as a result of propagation and stocking.

For the past several years, Service staff has worked collaboratively with the Department, OMB, GAO, the Sport Fishing and Boating Partnership Council and many other external partners to improve NFHS programs and management practices, advance the objectives of the President's Management Agenda, and promote the Secretary's 4 C's: Conservation through Cooperation, Communication, and Consultation. Significant emphasis has been placed on budget and performance integration. In addition, the NFHS is actively implementing the Department's Strategic Plan and the Fisheries Vision, which were developed in close collaboration with the Program's many partners and stakeholders, with encouragement from the Senate and House Interior Appropriations Committees, and with support from the Secretary of the Interior and the OMB.



### Use of Cost and Performance Information

In carrying out the Service's mission of working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people, and to achieve the Fisheries Program's mission goals, the NFHS continues to link program and fiscal management with performance. The NFHS and its partners and stakeholders have been actively implementing the Fisheries Program's Regional and National strategic planning process. These strategic plans include performance targets developed in conjunction with the Department during the Administration's Program Assessment and Rating Tool (PART) process that link to the DOI Strategic Plan. Specifically, the NFHS has taken the following actions:

- Baseline data for all performance measures were reported in FY 2004.
- Working with DOI, OMB, and the Endangered Species Program, the Fisheries Program developed a new Program outcome measure ("% of threatened and endangered aquatic species populations, prescribed as necessary in Recovery Plans, that become self-sustaining in the wild") and set the baseline and outyear targets.
- The Fisheries Information System (FIS) is the Fisheries Program's primary tool to record Fisheries Operational Needs (FONS) projects and Program accomplishments. The FIS will continue to be improved to better track and report performance measure targets and performance accomplishments. A web-based prototype of the new FIS system is being tested and reviewed, with projected completion by April 2006.
- NFHS personnel worked closely with Department and other Service Planning and Evaluation staff to develop a standard set of work activities and output costs, to implement Activity-Based Costing/Management (ABC/M) in FY 2004. ABC/M will allow the NFHS to allocate costs associated with program performance goals and DOI Strategic Plan goals to better align budget with performance.
- In 2004, NFHS personnel worked closely with DOI and OMB as it underwent its second PART review. The Program achieved the second highest rating of "Moderately Effective". NFHS has made significant progress in improving its program purpose and design, strategic planning, program management and program results/accountability.
- By the end of FY 2005, all NFHS facilities had implemented SAMMS, the Service adaptation of the Department's standardized facilities maintenance management system. SAMMS will improve maintenance scheduling, comprehensive budget planning, and maintenance accomplishment reporting.
- NFHS personnel worked with the Sport Fishing and Boating Partnership Council (SFBPC) to develop protocols for regular, independent evaluations of the Fisheries Program as it implements the Fisheries Strategic Plan. The Council evaluated the Fisheries Program in FY 2005 and found that the NFHS is "Effective" in delivering its mission to the American people. A policy-level workgroup is drafting an Action Plan to address the recommendations made by the Council which will further improve Program management and responsiveness to resource issues.

## Hatchery Operations

		FY 2005 Actual	FY 2006 Enacted	FY 2007			Change From 2006 (+/-)
				Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
<b><i>Hatchery Operations and Maintenance</i></b>							
Hatchery Operations	\$(000)	38,181	40,661	+636*	+3,241	44,538	+3,877
	FTE	364	364		0	364	0

\* This reflects a permanent internal transfer not reflected in the Department of the Interior's support table. The Service's 2007 budget request includes this technical adjustment to correctly reflect this transfer.

### Summary of FY 2007 Program Changes for Hatchery Operations

<u>Request Component</u>	<u>Amount</u>	<u>FTE</u>
Program Changes		
• General Program Activities	+1,873	0
• Fish Health/Whirling Disease	+1,473	0
• Program Management Savings	- 105	0
<b>TOTAL, Program Changes</b>	<b>+3,241</b>	<b>0</b>

### Justification of 2007 Program Changes

The FY 2007 budget request for Hatchery Operations is \$44,538,000 and 364 FTEs, a net program increase of \$3,241,000 from the FY 2006 enacted level. This request includes a \$1.873 million increase in General Program Activities, to be used for native aquatic species recovery and other high-priority activities, a transfer of \$1.473 million for fish health/whirling disease from Fish and Wildlife Management to accomplish the National Wild Fish Health Survey and other work in native fish health, and a decrease of \$105,000 for program management savings.

#### **General Program Activities (+\$1,873,000)**

With the requested funds, the NFHS will implement 15 high-priority recovery projects (attached), which will result in completion of tasks prescribed in Recovery Plans to accelerate the recovery of Gila and Apache trout, other listed cutthroat trout species, and Federally-listed native freshwater mussel species. Specific tasks include reintroduction of organisms into restored habitats, establishment and maintenance of refugia, enhancement or development of propagation and population monitoring techniques, and genetics work critical to the recovery of these species. The requested funding will also allow implementation of 12 high-priority projects that will provide long-term benefits in aquatic species health and applied research, determination of contaminant levels in fish and fish feeds at Pacific Region NFHS, and fulfillment of NFHS' Tribal trust responsibilities.

Three species of trout: the Gila trout, Apache trout, and greenback cutthroat trout, are on the brink of being downlisted or delisted. The endangered Gila trout is an integral component of the high mountain streams of southwestern New Mexico and eastern Arizona. Its recovery depends upon management of wild populations and their habitats and propagation of the species in numbers sufficient to repopulate restored habitats. A Federal Register Notice was published in May 2005, proposing to reclassify the status of the Gila trout from Endangered to Threatened. Apache trout distribution is restricted to the White Mountains in eastern Arizona, and more specifically to upper reaches of streams above natural or manmade barriers. Funds will be used to complete remaining activities outlined in the Apache Trout Recovery Implementation Plan which will further Apache trout recovery efforts to the point where delisting will be possible. The greenback cutthroat trout, the

State fish of Colorado, is the only salmonid native to the South Platte and Arkansas drainages and is currently listed as Threatened. As a result of long-term collaborative efforts, the greenback cutthroat trout is on the brink of delisting.

All NFHS efforts are directed at meeting the Fisheries Program's long-term outcome measure, which was developed in coordination with the Department, OMB, and the Service's Endangered Species Program. That measure is the percentage of threatened or endangered populations, prescribed as necessary in Recovery Plans, that become self-sustaining in the wild.

The request will address the Secretary's priority of native aquatic species recovery, continue species recovery activities that are highly valued by our many partners and stakeholders, and satisfy the FY 2006 PART recommendation for the NFHS to include funding in its budget to help achieve program performance goals by carrying out specific activities identified in recovery plans and fishery management plans.

**Fish Health/Whirling Disease (+\$1,473,000)**

The requested funds are being transferred from the Fish and Wildlife Management subactivity and will be used to accomplish the National Wild Fish Health Survey (NWFHS) and other critical work in the area of native fish health. Increasingly, the Service's Fish Health Centers are being called upon to play national and international leadership roles with partners such as the American Fisheries Society's Fish Health Section, NOAA Fisheries, the Department of Agriculture's Animal and Plant Health Inspection Service, and the State Department. The NFHS's current fish health program is focused on: 1) aquatic animal drug approval; 2) whirling disease research; 3) the National Aquatic Animal Health Plan and Service's Aquatic Animal Health Policy; 4) the National Wild Fish Health Survey (NWFHS); and 5) general aquatic animal health support activities for Service facilities (e.g. hatchery inspections).

**Program Management Savings (-\$105,000)**

To enable the Service to address its highest priorities during constrained fiscal times, the Service proposes reducing program administrative funding by \$1,980,000. Using Activity-Based Cost information and other budgetary analyses, the Service anticipates achieving a savings of \$105,000 in Hatchery Operations. These savings will be realized by streamlining program administrative support activities.

<b>Total Performance Change</b>					
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D= B+C</b>	<b>E</b>
<b>Overall Performance Changes from 2006 to 2007</b>					
<b>Measure</b>	<b>2006 Enacted Performance</b>	<b>2007 Base Performance</b>	<b>2007 Impact of Program Change on Performance</b>	<b>2007 Budget Request Performance</b>	<b>Out-year Impact of 2007 Program Change on Performance</b>
% of Recovery Plan production tasks implemented <b>(PART) (a) (*)</b>	76% 85/112	76% 85/112	+5% +6	81% 91/112	0
% of applied science and technology tasks implemented as prescribed by Recovery Plans <b>(PART) (a) (*)</b>	57% 70/122	57% 70/122	+9% +10	66% 80/122	0
% of post-stocking survival targets met, as prescribed by Recovery Plans, for hatchery propagated listed species. <b>(PART) (c) (*)</b>	64% 14/22	64% 14/22	+4% +1	68% 15/22	0
# of fish and aquatic animal populations that are held in refugia. <b>(BUR)</b>	50	50	+2	52	0
% of Fishery Management Plan production tasks implemented. <b>(PART) (b) (*)</b>	75% 244/325	76% 244/323	+3% +10	79% 254/323	0
% of applied science and technology tasks implemented as prescribed by Fishery Management Plans. <b>(PART) (b) (*)</b>	51% 81/158	51% 81/158	+6% +9	57% 90/158	0
% of post-stocking survival targets met, as prescribed by Fishery Management Plans, for hatchery propagated depleted species. <b>(PART) (c) (*)</b>	60% 30/50	60% 30/50	+2% +1	62% 31/50	0
% of marking and tagging targets met, as prescribed by approved management plans. <b>(PART) (b) (*)</b>	67% 90/135	67% 90/135	+7% +10	74% 100/135	0
# of techniques and culture technology tools developed. <b>(BUR)</b>	125	125	+11	136	0
# of applied aquatic scientific and technologic tools shared with partners. <b>(BUR)</b>	127	127	+12	139	0
% DOI watershed units with current wild fish health surveys <b>(*)</b>	19% 462/2468	19% 462/2468	0% +3	19% 465/2468	0
% planned accomplishments/reintroduction objectives completed to fulfill Tribal Trust responsibilities. <b>(SP)</b>	98% 92/94	98% 92/94	+1% +1	99% 93/94	0
<p><b>Column B: The performance level expected to be achieved absent the program change (i.e., at the 2006 request level plus/minus funded fixed cost/related changes); this would reflect, for example, the impact of prior year funding changes, management efficiencies, absorption of fixed costs, and trend impacts.</b></p> <p><b>Column E: The out-year impact is the change in performance level expected in 2008 and Beyond of ONLY the requested program budget change; it does <u>not</u> include the impact of receiving these funds again in a subsequent outyear.</b></p>					

\* Performance totals (numerators and denominators) for these measures include tasks accomplished by more than one Service Region (duplicates).

