

Conserving America's Fisheries in the Southwest

**U.S. Fish and Wildlife Service
Department of the Interior**

**Fisheries Program
Region Two Strategic Plan**

2004-2008

Fisheries Program Vision:

The vision of the Service and its Fisheries Program is working 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.

Fisheries Program Mission:

To achieve our vision, the Fisheries Program is committed to working with our partners to:

- *Protect* the health of aquatic habitats.
- *Restore* fish and other aquatic resources.
- Provide opportunities to *enjoy* the many benefits of healthy aquatic resources.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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A Message from the Regional Director

Thanks to Everyone Who Helped the Fisheries Program Develop This Dynamic Strategic Plan. Developing a Strategic Plan for any organization is a long, arduous process. For the Fisheries Program, their Plan development process really began two years ago with the involvement of the Sportfishing and Boating Partnership Council (Council). The Council is an organization of broad-based conservation and environmental groups such as Trout Unlimited, National Wildlife Federation and the International Association of Fish and Wildlife Agencies. Through a series of meetings with the Council, the Fisheries Program developed the Strategic Vision for the national Fisheries Program. That vision is:

The vision of the Service and its Fisheries Program is to work with Tribes, states, partners, and other stakeholders to restore and maintain fish and other aquatic resources as self-sustaining levels and support federal mitigation programs for the benefit of the American Public.

The Vision set the national goals for the Fisheries Program, but the Service needed for each Region to produce its own Strategic Plan. These regional plans would describe on-the-ground activities. Unlike any planning process utilized by Fisheries in the past, input and comments from states, tribes, Federal agencies, and persons interested in fish or fishing was not only solicited but also utilized to develop and edit the Plan.

The Southwest Region's Fisheries Program is committed to working with our partners to:

- Protect the health of aquatic habitat.
- Recover and restore fish and other aquatic resources.
- Provide opportunities to enjoy the many benefits of healthy aquatic resources.

Many responsibilities for managing and conserving fish and other aquatic resources are shared. Success is contingent upon the combined knowledge, resources and commitment of each party that has a stake in the aquatic resources of this region.

Employees and partners alike clearly articulated the need for a Plan with continuity so that they could make plans to collaborate on projects with us. With this Strategic Plan, Fisheries has stepped up and detailed plans for its Program. Most importantly the Program will utilize this Plan for the next five years. We heard your concerns.

Without your involvement, I can assure you that this Strategic Plan would have been a much different document. My Fisheries staff has worked hard to incorporate comments regarding everything from format to priorities. You will notice the wholesale change in the document between draft and final editions. This was the result of comments and suggested changes from the collective group of partners. Thank you!

The Region's planning phase is concluded with this document. Our regional Plan was built in partnership with people and organizations across the Southwest Region who contributed their valuable time and expertise. Continued communication, cooperation and partnership building will be critical to the successful implementation of the Fisheries Program's Strategic Plan. **Let's get to work!**

A handwritten signature in cursive script, reading "Dale Hall".

Dale Hall
Regional Director
U.S. Fish and Wildlife Service
Southwest Region

Table of Contents

| | |
|--|----|
| Fisheries Program Vision and Mission..... | i |
| A Message from the Regional Director..... | ii |
| I. EXECUTIVE SUMMARY..... | 1 |
| II. FISHERIES PROGRAM ACTIVITIES AND CRITICAL IMPORTANCE IN THE SOUTHWEST REGION..... | 2 |
| III. EXTERNAL FACTORS AND FUTURE GROWTH..... | 4 |
| VI. HOW TO USE THIS DOCUMENT..... | 5 |
| VII. IMPLEMENTATION AND EVALUATION..... | 7 |
| VII. FY2003-2008 FISHERIES PROGRAM FOCUS AREAS..... | 8 |
| <u>Partnerships and Accountability</u> | 8 |
| a. Partnerships..... | 8 |
| b. Accountability..... | 10 |
| <u>Aquatic Species Conservation and Management</u> | 12 |
| a. Native Species..... | 12 |
| b. Aquatic Nuisance Species..... | 19 |
| c. Interjurisdictional Fisheries..... | 23 |
| <u>Public Use</u> | 26 |
| a. Recreational Fishing..... | 26 |
| b. Mitigation Fisheries..... | 29 |
| <u>Cooperation with Native Americans</u> | 30 |
| <u>Leadership in Science and Technology</u> | 33 |
| <u>Aquatic Habitat Conservation and Management</u> | 36 |
| <u>Workforce Management</u> | 41 |
| XI. REGIONAL CONTACT INFORMATION..... | 43 |
| XI. APPENDICES..... | 44 |
| a. Regional and Program Organizational Charts..... | 44 |
| b. Southwest Regional Fisheries Partners..... | 47 |
| c. Recovery Plans Contributed by Southwest Region Fisheries Program..... | 51 |
| d. FONS List of Ranked Un-Funded Operational Needs..... | 53 |
| e. Region 2 Fisheries Program Station Profiles..... | 64 |

Executive Summary

The Fisheries Program of the U.S. Fish and Wildlife Service (Service) has played a vital role in conserving and managing fish and other aquatic resources since 1871. Today, the Fisheries Program is a critical partner with states, tribes, other governments, other Service programs, private organizations, public institutions, and interested citizens in a larger effort to conserve these important resources. In 2002, the Service, working with its many partners in aquatic conservation through the Sport Fishing and Boating Partnership Council's Fisheries Steering Committee, completed its strategic vision document: "Conserving America's Fisheries, U.S. Fish and Wildlife Service Fisheries Program Vision for the Future" (hereafter *Fisheries Vision*).

The vision of the Service and its Fisheries Program is to work with partners to restore and maintain fish and other aquatic resources at sustainable levels and support federal mitigation programs for the benefit of the American public. To achieve that vision, the Fisheries Program is committed to working with our partners to:

- I. Protect the health of aquatic habitats.
- II. Restore fish and other aquatic resources.
- III. Provide opportunities to enjoy the many benefits of healthy aquatic resources.

This Southwest Region Strategic Plan is an extension of the *Fisheries Vision* and describes how it will implement the goals and objectives identified within, describing more specifically the tactics and performance measures to be carried out at the regional level over the next five years.

The Fisheries Program and its partners and stakeholders recognize that many responsibilities for managing and conserving fish and other aquatic resources are shared, and overall success is usually contingent upon the combined knowledge, resources and commitment of each party. Therefore, the Southwest Region views this strategic plan as a general contract between the Fisheries Program and those partners and stakeholders that contributed to the development of this document.

Fisheries Program Activities and Critical Importance in the Southwest Region

The Southwestern Region bridges the diverse lands, waters, and people of Oklahoma, Texas, New Mexico, and Arizona. The range of aquatic habitats and species is extensive, not only in terms of their unique forms and regional endemism, but of cultural significance, economic importance, and management complexity. The vital organisms inhabiting regional waters harmonize the richness of the landscapes, carved and formed by the waters that flow through and connect the states.

The Southwest Region Fisheries Program is composed of three equal and interdependent activities:

Production

This includes production of sport fish for recreational programs on federal and tribal lands; production of threatened and endangered aquatic species for population expansion and reintroduction into historic habitats; short- and long-term holding of native species threatened by temporary habitat degradation; and identification of new technology to advance fish culture operations. These activities occur within the regions **Six National Fish Hatcheries (NFHs) and Three National Fish Hatchery and Technology Centers (NFH&TCs)**.

Monitoring

Monitoring of wild populations of sport fish, native and nonnative fish populations, and endangered species are fundamental activities for this region. These activities take place through interaction and collaboration with Native American tribes and other partners to maintain healthy wild populations through habitat conservation and improvement, harvest management, and recommending stocking sites and numbers. These management activities are the responsibilities each of the **Fishery Resources Offices (FROs)** located in the Southwest Region.

Fish Health

Health of both wild and hatchery fish populations has become a significant concern for state, federal, and tribal resource managers. The spread of such diseases as whirling disease and largemouth bass virus has the potential to significantly affect both the health of aquatic systems and their economies based upon the use of those fisheries. The lead for monitoring fish health is held by the Region's **Fish Health Center (FHC)**.

(See Appendix A for complete organizational charts of the Southwest Region)

The boundaries of the Southwest Region encompass over 80 recognized tribal entities. Of that number, 20 tribes, located primarily in Arizona and New Mexico, rely almost exclusively on the fish produced by three Service hatcheries to support economically important recreational enterprises on tribal lands. Both warm water and cold-water species are sought by the tribes for their recreation programs, which in turn support vital economic development and natural resources management on tribal lands.

Unique aquatic species dependent upon habitats of the Southwest Region are considered to be some of the most imperiled in the nation. Given this dependence, the increasing development of surface and ground water sources to support both urban and rural growth in the West becomes critically important to the continued survival of many of these species. For many endangered species of fish, populations are currently small and concentrated in fragmented portions of Western rivers that are highly vulnerable to not just low flows but complete desiccation.

National Fish Hatcheries within the Southwest have become increasingly important as both short-term refuges for species in crisis and as long-term propagation and management facilities for these species. Over thirty species of listed fish, wildlife and plants are in hatchery care in the Southwest Region. Some of these captive populations are the only known-breeding individuals of their species. Yet, wild species cannot exist in isolation from their habitats.

Although management of aquatic systems can involve necessary actions, such as captive propagation, natural populations existing within healthy systems are the ultimate goals. Without habitat protection, we are the guardians of relict museum specimens of fish and other forms of aquatic life that have lost their place in the wild. Without stewardship of captive populations to ensure that we have species left, no amount of habitat protection will help. Thus, captive management and habitat conservation are equal and interdependent and are basically expressed in the two arms of the Fisheries Program in the Southwest - the units of the National Fish Hatchery System, including the Fish Health Center and the three Technology Centers, and the Fishery Resources Offices, each with state-wide responsibilities.

This duality and balance also exists with respect to our responsibility to work with both native and non-native species, to advise other federal, state, tribal, and private entities concerning the impacts of actions on aquatic systems, to recommend actions to restore and recover systems and species, and to support the partnerships with those entities in their resource management. The Southwest Region Fisheries Program utilizes both its branches and their unique and complementary abilities to achieve its mission.

Self-sustaining ecosystems can include both native and non-native species with appropriate management and balanced priorities. Management has to be developed within a framework that incorporates diverse activities, societal values, and biological realities. The priorities must also be developed within an objective weighing of multiple, and sometimes competing, public interests. In aquatic systems, the gathering and assessment of information necessary for management of species and habitat is conducted by the Fishery Resources Offices. These offices link habitat and population monitoring and assessment activities with the intensive, species-specific research and culture conducted within the National Fish Hatchery System to provide scientific understanding of the functioning of the system and the interactions of the species within it. This information is provided in four major arenas: monitoring the fate of hatchery-reared species released to the wild; consulting with other federal agencies whose actions may affect listed species within the basin; aiding private landowners as partners in

resource management plans; or working with tribal or state resource agencies in assessing and supporting resource management options.

The program is relied upon for its expertise as an active participant in the identification of solutions with habitat owners and managers. In the Southwest Region, exterior to the boundaries of the Service's National Wildlife Refuges, those habitat managers are primarily tribal sovereigns, federal agencies (National Park Service, U.S. Forest Service, Department of Defense, and Bureau of Land Management), or private landowners.

The restoration or rehabilitation of aquatic systems is an evolving discipline and one that may involve both on-site and off-site components. It may require the production of species for augmentation or restoration; it will certainly involve monitoring and adaptive management to adjust management actions to conditions as they change in response to those actions.

In support of the *Fisheries Vision* goals to recover listed species, protect and enhance native species, conserve aquatic communities, support tribal recreational fish programs, and assist federal agencies in mitigating project-related impacts to aquatic resources, we have set forth commitments expressed in this strategic plan as a Program of the Service and as a partner to state agencies, tribal governments, non-governmental organizations, and people of the Southwest. These commitments have been formulated after seeking the input of our partners and stakeholders across the Region and reflect our interpretation of how best we can serve the resources and our partners over the next five years.