(a) The data collected for these two measures will equal the performance target for the PART measure: % of NFHS priority recovery tasks implemented as prescribed in approved Recovery Plans.

(b) The data collected for these three measures will equal the performance target for the PART measure: % of NFHS priority restoration tasks implemented as prescribed in approved Fishery Management Plans.

(c) The data collected for these two measures will equal the performance target for the PART measure: % of survival targets, prescribed by approved management plans, met for hatchery stocks of imperiled species.

---

## Program Overview

---

America's fishery and other aquatic resources are among the world's richest and most diverse, and provide enormous social, economic, and ecological benefits to the Nation. Since 1871, the NFHS has played a vital role in conserving America's fisheries, and today is a key partner with States, Tribes, other Federal agencies/programs, and private interests in a broad collaborative effort to conserve fish and other aquatic resources. The NFHS consists of 69 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 provide a network unique in our national conservation efforts by propagating healthy and genetically appropriate aquatic animals and plants to help re-establish wild populations, and by providing scientific leadership in development of aquaculture, fish nutrition, and disease diagnostic technologies.

To fulfill its long-term commitments, the NFHS established five-year (FY 2004 – FY 2008) targets for each performance measure outlined in the draft National Fisheries Program Strategic Plan under the focus areas of 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. Achievement of those targets will provide tremendous accomplishments in imperiled species recovery and restoration, including the delisting/downlisting of several species on the Endangered Species list, and implementation of the Service's Aquatic Animal Drug and Chemical Use Policy.

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

The NFHS is a key contributor to accelerating the recovery of aquatic species listed under the Endangered Species Act (ESA) and the proactive restoration of aquatic species where populations are declining, in order to preclude the need for listing. Fish Technology Centers and Fish Health Centers support habitat investigations and provide the scientific foundation for recovery and restoration programs. The Aquatic Animal Drug Approval Partnership (AADAP) program provides the mechanism whereby hatchery and field biologists can access approved drugs and chemotherapeutants necessary to safeguard and manage critical stocks. NFHS recovery and restoration activities are conducted in coordination with State, Federal, Tribal, and private sector partners as prescribed by Recovery Plans and multi-entity fishery management plans. These activities support the DOI's resource protection goal to sustain biological communities on DOI managed and influenced lands and waters in a manner consistent with obligations regarding the allocation and use of water.

***Recovery of Species Listed Under the ESA*** – In 2005, the NFHS directly contributed to the recovery of 66 imperiled aquatic species. For example, the NFHS works with its partners on four Federally-Endangered sturgeon species (pallid, Kootenai white, shortnose, & Alabama), one Federally-Threatened sturgeon species (Gulf), as well as depleted populations of lake, Atlantic, and shovelnose sturgeon. Working in concert, eighteen NFHS facilities play key roles in recovering these highly migratory and long-lived fish, including maintenance of genetically distinct broodstock populations, development and refinement of captive propagation techniques, stocking captive-reared sturgeon into restored habitat, development of non-lethal marking and tagging techniques, conducting post-stocking assessments on survival and migration of introduced fish, development of methods to identify and track habitat preference, and other activities prescribed in approved Recovery Plans.

***Restoration of Depleted, but Non-Listed Species*** - The NFHS also focuses on restoration projects to protect non-listed species and enhance recreational opportunities through 1) production and stocking of healthy, genetically appropriate animals to maintain and/or re-establish wild populations; 2) providing technical support in areas such as biometrics, nutrition, physiology, and conservation

genetics; 3) providing support in fish health, disease diagnostics, treatment, and management; and 4) providing support for habitat restoration.

### **Aquatic Habitat Conservation and Management**

The NFHS contribution to cooperative habitat conservation efforts is multi-faceted. Some activities directly improve habitats by providing whole plants or propagules for habitat restoration projects. Other projects provide “explorer” or “research” fish to help determine habitat preferences, population dynamics and interactions, or other requirements of various imperiled species. Additional NFHS projects provide for a cleaner environment by developing and adopting innovative technologies to meet EPA and FDA water effluent standards. The National Wild Fish Health Survey helps monitor habitat health that affects all wild aquatic animals. These activities also support and provide the scientific basis for recovery and restoration programs inherent in the National Fish Habitat Initiative.

### **Partnerships and Accountability**

**Strategic Planning** – In 2003, the Fisheries Programs in each Service Region developed 5-year implementation plans in consultation with its partners and stakeholders. These plans contain measurable, Region-specific goals and commitments for implementing the Fisheries Program mission. These goals and performance targets have been merged into the draft National Fisheries Program Strategic Plan and will improve national program management and budget performance integration. The Service worked closely with State partners in developing these strategic planning goals and targets at both the Regional and National levels. These coordinated efforts assure that Service conservation and management activities also complement State Comprehensive Wildlife Action Plans.

**Program Assessment Rating Tool (PART) Review** - The National Fish Hatchery System was among the first programs to undergo the Administration’s PART review in 2002. OMB concluded that the program needed to address issues concerning its mission, program design, performance measures, and several specific issues. As a result, the NFHS received a rating of “Results not Demonstrated”. The Service and NFHS implemented a series of actions in response to OMB’s recommendations to address the identified issues.

With the guidance and support of the Department and OMB, the NFHS completed its second Performance Assessment Rating Tool (PART) review in 2004, which reassessed the Program’s achievements since its first review in 2002. The results show that the NFHS had made significant progress (a rating of “Moderately Effective”) in improving its program purpose and design, strategic planning, program management, and program results/accountability. The NFHS views the PART as a valuable method to ensure continued improvement in program management and to improve and enhance all aspects of linking performance management and accountability with budget.

### **Other Efforts**

Under the guidance of the Department’s Strategic Plan, the NFHS refined its Fisheries Information System (FIS) database to become a more efficient and effective strategic planning and accomplishment reporting tool. The Fisheries Operational Needs System (FONS) captures Regionally-prioritized projects, each developed in conjunction with Regional partners, and includes associated budget and performance targets. The revised database seamlessly links performance measures and targets from FONS with the Accomplishment Report Module to compile target and completion information related to short-term and long-term goals specified in the Fisheries Program and DOI Strategic Plans. In 2004, the Fisheries Program established baselines for output and outcome performance measures. Currently, the Fisheries Program is again upgrading the FIS to make it accessible through the Internet, allowing conservation biologists and managers to track project

performance in real-time, thus greatly streamlining the reporting process and improving management capabilities. A working prototype of the new web-based FIS system is scheduled for testing, review, and completion by April 2006.

In FY 2004, the Fisheries Program completed a detailed analysis of its economic status at the National, Regional, and field station levels, with the goals of identifying and implementing efficiencies and ensuring that appropriated funds are targeted on the Program's highest priorities. The analysis provided valuable information to help managers to better understand program costs and to more effectively manage available funds to meet the Fisheries Program's varied mission. At present, the analysis is being updated with 2005 data.

### **Leadership in Science and Technology**

**Science and Technology** - The Service's Fish Technology Centers, Fish Health Centers, and the AADAP program provide scientific and technical leadership to solve "on the ground" hatchery and fishery management problems that are critical to many restoration and recovery programs, as well as mitigation programs. Over the years, contributions in genetic analyses, nutrition, reproductive biology, population dynamics, cryopreservation, biometrics, culture technologies, disease diagnostics, health management, and availability of critical new aquatic animal drugs have improved the quality, contribution, and relevance of both hatchery production programs and broader fisheries management activities.

**Fish Health** - Increasingly, the Service's Fish Health Centers provide national and international leadership roles with partners such as the American Fisheries Society's Fish Health Section, NOAA Fisheries, the Department of Agriculture's Animal and Plant Health Inspection Service, and the State Department. The NFHS's fish health program is focused on: 1) coordinating national-scope activities and submitting data to obtain new drug approvals for aquatic species; 2) whirling disease research; 3) the National Aquatic Animal Health Plan (NAAHP) and Service's Aquatic Animal Health Policy; 4) the National Wild Fish Health Survey (NWFHS); and 5) general aquatic animal health support activities for Service and non-Service partner facilities (e.g., hatchery inspections, diagnostics, etc.).

The Aquatic Animal Drug Approval Partnership program in Bozeman, MT is a partner-based national program established by the NFHS in FY 2004 that provides multi-agency coordination for efforts to obtain Food and Drug Administration (FDA) approval for new aquatic animal drugs and therapeutants. These drugs are critical to maintaining the health and fitness of not only aquatic species in captivity, but also of the ecosystems into which they are stocked. This partnership, led by the Service, 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, and enables the generation of large, consolidated data packages for submission to FDA through the highly successful leveraging of funds. The AADAP supports the work of the NFHS by ensuring continued progress towards obtaining FDA-approved and EPA-compliant new animal drug approvals for use in Federal, State, Tribal and private aquaculture programs throughout the United States.

### **Public Use**

**Recreation** - NFHS restoration of depleted populations of native gamefish provides and enhances recreational fishing opportunities for the nation's 58 million recreational anglers. All of this work is in conjunction with State, Tribal, NGOs, and partners operating under approved fishery management plans. For example, most of Lake Superior's 3,000 miles of shoreline and 100 tributaries historically supported fishable populations of coaster brook trout, a highly desirable recreational species. Over-harvest and habitat loss decimated the populations until only remnant stocks remained. Using river

specific broodstocks developed by the NFHS, the Service is reestablishing coaster brook trout populations in Siskiwit Bay in Isle Royale National Park (MI) in partnership with the National Park Service, the Keweenaw Bay Indian Community, the Michigan Department of Natural Resources, and Trout Unlimited.

A recent report on the economic benefits accrued as a result on the NFHS production of rainbow trout provides a view of the impacts the NFHS has on local economies. According to the report, \$5.4 million expended by NFHS facilities to grow and stock rainbow trout provided a total economic output of \$325.1 million. These NFHS activities account for over 3,500 jobs and \$172.7 million in angling-related sales. Overall, \$60 of economic benefit accrues for every dollar expended by the NFHS on rainbow trout.

**Mitigation** - When Federal locks and dams were constructed, Congress and the Federal government committed to mitigate impacts on recreational, commercial, and Tribal fisheries. The Service supports mitigation fishery programs through the NFHS to address the adverse impacts of some of these projects. NFHS fish production for mitigation in the Southeast is estimated to generate more than \$107 million annually in direct expenditures on recreational fishing activities and maintains more than 2,800 jobs.

Over the years, many project-specific authorities have led to a myriad of mechanisms and responsibilities for funding and operating Federal mitigation fisheries. In some cases Federal water project development agencies or the beneficiaries of those Federal projects fund mitigation costs. The Service currently expends approximately \$34 million annually for fishery mitigation activities. Approximately 2/3 of these costs are reimbursed by the responsible water development agency. The Service's fishery mitigation roles and responsibilities remain a major issue in the development of a collaborative strategy for the Service's Fisheries Program. Operating under program priorities established in the Fisheries Program Strategic Plan and Vision, the Service will honor its commitments to mitigate the adverse effects of Federal water development projects while focusing on native fish recovery and restoration, and meeting the expectations from its program stakeholders to work towards reimbursement by responsible agencies.

### **2007 Program Performance Estimates**

---

In FY 2007, the NFHS will continue its multi-faceted efforts to accelerate recovery of listed fish and other native aquatic species, including active participation in the development and implementation of the National Fish Habitat Initiative. Working with State and other Federal 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 approved 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) maximizing 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 fish and mollusks for reintroduction into restored habitats. High-priority projects include production and release of native trout and imperiled and declining native freshwater mussel species.

With the requested funds, the NFHS will implement 15 high-priority recovery projects, which will result in completion of tasks prescribed in Recovery Plans to accelerate the recovery of Gila and Apache trout, other listed cutthroat trout species, and Federally-listed native freshwater mussel species. At the end of FY 2007, the NFHS expects to have implemented 91 production tasks (+5%) and 80 applied science and technology tasks (+9%) prescribed in Recovery Plans. The NFHS expects

to have implemented 254 NFHS-related captive production tasks (+3%) prescribed by fishery management plans at the end of FY 2007.

### **2006 Planned Program Performance**

---

In FY 2006, the NFHS received an additional increase of \$2.2 million to meet high-priority resource needs. The increase will be used to implement the President's and Secretary's priorities, captured in the DOI's resource protection goals to sustain biological communities on DOI managed and influenced lands and waters in a manner consistent with obligations regarding the allocation and use of water and to improve health of watersheds, landscapes, and marine resources that are managed or influenced in a manner consistent with obligations regarding the allocation and use of water. The increase will be used by the NFHS to implement 34 high-priority FONS projects, accounting for 49 priority Recovery Plan and Fishery Management Plan tasks. These projects address specific Recovery Plan and Fishery Management Plan tasks, such as the joint study of Coho salmon density conducted by the Quinault NFH (WA), the Western Washington FRO (WA), the Abernathy FTC (WA), and the Olympia FHC (WA) and the culture and stocking of pallid sturgeon at Gavins Point NFH (SD). Specifically, these projects will accomplish 21 new restoration production tasks and implement 4 additional applied science and technology tasks prescribed by Recovery Plans. Project selection was based on a number of factors, including the ecological, social, and economic benefits and needs, and coordination with partners, thereby increasing the likelihood of successful restoration and potential increased recreational opportunities.

At the end of FY 2006, the NFHS plans to have implemented 329 production tasks and fulfilled 151 applied science and technology tasks prescribed in Recovery Plans and Fishery Management Plans, to address the Fisheries Program outcome measure target of: "22% of threatened or endangered populations, prescribed as necessary in Recovery Plans, that become self-sustaining in the wild". By meeting Program performance targets, the NFHS and its partners will have achieved many of the long-term goals required to delist and/or downlist several endangered and threatened species such as Apache and Gila trout, and to keep other imperiled aquatic populations, such as several species of Pacific Northwest salmonids, at stable levels.

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

***Recovery of Species Listed Under the ESA*** – In FY 2006, the NFHS expects to implement 85 production tasks and 70 applied science and technology tasks prescribed in Recovery Plans, to accelerate the recovery of listed fish such as Pacific and Atlantic salmon, cutthroat trout species, a number of Southwestern and intermountain native trouts, inland and coastal sturgeon species, mollusks, amphibians, and aquatic plants. Specific tasks include establishment and maintenance of refugia, enhancement or development of propagation and population monitoring techniques, and reintroduction of organisms into restored habitats. All NFHS programs are coordinated with other Service Programs and with other Federal, State, and Tribal partners. Habitat restoration is a key to the long term success of any propagation program, and the NFHS works closely with its partners to identify key habitat for restoration and enhancement of survival and recovery.

For example, the Gila trout, a Federally-endangered species once widespread in the upper Gila River Basin of southwestern New Mexico and north-central Arizona, has battled competition and hybridization with non-native salmonids, as well as habitat degradation and destruction. For the past several years, the Mora NFH & Fish Technology Center (FTC) (NM) has played a vital role in Gila trout recovery by providing temporary refugia for fish jeopardized by fires, refining captive propagation techniques, and producing captive-bred fish for reintroduction. Genetic analysis of captive populations maintained at Mora has provided crucial information that has aided the recovery of genetically diverse populations. Alchey-Williams Creek NFH (AZ) personnel work with the

Mora NFH & TC and other NFHS facilities to develop and employ natural rearing techniques, which encourages wild behavior and improves survival following reintroduction. Captive propagation in concert with habitat restoration has successfully restored this native trout to historic habitat and Gila trout recovery is imminent, provided additional wild land fires do not impact the recovery sites.

***Restoration of Depleted, but Non-Listed Species*** – In FY 2006, the NFHS is working to implement 244 NFHS-related production tasks prescribed by fishery management plans. The NFHS will continue to develop fish culture technologies, conduct fish health assessments and diagnostics, coordinate and submit technical section data for new aquatic species drug approvals, and produce healthy, genetically fit fish as identified in fishery management plans. Collectively these activities will help restore and maintain fish such as lake trout, Atlantic and Pacific salmon, cutthroat trout, Arctic grayling, paddlefish, coaster brook trout, American shad, and other aquatic species, to sustainable levels.

For example in FY 2006, Iron River NFH (WI) will use funds to develop and maintain a captive spawning population of native coaster brook trout and support production, as called for in the Coaster Brook Trout Restoration Plan. Propagated brook trout will be reintroduced into waters on the south shore of Lake Superior, where they have been extirpated. The Coaster Brook Trout Restoration Plan requires that only genetically pure strains of healthy fish be reintroduced to the wild. Funds will be used to: 1) obtain new equipment to handle coaster brook trout, 2) work with the LaCrosse Fish Health Center (WI) to manage genetic and fish health issues, and 3) reintroduce fish to strain-specific streams.

### **Aquatic Habitat Conservation and Management**

In FY 2006, the NFHS will continue contributions to cooperative habitat conservation efforts, including involvement in the National Fish Habitat Initiative, and will target projects that improve physical rearing environments to enhance survival of native fish when released and reduce non-dissolvable components of effluents from NFHs.

### **Cooperation with Native Americans**

The Service has a long history of fulfilling obligations to Native American Tribes by providing subsistence fish to Treaty Tribes. The Creston NFH (MT) has stocked 47,878 Westslope cutthroat into five lakes on the Flathead Indian Reservation in northwest Montana for the Confederated Salish Kootenai Tribe (CSKT). Hatchery and CSKT Tribal fish biologists monitor and evaluate the sport fishery and update recommendations in the Flathead Reservation Fishery Management Plan for site-specific strains and numbers of fish stocked each year to ensure that the fishery is managed efficiently. In FY 2006 and beyond, Creston will continue to stock a minimum of 35,000 Westslope cutthroat trout annually on the Flathead Indian Reservation.

### **Partnerships and Accountability**

***Strategic Planning*** - In FY 2006, the Service's NFHS personnel will be actively involved in implementing a web-based version of the Fisheries Information System (FIS), which will provide the NFHS very powerful, real-time data management capability.

***Program Assessment Rating Tool (PART) Review***—In FY 2006, actions related to the PART will include:

- Utilizing Activity-Based Costing (ABC) information to better allocate costs associated with program performance goals and DOI Strategic Plan goals and to more accurately link budget and performance.

- Fisheries Program senior management will continue to discuss and explore possible new strategies to gain program efficiencies, in response to the recommendation to seek legislative changes to acquire the authority to open and close hatcheries to help accomplish program goals.
- Fisheries Program senior management is considering workgroup recommendations on performance measure definitions, modifications to, or creation of performance measures, and reporting consistency. Recommended actions will be presented to DOI and OMB for concurrence.
- Implement recommendations developed by the Sport Fishing and Boating Partnership Council as a result of its review of the Fisheries Program.

### **Leadership in Science and Technology**

**Science and Technology** - In FY 2006, the Service's NFHS plans to develop 125 techniques and culture technology tools, and share with partners 127 applied aquatic scientific and technologic tools. In 2006, FTCs continue to play key restoration and recovery roles. Abernathy FTC (WA) is working with the Quinault NFH to determine optimal rearing density for coho salmon, to minimize the incidence of disease and maximize successful production of high quality fish to meet both restoration goals and tribal trust responsibilities to the Quinault Indian Nation. Abernathy will also focus on natural rearing methods to improve wild characteristics of captively-propagated fishes to better meet recovery goals. In 2006, genetic studies at Lamar FTC (PA) and Warm Springs FTC (GA) will focus on wild and captive stocks, respectively. At Lamar, genetic analysis of wild stocks (landlocked Atlantic salmon, brook trout, and bog turtles) will establish a basis for future restoration, identifying which introduced stocks are successful in returning as adults and contributing to reproduction. This project will develop a methodology to evaluate stocking practices and spawning protocols for NFHs. At Warm Springs FTC, national salmonid broodstocks at NFHs will be analyzed for inbreeding, polymorphism, and heterozygosity, producing data necessary to assess and appropriately revise current management practices to ensure healthy broodstocks to meet management goals.

**Fish Health** - In FY 2006, the Aquatic Animal Drug Approval Partnership (AADAP) program will complete technical section data packages to FDA for approval of at least two additional drugs (from the list of 8-12 prospective drugs) necessary for healthy fish production. The AADAP will continue to coordinate multi-agency efforts to meet this important need, including the generation and submission of critical data, dissemination of complete and up-to-date drug-use information to all user groups, and administration of Investigational New Animal Drug (INAD) exemptions which allow (under stringent FDA-regulation) the legal use of as yet non-approved drugs in an approved manner.

Since 1996, the NFHS has been working aggressively with its partners from the States, non-governmental organizations, and universities to combat whirling disease (WD). Funding has been leveraged two-fold by in-kind contributions from these partners, resulting in development of a large, diverse, talented, and coordinated consortium. These combined efforts have expanded the knowledge of WD, its causative agent, the agent's hosts (salmonid species and tubifex worms), and most importantly, have established a number of management strategies that are in-use to mitigate impacts of the disease. These activities have raised awareness of the disease and provided the support needed to study it throughout affected States. These efforts will continue in FY 2006, as will efforts to identify new and innovative management solutions.

### **Public Use**

**Mitigation** - In regard to the FY 2002 PART recommendation - *Seek reimbursement for mitigation production programs*, the Service and the Department agreed to resolve issues within the Department before approaching outside agencies. Efforts focused on the Bureau of Reclamation, before engaging the US Army Corps of Engineers and other agencies. In FY 2006, the Service and the Department

will initiate discussions with the Corps of Engineers and other Federal agencies regarding obtaining full cost recovery for fishery mitigation activities conducted by the Service on their behalf.