External Factors and Future Growth

Despite our best efforts to anticipate and prepare for the future, various forces outside of our control could significantly alter our results over the next five years.

The commitments detailed in this strategic plan have been shaped within the very real context of budgetary restrictions experienced by the Fisheries Program nationally, and most particularly by the Southwest Region, over the past decade.

Our Fisheries Program, in concert with Washington Office program staff and managers, outlined a process in June 2001 to implement significant measures with respect to declining funding levels experienced by our stations. The efforts were directed toward one goal: to keep our Fisheries Program a viable tool in achieving the Service's mission of conservation. The agreements reached in 2001 were commitments to utilize every creative opportunity at both the Regional and National levels to maintain field offices at viable levels, and to actively seek sources of funding outside the Program and outside the Service.

Given the commitment to these steps toward solvency, it was also recognized by our workforce that Southwest Region Fisheries field stations could only go so long without committing base funding to filling critical positions. **We remain at the 50% vacancy level and are unable to fully commit to the level of assistance that has been requested of us.**

The Southwest Region Fisheries Program has formulated several Fisheries projects within its Fisheries Operating Needs System (FONS) database to support funding requests. Most notably, FONS projects have been developed for several significant commitments to emergency refugia operations and isolation facilities at all hatcheries in the Southwest Region—this is because all hatcheries in our Region have been identified by our partners as needed for emergency care of aquatic species endangered by long-term habitat or population loss or catastrophic conditions caused by drought and wildfire in the West. The FONS database has also been used to document priorities for aquatic habitat and species restorations in every state within the Southwest Region.

Notwithstanding the commitment to utilize every avenue available to keep Fisheries in the Southwest Region viable in future budgets, we face immediate significant challenges:

1. We have maintained the same level of full-time employees in the Region equivalent to those of two years past; we operate without half the necessary work force;
2. We continue to seek alternative funding for work we conduct from other programs of the Service and other agencies;
3. We have cut operations at every office to only those activities and commitments considered mission-critical.

Within these constraints, and in the face of these challenges, we still dedicate the Southwest Region Fisheries Program to achieving the objectives described in this strategic plan. We must forge new and stronger partnerships and find new ways to leverage additional funding in order to reach the highest level of commitment.

In order to conserve fisheries over the next five years, the Southwest Region Fisheries Program must build upon the Service's core mission, strategy, and strengths, despite these economic realities. This core challenge can be summarized best by this passage from the Department of Interior's (DOI's) strategic plan:

“No one knows, exactly, what's to come. Uncertainty is the single common denominator for all strategic planning. Success depends on preparing for that unpredictable future, building an organization with the vision, strategy, and strengths we will need to meet whatever tomorrow might bring.”

How to Use This Document

This is the Southwest Region's step-down strategic plan for implementing the national *Fisheries Vision*, and is an extension of the National Fisheries Program Strategic Plan, focusing specifically on the Southwest Region's strategy over the next five years. The primary purpose of this plan is to set forth specific performance measures that focus on outcomes and meaningfully reflect the purpose of the Southwest Region's Fisheries Program, and to propose ambitious annual and long-term performance targets for those measures. This plan is not intended to describe the condition of America's aquatic resources, or the Fisheries Program itself; for that information, the reader is referred to the *Fisheries Program Vision for the Future*.

Following the format of the *Fisheries Vision*, this document is structured to enable straightforward and realistic measurement of implementation and performance over the next five years. Under each of the seven focus areas, the *Fisheries Vision* provides eleven goals that express what the Fisheries Program will strive to achieve over the next five years. In this plan, each of those eleven goals is linked to “Strategic Goals,” “End Outcome Goals” and “Intermediate Strategies” from the DOI strategic plan to communicate the interrelationship and shared vision from the Fisheries Program level to the Department level. This is followed by national and regional level “Performance Measures”; conveying the specific operational measures the Southwest Region’s Fisheries Program will account for throughout the five-year plan. For each performance measure, ambitious targets have been established in order to meet the goals that the Program and its partners set forth in the *Fisheries Program Vision for the Future*.

Additional information and rationale is given under each performance measure in the tables in order to show the specific actions and reasoning behind the Southwest Region Fisheries Program targets. In some instances specific species are listed in the rationale. For additional rationale and detailed information about the targets, readers are referred to the regional contact located at the end of this document.

Narrative information is included under each of the goals to describe the goal purpose, goal achievement and strategies, and the program and budget changes required to achieve performance targets. While much can be achieved with existing resources and authority, the Program will be challenged to fully accomplish the goals and targets in this plan due to funding constraints, available expertise, programmatic responsibility and authority, and partner support.

Because of these challenges, implementation of this step-down plan requires assessing time, expertise, resources, and need in determining what extent the Southwest Region Fisheries Program will accomplish each goal and objective in this plan. Equally, within every focus area, we expand on what direction the Southwest Region Fisheries Program is committed in seeking additional means to accomplish all goals and objectives.

In developing this strategic plan, the Fisheries Program made a number of critical and defensible assumptions regarding key factors in the social and political environments. While some changes in these factors are inevitable, these assumptions must remain valid in order for the Fisheries Program to meet long-term goals.

- Americans place a high value on fish and their habitats, and consider them important national assets;
- Americans value recreational, commercial, and subsistence benefits derived from fish and their habitats, and use these resources in a manner that conserves natural resources;
- The American people will provide support to achieve the strategic goals of an effective, efficient Fisheries Program, including funds and cooperative participation in conservation activities.

Implementation and Evaluation

This strategic plan serves as a general contract between the Service and its partners, by identifying key actions the Service and its Fisheries Program will take in the interest of conserving America's fish and other aquatic resources and in sustaining the benefits those resources provide.

Implementation of this strategic plan will be accomplished through the development of annual performance plans and program budgets that link to the goals, objectives, strategies, and performance measures that have been identified within this document. Ambitious targets have been developed for each focus area in order to direct planning and management decisions.

Partners will be consulted as key decisions are made that affect the direction of the Fisheries Program. The Fisheries Program will use five criteria to decide which fishery activities, opportunities, and issues to address. The criteria are based on the identification of a federal role and a determination of whether or not the Fisheries Program is the most appropriate federal agency to fill the role. The Fisheries Program will weigh proposed and potential activities by:

- The strength of federal authority and responsibility;
- The extent to which our efforts will complement others in the fisheries and aquatic resource conservation community;
- The likelihood that our efforts will produce measurable resource results;
- The likelihood that our efforts will produce significant economic or social benefits; and
- The extent of partner support.

Determining the Southwest Region Fisheries Program's success in implementing this strategic plan will be based on regular monitoring of activities and evaluation of accomplishments. These monitoring and evaluation activities will supply information needed to fine-tune our priorities, annual performance plans, and Program budgets.

Equally as important is communication of successes and failures to our partners, stakeholders, Congress, and the Administration. The Southwest Region Fisheries Program will annually report on all performance activities and progress in achieving our strategic plan objectives. Reporting is accomplished in the form of monthly activity reports; accomplishments, initiatives, and upcoming events/hot issue items reported in the Service's Accomplishment Reporting System; through reports derived from meetings with our partners; and with each budget submission report on our Program activities.

FY2003-2008 Seven Strategic Focus Areas

PARTNERSHIPS AND ACCOUNTABILITY

A. Partnerships

| | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|
| Fisheries Outcome Goal (from the <i>Fisheries Vision</i>): Open, interactive communication between the Fisheries Program and its partners. | | | | | |
| DOI Strategic Goal: Protect the Nation's natural, cultural and heritage resources. | | | | | |
| DOI End Outcome Goal: Protect Cultural and Natural Heritage Resources. | | | | | |
| DOI Intermediate Strategy: Increase Partnerships, Volunteer Opportunities, and Stakeholder Satisfaction. | | | | | |
| Southwest Region Fisheries Long-Term Performance Goals: | | | | | |
| NFHS | | | | | |
| By September 30, 2008, establish 7 friends Groups in support of NFHS facilities. | | | | | |
| By September 30, 2008, report 4900 volunteer participation hours per year at NFHS facilities. | | | | | |
| Southwest Region Fisheries Annual Performance Goals: | | | | | |
| NFHS | | | | | |
| By September 30, 2004, establish 1 Friends Groups in support of NFHS facilities. | | | | | |
| By September 30, 2004, report 4050 volunteer participation hours per year at NFHS facilities. | | | | | |
| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| # of Friends Groups | 1 | 2 | 5 | 6 | 7 |
| Includes completion of Alchey/Williams Creek NFH, Inks Dam NFH, and Tishomingo NFH friends groups and four additional groups based on continued efforts in forging effective partnerships. | | | | | |
| # of volunteer participation hours | 4050 | 4200 | 4400 | 4600 | 4900 |
| Targets are approximations based on prior year estimates and expectation of increased resources in developing and maintaining volunteer support efforts throughout the region. | | | | | |

Goal Purpose

Partnerships are essential for effective fisheries conservation. Many agencies, organizations, and private individuals are involved in fisheries conservation and management, but no one can do it alone. Together, these partners and stakeholders combine efforts and expertise to tackle challenges facing fisheries conservation. Enhancing partnerships will enable the Program to leverage funding, identify strategies that can be embraced by a variety of interested citizens and groups, and create an environment of cooperation, consultation, and communication to conserve the Southwest Region's aquatic resources.

Goal Achievement and Strategies

To achieve the *Fisheries Vision* goal for Partnerships, the Southwest Region Fisheries Program will:

- **Develop and improve long-term partnerships with states, tribes, other federal agencies,**

non-governmental organizations, and other Service Programs to develop collaborative conservation strategies for aquatic resources.

The Program will meet annually with partners and stakeholders at the national and regional level to identify and resolve aquatic resource management problems, explore new management opportunities, maintain productive working relationships, and review resource results. Through meetings and other interaction, Fisheries will solicit feedback from partners and stakeholders, guiding the Program in future years.

The Program will leverage its funding and expertise through cooperative arrangements with partners and other Service programs to achieve common goals. The Program will work proactively within local communities to establish new “Friends Groups” that support the goals and purposes of Fisheries facilities. The Program will also develop, test, and employ new means of communicating with partners and stakeholders, such as electronic newsletters and web pages.

The Fisheries Program will involve communities, tribes, partners, customers, contractors, volunteers, and the interested public in carrying out its *Fisheries Vision*. By actively seeking input and feedback, the Fisheries Program will improve its programs, processes, plans, and practices.

The Program will also foster stronger working relationships with other Service programs. Effective cross-program collaboration increases efficiency by reducing duplication of effort, and increase effectiveness by addressing priorities in a coordinated manner. For example, the National Wildlife Refuge System, Habitat Conservation Program, and the Endangered Species Program help to conserve fish and aquatic habitat, and the Fisheries Program contributes significantly to fulfilling those programs’ responsibilities.

Program and Budget Changes to Meet Performance Targets

The Fisheries Program has begun an aggressive campaign to leverage its limited resources with those of potential partners for attaining aquatic resource conservation goals. For example, in FY 2003, the Mora NFH&TC received a grant from the Federation of Fly Fishers to develop naturalistic rearing techniques for the endangered Gila trout. Mora NFH&TC has also pursued an Intergovernmental Personnel Act agreement with the Arizona Game and Fish Department to share needed expertise and manpower.

The New Mexico Fishery Resources Office (NMFRO) has contracted with the U.S. Bureau of Reclamation, via the San Juan River Basin Recovery Implementation Program, to remove non-native channel catfish that prey upon native fish species and to stock them into tribal fishing lakes to offset stocking shortfalls from Service hatcheries. NMFRO also contracts with the U.S. Bureau of Reclamation to study habitat preferences of the endangered Rio Grande silvery minnow. This information will be applied to future habitat restoration projects. They have also received contracts for the augmentation and monitoring of the Rio Grande silvery minnow, which is resulting in major funding increases for this station as well for its partners.

Yet with these successes, a limitation in base (permanent) funding for new staff within the Southwest Regional Fisheries Program has slowed our ability to leverage the greatest

potential of partners in attaining aquatic resource conservation goals.

Secretary Norton's 4C's initiative calling for the DOI to work with its partners for conservation requires the Fisheries Program to greatly increase its coordination efforts. Additionally, the proliferation of conservation grants and contracts available to the Service offers opportunities for increased leveraging of Service funds. These factors reinforce the need for a full-time partnership coordinator (\$150,000 per year). This position would potentially leverage many times his or her salary in funds from other programs and organizations, which then could be used to support implementation for many of the ambitious activities described in this strategic plan.

B. Accountability

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| Fisheries Outcome Goal (from the <i>Fisheries Vision</i>): Effective measuring and reporting of the Fisheries Program's progress toward meeting short-term and long-term fish and other aquatic resource conservation goals and objectives |
| DOI Strategic Goal: Manage the Department to be highly skilled, accountable, modern, functionally integrated, citizen-centered and results-oriented. |
| DOI End Outcome Goals: Accountability; Customer Value |
| DOI Intermediate Strategies: Performance-Budget Integration; Performance/Process Improvement |

Goal Purpose

This plan is a new beginning for the Fisheries Program, but good beginnings are not the measure of success. What matters in the end are performance, results, and following through to completion on commitments made. By measuring our performance, setting targets, and reporting on results, the Fisheries Program seeks to establish a record of accountability and to truly integrate program performance and budgets. The Program will implement in letter and in spirit the *Government Performance and Results Act*, which mandates that federal programs pursue long-term and annual performance goals, and have appropriate performance measures in place to track progress.

Goal Achievement and Strategies

To achieve the *Fisheries Vision* goal for accountability, the Fisheries Program will:

- **Develop and implement performance measures to determine the efficiency and effectiveness of Fisheries Program resource activities and financial accountability.**

This regional strategic plan identifies key performance measures and related outputs that capture the core functions of the Fisheries Program. These measures gauge the Program's progress towards meeting objectives in the *Fisheries Vision*, meeting the Department's end outcome and intermediate outcome goals, and measuring the efficiency in which the Program operates.

With the completion of the 2003-2008 Department of the Interior Strategic Plan in September 2003, GPRA performance measures changed significantly. These changes affect

the Fisheries Program. Now guided by the *Fisheries Vision*, the Service strategic plan (not yet developed), and the Department strategic plan, the challenge for the Fisheries Program will be to develop, implement, and refine performance measures that track progress toward the diverse yet similar resource and other goals contained in each of these plans.

The Fisheries Program's long-term performance measures focus on outcomes and are intended to meaningfully reflect the purpose of the Program. The Fisheries Program will set ambitious targets and timeframes for the long-term measures, and utilize annual performance measures that demonstrate progress toward achieving the Program's long-term goals.

The performance measures in this regional strategic plan represent an important step in holding the Program accountable to its partners and stakeholders, the Administration, and the public. The measures will be improved over time as new information becomes available and gaps or inconsistencies are identified. For some of the new measures, the Program will set targets at a later date after establishing comprehensive baseline information.

Program and Budget Changes to Meet Performance Targets:

The Fisheries Program will use the Fisheries Information System (FIS) as the primary management tool to integrate its budget and performance, to set performance targets, and to measure its performance against the targets. FIS is a database to record resource needs and accomplishments by Fisheries field stations, and to organize them for regional and national reporting purposes.

Additional measures may be employed to further demonstrate incremental performance differences that would result from increases or decreases in requested funding. These additional measures will be drawn from the Fisheries Operating Needs System project plans, located within the FIS, of affected stations in the Southwest Region.

The interrelationship of goals, objectives, strategies, and performance measures has been a core concept in the development of this plan, gives direction to program activities, and forges the critical link with resource needs. This regional strategic plan is meant to be an iterative process and may need adjustments in some instances in order to generate continuity with annual performance planning.

The Service nationwide has been undergoing a comprehensive audit. Responding to audit data calls, questions and other demands have brought about added commitments in the Albuquerque Regional Fisheries Office. As a result, time has been taken away from normal duties in order to perform added commitments. This demand for staff time promises to continue indefinitely as the audit progresses from the real property inventory into other areas.

The Southwest Region Fisheries Program has identified a need to more accurately manage and report its physical facilities as well as manage an every increasing amount of data and information. The Program has to be able to track its assets and to maintain program information in a business-like manner. A GS-9 facility and database management specialist is needed (\$90,000). This person would allow time for key personnel to perform their normal programmatic oversight duties while devoting the time needed for these specific

functions.

AQUATIC SPECIES CONSERVATION AND MANAGEMENT

A. Native Species

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| Fisheries Outcome Goal (from the Vision): Self-sustaining populations of native fish and other aquatic resources that maintain species diversity, provide recreational opportunities for the American public, and meet the needs of tribal communities |
| DOI Strategic Goal: Protect the Nation's natural, cultural and heritage resources. |
| DOI End Outcome Goal: Sustain Biological Communities on DOI Managed and Influenced Lands and Waters in a Manner Consistent with Obligations Regarding the Allocation and Use of Water |
| DOI Intermediate Strategies: Manage populations to self-sustaining levels for specific species; Improve Information Base, Information Management and Technical Assistance; Provide effective interpretation and education programs |
| Southwest Region Fisheries Long-Term Performance Goals: <u>FWMA</u> By September 30, 2008, 33% of threatened or endangered species listed a decade or more are stabilized or improved, due in whole or in part to FWMA involvement. By September 30, 2008, 100% of candidate species are not listed as a result of conservation actions or agreements involving FWMA. By September 30, 2008, 19% of species of management concern are managed to self-sustaining levels due in whole or in part to FWMA involvement. By September 30, 2008, current condition (e.g. quantity and quality) and trend are known for 64% of populations managed or influenced by the Fisheries Program. By September 30, 2008, management plans are completed for 100% of populations managed or influenced by the Fisheries Program. <u>NFHS</u> By September 30, 2008, implement 41% of Recovery Plan production tasks for aquatic species (listed under the ESA) that involve NFHS production activities. By September 30, 2008, implement 100% of Fishery Management Plan production tasks for interjurisdictional and other trust species that involve NFHS production activities. By September 30, 2008, meet 100% of post-stocking survival targets as prescribed by Recovery Plans, for hatchery propagated listed species. By September 30, 2008, meet 100% of post-stocking survival targets as prescribed by Fishery Management Plans, for hatchery propagated depleted species. By September 30, 2008, .8% of DOI watershed units will have current wild fish health surveys. |
| Southwest Region Fisheries Annual Performance Goals: |

FWMA

By September 30, 2004, 12% of threatened or endangered species listed a decade or more are stabilized or improved, due in whole or in part to FWMA involvement.

By September 30, 2004, 50% of candidate species are not listed as a result of conservation actions or agreements involving FWMA.

By September 30, 2004, 0% of species of management concern are managed to self-sustaining levels due in whole or in part to FWMA involvement.

By September 30, 2004, current condition (e.g. quantity and quality) and trend are known for 14% of populations managed or influenced by the Fisheries Program.

By September 30, 2004, management plans are completed for 100% of populations managed or influenced by the Fisheries Program.

NFHS

By September 30, 2004, implement 33% of Recovery Plan production tasks for aquatic (species listed under the ESA) that involve NFHS production activities.

By September 30, 2004, implement 100% of Fishery Management Plan production tasks for interjurisdictional and other trust species that involve NFHS production activities.

By September 30, 2004, meet 0% of post-stocking survival targets as prescribed by Recovery Plans, for hatchery propagated listed species.

By September 30, 2004, meet 0% of post-stocking survival targets as prescribed by Fishery Management Plans, for hatchery propagated depleted species.

By September 30, 2004, .8% of DOI watershed units will have current wild fish health surveys.

| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|------|------|------|-------|-------|
| FWMA | | | | | |
| % of threatened or endangered species listed a decade or more that are stabilized or improved | 12% | 12% | 24% | 33% | 33% |
| | 4/33 | 4/33 | 8/33 | 11/33 | 11/33 |
| Alchesay-Williams Creek NFH: In cooperation with the AZFRO, improve the East Fork population of Apache trout annually. | | | | | |
| Arizona FRO: Through replications and stocking, will work with partners to improve populations of Apache trout, razorback sucker, bonytail chub, and Gila topminnow (4 of 18 listed species or 4 of 33 native species). Will work with numerous native species to stabilize conditions. Several populations (11 of 33) would likely be stable however; if drought conditions persist all populations will be negatively affected. | | | | | |
| New Mexico FRO: Stream renovations to remove nonnative salmonids in upper Gila River Basin planned to secure and expand existing population of Gila trout in Whiskey Creek and establish 6 new Gila trout populations. | | | | | |
| Oklahoma FRO: Continue to complete Fish Passage projects to improve leopard darter habitat. | | | | | |
| % of candidate species where listing is unnecessary as a result of conservation actions or agreements | 50% | 50% | 100% | 100% | 100% |
| | 1/2 | 1/2 | 2/2 | 2/2 | 2/2 |
| Arizona FRO: Conduct pond renovations in FY04 and FY05 in the Fossil Creek drainage for roundtail chub. Work with partners to prevent the need for | | | | | |

| | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <p>listing of roundtail chub.</p> <p>New Mexico FRO: Obtain three tribal agreements for Rio Grande cutthroat trout conservation by FY06.</p> | | | | | |
| <p>% of species of management concern managed to self-sustaining levels, in cooperation with affected states and others, as defined in approved management plans</p> <p>New Mexico FRO: Rio Grande cutthroat trout populations on tribal lands in the upper Rio Grande Basin will be protected from nonnative invasions and post-fire flooding impacts.</p> <p>Oklahoma FRO: (with Tishomingo NFH support) Arkansas River paddlefish currently managed at self-sustaining levels) Red River paddlefish self-sustaining by 2006; alligator gar projected status known and completed fishery management plan by FY07; paddlefish state-wide fishery management plan by FY06</p> | <p>0%</p> <p>0/16</p> | <p>0%</p> <p>0/16</p> | <p>6%</p> <p>1/16</p> | <p>19%</p> <p>3/16</p> | <p>19%</p> <p>3/16</p> |
| <p>% of populations managed or influenced by the Fisheries Program for which current condition (e.g., quantity and quality) and trend is known</p> <p>Arizona FRO: Work with partners throughout the Gila, Colorado, and Yaqui river basins to determine current conditions and trends. Includes species such as razorback sucker (Lakes Mohave and Havasu), humpback chub (Grand Canyon), Gila topminnow (Bylas Springs), Apache trout (3 populations on the Fort Apache Indian Reservation), Yaqui chub (El Coronado Ranch), Yaqui catfish (El Coronado Ranch), flannelmouth sucker (Grand Canyon), bluehead sucker (Grand Canyon), Gila chub (2 populations on the San Carlos Apache Reservation), and speckled dace (Grand Canyon, 2 populations on the San Carlos Apache Reservation).</p> <p>New Mexico FRO: Cooperate with partners in the Pecos, San Juan, Upper Gila, Canadian, and Rio Grande basins to evaluate conditions and trends of resident native and nonnative species. Species are Gila and Rio Grande trouts (headwaters of Upper Gila and Rio Grande basins), Colorado pikeminnow and razorback sucker (San Juan), Rio Grande silvery minnow, Pecos fishes: Pecos bluntnose shiner, Pecos gambusia, Pecos pupfish, Arkansas River shiner (Canadian)</p> | <p>14%</p> <p>18/126</p> | <p>30%</p> <p>18/126</p> | <p>36%</p> <p>45/126</p> | <p>48%</p> <p>60/126</p> | <p>64%</p> <p>80/126</p> |
| <p>% of populations managed or influenced by the Fisheries Program with approved management plans (e.g., Recovery Plans, Restoration Plans, Fishery Management Plans, etc.)</p> <p>Arizona FRO: All 18 species of fish listed in AZ have approved Recovery Plans. Currently working with partners to revise the Apache Trout Recovery Plan.</p> <p>New Mexico FRO: Listed species worked on have approved recovery plans. Management and restoration plans either currently exist or are being developed for relevant native and/or sport species.</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> |