### 2005 Program Performance Accomplishments

In FY 2005, the NFHS received an operational increase of \$1 million for recovery, restoration, and scientific leadership in aquatic species conservation and management. These increases brought progress in terms of achieving the nation's natural resources conservation goals. The NFHS implemented 22 additional high priority recovery and restoration FONS projects in accordance with the priorities of the DOI's Strategic Plan and in conjunction with our many partners. For example, the Bozeman FHC (MT) provided histopathology diagnostic services to numerous State, Federal, commercial, academic, and Tribal fishery programs to reduce disease threats and speed recovery of more than one-half million native cutthroat trout and pallid sturgeon. Tishomingo NFH (OK) stocked over 31,000 tagged paddlefish into the Arkansas-Red River Basin in 2005, as part of on-going efforts to re-establish a self-sustaining population in that region.

### Aquatic Species Conservation and Management

**Recovery of Species Listed Under the ESA** – Currently, the NFHS is helping complete tasks specified in approved Recovery Plans for 70 aquatic species (47 fish species and 23 molluscan, amphibian, and plant species). For the first time in history, Federally-endangered Winged Mapleleaf mussels were artificially-propagated and recovered from culture cages. Personnel from the Minnesota Department of Natural Resources, Macalester College, the National Park Service, and the Fisheries Program's Twin Cities Field Office searched the St. Croix River, the last known location where the reproducing Winged Mapleleaf can be found. Two gravid females were taken to Macalester College where they released their glochidia (larvae). To mimic the species' natural cycle, 100 infested channel catfish were held at Genoa NFH (WI) in natural water temperatures, to ensure larval attachment. In May 2005, host catfish were placed in cages in the St. Croix River. The channel catfish were removed one month later, leaving the juvenile Winged Mapleleaf to grow in the cage on their own. In early October 2005, eleven juvenile Winged Mapleleaf were recovered. Building on this success, three additional gravid Winged Mapleleaf adults were collected in September 2005, and a total of 300 eight-inch channel catfish were infested with their larvae to produce and harvest more Winged Mapleleaf juveniles in the fall of 2006.

**Nearly 3/4 of all ESA Recovery Plans for fish recommend developing or using captive propagation technology or refugia as part of recovery plan "strategies" to re-establish wild populations. These tasks are accomplished at NFHS facilities.**

**Table 2.** Number of imperiled species and populations benefited by the NFHS as of December, 2005.

	Fish Species/Populations	Other Aquatic Species
Endangered	28	19
Threatened	17	2
Candidate	2	2
<b>Total</b>	<b>47</b>	<b>23</b>

**Restoration of Depleted, but Non-Listed Species** - In FY 2005, the NFHS accomplished 223 NFHS-related production tasks prescribed by fishery management plans. For example, in accordance with the Quinalt NFH (WA) Cooperative Agreement and the Service's National Aquatic Animal Health Policy, the Olympia FHC (WA) inspected, monitored, and treated approximately 3,000,000 Chinook,

coho, and steelhead juvenile salmon to prevent excess loss and increase the survival of these propagated fish at the Makah NFH (WA). Ennis NFH (MT) produced rainbow trout in a cooperative exchange with Montana Fish, Wildlife and Parks to facilitate the restoration of native candidate species of Big Hole River Grayling to prevent listing under the Endangered Species Act.

**Table 1. FY 2005 Fish and Fish Egg Distribution**

	Number of Fish	Pounds of Fish	Number of Eggs
<b>FY 2005 Actual</b>			
Recovery	9,864,331	166,802	6,699,809
Restoration	40,297,857	937,030	17,401,721
Mitigation	77,469,170	4,952,117	75,565,386
Special Conservation	26,688,308	796,833	48,602,662
<b>TOTAL</b>	<b>154,319,666</b>	<b>6,852,782</b>	<b>148,269,578</b>

**Recovery:** (Sustain biological communities)

Activities contributing to down-listing or de-listing Federally endangered or threatened species.

**Restoration:** (Sustain biological communities)

Activities contributing to re-establishing self-sustaining native populations at levels of abundance and spatial distributions well above the threshold for de-listing or listing.

**Mitigation:** (Ensure quality of recreation)

Activities contributing to offsetting aquatic resource losses and the preserving of native species from potential extinction, due to water projects developed by the Federal government or under the licensing or regulation of the Federal government.

**Special Conservation:** (Sustain biological communities/ensure quality of recreation)

Activities conducted in cooperation with States, Tribes, and Universities focusing on localized partnerships for enhancement of fish populations.

### Cooperation with Native Americans

In FY2005, Creston NFH (MT) stocked 60,000 Westslope cutthroat trout into three lakes on the Flathead Indian Reservation to meet Federal Tribal Trust responsibilities. Creston NFH also stocked 30,000 Westslope cutthroat trout and 361,127 Rainbow trout into twenty two lakes on the Blackfeet Indian Reservation in Montana to meet Federal Tribal Trust responsibilities.

Lake sturgeon is a biologically and culturally significant species to the Menominee people of Wisconsin that were extirpated from Reservation waters in the early twentieth century as a result of construction of two dams. During the past decade, LaCrosse Fishery Resources Office (WI) fishery biologists have been working with the Tribe, the Wisconsin Department of Natural Resources and Genoa NFH (WI) to restore lake sturgeon on the reservation. Over 56,000 lake sturgeon from Genoa have been stocked into Legend Lake since 1994. This multi-agency team reviewed the assessment data from 2003 and 2004 and supported a proposal to open a limited fishery to tribal members several years earlier than anticipated. On February 5, 2005, the Menominee Tribe opened their first annual regulated sturgeon fishery on Legend Lake.

### Partnerships and Accountability

**Strategic Planning** - In FY 2005, a national workgroup was established and initiated examination of the Fisheries Program's performance measures and definitions as part of an effort to improve the ability of the Fisheries Information System (FIS) to accurately collect and represent Program operations and accomplishments.

**Program Assessment Rating Tool (PART) Review** - In FY 2005, the Service took the following actions related to the PART.

- ABC measures were re-evaluated (and re-implemented) to provide a more accurate reflection of all NFHS activities.

- The Fisheries Program Performance Measures Workgroup met in March 2005 and discussed performance measure definitions, modifications or creation of performance measures, and reporting consistency (ensuring that the Regions report performance measures consistently).

### **Leadership in Science and Technology**

**Science and Technology** - In 2005, FTCs continued to provide science support to meet restoration and recovery goals. For example:

- **Propagation Technology** - Populations of Atlantic sturgeon have been severely depressed and may require supplemental stocking of hatchery reared fish to recover some stocks, but culture techniques were largely unknown. To fill this void, Lamar FTC (PA) completed an Atlantic Sturgeon Propagation Manual in 2005 which has been provided to State, University, and other partners (internationally). Nutrition and disease experiments conducted at Lamar continue to provide new information, including optimum feeding for juveniles, age validation techniques, and reproductive physiology of captive adults.
- **Contaminants in Fish Feed** - In 2005, the Bozeman FTC (MT) worked with partners to develop microbially enhanced plant proteins to substitute for fishmeal in fish feeds. Plant-based fish feed is less likely to contain elevated levels of PCBs and other contaminants found in some fish oils. Also in 2005, Abernathy FTC (WA) conducted a study to determine the levels of contaminants in fish feed at NFHs. Results will be shared with the feed industry with the goal of developing improved standards for contaminants in feed, thereby helping to ensure the fitness and survival of fish produced for restoration and recovery.
- **Fisheries Management** - The Abernathy FTC developed a computer model in 2005, as part of the Washington (WA) Hatchery Scientific Review Group, to implement long-range goals for hatcheries, habitat, and harvest for the Washington State Hatchery Reform Group. This science-based model will play a key role in effective management in support of restoration and recovery of pacific salmonids.

**Fish Health** - The Aquatic Animal DADAP's INAD Program is essential to meet the current needs of aquaculture programs throughout the United States, and this importance is exemplified by the 170 State, Tribal, private, university, and other Federal aquaculture facilities that participated in this program in FY2005. In FY2005, the AADAP also hosted the 11<sup>th</sup> Annual FWS Drug Approval Coordination Workshop. Over 80 participants, representing virtually all U.S. public and private aquaculture interests, pharmaceutical sponsors, the International Association of Fish and Wildlife Agencies, the American Veterinary Medical Association, USGS, USDA, EPA, FDA's Center for Veterinary Medicine, attended the Workshop.

FY2007 NFHS Operations Increase Request	
<p><b>Abernathy FTC (WA)</b>  <b>Lahontan NFH (NV)</b>  <b>Nevada FWO (NV)</b>  <b>FONS 2003-013</b></p> <p><b>Genetic Monitoring of Artificially Propagated Strains of Threatened Lahontan Cutthroat Trout</b></p> <p>The Federally Threatened Lahontan cutthroat trout (LCT) was extirpated from Pyramid Lake and the Truckee River (NV) after construction of a Bureau of Reclamation water diversion dam in the early 1900's. A transplanted population of the original Pyramid Lake strain was discovered in the Pilot Peak range of eastern Nevada in the late 1970's. The Service is currently developing a captive breeding program for this strain for potential reintroduction into the Truckee River Basin – a task included in the Lahontan Cutthroat Trout Recovery Plan. DNA markers will be used to pedigree all propagated fish, quantify genetic variation, and identify parents of released fish recaptured in the two basins. In addition, the Service and the Pyramid Lake Paiute Tribe have developed an artificially propagated composite population of LCT that supports mitigation tribal fisheries in Pyramid Lake. A Genetic Management Plan will be developed that considers recovery goals under the Endangered Species Act and Tribal mitigation needs.</p>	<p><b>\$34,000</b></p>
<p><b>Abernathy FTC (WA)</b>  <b>FONS 2005-013</b></p> <p><b>DNA Methods to Estimate Hybridization between Native Westslope Cutthroat Trout and Introduced Trout</b></p> <p>Throughout the range of Westslope cutthroat trout (WCT) (Montana, Idaho, and Washington), introduction of rainbow trout has resulted in widely varying levels of hybridization. Molecular genetic techniques provide the most efficient way to detect natural hybridization and very low levels of "introgression". In response to a recent court remand, the Service published specific criteria for detecting natural hybridization and estimating genetic "admixture proportions" between WCT and introduced species, as well as specific criteria for minimal levels of genetic introgression, in the Federal Register. As a matter of policy, fish with low levels of introgression are considered WCT if the introgression is detectable only by molecular genetic methods. This project will result in development of standardized DNA protocols for detecting hybridization and estimating admixture proportions for WCT at the population and individual fish levels.</p>	<p><b>\$34,000</b></p>
<p><b>Bozeman FTC (MT)</b>  <b>FONS 2003-010</b></p> <p><b>Recovery and Restoration of Imperiled Native Inland Salmonids</b></p> <p>Inland trout populations have suffered declines through loss of habitat and other factors. As a result, several populations and strains of cutthroat and desert trout are being supplemented with hatchery-reared fish. These trout have different nutritional requirements than rainbow trout and other hatchery-reared species. As a result of this project, new feed formulations for larval, juvenile, and maturation phases of propagated, imperiled inland trout will result in healthier fish to augment naturally-bred populations.</p>	<p><b>\$109,000</b></p>