| | | | | | |
|--|-------|-------|-------|-------|-------|
| NFHS | 33% | 36% | 40% | 41% | 41% |
| % of Recovery Plan production tasks implemented (PART) | 19/58 | 21/58 | 23/58 | 24/58 | 25/58 |
| <p>Alchesay/Williams Creek NFH: Dependent on the successful revision of the draft Apache trout Recovery Plan to include detailed hatchery production tasks.</p> <p>Dexter NFH&TC: Includes razorback sucker (1998) Sections 1.4 & 2.6; Chihuahua chub (1986) Sections 2.0 & 4.0; woundfin, Virgin River fishes (1978) Section 1.3; Colorado pikeminnow (1978) Sections 3.0 & 3.1; Bonytail chub (1984) Section 1.3; Rio Grande silvery minnow (1999) Sections 2.0 & 2.8; In 2005 we will add the Pahranaqat roundtail chub Recovery Plan, 1986 Section 1.0.</p> <p>Mora NFH&TC: Includes refugia for three Gila trout lineages and production of 5,000 stocked per year.</p> <p>Willow Beach NFH: Includes production of razorback and bonytail according to the appropriate recovery plans.</p> | | | | | |
| % of post-stocking survival targets met, as prescribed by Recovery Plans, for hatchery propagated listed species (PART) | 100% | 100% | 100% | 100% | 100% |
| | 7/7 | 7/7 | 7/7 | 7/7 | 7/7 |
| <p>Alchesay/Williams Creek: All post stocking survival targets will be met annually when prescribed by Recovery Plans.</p> <p>Dexter NFH&TC: Rio Grande silvery Minnow; There is only one post stocking survival target identified, no specific numbers have been identified because the desired result is to maximize survival.</p> | | | | | |
| % of Fishery Management Plan production tasks implemented (PART) | 0% | 100% | 100% | 100% | 100% |
| | 0/7 | 15/15 | 21/21 | 27/27 | 33/33 |
| <p>Inks Dam NFH: Produce and stock Gulf Coast striped Bass in accordance with the Gulf Coast Bass Fishery Management Plan. Assist Tishomingo with paddlefish production tasks; implemented, as fry are available.</p> <p>Tishomingo NFH: Produce and stock paddlefish in accordance with Lake Texoma Paddlefish Management Plan.</p> | | | | | |
| % of post-stocking survival targets met, as prescribed by Fishery Management Plans, for hatchery propagated depleted species (PART) | 0% | 100% | 100% | 100% | 100% |
| | 0/7 | 15/15 | 21/21 | 27/27 | 33/33 |
| <p>Alchesay/Williams Creek NFH: Currently no post stocking survival targets exist in the Apache Trout Fishery Management Plan. Will meet all targets as they are prescribed.</p> <p>Dexter NFH&TC: Rio Grande silvery Minnow; There is only one post stocking survival target currently identified, no specific numbers have been identified because the desired result is to maximize survival.</p> | | | | | |
| % DOI watershed units with current wild fish health surveys (PART) | .8% | .8% | .8% | .8% | .8% |
| | 3/385 | 3/385 | 3/385 | 3/385 | 3/385 |
| <p>Pinetop FHC: Actual geographic HUCs to be determined in cooperation with partners.</p> | | | | | |

| Supporting Workload Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
|--|-------|-------|-------|-------|-------|
| FWMA | | | | | |
| % of technical assistance requests fulfilled on DOI managed and influenced lands and waters | 74% | 74% | 80% | 84% | 88% |
| Numerators and denominators defined by approximating all fishery resource offices receiving requests and are based on past performance and the expectation that additional resources will increase the amount of assistance requests fulfilled. | 17/23 | 17/23 | 20/25 | 21/25 | 22/25 |
| # of management plans in development, completed, or revised | 7 | 7 | 21 | 27 | 33 |
| Arizona FRO: Will complete fishery management plans for San Carlos Apache, Kaibab Paiute, and Hopi. FY05 - Ft. McDowell & Salt River Pima-Maricopa. FY06 - Colorado River Indian tribes & Navajo Nation. FY07 - Ft. Mojave, Chemehuevi, Yavapai Apache, & Quechan. FY08 - White Mountain Apache, Hualapai, Tohono O'Odham, & Gila River Indian tribes. New Mexico FRO: All FWS stockings in NM currently covered by Management Plans and Intra-Service Section 7 consultations. Three tribal management plans (Santa Clara, Taos, Nambe) are under revision. Oklahoma FRO: Will be completed as requested. | | | | | |
| <i>Status and Trends</i> : # of population assessments completed | 4 | 4 | 15 | 22 | 29 |
| Arizona FRO: Will assess and establish trends for razorback sucker (Lakes Mohave and Havasu), humpback chub (Grand Canyon), Gila topminnow (Bylas Springs), Apache trout (3 populations on the Fort Apache Indian Reservation), Yaqui chub (El Coronado Ranch), Yaqui catfish (El Coronado Ranch), flannelmouth sucker (Grand Canyon), bluehead sucker (Grand Canyon), Gila chub (2 populations on the San Carlos Apache Reservation), and speckled dace (Grand Canyon, 2 populations on the San Carlos Apache Reservation). New Mexico FRO: Population status surveys will be conducted for Pecos River fishes affected by federal reservoir operations, Rio Grande fish community associated with Rio Grande silvery minnow stockings, San Juan River fish community, upper Gila River Basin stream fish communities, and spring/sinkhole fish populations at Bitter Lake NWR. San Marcos NFH&TC: Will assist with assessment of fountain darter populations in the San Marcos and Comal rivers. | | | | | |

| | | | | | |
|---|------------|---------------|---------------|---------------|---------------|
| <p>NFHS</p> <p># of fish and aquatic animal populations that are held in refugia</p> <p>Uvalde NFH: Includes fountain darter, Texas wild rice, Yaqui catfish, and Comanche Springs pupfish</p> <p>Dexter NFH: Includes Big Bend Gambusia, Gila Topminnow, Leon Springs pupfish, desert pupfish, Comanche Springs pupfish, razorback sucker, Guzman beautiful shiner, Chihuahua chub, woundfin, Colorado pikeminnow, bonytail, Cirgin River chub, Rio Grande silvery minnow, Pecos blintnose shiner, Pahrnagat roundtail chub</p> <p>San Marcos NFH&TC: Includes fountain darter, San Marcos salamander, Texas blind salamander, Comal Springs salamander, Comal Springs riffle beetle, Barton Springs salamander, Devils River minnow.</p> | 25 | 27 | 30 | 30 | 30 |
| <p># of aquatic plant populations that are held in refugia</p> <p>San Marcos NFH&TC: Includes maintaining captive stock of Texas wild rice plants.</p> | 1 | 1 | 1 | 1 | 1 |
| <p>% of marking and tagging targets met, as prescribed by approved management plans</p> <p>Alchesay/Williams Creek NFH: Will meet all marking and tagging targets as they are prescribed.</p> <p>Dexter NFH&TC: All Rio Grande Silvery minnow reared or produced at the facility will have an individual or batch mark prior to leaving the facility for augmentation. Wire, VIE and calcein marking will be used.</p> | 0% 0/7 | 100% 15/15 | 100% 21/21 | 100% 27/27 | 100% 33/33 |
| <p>% of NFHS stations scheduled for Condition Assessments on a 5-year cycle basis that have had those assessments completed</p> <p>Inks Dam NFH: Condition Assessment completed in FY2003.</p> <p>San Marcos NFH&TC: Condition Assessment scheduled for FY2004.</p> <p>Uvalde NFH: Condition Assessment scheduled for FY2005.</p> <p>Tishomingo NFH: Condition Assessment completed in FY2003.</p> <p>Dexter NFH&TC: Condition Assessment completed in FY2003.</p> <p>Mora NFH&TC: Condition Assessment scheduled for FY2004.</p> <p>Willow Beach NFH: Condition Assessment completed in FY2001.</p> <p>Alchesay/Williams Creek NFHs: Condition Assessments completed in FY2002.</p> | 75% 6/8 | 100% 8/8 | 100% 8/8 | 100% 8/8 | 100% 8/8 |

Goal Purpose

Fish and other aquatic species are of recreational, cultural, and economic importance to Americans. Currently, 115 species of fish, 19 species of amphibians, 70 species of mussels,

and 21 species of crustaceans are listed as threatened or endangered under the *Endangered Species Act*. Many unlisted species are also in decline. Many populations of the remaining self-sustaining species are at risk to the same threats that have contributed to declines in other species elsewhere. Achievement of this goal will contribute to restoration and recovery of listed and unlisted species and their ecosystems; keep self-sustaining populations in a healthy state; provide for increased recreational opportunities; provide benefits to tribal communities; and allow more flexible land, water and species management.

Goal Achievement and Strategies

To achieve the Fisheries Vision goal for Native Species, the Fisheries Program will:

- **Recover fish and other aquatic resource populations protected under the *Endangered Species Act*.** The Southwest Region Fisheries Program will work with the tribes, states, NGOs and other federal agencies to increase local and regional efforts in planning and implementing actions to help recover threatened and endangered aquatic species. This effort will involve assessing status of populations and habitats, preparing recovery plans where needed, defining specific recovery priorities to reduce threats, holding populations in refugium, producing required numbers for repatriation, implementing population and habitat restoration projects, and monitoring to evaluate the success of recovery actions.
- **Restore declining fish and other aquatic resource populations before they require listing under the *Endangered Species Act*.** The Southwest Region Fisheries Program will achieve this objective by working with partners to: identify declining fish and other aquatic species and their associated threats; assess population and habitat condition trends; identify incomplete restoration and management plans and complete them; prioritize habitat restoration and rehabilitation projects; and implement priority projects including fish production, fish passage, habitat restoration and enhancement, monitoring and evaluation.
- **Maintain diverse, self-sustaining fish and other aquatic resource populations.** The Southwest Region Fisheries Program will increase its participation in collaborative efforts to monitor the status of self-sustaining native fish and other aquatic species and identify threats to those populations, complete necessary management plans, identify and implement priority actions to reduce and monitor the threats, and manage to sustainable levels in cooperation with states and other partners as defined in management plans.

These goals represent increased emphasis from a decade ago on restoration and recovery of native fishes and their habitats. To accomplish them, the Fisheries Program will need to work more closely with old and new partners, especially the Ecological Services program, to leverage funding, develop priorities, and maximize efficiencies.

Spotlight on Native Species

The Southwest Region Fisheries Program assists the White Mountain Apache tribe in restoring the Apache trout and its habitat, a project started by the tribe in the 1940s. The Program provides technical assistance to the tribe, helps to remove non-native fishes that compete with Apache trout, and propagates Apache trout for out-planting into its native range. Once listed as “endangered” and facing extinction, the Apache trout has been up-graded to “threatened” and is near full recovery.

Program and Budget Changes to Meet Performance Targets:

Continued drought, unprecedented demands of water for municipal and agricultural use, and other factors in the Southwest are jeopardizing the continued existence of many fishes and other aquatic species. This conflict over water has resulted in numerous lawsuits and petitions for listing additional aquatic species. The current trend foresees more species becoming imperiled. Federal, state and non-governmental agencies look to the Service to provide a safe haven to these populations until they can return to the wild. Virtually every national fish hatchery in the Southwest Region has been identified to serve in this capacity. In order to do so, additional facilities, staff, and funding are needed.