<b>Lahontan NFH (NV)</b> <b>FONS 2005-002</b>	<b>\$180,000</b>
<b>Mass-Marking Program for Lahontan NFH Production for the Walker Lake, Truckee River, and Tahoe Basin for listed Lahontan Cutthroat Trout</b>	
<p>A unique strain of the threatened Lahontan cutthroat trout propagated at the Lahontan NFH Complex is being reintroduced into historic habitats in Walker Lake, the Truckee River, and the Tahoe Basin (NV). A comprehensive, age-specific marking program is a crucial part of the recovery and restoration program for these basins, allowing for effective monitoring of the performance of this strain and the survivorship of the various age classes released into the wild. Thermal marking techniques will be utilized for eggs and fry, while Floy (streamer) tags and coded wire tags will be used on the larger fishes. The tagging program will address the marking and tagging components of the Lahontan cutthroat trout Recovery Plan for all three basins.</p>	
<b>Dexter NFH and FTC (NM)</b> <b>FONS 2004-004</b>	<b>\$82,000</b>
<b>Genetic Status and Monitoring of Gila Trout Broodstock by Microsatellite Analysis</b>	
<p>Endangered Gila trout production and refugium is limited to brood fish located at Mora FTC, which has in place a genetic management plan that requires extensive monitoring of broodstocks and progeny. Dexter NFHTC will meet Recovery Plan requirements by examining between 100-200 fish annually with ten microsatellite loci, which should be sufficient to accurately identify levels of genetic variation and genetic population structure of the existing broodfish. Markers developed in this initiative can provide definitive answers to questions of purity, hybridization, inbreeding, gene flow, and population subdivision in five populations of Gila trout. This cooperative effort with the University of New Mexico will provide data for multiple agency use.</p>	
<b>Mora NFH and FTC (NM)</b> <b>FONS 2003-001</b>	<b>\$72,000</b>
<b>Evaluation of Gila Trout Natural Rearing Systems</b>	
<p>Endangered Gila trout will be reared in indoor fiberglass tanks mimicking natural settings (water flow, rock &amp; gravel substrates, hiding places), and will be subsequently monitored after stocking in the wild to determine if survival and fitness are increased by using these unique methods. Wild Gila trout broodstock will be matured using non-traditional hatchery regimes and resulting offspring will be reared in the natural settings. Fingerlings will be tagged before stocking and will be monitored in the wild to determine success.</p>	
<b>Alchেসay NFH (AZ)</b> <b>Williams Creek NFH (AZ)</b> <b>FONS 2005-002</b>	<b>\$107,000</b>
<b>Native Apache Trout Recovery through Alternative Hatchery Strategies</b>	
<p>Apache trout recovery and restoration efforts have focused on the production and distribution of catchable sized trout to protect pure endemic populations and sustain sport fishing on the Fort Apache Indian Reservation. Recent studies have proved that in-stream incubation and introduction of early life stages of trout allow successful adaptation and often result in higher incidence for establishment of self-sustaining populations. Early life stages of Apache trout will be introduced to several remote and unoccupied or under-occupied stream habitats on the Fort Apache Indian Reservation to allow a natural adaptation to stream environments. The program will test multiple introductions of developing eggs, fry, and advanced fry for survival and adaptation success.</p>	

<p><b>Leadville NFH (CO)</b> <b>FONS 2000-001</b></p>	<p><b>\$45,000</b></p>
<p><b>Restore Greenback Cutthroat Trout in Rock Creek, Colorado WNTI/NFHI</b></p>	
<p>The Rock Creek population of Arkansas strain greenback cutthroat trout is one of twenty self-sustaining populations prescribed in the Greenback Cutthroat Trout Recovery Plan which must be reestablished before delisting. Rock Creek is currently overrun by brook trout and the greenback cutthroat trout stocked in the creek in the early 1990's are not genetically pure. This project will involve the removal of beaver dams to facilitate stream treatment, locating incoming water sources, treating the stream with antimycin on successive occasions to remove all undesirable fish, restocking the stream with pure Arkansas strain greenback cutthroat trout, and monitoring the newly established population. This project will be accomplished with the assistance of the Colorado Division of Wildlife, Trout Unlimited and the U.S. Forest Service.</p>	
<p><b>Mora FTC and NFH (NM)</b> <b>2002-009</b></p>	<p><b>\$83,000</b></p>
<p><b>Gila Trout Broodstock Development for Recovery Efforts</b></p>	
<p>Recovery objectives for the endangered Gila trout include replication and securing of all existing lineages of the species. The South Diamond Creek lineage has been replicated in two streams, but additional fish are necessary to augment wild populations and restore the lineage to a larger portion of its historic range (required to de-list the species). To meet this objective, Sub-adult fish will be removed from the wild to develop a South Diamond lineage broodstock.</p>	
<p><b>Neosho NFH (MO)</b> <b>FONS 2002-003</b></p>	<p><b>\$110,000</b></p>
<p><b>Native Aquatic Species Restoration/Protection (Culture of Endangered Mussels)</b></p>	
<p>Degradation of water quality, physical barriers, channel dredging, over-harvest, large vessel traffic, and the invasion of zebra mussels have placed many North American freshwater mussel species on the brink of extinction. This project will explore methods practical to a hatchery setting to culture species which often rely on particular host fish to complete their life cycle. Suitable host fish species will be reared at the Neosho NFH for glochidia attachment and methods will be investigated to advance mussels to the juvenile stage in a hatchery environment. Efforts will focus on two Federally-endangered mussels (pink mucket and pocketbook), but successful techniques can be used by other state and Federal hatcheries to save other threatened and endangered mussels. The project is a cooperative effort with the Columbia Ecological Services Office and Southwest Missouri State University.</p>	
<p><b>Natchitoches NFH (LA)</b> <b>FONS 2000-003</b></p>	<p><b>\$75,000</b></p>
<p><b>Enhance Recovery of the Imperiled Louisiana Pearlshell Mussel</b></p>	
<p>Listed in 1988 as endangered, the Louisiana Pearlshell mussel (LPS) was originally thought to only be found in one parish. Discovery of an expanded range in 1991 resulted in amendment of the Recovery Plan and the species downlisted to threatened in 1993. Much of the habitat is located on U.S. Forest Service land which has been well surveyed. This project would aid in surveying public and private off-Forest Service lands in an effort to complete population status and range documentation, determine host fish species, and develop methods to culture juvenile mussels. The project is a cooperative effort with the U.S. Forest Service, Louisiana Natural Heritage Program, USFWS Lafayette Ecological Services Office, and private landowners (Partners for Fish and Wildlife projects). General consensus among partners is that there is excellent potential to de-list this species after addressing these three Recovery Plan tasks.</p>	

<b>Harrison Lake NFH (VA)</b> <b>FONS 2004-001</b>	<b>\$69,000</b>
<b>Rearing of James Spiny mussel Juveniles for Recovery and Restoration</b>	
<p>The James spiny mussel Recovery Plan calls for development and implementation of a culture protocol for the purpose of providing juveniles for population augmentation and re-establishment of extirpated populations. The Recovery Team has requested that Harrison Lake NFH assist with this project due to its location within the drainage of the species. The spawning of adults, infestation of host fishes by the glochidia, and the harvest of resultant newly-transformed juveniles would be done at Virginia Tech. Juveniles would be transferred to Harrison Lake NFH for grow-out until they are 90-120 days of age, and then stocked into the wild at locations determined by the Recovery Team.</p>	
<b>Abernathy FTC (WA)</b> <b>FONS 2005-023</b>	<b>\$128,000</b>
<b>Contaminants in Fish and Fish Feeds at Pacific Region NFHs</b>	
<p>Contaminants found in fish and fish feeds has been highlighted recently in a paper published in <i>Science</i> (Hites, et al. 2004), noting that consumption of fish raised on commercial feeds increased human-health concerns. Contaminants were identified in the feeds tested and were reflected in the flesh of Atlantic salmon (<i>Salmo salar</i>), in his study. This project will address the potential occurrence of polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), dioxins/furans, heavy metals (including mercury), and organochlorine pesticide (OC) contaminant residues in fish and commercial feeds at NFHs. Fish and feed will be sampled at two Pacific Region NFHs – steelhead at Hagerman NFH and coho salmon at Quilcene NFH (WA). Project results will benefit all the Pacific Region NFHs. This project is shared with the Western Washington Office (# 13320-2005-007), Contaminants Section and will be partnered with the USGS Columbia River Research Laboratory.</p>	
<b>San Marcos NFH &amp; FTC (TX)</b> <b>FONS 1999-004</b>	<b>\$121,000</b>
<b>Expansion of Refugia for Edwards Aquifer Species</b>	
<p>This project will permit expansion of refugia for the fountain darter, Texas wildrice, San Marcos, Texas blind, and Comal Springs salamanders, the Comal Springs riffle beetle, and establishment of refugia for the Comal Springs dryopid beetle and Peck's Cave amphipod at the San Marcos NFH &amp; FTC, as mandated by <i>Babbitt vs. Sierra Club</i> and in current Recovery/contingency plans. As spring flows decrease, refugium activities at the hatchery expand from maintenance of standing stocks to include the collection of refugium stocks. The central Texas drought is predicted to continue resulting in additional court involvement in the hatchery program. The drought also may intensify damage to critical habitat by over 30 aquatic nuisance species. Funds will provide expanded refugia and allow work on problems associated with aquatic nuisance species. This project is associated with MMS construction project #2004006 (\$1,253,000).</p>	
<b>Iron River NFH (WI)</b> <b>FONS 2005-001</b>	<b>\$55,000</b>
<b>Produce 400,000 Fall Fingerling Lake Trout in Support of the 2000 Consent Decree</b>	
<p>The US vs. Michigan Consent Decree calls for increased production of lake trout at federal facilities. Continuing to allow room for maximum yearling production would be priority, but optimizing available space and water with fall fingerling production could aid in meeting Consent Decree requirements and reduce overall costs by eliminating the need for capital expansion at other facilities. Currently, Iron River NFH is at its maximum production capacity of 1.2 million yearling lake trout annually. However, Iron River has the capability, water, and space, to raise an additional 400,000 fall fingerling lake trout annually. These fish would be stocked in early November, therefore not affecting yearling production, and allowing for marking to occur.</p>	