Fish isolation facilities need to be constructed (\$1.55 million each - Construction funds) at each hatchery. These isolation units are to be built on a remote part of the hatchery. Each facility would enable up to four wild species, of unknown disease status, to be rescued and brought onto the hatchery for one to several years, without jeopardizing other hatchery populations already on station. In addition, one biologist plus operating funds (\$150,000 per year) would be required to research how to culture each species, which likely has never been held in captivity before.

Major funding is needed to meet identified species recovery needs (See Appendix C). Staffing is needed to work with the increasing number of listed and imperiled aquatic species, both in the wild and in captivity. Some species, such as the Gila trout and Apache trout, are very close to being down-listed to Threatened or recovered and removed from the Endangered Species list.

Funding would result in additional sustained species management of the native Guadalupe bass, the Texas state fish, at Inks Dam, San Marcos and Uvalde facilities. Uvalde and San Marcos stations pump their water from the Edwards Aquifer. In order to comply with the current biological opinion barring first-use water for sport fish production at Edwards Aquifer, \$2,500,000 would be needed to construct a water reuse system at each hatchery plus \$150,000 annually at each station for staff, electricity and other operating expenses.

B. Aquatic Nuisance Species

Fisheries Outcome Goal (from the Vision): Risks of aquatic nuisance species invasions are substantially reduced, and their economic, ecological, and human health impacts are minimized.

DOI Strategic Goal: Protect the Nation’s natural, cultural and heritage resources.

DOI End Outcome Goal: Sustain Biological Communities on DOI Managed and Influenced Lands and Waters in a Manner Consistent with Obligations Regarding the Allocation and Use of Water

DOI Intermediate Strategies:

Create habitat conditions for biological communities to flourish

Improve information base, information management, and technical assistance

Southwest Region Fisheries Aquatic Nuisance Species Long-Term Performance Goals:

- ◆ By September, 2008, annually conduct 50 risk assessments to evaluate potentially invasive species
- ◆ By September, 2008, annually conduct 42 surveys for early detection of aquatic invasive species
- ◆ By September, 2008, annually control/manage 11 aquatic nuisance species populations
- ◆ By September, 2008, annually support 10 state/interstate management plans to prevent and control aquatic nuisance species

Southwest Region Fisheries Aquatic Nuisance Species Annual Performance Goals:

- ◆ By September, 2004, annually conduct 41 risk assessments to evaluate potentially invasive species
- ◆ By September, 2004, annually conduct 38 surveys for early detection of aquatic invasive species
- ◆ By September, 2004, annually control/manage 8 aquatic nuisance species populations
- ◆ By September, 2004, annually support 2 state/interstate management plans to prevent and control aquatic nuisance species

| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
|--|-------------|-------------|-------------|-------------|-------------|
| <p># of risk assessments conducted</p> <p>HACCP plans are risk assessments to prevent introductions. These targets represent the number of Region 2 HACCP plans to be posted on the HACCP website (http://haccp-nrm.org).</p> | 41 | 44 | 46 | 48 | 50 |
| <p># of surveys conducted for early detection</p> <p>Surveys will be part of ongoing surveys conducted by the fishery resource offices throughout the Southwest. The targets estimate 1/10th of 385 HUCs in Region 2 currently surveyed.</p> | 38 | 38 | 40 | 41 | 42 |
| <p># of aquatic nuisance species populations controlled/managed</p> <p>San Marcos NFH&TC: Includes reduction of <i>cryptocoryne beckettii</i> in the San Marcos River and dredging to remove small patches of recently introduced exotic plant species from critical habitats in Central and West Texas.</p> | 8 | 8 | 9 | 10 | 11 |
| Supporting Workload Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| <p># of activities conducted to address priority pathways</p> <p>Activities to include: meetings directed at a specific pathway, developing watch cards, support for websites, boat ramp signs count by state, surveys, HACCP website, workshops, course development, etc.</p> | 10 | 10 | 11 | 11 | 12 |
| <p># of activities conducted to support the management/control of aquatic invasive species</p> <p>Activities to include: developing, sponsoring, and guiding websites used to coordinate management & control.</p> | 12 | 13 | 13 | 14 | 14 |

| | | | | | |
|--|----|----|----|----|----|
| # of outreach/education activities conducted Activities to include: formal presentations, distribution of material, radio and TV interviews, published articles in professional peer-reviewed journals, magazines and web pages. | 6 | 6 | 7 | 7 | 8 |
| # of formal partnerships Targets represent various river basins in the 100th Meridian effort to include: Colorado, Columbia El Dorado Team, 100th Meridian states, Lower Colorado River Giant Salvinia Team. | 1 | 2 | 3 | 4 | 5 |
| # of technical assistance/coordination activities conducted Routine checks of FWS hatchery fish shipments by FRO's will be conducted to avoid transfer/stocking of non-intended aquatic organisms (fish, amphibians, mollusks). | 9 | 10 | 10 | 11 | 11 |
| # of surveys conducted for baseline/trend information Surveys will be part of ongoing surveys conducted by the Fishery Resource Offices throughout the Southwest. The targets estimate 1/10th of 385 HUCs in Region 2 currently surveyed. | 38 | 38 | 40 | 41 | 42 |

Goal Purpose

Aquatic nuisance species are nonnative plants and animals that threaten the diversity or abundance of native aquatic species, the ecological stability of infested waters, or the commercial, agricultural, and recreational activities dependent on those waters. These nonnative introductions are second only to habitat alteration as a factor in the decline of native aquatic species in North America. New introductions and the spread of already established invasive species have the potential to add to these declines and hinder efforts to restore already depleted and listed native species.

Goal Achievement and Strategies

Under the provisions of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (as amended, National Invasive Species Act, 1996), the Service’s primary role with aquatic invasive species focuses on coordination and integration of activities to prevent and control aquatic invasives. The Service uses its Aquatic Nuisance Species Program to focus on the core elements of prevention, detection and monitoring, and control as well as the supporting elements of outreach and education, research, and technical assistance.

To achieve the Fisheries Vision goal for aquatic nuisance species, the Fisheries Program will:

- **Prevent new introductions of aquatic nuisance species.** The Southwest Region Fisheries Program will increase its leadership role in collaborative efforts to implement activities and programs that prevent the establishment of aquatic nuisance species.
- **Minimize range expansion and population growth of established aquatic nuisance species.** The Southwest Region Fisheries Program will expand its role in

partnership efforts by developing methods and conducting programs designed to prevent the spread of aquatic nuisance species to new locations and limit growth of established populations.

Spotlight on Aquatic Nuisance Species

The Southwest Region Fisheries Program has initiated the Hazard Analysis and Critical Control Point (HACCP) program. Every field station has developed and implemented HACCP plans for all of their activities to control the accidental spread of aquatic nuisance species. The HACCP process analyzes every step of an activity, such as out-planting fish, to identify those points where spread of non-target species can be stopped. The Region is also teaching this process to other natural resource agencies.

Program and Budget Changes to Meet Performance Targets:

Aquatic nuisance species impact to resources and users continues to increase. Aquatic invasive species concerns in the Southwest Region have dramatically increased from preventing zebra mussel spread to include controlling giant salvinia, responding to brown tree snake threats, controlling New Zealand mudsnails, and others. The most effective strategies to decrease impacts and reduce the threat to Southwestern waters include education to prevent spread, monitoring through surveys to know when new species are introduced and creating collaborative rapid-response teams to respond as quickly as possible to new invasions for eradication or containment.

Funding is needed to increase outreach and education efforts across a broad audience with a consistent message describing the problem and how they can help. Each state in the Southwest Region will need to establish a network of knowledgeable people to monitor their waters using pooled survey information collected in routine operations along with spot surveys to cover all state waters each year. This data would be reviewed with historical data to identify invasive species so that rapid-response teams can respond. Additional changes needed include: establishing multi-agency, multi-specialty rapid response teams in each state; a comprehensive outline of contacts and requirements for each state that can be readily accessed to guide rapid-response procedures; purchase control equipment that is easily dispatched; and maintain a fund reserved for chemicals needed to contain or eradicate new invasions.

C. Interjurisdictional Fisheries

| | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|
| Fisheries Outcome Goal (from the Vision): Interjurisdictional fish populations are managed at self-sustaining levels. | | | | | |
| DOI Strategic Goal: Protect the Nation's natural, cultural and heritage resources. | | | | | |
| DOI End Outcome Goal: Sustain biological communities on DOI managed and influenced lands and waters in a manner consistent with obligations regarding the allocation and use of water | | | | | |
| DOI Intermediate Strategies: Manage populations to self-sustaining levels for specific species; Improve information base, information management, and technical assistance | | | | | |
| Southwest Region Fisheries Long-Term Performance Goals: | | | | | |
| FWMA By September 30, 2008, 19% of species of management concern are managed to self-sustaining levels due in whole or in part to FWMA involvement. By September 30, 2008, current condition (e.g. quantity and quality) and trend are known for 64% of populations managed or influenced by the Fisheries Program. By September 30, 2008, management plans are completed for 100% of populations managed or influenced by the Fisheries Program. | | | | | |
| Southwest Region Fisheries Annual Performance Goals: | | | | | |
| FWMA By September 30, 2004, 0% of species of management concern are managed to self-sustaining levels due in whole or in part to FWMA involvement. By September 30, 2004, current condition (e.g. quantity and quality) and trend are known for 14% of populations managed or influenced by the Fisheries Program. By September 30, 2004, management plans are completed for 100% of populations managed or influenced by the Fisheries Program. | | | | | |
| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| % of species of management concern managed to self-sustaining levels, in cooperation with affected states and others, as defined in approved management plans | 0% 0/16 | 0% 0/16 | 6% 1/16 | 19% 3/16 | 19% 3/16 |
| <p>New Mexico FRO: Rio Grande cutthroat trout populations on tribal lands will be managed and protected from impacts associated with nonnative salmonids and wildfire flooding.</p> <p>Oklahoma FRO: (with Tishomingo NFH support) Arkansas River paddlefish currently managed at self-sustaining levels) Red River paddlefish self-sustaining by 2006; alligator gar projected status known and completed fishery management plan by FY07; paddlefish state-wide fishery management plan by FY06</p> | | | | | |

| | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <p>% of populations managed or influenced by the Fisheries Program for which current condition (e.g., quantity and quality) and trend is known</p> <p>Arizona FRO: Works with partners throughout the Gila, Colorado, and Yaqui river basins to determine current conditions and trends. Includes species such as razorback sucker (Lakes Mohave and Havasu), humpback chub (Grand Canyon), Gila topminnow (Bylas Springs), Apache trout (3 populations on the Fort Apache Indian Reservation), Yaqui chub (El Coronado Ranch), Yaqui catfish (El Coronado Ranch), flannelmouth sucker (Grand Canyon), bluehead sucker (Grand Canyon), Gila chub (2 populations on the San Carlos Apache Reservation), and speckled dace (Grand Canyon, 2 populations on the San Carlos Apache Reservation).</p> <p>New Mexico FRO: Ongoing collaborative efforts will be continued, including participation in technical and recovery committees guiding research and management activities in the San Juan, Pecos, upper Gila, and Rio Grande basins.</p> | <p>14%</p> <p>18/126</p> | <p>30%</p> <p>18/126</p> | <p>36%</p> <p>45/126</p> | <p>48%</p> <p>60/126</p> | <p>64%</p> <p>80/126</p> |
| <p>% of populations managed or influenced by the Fisheries Program with approved management plans (e.g., Recovery Plans, Restoration Plans, Fishery Management Plans, etc.)</p> <p>Arizona FRO: All 18 species of fish listed in AZ have approved Recovery Plans. Currently working with partners to revise the Apache Trout Recovery Plan.</p> <p>New Mexico FRO: Direct participation in recovery actions identified in recovery plans for Gila trout, Rio Grande silvery minnow, and Pecos bluntnose shiner.</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> | <p>100%</p> <p>18/18</p> |
| Supporting Workload Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| <p>% of technical assistance requests fulfilled on DOI managed and influenced lands and waters</p> <p>The numerators and denominators defined were approximated by fishery resource offices receiving requests and are based on past performance and the expectation that additional resources will increase the amount of assistance requests fulfilled.</p> | <p>74%</p> <p>17/23</p> | <p>74%</p> <p>17/23</p> | <p>80%</p> <p>20/25</p> | <p>84%</p> <p>21/25</p> | <p>88%</p> <p>22/25</p> |
| <p># of management plans in development, completed, or revised</p> <p>Arizona FRO: Will complete fishery management plans for San Carlos Apache, Kaibab Paiute, and Hopi. FY05 - Ft. McDowell & Salt River Pima-Maricopa. FY06 - Colorado River Indian tribes & Navajo Nation. FY07 - Ft. Mojave, Chemehuevi, Yavapai Apache, & Quechan. FY08 - White Mountain Apache, Hualapai, Tohono O'Odham, & Gila River Indian tribes.</p> <p>New Mexico FRO: Under the current schedule for revision of existing management plans, revisions will be completed for Santa Clara, Taos, and Nambe pueblos.</p> | <p>7</p> | <p>7</p> | <p>21</p> | <p>27</p> | <p>33</p> |

| | | | | | |
|---|---|---|----|----|----|
| <i>Status and Trends:</i> # of population assessments completed | 4 | 4 | 15 | 22 | 29 |
| <p>Arizona FRO: Will assess and establish trends for razorback sucker (Lakes Mohave and Havasu), humpback chub (Grand Canyon), Gila topminnow (Bylas Springs), Apache trout (3 populations on the Fort Apache Indian Reservation), Yaqui chub (El Coronado Ranch), Yaqui catfish (El Coronado Ranch), flannelmouth sucker (Grand Canyon), bluehead sucker (Grand Canyon), Gila chub (2 populations on the San Carlos Apache Reservation), and speckled dace (Grand Canyon, 2 populations on the San Carlos Apache Reservation).</p> <p>New Mexico FRO: Annual population assessments will be completed for resident fish communities in San Juan, Pecos, upper Gila, and Rio Grande basins.</p> | | | | | |

Goal Purpose

Responsibility for managing native, interjurisdictional fisheries in the United States is assigned by many laws, treaties, and court orders, but follows no single implementation model across the Nation. Imposing political or jurisdictional boundaries upon living organisms that freely move across these boundaries is a fundamental challenge for interjurisdictional fisheries managers. Shared or overlapping responsibilities have resulted in confusion regarding the federal role in management of interjurisdictional coastal species in the majority of Service Regions. This has led to a lack of management for some species, and management conflicts for others. Success is predicated on a collaborative and coordinated approach between the government entities that share management responsibilities. Increased resource inputs that better foster collaboration between jurisdictional agencies will significantly improve management-related outcomes.

Goal Achievement and Strategies

To achieve the Fisheries Vision goal for Interjurisdictional Fisheries, the Fisheries Program will:

- **Co-manage interjurisdictional fisheries.** The Southwest Region Fisheries Program will improve co-management primarily through increased participation in fishery management councils, commissions, and other associations. This will require a thorough review of existing policy and technical assistance roles. This review will identify areas where jurisdictional conflicts are hindering management, and further define the scope of staffing, training, and equipment needs required for support and facilitation. This will also entail reopening the Texas Fishery Resources Office and expanding several field offices. Coordinating management activities through these entities will also provide a forum for identifying and implementing measures to eliminate violations and noncompliance by commercial and private interest aquaculture operations.
- **Support, facilitate, or lead collaborative approaches to manage interjurisdictional fisheries.** The Southwest Region Fisheries Program will increase its involvement in collaborative approaches by: developing enhanced expertise in

population genetics, fish health, populations dynamics, and disseminating this expertise to others via workshops and scientific meetings; identifying, prioritizing, and resolving information gaps and deficiencies in understanding mechanisms limiting and threatening fish abundance; developing and implementing innovative measures to eliminate or mitigate habitat loss and perturbation, disease, over harvest, genetic impairment, and other threats; and developing and implementing genetic and disease management plans.

Program and Budget Changes to Meet Performance Targets

The Southwest Regional Fisheries Program has been invited to participate in numerous fishery management councils created to manage interjurisdictional fisheries. The limited availability of Fisheries staff and travel funds limit participation to just a few councils.

Funding is needed to reopen the Texas Fishery Resources Office so it can participate in the Gulf State Marine Fisheries Commission, Gulf of Mexico Fisheries Management Council, and several bay and estuary programs along the Texas Coast (\$250,000). In addition, a biologist is needed at the one-man Oklahoma Fishery Resources Office to represent the Southwest Region on the Mississippi Interstate Cooperative Resource Association (MICRA) and in the High Plains Partnership (\$150,000 per year).

PUBLIC USE

A. Recreational Fishing

| | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|
| Fisheries Outcome Goal (from the Vision): Quality opportunities for responsible fishing and other related recreational enjoyment of aquatic resources on Service lands, on tribal and military lands, and on other waters where the Service has a role. | | | | | |
| DOI Strategic Goal: Provide recreation opportunities for America | | | | | |
| DOI End Outcome Goal: Provide for a Quality Recreation Experience, including Access, and Enjoyment of Natural and Cultural Resources on DOI Managed and Partnered Lands and Waters. | | | | | |
| DOI Intermediate Strategies: Promote Recreational Opportunities. Enhance the Quality of Recreation Opportunities. Provide Effective Interpretation and Education Programs. | | | | | |
| Southwest Region Fisheries Long-Term Performance Goals: NEHS By September 30, 2008, maintain 100% of public use assets in good or fair condition as measured by the DOI FCI, using total repair and replacement values. | | | | | |
| Southwest Region Fisheries Annual Performance Goals: NEHS By September 30, 2004, maintain 67% of public use assets in good or fair condition as measured by the DOI FCI, using total repair and replacement values. | | | | | |
| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |

| | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|
| # of visitors to NFHS facilities Estimates based on prior year visitation rates to all field stations with the expectation of continued public interest. | 27000 | 27000 | 27200 | 28200 | 28200 |
| Supporting Workload Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| # of aquatic outreach and education events Targets represent a number of outreach and education events proposed in the Southwest over the next five years. Examples include: Dexter NFH (FY04-08): Environmental Education Program sponsored by Lincoln National Forest: water conservation, quality and monitoring with NM MESA: environmental /science education with Dexter ISD. Arizona FRO (FY04-08): creel surveys, databases, and sampling techniques. Oklahoma and New Mexico FROs have also reported they will accomplish outreach and education events during this period. | 13 | 13 | 41 | 57 | 74 |
| Index of productivity for rainbow trout production cost/lb, adjusted for inflation and quality, as an efficiency measure for recreation (baseline = 1) Alchessay/Williams Creek NFH: Achieve a rainbow trout production efficiency index of 1 or greater for FY 2004-2008, as per "A Hatchery Efficiency Measure For Rainbow Trout Produced by the National Fish Hatchery System", USFWS November 2003. | 1.01 | 1.02 | 1.03 | 1.04 | 1.05 |

Goal Purpose

The Fisheries Program has a long history of providing scientific information and services that benefit recreational fisheries on Service lands, on tribal and military lands, and on other waters where the Service has a federal role. Today, an estimated 35 million American anglers generate approximately \$70 billion in economic outputs, and about 1,600,000 people visit our National Fish Hatcheries each year. The Fisheries Program will continue its contributions toward meeting the public's interest in fisheries conservation and quality angling experiences.

Goal Achievement and Strategies

To achieve the Fisheries Vision goals for Recreational Fisheries, the Fisheries Program will:

- **Enhance recreational fishing opportunities on Service and Department of Defense lands.** The Southwest Region Fisheries Program will continue to work with state agencies, tribes, and NGOs to promote recreational fishing opportunities on Service and other federal lands. The Program will assist National Wildlife Refuges and military installations to develop and update comprehensive conservation plans and fishery management plans to include enhancing recreational fishing opportunities, and increase access to fishing sites on Service lands.
- **Provide support to states, tribes, and other partners to identify and meet shared or complementary recreational fishing and aquatic education and outreach objectives.** The Southwest Region Fisheries Program will seek to expand its

capabilities for conducting and supporting educational and outreach events (e.g., National Fishing and Boating Week, scouting jamborees, local festivals, local fairs) to promote the value and benefits of recreational fishing.

- **Recognize and promote the value and importance of recreational fishery objectives in implementation of other Service responsibilities.** The Southwest Region Fisheries Program will provide increased assistance to tribes, states, partners, and other stakeholders to promote outreach and educational activities and distribute information materials that describe the value and importance of recreational fishing to the American public. We will also promote the value and importance of recreational fishery objectives in the plans, policies, guidelines, and decisions developed throughout the Service.

Spotlight on Recreational Fishing

The Southwest Region Fisheries Program partnered with six other agencies in the *Lake Havasu Fisheries Improvement Program*. This partnership was formed to improve game fish production, enhance shoreline-angling access and increase endangered native fish populations in Lake Havasu, AZ/CA. It installed 875 acres of artificial habitat in 42 coves, constructed six fishing docks, and stocked 30,000 razorback suckers and 30,000 bonytail. Fishing has improved significantly, generating \$33.8 million per year to the local economy.

Program and Budget Changes to Meet Performance Targets:

The Fisheries Program regularly receives requests from its partners for technical assistance and hatchery fish in support of recreational fisheries. National Wildlife Refuges throughout the Southwest Region seek guidance on how to manage refuge waters for sport fishing. Forty-two military bases, under the Sikes Act, request technical assistance in managing their natural resources. The Forest Service in East Texas seeks catfish for recreational waters in five National Forests. Unfortunately, the Fisheries Program involvement in the Southwest is limited by lack of staff and funding.

Funding is needed to restore the Program's recreational fishing program to its former capacity. We need to place an additional biologist in each of the four fishery resources offices (\$150,000 each per year) to assist partners on managing recreational fisheries. We also need to place a similar biologist at the Alchey-Williams Creek, Inks Dam, Tishomingo and Willow Beach hatcheries (\$150,000 each per year) to rebuild sport fish production to meet demand.

B. Mitigation Fisheries

| |
|--|
| Fisheries Outcome Goal (from the Vision): The federal government meets its responsibilities to mitigate for the impacts of federal water projects, including restoring habitat and/or providing fish and associated technical support to compensate for lost fishing opportunities. |
| DOI Strategic Goals: Protect the Nation's natural, cultural and heritage resources; Provide recreation opportunities for America. |
| DOI End Outcome Goals: Sustain biological communities on DOI managed and influenced lands and waters in a manner consistent with obligations regarding the allocation and use of water. Provide for a quality recreational experience, including access, and enjoyment of natural and cultural resources on DOI managed and partnered lands and waters. |
| DOI Intermediate Strategies: Enhance the quality of recreational opportunities; Provide effective interpretation and education programs. |

Goal Purpose

The Fisheries Program conducts numerous activities to fulfill federal responsibilities associated with mitigating for the adverse environmental effects of water development projects constructed and operated by federal agencies. Mitigation activities include habitat improvement, native species restoration, and stocking native and non-native fish to support otherwise lost tribal, commercial and recreational fisheries. In most cases, the Fisheries Program is not reimbursed or fully reimbursed by the federal agency responsible for the federal water project. The Service has committed to placing a high priority on taking the appropriate steps to ensure full mitigation requirements and full cost recovery are achieved.