<p><b>Pendills Creek NFH (MI)</b> <b>FONS 2006-014</b></p>	<p><b>\$26,000</b></p>
<p><b>Pendills Creek NFH Fall Fingerling Program</b></p>	
<p>Pendills Creek NFH could produce up to 200,000 fall fingerlings for stocking into the Great Lakes towards the purpose of lake trout restoration. The fingerlings would need to be fin clipped before stocking, which would require our intermittent clippers to be hired back. We would also have to prep and run our distribution trucks for hauling the fish to the Great Lakes. Added costs for extra fish food, administrative costs, staff time, and maintenance.</p>	
<p><b>Sullivans Creek NFH (MI) FONS 2006-007</b> <b>Pendills Creek NFH (MI) FONS 2006-006</b></p>	<p><b>\$8,000</b></p>
<p><b>New Effluent Water Discharge Fees at Sullivans Creek NFH</b></p>	
<p>Funds will be expended to satisfy new effluent water discharge fees required by the Michigan Department of Environmental Quality at Pendills Creek and Sullivans Creek NFHs. These fees, which began two years ago, have negatively impacted base operating budgets at these two stations.</p>	
<p><b>Pendills Creek NFH (MI)</b> <b>FONS 2006-009</b></p>	<p><b>\$60,000</b></p>
<p><b>Operation of a New Combination Oxygen and Water Filtration Building at Pendills Creek NFH</b></p>	
<p>Pendills Creek NFH has a new 3000 gallon liquid oxygen tank and a new inflowing water filtration system and low-head oxygenators to improve water quality for raising lake trout. These new additions to the facility will aid Pendills Creek NFH in producing more lake trout yearlings for restoration of the Great Lakes and in turn, help fulfill mandates of the 2000 Michigan Consent Decree.</p>	
<p><b>Welaka NFH (FL)</b> <b>FONS 1999-001</b></p>	<p><b>\$40,000</b></p>
<p><b>Production for Increased Fitness, Survival, Recruitment, and Accelerated Recovery of Interjurisdictional Fish Species in Coastal Florida streams and the St. Johns River</b></p>	
<p>The St. Johns River and several other coastal streams holds a variety of depleted interjurisdictional fish species and well as the endangered shortnose sturgeon. Species such as the striped bass, American shad, hickory shad, and blue-black herring were once abundant in this historical range. Welaka National Fish Hatchery, situated near the banks on the river, 80 miles from the mouth, is in an excellent position to assist in the recovery of these populations. Currently, only limited numbers of striped bass are distributed to the St. Johns River. As species population continue to decrease, this hatchery has the capability to produce over 250,000 American and hickory shad, increase striped bass production by 25%, begin initial rearing programs for blue-black herring, and continue with the shortnose sturgeon recovery efforts. This project is guided by several Fisheries Management Plans: The Atlantic States Marine Fisheries Commission Fishery Management for Striped Bass; a Memorandum of Agreement with the State of Florida, and the Recovery Plan for the shortnose sturgeon.</p>	

<b>Welaka NFH (FL)</b> <b>FONS 2002-001</b>	<b>\$57,200</b>
<b>Expansion of Striped Bass Spawning Capabilities</b>	
<p>The restoration of the unique strain of Gulf of Mexico striped bass is a high priority for the Service. Current production capabilities at Welaka National Fish Hatchery are limited to approximately 20% of the total needs for the Gulf of Mexico system. This limits the Service and Welaka National Fish Hatchery to focusing efforts of the A-C-F- system, while doing very little in the other important river drainages. Funding for this project would increase the number of fry available to meet additional production commitments and would allow the facility to increase striped bass production by 40%. This increased capacity would allow the Service to begin to address restoration efforts in additional river systems. In addition to increasing production, hatchery personnel would continue their investigations into more efficient marking techniques of striped bass fry that will aid in identifying future needs of Gulf of Mexico striped bass.</p>	
<b>Bears Bluff NFH (SC)</b> <b>FONS 2003-003</b>	<b>\$17,000</b>
<b>Enhanced Pond Production and Tagging of Red Drum for Restoration Purposes</b>	
<p>Bears Bluff NFH is involved in restoration efforts for red drum, a species of special concern along the south Atlantic coast. The station is currently involved in a cooperative partnership with the state of South Carolina to (1) prepare the hatchery's production ponds for receipt of red drum fry/juveniles, (2) grow the red drum to a predetermined length in the ponds, and (3) assist with harvesting, tagging, and releasing the red drum into the wild. Funding for this project would enable Bears Bluff NFH to increase hatchery production of red drum by 500,000 fingerlings and allow the Service and its partners the ability to meet all long term restoration goals for this species.</p>	
<b>Greers Ferry NFH (AR)</b> <b>FONS 2004-001</b>	<b>\$11,400</b>
<b>New Fish Culture Technology to Improve Water Quality at Greers Ferry NFH</b>	
<p>Greers Ferry National Fish Hatchery is responsible for mitigation of Federal water development projects in Arkansas and Oklahoma. The focus of the project will enable hatchery personnel to scientifically monitor and improve water quality conditions at the hatchery, resulting in enhanced production of quality fish to address mitigation stocking of Federal water development projects. The project funds would allow the hatchery to scientifically determine the need for aeration devices (i.e. oxygen injection) and degassing devices to improve overall water quality. A monitoring program involving water flow levels and nitrogen gas levels will be implemented by station personnel. This will enable station personnel to better adjust hatchery production regimes in rearing ponds. The end outcome will be an improved hatchery product to support mitigation stocking. Performance measures for this project are guided by the Cooperative Agreements with the States of Arkansas and Oklahoma.</p>	

<p><b>Greers Ferry NFH (AR)</b> <b>FONS 2004-002</b></p>	<p><b>\$11,400</b></p>
<p><b>New Fish Culture Technology to Monitor Water Quality</b></p>	
<p>Greers Ferry National Fish Hatchery is responsible for mitigation of Federal water development projects in Arkansas and Oklahoma. The focus of the project is to improve water quality, resulting in enhanced production of quality fish to address mitigation stocking of Federal water development projects. The hatchery will direct efforts to improve the monitoring of water temperatures and dissolved oxygen of the hatchery water supply coming from a Corps of Engineer's dam. This will enable station personnel to better adjust hatchery production regimes in rearing ponds. The end outcome will be an improved hatchery product to support mitigation stocking. Performance measures for this project are guided by the Cooperative Agreements with the States of Arkansas and Oklahoma.</p>	
<p><b>Lamar NFH (PA)</b> <b>N.E. Fishery Center</b> <b>FONS 1999-003</b></p>	<p><b>\$149,000</b></p>
<p><b>Technology Development Studies in the Atlantic Salmon Program</b></p>	
<p>Six National Fish Hatcheries produce over nine million Atlantic salmon and ten million Atlantic salmon eggs annually as directed by management plans for the Maine rivers, the Connecticut River, and the Merrimack River. Adult returns for DPS and restoration rivers have been depressed in recent years. The successful interaction of hatchery products with river and ocean environments may in part be affected by rearing methodologies. Economic considerations such as cost per individual produced at various sizes and their resultant return performance as adults, are also strongly influenced by hatchery management. Evaluation of rearing regimes to examine variables such as egg incubation techniques, diets, effects of culture water velocity upon stocked performance, determination of effectiveness of rearing programs (fry, parr, 1&amp; 2 year smolts). Economy of operation and compliance with NPDS (effluent) requirements significantly impact hatchery performance. Application of sound science offers a method to resolve problems and streamline operations to meet the Service mission.</p>	
<p><b>Bozeman FHC (MT)</b> <b>FONS 2004-007</b></p>	<p><b>\$33,000</b></p>
<p><b>Development of Non-Lethal Sampling Methods for Detection of Fish Pathogens</b></p>	
<p>Fish health plays a key role in monitoring, evaluating and protecting the overall health of all aquatic animals within an ecosystem whether it relates to restoring depleted populations or the recovery of threatened and endangered (T&amp;E) species. For this reason, fish species involved in special recovery projects and those of special management concern have been targeted as high priority for sampling criteria outlined in the National Wild Fish Health Survey. The Bozeman Fish Health Center proposes to test several diagnostic assays using sample tissues collected by non-lethal means. These sample types will be used concurrently with lethal sample tissues and then the assays will be evaluated for: sensitivity, validity, and statistical significance. The results will be reported and published in peer review journals.</p>	

<b>ARD-Fisheries R6</b> <b>FONS 2004-001</b>	<b>\$22,000</b>
<b>Establishment of Cooperating Associations (Friends Groups) for Fisheries Field Offices</b>	
<p>Collaboration between the Service, States, other federal agencies and Tribes on priorities, goals and objectives, is essential to effective conservation efforts. Coordination within and outside the Service needs to continually be improved to optimize efficiencies and take best advantage of opportunities. Using the Booth Society as a model, we intend to establish 3 new cooperating associations at fisheries field station to further our mission, seek Congressional support, leverage funding and expand outreach efforts to the public and others.</p>	
<b>Creston NFH (MT)</b> <b>FONS 1999-003</b>	<b>\$34,000</b>
<b>Restoring Native Westslope Cutthroat Trout on the Blackfeet Indian Reservation</b>	
<p>The Blackfeet Tribal Fishery Management Plan prioritizes the stocking of endemic Westslope cutthroat trout into Tribal managed waters. The plan suggests stocking open system lakes, glaciated potholes and inlets with native fish, while stocking non-endemic species in closed systems. In order to restore Westslope cutthroats and eventually provide a recreational fishery for the species, the Tribe has requested the Service (Creston NFH) begin a Westslope cutthroat trout stocking program of approximately 250,000 annually in St. Mary's Lake. A switch from nonnative to native fish stocking in tribal waters would prevent species competition and address genetic concerns in the St. Mary's and Upper Missouri River drainages. Funding would provide production and distribution associated with the slower growth rates and lower rearing density requirements of Westslope cutthroat trout. It would also allow the hatchery to implement strain specific fish health requirements, proper genetic protection, and management evaluation.</p>	
<b>Creston NFH (MT)</b> <b>FONS 2003-001</b>	<b>\$8,000</b>
<b>Restoring Native Westslope Cutthroat Trout on the Flathead Indian Reservation</b>	
<p>The Confederated Salish and Kootenai Tribal (CSKT) Fishery Management Plan prioritizes the stocking of endemic Westslope cutthroat trout into Tribal managed waters. Fishery biologists with the CSKT monitor and evaluate the native fishery and request fish from Creston NFH based on annual field observations. A healthy tribal fishery helps the CSKT meet native fish restoration goals, provides increased recreational fishing opportunities and strengthens Tribal cultural heritage. The Tribe has requested Creston NFH stock a minimum of 35,000 Westslope cutthroat trout annually as part of the Service's Tribal trust responsibility. Funding would cover production costs associated with the slower growth rates, enhanced feed, and the lower rearing density requirements of Westslope cutthroat trout. It would also allow the hatchery to implement strain specific fish health requirements, proper genetic protection, and management evaluation.</p>	
<b>Hotchkiss NFH (CO)</b> <b>FONS 2001-002</b>	<b>\$33,000</b>
<b>Restoring Colorado River Cutthroat Trout for Colorado River Storage Project Reservoirs, Tribal, and Recreational Benefits</b>	
<p>This project will result in the development of disease-free Colorado River cutthroat trout broodstock to replace nonnative rainbow trout currently stocked in reservoirs and on the Northern Ute Indian Reservation in Eastern Utah. A brood of the Nanita Lake or the Upper Duchesne River strain would be established. Hotchkiss NFH has the capabilities of producing 2.5 million trout annually. The hatchery already has a tradeoff agreement with the Colorado DOW for catchable size rainbow trout and this proposal would produce brood and transfer eggs for grow-out. Trout would be distributed locally by conventional means at sizes of 3-8 inches. Program evaluation will be accomplished by the Colorado or the Utah Fish and Wildlife Management Assistance Office.</p>	

<p><b>Bozeman FHC (MT)</b> <b>FONS 2004-002</b></p>	<p><b>\$23,000</b></p>
<p><b>Fish Health Monitoring of Westslope Cutthroat Trout</b></p>	
<p>Free-ranging Westslope cutthroat trout in Montana are considered a species of special concern. Population declines and concern for genetic integrity have prompted establishment of domestic Westslope stocks in culture. Several original aquatic habitats have been identified for re-introductions and re-establishment of self-sustaining genetically pure strains of Westslope cutthroat. An integral component to monitoring Westslope cutthroat is the provision of fish health diagnostic testing services. The Bozeman Fish Health Center provides complete diagnostic testing for domestic and wild Westslope cutthroat populations monitored in the State of Montana. Fish health certifications facilitate movement of cultured stocks. Fish health monitoring of wild Westslope complements genetic studies and evaluation of aquatic ecosystem health. Monitoring regulated fish pathogens meets regulatory requirements for fish transport and certification documentation of pathogen status.</p>	
<p><b>ARD- Fisheries (UT)</b> <b>FONS 2003-832</b></p>	<p><b>\$3,000</b></p>
<p><b>Genetic Evaluation of West Desert Bonneville Cutthroat Trout Populations NFHI/WNTI</b></p>	
<p>The Western Native Trout Initiative (WNTI) goals of building, funding, and implementing collaborative conservation efforts for western native trout are consistent with the Service's "Fisheries Program Vision for the Future" and the National Fish Habitat Initiative (NFHI). This project aims to complete genetic analysis on a number of Bonneville cutthroat trout populations in the West Desert Game Management Unit to understand how these populations are related and if any are unique and require isolation from others. This WNTI priority project directly conserves native trout species and enhances recreational angling opportunities.</p>	
<p><b>Lahontan NFH (CA)</b> <b>FONS 1999-001</b></p>	<p><b>\$32,000</b></p>
<p><b>Lahontan Cutthroat Trout Recovery in Fallen Leaf Lake in the Lake Tahoe Basin</b></p>	
<p>The Lahontan NFH Complex, in partnership with the Community of Fallen Leaf Lake and the Forest Service, is part of an ongoing effort to reestablish the native trout to lake habitats in the Tahoe and Truckee Basins. Fallen Leaf Lake, located in the Tahoe Basin, is historic habitat for the Lahontan cutthroat trout, which were extirpated by the 1930's. A broodstock of a remnant population has been established at Lahontan NFH and are the source population for this reintroduction program. The funds will be used to produce, tag, and distribute 50,000 eight-inch Lahontan cutthroat trout into Fallen Leaf Lake. Additionally, vertical incubator trays will be obtained to enable segregation of family groups for disease compliance issues and automatic belt feeders will be obtained to facilitate early rearing and removal of human interaction with this wild strain, while improving fish health by reducing concentrations of wasted feed in the rearing units.</p>	

## Hatchery Maintenance and Rehabilitation

		FY 2005 Actual	FY 2006 Enacted	FY 2007			Change From 2006 (+/-)
				Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
<b><i>Hatchery Operations and Maintenance</i></b>							
Hatchery Maintenance	\$(000)	18,783	16,528	+91	-32	16,587	+59
	FTE	93	93			93	0

### Summary of FY 2007 Program Changes for Hatchery Maintenance

Request Component	Amount	FTE
Program Changes		
• Program Management Savings	-32	0
<b>Total, Program Changes</b>	<b>-32</b>	<b>0</b>

### Justification of 2007 Program Changes

The FY 2007 budget request for Hatchery Maintenance is \$16,587,000 and 0 FTEs, a net program decrease of \$32,000 from the FY 2006 enacted level.

#### Program Management Savings (-\$32,000)

To enable the Service to address its highest priorities during constrained fiscal times, the Service proposes reducing program administrative funding by \$1,980,000. Using Activity-Based Cost information and other budgetary analyses, the Service anticipates achieving a savings of \$32,000 in Hatchery Maintenance. These savings will be realized by streamlining program administrative support activities.

### Program Overview

Implementation of the National Fish Hatchery System's (NFHS) Maintenance Program at its diverse field stations directly supports the Department's resource protection goals to sustain biological communities and to manage populations to self-sustaining levels for specific species by ensuring that key assets on NFHS facilities are in structurally sound, safe and efficient operating condition. Proper maintenance of facilities is essential to sustain the captive aquatic populations necessary to meet recovery, restoration and mitigation objectives identified in approved Recovery Plans and fishery management plans.

The NFHS has embraced the recommendations made to the Department in the Office of the Inspector General's (OIG) December 2001 Advisory Report titled "*Maintaining the Department of Interior's Facilities, A Framework for Action.*" The OIG report documents the need, amongst others, to take such actions as 1) reducing the backlog, 2) managing facilities proactively, 3) conducting condition assessments, 4) establishing performance measures, and 5) implementing a facilities management system. In recent years, the NFHS has focused its deferred maintenance appropriations on its most critical assets – mission critical water management assets.

Maintaining mission critical water management assets in good to fair condition is essential for the NFHS to meet its aquatic resource mission while complying with national environmental quality standards. These assets include those that directly influence the quality or quantity of water delivered and discharged, or assets that determine the actual rearing or holding environment of fish or other

aquatic species being held. Keeping NFHS mission critical water management assets in the best condition supports DOI's Resource Protection Goal of Sustaining Biological Communities as both water quality and quantity are critical elements in sustaining biological communities. Pending final condition assessments, critical water management assets are estimated to comprise \$958 million of the NFHS's \$1.3 billion in asset replacement value.

The NFHS incorporated these principles into its draft Fisheries Program Maintenance Management Policy, which provides maintenance management guidance and standard operation procedures consistent with Departmental and Service guidance and financial management directives. Recently, the Department has stressed that all Bureaus should focus their maintenance resources towards reducing the Facilities Condition Index (FCI). Within Program funding constraints, the NFHS has focused on all of these recommendations, both in actions taken and out-year planning. The DOI Strategic Plan now includes a specific performance measure to track maintenance progress, and consistent with that Plan and guidance from the Administration's PART review, the NFHS has implemented maintenance performance measures to track progress made toward assessing asset condition status and bringing assets back to proper working condition, particularly mission critical assets.

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

**Annual Maintenance** - NFHS annual preventive maintenance funds are used to pay salaries of maintenance personnel, purchase supplies (lumber, pipe, paint, tools, air and oil filters, etc.), materials and contracts during the year in which the deficiency occurs, and small equipment replacement (generally less than \$5,000 - lawn mowers, etc.). Properly managed, annual preventive maintenance is a logical approach to emerging maintenance issues, addressing needs as they occur in a cost effective manner, thus avoiding adding additional projects to the deferred maintenance backlog and untimely equipment replacement.

**Deferred Maintenance** – Deferred maintenance funding is directed to the repair, rehabilitation, or replacement of constructed assets. The NFHS mission accomplishments are largely determined by the condition of the core assets associated with water delivery, aquatic species culture, and effluent management. Maintaining these mission critical water management assets in good condition is essential for the NFHS to meet its aquatic resource conservation mission while complying with national environmental quality standards.

All projects are identified and tracked in Service Maintenance databases and are prioritized for funding in the NFHS' Five-Year Deferred Maintenance Plan. Consistent with DOI guidance, projects are ranked and scored depending on how they address the following criteria: 1) critical health and safety, 2) critical resource protection, 3) critical mission, and 4) other important needs. Additionally, deferred maintenance projects focusing on the NFHS's highest priority assets, mission critical water management assets, and assets directly linked to Regional Strategic Plans are considered along with DOI Scores when prioritizing projects for the 5-Year Deferred Maintenance Plan.

The Service has developed a 5-Year Deferred Maintenance/Construction Plan. Each plan provides the projects of greatest need in priority order with focus first on critical health and safety and critical resource protection. The Service has undertaken an intense effort in originating in the field to develop these lists.

For FY 2007 construction projects, complete project descriptions in alphabetical order are provided in the Justifications, with a summary list showing priority order. The 2007 deferred maintenance project descriptions and lists showing all projects between 2008-2011 are provided in a companion volume.

Limited modifications to the lists will occur as they are annually reviewed and updated, with the addition of a new fifth year, and submission to the Congress.

**Equipment: Routine Maintenance, Repair and Replacement –**

The NFHS equipment allocation funds equipment maintenance, repair and replacement. NFHS equipment is essential to mission accomplishment and is comprised of machinery (tractors, loaders, backhoes, riding mowers, etc.), fish transports (trucks, tanks, oxygen containment), standard vehicles (pickups, sedans, vans, etc.), and tools (table saws, welders, and hand-held power tools). Replacement generally targets those equipment items with a value greater than \$5,000 and less than \$30,000, and passenger-carrying vehicles. More expensive equipment is presently identified for purchase through the Five-Year Deferred Maintenance Plan. To achieve greater efficiencies, the NFHS works closely with the NWRS to accomplish projects requiring specialized needs. When such arrangements cannot be accommodated because of scheduled equipment usage, specialized equipment is leased from the private sector and Refuge based equipment operators are “loaned” to NFHS for the duration of the project.