Goal Achievement and Strategies

To achieve the Fisheries Vision goal for mitigation, the Fisheries Program will:

- **Identify the mitigation responsibilities of federal agencies related to water projects.** The Southwest Region Fisheries Program will work with federal agencies, tribes, state agencies, and other partners to identify appropriate mitigation goals and objectives for water development projects, plans for meeting them, and funding responsibilities of the respective federal agencies wherever that has not already been done.
- **Meet the Service's responsibilities for mitigating fisheries.** The Service is committed to meeting current mitigation responsibilities. In cooperation with project partners, the Service identifies mitigation requirements and supports mitigation fisheries. The Southwest Region Fisheries Program will work cooperatively to monitor and evaluate its mitigation programs to determine if mitigation goals and objectives are achieved.
- **Achieve full cost recovery from water project sponsors**

The Southwest Region Fisheries Program will pursue recovery of all direct and indirect costs for mitigation activities associated with hatchery production and stocking from the federal agency on whose behalf the mitigation program is conducted.

Program and Budget Changes to Meet Performance Targets

The Fisheries Program receives requests from its state partners for technical assistance and hatchery fish for large federal water projects in Arizona, New Mexico, Oklahoma and Texas. The recreational fisheries in these federal projects are commonly considered “de facto mitigation” fisheries yet the water-managing agency pays nothing toward its management. The *Fisheries Vision* document calls for Fisheries to determine and seek full reimbursement of the costs for mitigation fisheries.

Funding is needed to identify mitigation fisheries costs within the Southwest Region and to seek reimbursement. We propose to place an additional biologist in the Oklahoma Fishery Resources Office (\$150,000 per year) to identify reservoir management needs (surveys, stocked fish) Region-wide, assess their costs and seek reimbursement from the water managing agencies.

COOPERATION WITH NATIVE AMERICANS

| | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|
| Fisheries Outcome Goal (from the Vision): Assistance is provided to tribes that results in the management, protection, and conservation of their treaty-reserved or statutorily defined trust natural resources, which helps tribes develop their own capabilities. | | | | | |
| DOI Strategic Goal: Safeguard lives, property and assets, advance scientific knowledge, and improve the quality of life for communities we serve. | | | | | |
| DOI End Outcome Goals: Fulfill Indian Fiduciary Trust Responsibilities; Advance Quality Communities for tribes and Alaska Natives. | | | | | |
| DOI Intermediate Strategies: Improve Indian Fiduciary Trust Beneficiary Services; Improve Management of Land and Natural Resource Assets; Promote Indian and Alaska Native Self-Governance and Self-Determination. | | | | | |
| Southwest Region Fisheries Long-Term Performance Goal: | | | | | |
| FWMA | | | | | |
| By September 30, 2008 fulfill 80% of tribal requests for technical assistance. | | | | | |
| Southwest Region Fisheries Annual Performance Goal: | | | | | |
| FWMA | | | | | |
| By September 30, 2004, fulfill 64% of tribal requests for technical assistance. | | | | | |
| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| FWMA | | | | | |
| % of technical assistance requests fulfilled on tribal lands and waters | 64% | 70% | 76% | 76% | 80% |
| | 32/50 | 29/50 | 38/50 | 38/50 | 40/50 |
| Targets based on previous years fulfillment of technical assistance requests and expectation of increased staff expertise and resources in achieving higher levels of tribal support. Stations will continue to meet at least annually with tribal partners to facilitate technical assistance requests as well as meet requests as they come in. | | | | | |

| Supporting Workload Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
|--|------|------|------|------|------|
| FWMA | | | | | |
| # of training sessions | 6 | 4 | 10 | 10 | 10 |
| Training session targets reported by Arizona and New Mexico FROs. Examples of future trainings include: electro-fishing training for Navajo and White Mountain Apache tribes and statistics and BVET training for the White Mountain Apache tribe. Increased training opportunities will depend on availability of increased resources. | | | | | |
| # of new or modified cooperative agreements or Intergovernmental Personnel Act Agreements | 5 | 2 | 6 | 6 | 9 |
| Stations have identified a number of potential new agreements in support of Native American cooperation. Selected potential agreements through FY2008 include Lake Mohave Native Fish Workgroup; Bureau of Reclamation, Bureau of Land Management, New Mexico Game and Fish, Arizona Game and Fish, White Mountain Apache tribe, University of Arizona, Navajo Nation, and others. | | | | | |
| # of tribal consultations | 33 | 30 | 35 | 38 | 37 |
| Targets based on number of consultations completed in prior years and the expectation of increased staff expertise and resources in achieving higher levels of consultative tribal support. Stations meet periodically with tribal partners for informal consultations. Formal consultations are routed through the proper Regional channels and programs. | | | | | |
| NEFS | | | | | |
| % of agreements fulfilled for tribal Trust responsibilities | 100% | 100% | 100% | 100% | 100% |
| All Southwest Region stations will strive to meet 100% of tribal Trust responsibilities each year. | 2/2 | 3/3 | 5/5 | 7/7 | 8/8 |

Goal Purpose

Conservation of this Nation's fish and other aquatic resources cannot be successful without the partnership of tribes; they manage or influence some of the most important habitats for fish and wildlife, both on and off reservations. In addition, the federal government and the Service have distinct and unique obligations toward tribes based on trust responsibility, treaty provisions, and statutory mandates. The Fisheries Program plays an important role in providing help and support to tribes as they exercise their sovereignty in the management of their fish and wildlife resources on more than 55 million acres of federal Indian trust land and in treaty-reserved areas.

Goal Achievement and Strategies

To achieve the Fisheries Vision goal for Native Americans, the Fisheries Program will:

- **Provide technical assistance to tribes.** The Southwest Region Fisheries Program will continue to provide technical assistance to tribes, as requested and to the extent possible, for tribal natural resource management activities. Assistance will include training, development

of management plans, maintaining healthy hatchery fish, and developing hatchery-operating procedures.

- **Identify sources of funds to enhance tribal resource management.** The Southwest Region Fisheries Program will work with its Washington Office, tribes and other stakeholders to identify sources of funds that can be used to enhance tribal resource management infrastructures or for particular partnerships or initiatives involving tribes.
- **Provide fish for tribal resource management.** The Southwest Region Fisheries Program will continue to provide fish as part of recovery plans for listed species, in support of sustainable fisheries management, and for trust species and ongoing programs to enhance outdoor recreation on tribal lands.
- **Recognize and promote the Service's distinct obligations toward tribes within the Fisheries Program.** The Southwest Region Fisheries Program will continue to be vigilant that its actions, programs, and partnerships do not infringe on tribal rights.

Spotlight on Cooperation with Native Americans

The Southwest Region Fisheries Program has partnered with the Southwest tribal Fisheries Commission and the Native American Fish and Wildlife Society to jointly address fisheries concerns of tribal members. Southwestern tribes were actively involved in the development of this regional strategic plan.

Program and Budget Changes to Meet Performance Targets

There are 80 Indian tribes within the Southwest Region. Most of them have requested the Service to provide technical assistance in the management of their natural resources. Many, upon the advice of the Service, have developed recreational fisheries as a source of additional income. After years of strong partnership with these tribes, our relations have diminished since the early 1990's due to a change of Service philosophy and declining funds. The tribes have learned that they can no longer depend on the Service for technical assistance as in past years.

Funding is needed to restore Fisheries' ability to help Southwestern tribes manage their aquatic resources. These tribes are confronted with such issues as threatened and endangered species management, recreational fisheries, habitat restoration, aquatic nuisance species, and fish passage problems, for which they need technical assistance. They also require hatchery fish in order to operate recreational fishing lakes for which they depend economically. This proposal would place a fishery biologist in the four Arizona Fishery Resources Offices (Pinetop, Parker, Flagstaff, San Carlos), two biologists at the New Mexico FRO and one biologist at the Oklahoma FRO to work with local tribes in managing their own lands (\$150,000 per position per year). Funding is also needed for biologists/technicians and associated fish production costs at the Alcheyay-Williams Creek, Inks Dam, Tishomingo and Willow Beach hatcheries (\$150,000 per position per year) so they can restore production of cold and warm water sport fish species.

In response to requests by our tribal partners, we would like to explore co-locating one or

more of these new positions in tribal nature resource agency offices so the Service fully understands issues from a tribal perspective.

LEADERSHIP IN SCIENCE AND TECHNOLOGY

| | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|
| Fisheries Outcome Goal (from the Vision): Science developed and used by Service employees for aquatic resource restoration and management is state-of-the-art, scientifically sound and legally defensible, and technological advances in fisheries science developed by Service employees are available to partners. | | | | | |
| DOI Strategic Goal: Protect the Nation's natural, cultural and heritage resources. | | | | | |
| DOI End Outcome Goal: Sustain Biological Communities on DOI Managed and Influenced Lands and Waters in a Manner Consistent with Obligations Regarding the Allocation and Use of Water | | | | | |
| DOI Intermediate Strategies: Manage populations to self-sustaining levels for specific species Improve Information Base, Information Management and Technical Assistance Provide effective interpretation and education programs | | | | | |
| Southwest Region Fisheries Long-Term Performance Goals: | | | | | |
| NEHS | | | | | |
| By September 30, 2008, develop 10 applied aquatic science and technologic tools, and share with partners through publications, web pages, technical bulletins, patents, meetings, and symposia. | | | | | |
| By September 30, 2008, develop 10 techniques and culture technology tools. | | | | | |
| By September 30, 2008, 100% of fish hatcheries and aquatic animal holding facilities have undergone complete annual inspections in compliance with the Aquatic Animal Health Policy. | | | | | |
| By September 30, 2008, 100% of diagnostic fish health service requests at fishery facilities have been evaluated. | | | | | |
| By September 30, 2008, conduct 2 clinical field trials supporting the registration of new drugs and chemicals. | | | | | |
| Southwest Region Fisheries Annual Performance Goals: | | | | | |
| NEHS | | | | | |
| By September 30, 2004, develop 6 applied aquatic science and technologic tools, and share with partners through publications, web pages, technical bulletins, patents, meetings, and symposia. | | | | | |
| By September 30, 2004, develop 4 techniques and culture technology tools. | | | | | |
| By September 30, 2004, 100% of fish hatcheries and aquatic animal holding facilities have undergone complete annual inspections in compliance with the Aquatic Animal Health Policy. | | | | | |
| By September 30, 2004, 100% of diagnostic fish health service requests at fishery facilities have been evaluated. | | | | | |
| By September 30, 2004, conduct 0 clinical field trials supporting the registration of new drugs and chemicals. | | | | | |
| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| # of applied aquatic scientific and technologic tools shared with partners | 6 | 7 | 8 | 9 | 10 |
| Scientific and technology tools developed and implemented in the Southwest will be shared with partners in a number of direct and indirect ways. Directly through collaboration and direct information sharing with those partners with mutual interest and indirectly through peer reviewed articles. The amount of sharing will be dependent on the resources available to develop and implement those tools. | | | | | |

| | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|
| # of techniques and culture technology tools developed | 4 | 9 | 9 | 10 | 10 |
| Dexter NFH&TC: In support of the Rio Grande silvery minnow-the refinement of intensive and extensive fish culture methods, test new formulated feed-FY04-05, VIE and Calcein marking-FY04-05, induced spawning/propagation methods FY04-05; | | | | | |
| Mora NFH&TC: In support of the Gila trout- testing broodstock management plan FY04-05. | | | | | |
| San Marcos NFH&TC: In support of the Comal Springs riffle beetle captive reproduction (FY04), San Marcos salamanders egg production (FY05), Devils River Minnow spawning (FY05), and <i>Percina</i> fry feeding study (FY04). | | | | | |
| Additional techniques identified by stations will have increased potential as they are developed and as increased resources become available to implement them. | | | | | |
| Supporting Workload Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| % of applied science and technology tasks implemented as prescribed by Recovery Plans | 60% | 80% | 80% | 80% | 80% |
| 3/5 | 4/5 | 4/5 | 4/5 | 4/5 | 4/5 |
| The targets for this measure are based on tasks identified for implementation prescribed by Recovery Plans. The specific tasks include: conduct genetic surveys and develop baselines for captive stocks of bonytail, razorback sucker, woundfin minnow; determine and maintain maximum genetic diversity in captive stocks, using hatcheries as a refugia, develop propagation techniques and implement broodstock management plan. | | | | | |
| Percentage of fish hatcheries and aquatic animal holding facilities that have undergone complete annual inspections in compliance with the Aquatic Animal Health Policy. | 100% | 100% | 100% | 100% | 100% |
| 9/9 | 9/9 | 9/9 | 9/9 | 9/9 | 9/9 |
| Pinetop FHC: To be completed as required by the Aquatic Animal Health Policy. | | | | | |
| Percentage of diagnostic fish health service requests at fishery facilities that have been evaluated. | 100% | 100% | 100% | 100% | 100% |
| 5/9 | 5/9 | 5/9 | 5/9 | 5/9 | 5/9 |
| Pinetop FHC: To be completed as required by the Aquatic Animal Health Policy. | | | | | |
| # of clinical field trials supporting the registration of new drugs and chemicals. | 2 | 2 | 2 | 2 | 2 |
| Pinetop FHC: To assist with drug and chemical registration. Actual field trials to be determined. | | | | | |

Goal Purpose

Science and technology form the foundation of successful fish and aquatic resource conservation and are used to structure and implement monitoring and evaluation programs that are critical to determine the success of management actions. Achieving this goal will help the Service and its partners demonstrate a commitment to following established principles of sound science, and increase the success of resource conservation.