NFHS maintenance efforts at its diverse field stations directly support the DOI’s resource protection goals to sustain biological communities and to manage populations to self-sustaining levels for specific species by maintaining key assets on NFH’s, FTC’s, and FHC’s in efficient and safe working condition. Proper maintenance of facilities is essential to sustain the captive aquatic populations necessary to meet restoration objectives identified in Recovery Plans and fishery management plans.

**2007 Program Performance Estimates**

---

In FY 2007, the NFHS will continue its focused support of the DOI’s Strategic Goal of resource protection to sustain biological communities to manage populations to self-sustaining levels for specific species. Consistent with existing strategies to address critical health and safety issues, critical water management asset deficiencies, and improving maintenance management through improved data collection, storage, and retrieval, the NFHS will focus on the initiatives identified in the 5-Year Deferred Maintenance Plan such as the examples below:

- Completing maintenance projects involving safety issues, such as rehabilitating the formalin storage and transfer systems used in disease treatments for fish eggs at the Williams Creek unit of the Alchey-Williams Creek NFH Complex (AZ). The current system does not meet OSHA and Service safety standards and presents health risks to staff and volunteers.
- Maintain facilities critical to the propagation of threatened or imperiled fish species including Lahontan cutthroat trout, coho salmon, and pallid sturgeon. For example: Replacing a seriously deteriorated production water supply line (1,763 linear feet) at the Lahontan NFH (NV); replacing 350 linear feet of severely deteriorated and leaking 30-inch water supply line at the Willard NFH (WA); and rehabilitating and upgrading the hatchery effluent system to ensure containment of fish and potential fish pathogens at the Valley City NFH (ND).
- Continuing the second 5-year cycle of comprehensive condition assessments by completing assessments at approximately 21 hatcheries. Efforts will continue to improve the assessment program by implementing knowledge gained in the first 5-year cycle and utilization of SAMMS to improve the efficiency of the data storage and retrieval system, and increasing the reliability of data.
- Implementing an Asset Management Plan and Asset Business Plans that outlines proactive strategies to maintain assets for their efficient, safe use.

---

## 2006 Planned Program Performance

---

The Service will develop an Asset Management Plan and Asset Business Plan in FY 2006 that will outline a proactive strategy for managing assets. These plans will prescribe additional management strategies that will target improving the Facility Condition Index (FCI) of high priority assets.

Projects planned for implementation in FY 2006 will target the NFHS mission critical water management assets; i.e., its water supplies, water treatment, and propagation facilities, and critical health and safety issues. For example, the replacement of deteriorated fish production kettles at Tishomingo NFH (OK) is necessary to meet recovery goals for State-listed paddlefish and alligator gar. The repair of crumbling raceways at Allegheny NFH (PA) will alleviate safety concerns for staff and visitors and improve rearing conditions and reduce the risk of disease transmission for the lake trout restoration program.

The 2<sup>nd</sup> 5-year cycle of comprehensive condition assessments at NFHS field stations will begin in FY 2006. Each year 20% of the field stations will be assessed, including stations owned by the Service but operated and maintained by non-Federal entities.

---

## 2005 Program Performance Accomplishments

---

**Annual Maintenance** - By the end of FY 2005, all field stations and Regional offices completed SAMMS training and thus, completed a significant transition to an integration of Service maintenance information systems. SAMMS provides a comprehensive understanding of annual maintenance needs to include salary and preventive maintenance needs, as well as document deferred maintenance and capital improvement needs of the NFHS. A centralized and complete documentation of life-cycle costs will assist the NFHS in predicting field station budget needs such that allocations can be adjusted annually to address them proactively and preventing unnecessary increases in the NFHS's deferred maintenance backlog.

In the past several years, the Service's NFHS has made steady progress in correcting and verifying information in the maintenance database, thus enabling existing resources to be focused on the most important maintenance needs associated with mission accomplishment: Critical Water Management Assets. It is imperative that the Service's NFHS address the Department's highest maintenance priorities to ensure minimal to no impact to employee safety, environmental compliance, and mission capabilities and accomplishments are incurred.

Presently, several states are permitting continued 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 would likely lead to a reduction or cessation of production for such programs as Atlantic salmon and other imperiled species. All the critical maintenance issues that directly deal with human health and safety, water delivery, water treatment, fish culture, and efficient discharge are high priority for the NFHS. In recent years, documented instances of fish losses, including listed species, have been directly attributable to critical infrastructure failure. Rehabilitating or replacing these mission critical assets is essential to the continued success of meeting strategic plan goals.

**Deferred Maintenance** – Deferred maintenance projects on the FY 2005 five-year plan specifically targeted the NFHS mission critical water management assets, i.e. its water supplies and rearing units. Refurbishing the water supply at Garrison Dam NFH (ND) to improve the warm water source is essential to meet recovery goals for the pallid sturgeon. The rehabilitation of the water supply canal banks at Welaka NFH (FL) will not only aid in the restoration of striped bass in the Southeast, but will alleviate a safety concern to both station staff and the visiting public. The DOI Strategic Plan

now includes a specific performance measure to track the progress the Service makes in bringing these essential assets back to proper working order. Examples of projects include:

- Ensuring continued production of critically important steelhead at Hagerman NFH (ID) by replacing 120 feet of corroded and deteriorated 8-inch water supply line and ensuring continued production of Spring Chinook salmon at Carson NFH (WA) by replacing deteriorated 50-plus year old 10-inch water supply line.
- Enhancing water quality issues for production of bull trout and grayling at Bozeman FTC (MT) by replacing failing ozone generation system to meet needs of critical species and become compliant with Montana water quality standards.
- Maintaining production of threatened Apache trout by rehabilitating the two units required for holding the 2-and 3-year old broodstock at the Williams Creek NFH (AZ). The Apache trout program is not only important to recovery of Apache trout, but also to enhancing status of associated native fishes such as loach minnow, and desert and Sonora suckers.

In addition to addressing critical maintenance needs, program accomplishments overall also contributed to performance based management by being directly related to performance targets associated with Facility Condition Index (FCI) and percentages of field stations that have undergone CCAs. Through FY 2005, 100% of NFHS field stations underwent a CCA, completing the Department's aggressive approach on schedule. FCI figures for the NFHS as a whole move slowly, but the FY 2005 accomplishments contribute to the gradual reduction of the FCI. Locally, project completion has an immediate and direct effect on the FCI of individual assets, moving them from poor to good condition.

Program Performance Overview: Hatchery Operations and Maintenance

Measure	FY 2005 Plan	FY 2005 Actual	Change from 2005 Plan	FY 2006 Enacted	2006 Change from 2005 Actual	FY 2007 Request	2007 Change from 2006
% of threatened or endangered populations, prescribed as necessary in Recovery Plans, that become self-sustaining in the wild. <b>(PART)</b>	15% 67/461	9% 38/416	-6% -29	22% 97/435	+14% +59	22% 97/435	0% 0
% of Recovery Plan production tasks implemented <b>(PART) (a) (*)</b>	79% 63/80	90% 79/88	+11% +16	76% 85/112	-14% +6	81% 91/112	+7% +6
% of applied science and technology tasks implemented as prescribed by Recovery Plans <b>(PART) (a) (*)</b>	53% 54/101	69% 66/96	+16% +12	57% 70/122	-12% +4	66% 80/122	+9% +10
% of post-stocking survival targets met, as prescribed by Recovery Plans, for hatchery propagated listed species. <b>(PART) (c) (*)</b>	21% 3/14	56% 10/18	+35% +7	64% 14/22	+8% +4	68% 15/22	+4% +1
# of fish and aquatic animal populations that are held in refugia. <b>(BUR)</b>	72	83	+11	50	-33	52	+2
% of Fishery Management Plan production tasks implemented. <b>(PART) (b) (*)</b>	92% 278/303	84% 223/266	-8% -55	75% 244/325	-8% +21	79% 254/323	+4% +10
% of applied science and technology tasks implemented as prescribed by Fishery Management Plans. <b>(PART) (b) (*)</b>	50% 103/206	50% 68/136	0% -35	51% 81/158	+1% +13	57% 90/158	+6% +8
% of post-stocking survival targets met, as prescribed by Fishery Management Plans, for hatchery propagated depleted species. <b>(PART) (c) (*)</b>	48% 41/86	62% 29/47	+14% -12	60% 30/50	-2% +1	62% 31/50	+2% +1
% of marking and tagging targets met, as prescribed by approved management plans. <b>(PART) (b) (*)</b>	54% 83/153	76% 93/123	+22% +10	67% 90/135	-12% -3	74% 100/135	+7% +10
# of techniques and culture technology tools developed <b>(BUR)</b>	211	215	+4	125	-90	136	+11

Measure	FY 2005 Plan	FY 2005 Actual	Change from 2005 Plan	FY 2006 Enacted	2006 Change from 2005 Actual	FY 2007 Request	2007 Change from 2006
# of applied aquatic scientific and technologic tools shared with partners (BUR)	222	206	-16	127	-79	139	+12
% planned accomplishments/reintroduction objectives completed to fulfill Tribal Trust responsibilities. (SP)	95% 40/42	100% 72/72	+5% +32/30	98% 92/94	-2% +20/22	99% 93/94	+1% +1
% DOI watershed units with current wild fish health surveys (PART) (*)	25% 532/2111	27% 577/2111	+2% +45	19% 462/2468	-8% -115	19% 465/2468	0% +3
Condition of mission critical water management assets as measured by the DOI FCI. (PART)	0.284 \$216,591,701 /\$761,835,882	0.185 \$184,929,983/ \$1,001,592,758	-0.099 \$31,661,718/ +\$239,756,876	0.182 \$349,309,154/ \$1,921,968,658	-0.003 +\$164,379,171 /\$920,375,900	0.178 \$351,055,883/ \$1,970,017,784	-0.004 -\$1,746,729/ \$48,049,216
% of mitigation production targets met. (PART) (*)	42% 11/26	90% 9/10	+48% -2	87% 39/45	-3% +30	76% 39/51	-11% 0
Pounds of healthy rainbow trout produced for recreation per dollar spent. (PART)	.37lb/\$1	.37lb/\$1	0	.37lb/\$1	0	.37lb/\$1	0

\*Performance totals (numerators and denominators) for these measures include tasks accomplished by more than one Service Region (duplicates).

(a) The data collected for these two measures will equal the performance target for the PART measure: % of NFHS priority recovery tasks implemented as prescribed in approved Recovery Plans.

(b) The data collected for these three measures will equal the performance target for the PART measure: % of NFHS priority restoration tasks implemented as prescribed in approved Fishery Management Plans.

(c) The data collected for these two measures will equal the performance target for the PART measure: % of survival targets, prescribed by approved management plans, met for hatchery stocks of imperiled species.