Goal Achievement and Strategies

To achieve the Fisheries Vision goal for science and technology, the Fisheries Program will develop, apply, and disseminate state-of-the-art science and technology to conserve and manage aquatic resources, focusing on the following areas:

- **Develop and share applied aquatic scientific and technologic tools with partners.** The Southwest Region Fisheries Program will continue to develop science and technology at its three Fish Technology Centers, Pinetop Fish Health Center, and six Fishery Resources Offices, and share those capabilities in order to provide a platform for cooperative programs that are beyond the scope of individual states and tribes. The Fisheries Program will coordinate with U.S. Geological Survey (USGS), Biological Resources Division, Cooperative Fish and Wildlife Research Units, and other research partners to improve connections between science delivery and fishery management needs. It will continue to encourage scientific excellence in the Program by providing opportunities for employees to acquire and upgrade their scientific skills, fostering involvement in scientific societies, requiring adherence to the highest scientific and ethical standards, and encouraging publication of research results in peer-reviewed journals.
- **Utilize appropriate scientific and technologic tools in formulating and executing fishery management plans and policies.** The Southwest Region Fisheries Program will increase its efforts to identify, revise, and update aquatic science tools as necessary to support the management and conservation of sustainable fisheries. The Program will implement the Science and Technology tasks in management plans and recovery plans, and work with partners to ensure that plans are based on scientifically valid information. It will coordinate with partners and other Service programs to promote and develop technical and management forums to increase efficiencies, share information, and leverage funding. It will support and create databases and Internet resources to promote information accessibility.

These objectives represent increased emphasis from a decade ago on developing, using and sharing science and technology that is state-of-the-art, scientifically sound, and legally defensible.

Spotlight on Leadership in Science and Technology

The Mora National Fish Hatchery and Technology Center in New Mexico, in partnership with the Federation of Flyfishers, is developing a “naturalistic rearing” process for holding the endangered Gila trout. Fiberglass tank walls are painted a dark color, the bottom is lined with gravel plus large rocks and logs for hiding and the trout are fed live food (crickets, worms). Growth is similar to traditional trout production but the trout look and act like wild fish. This process may apply to any fish species requiring increased post-out-planting survival.

Program and Budget Changes to Meet Performance Targets

The Southwest Region’s three fish technology centers (Dexter, Mora, San Marcos) provide a valuable link between academic research and fish hatcheries. Their mission is to seek

improved ways to culture fish and maintain high-quality brood stock through research. Other agencies historically look to the Service for leadership in science and technology. As such, the Center staffs interact with universities, state and other federal agencies, and several private firms to develop state-of-the-art technology. However, as funding has diminished Service-wide, studies have been reduced or not funded.

The Service needs to invest in each of the technology centers by adding two research scientists, one lab technician, updated equipment and associated operating costs (\$500,000 per Center per year) at each of the three Centers. By doing so, each can complete many more studies that have direct benefit to Service goals.

In addition, funding is needed to employ one biologist and one biologist lab technician (\$240,000) at the Pinetop Fish Health Center. These two positions would allow the Center to perform further necessary health monitoring in the region to benefit Service goals.

AQUATIC HABITAT CONSERVATION AND MANAGEMENT

| |
|--|
| <p>Fisheries Outcome Goal (from the Vision): America's streams, lakes, estuaries, and wetlands are functional ecosystems that support self-sustaining communities of fish and other aquatic resources.</p> |
| <p>DOI Strategic Goal: Protect the Nation's natural, cultural and heritage resources.</p> |
| <p>DOI End Outcome Goals: Improve the health of watersheds, landscapes, and marine natural resources that are DOI managed or influenced in a manner consistent with obligations regarding the allocation and use of water; Sustain biological communities on DOI managed and influenced lands and waters in a manner consistent with obligations regarding the allotment and use of water.</p> |
| <p>DOI Intermediate Strategies: Restore and maintain proper function to watersheds and landscapes; Create habitat conditions for biological communities to flourish; Improve information base, assessments, and technical assistance.</p> |
| <p>Southwest Region Fisheries Long-Term Performance Goals: By September 30, 2008, restore or enhance 985 wetland acres, 2010 upland acres, and 492 stream/shoreline miles to achieve habitat conditions consistent with management plans.</p> <p>By September 30, 2008, 67% of watersheds supporting listed or depleted populations have watershed plans that include habitat conservation and restoration.</p> <p>By September 30, 2008, 33% of watersheds supporting listed or depleted populations have current habitat assessments, as called for in approved plans.</p> <p>NFHS By September 30, 2008, 44% of NFHS stations will meet environmental requirements for effluent as defined by federal, tribal, and state Law.</p> |
| <p>Southwest Region Fisheries Annual Performance Goals: By September 30, 2004, restore or enhance 949 wetland acres, 1,004 upland acres, and 247 stream/shoreline miles to achieve habitat conditions consistent with management plans.</p> <p>By September 30, 2004, 4% of watersheds supporting listed or depleted populations have watershed plans that include habitat conservation and restoration.</p> <p>By September 30, 2004, 3% of watersheds supporting listed or depleted populations have current habitat assessments, as called for in approved plans.</p> <p>NFHS By September 30, 2004, 33% of NFHS stations will meet environmental requirements for effluent as defined by federal, tribal, and state Law.</p> |

| Performance Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
|--|------------|------------|------------|------------|------------|
| FWMA | | | | | |
| Wetland acres restored or enhanced | 35 | 35 | 395 | 210 | 310 |
| <p>Arizona FRO: Will conduct pond renovations in the Fossil Creek drainage for roundtail chub. AZFRO will also work through other programs to identify and restore wetland acres, e.g. Partners for Fish & Wildlife.</p> <p>New Mexico FRO: Planning will continue for Pecos River channel restoration at BLNWR includes reconnection of isolated oxows, seasonal flooding of associated bottomlands, and nonnative salt cedar removal.</p> | | | | | |
| Upland acres restored or enhanced | 130 | 130 | 260 | 500 | 1000 |
| <p>Arizona FRO: Will work other Service programs and our partners to identify and restore upland acres.</p> <p>New Mexico FRO: Benefits will be derived from salt cedar removal at BLNWR as described above.</p> | | | | | |
| Stream/Shoreline miles restored or enhanced | | | | | |
| Stream..... | 51 | 46 | 143 | 106 | 146 |
| Shoreline (riparian)..... | 29 | 26 | 63 | 66 | 91 |
| <p>Arizona FRO: Will renovate Bear Wallow, Fish, Granite, Salt, and Fossil creeks, as well as several Apache trout streams.</p> <p>New Mexico FRO: Renovation of the upper watershed of the West Fork Gila River will be completed to remove nonnative salmonids from Gila trout recovery areas.</p> <p>Oklahoma FRO: In cooperation with Partners for Wildlife, continue restoration efforts as stated in the High Plains Initiative, restoring one or more miles per year to benefit native fish management in Western Oklahoma.</p> | | | | | |
| % of watersheds supporting listed or depleted populations under DOI authority or influence with approved watershed plans | 17% 1/6 | 17% 1/6 | 33% 2/6 | 50% 3/6 | 67% 4/6 |
| <p>Arizona FRO: Needs will be determined by AZ FRO Watershed Prioritization Project.</p> <p>New Mexico FRO: Watershed planning incorporated into cooperative native fish management actions via Section 7 consultations and affecting agency remediation.</p> <p>Oklahoma FRO: In cooperation with the US Forest Service, protect watersheds containing the threatened leopard darter.</p> | | | | | |
| % of watersheds supporting listed or depleted populations under DOI authority or influence with current habitat assessments, as called for in approved plans | 0% 0/6 | 0% 0/6 | 0% 0/6 | 17% 1/6 | 33% 2/6 |
| <p>Arizona FRO: Needs will be determined by AZ FRO Watershed Prioritization Project.</p> <p>New Mexico FRO: Watershed planning incorporated into cooperative native fish management actions via Section 7 consultations and affecting agency remediation.</p> | | | | | |

| | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|
| <p>NFHS % of NFHS facilities that meet environmental requirements for effluent as defined by federal, tribal, and state Law.</p> <p>Currently Mora NFHTC, Willow Beach and Alchesay NFHS meet environmental requirements. By 2005, Williams Creek NFH will be compliant to environmental requirements.</p> <p>San Marcos NFH&TC: Working towards environmental requirements and will complete second phase of three-phase hatchery water reuse system project in 2004.</p> | 33% 3/9 | 33% 3/9 | 44% 4/9 | 44% 4/9 | 44% 4/9 |
| Supporting Workload Measures | 2004 | 2005 | 2006 | 2007 | 2008 |
| <p>FWMA Habitat restoration: # of acres/miles re-opened to fish passage</p> <p>Acres.....</p> <p>Miles.....</p> <p>Arizona FRO: Will complete fish passage projects on Leslie Creek, Paradise Creek, Elk Canyon Creek, East Fort White River. Additional sites will be determined with our partners.</p> <p>New Mexico FRO: Fish passage projects will continue on upper Pecos River and surveys will be conducted on tribal lands in upper Rio Grande for Rio Grande cutthroat trout management.</p> <p>Oklahoma FRO: Re-open one mile per year in cooperation with private timber industry to restore stream habitat for the threatened leopard darter and several sports fishes in the Ouchita Uplift sector of Southeast Oklahoma.</p> | 25 | 25 | 75 | 125 | 175 |
| <p># of fish passage barriers removed or bypassed</p> <p>Arizona FRO: Will complete fish passage projects on Leslie Creek, Paradise Creek, Elk Canyon Creek, East Fort White River. Additional sites will be determined with our partners.</p> <p>New Mexico FRO: One barrier on the upper Pecos and one on Embudo Creek will be evaluated for effectiveness of fish movement.</p> <p>Oklahoma FRO: Will remove or bypass 2 to 3 fish passage barriers per year. Locations to be determined through cooperation with partners.</p> | 2 | 4 | 7 | 10 | 13 |
| <p># of habitat assessments completed</p> <p>Arizona FRO: Will work with partners to develop habitat assessments throughout the Gila, Colorado, and Yaqui river drainages.</p> <p>New Mexico FRO: Cooperate with federal land management agencies, state, and tribes on habitat assessments.</p> | 0 | 1 | 4 | 7 | 10 |
| <p># acres of wetland and upland habitat assessed</p> <p>Arizona FRO: Will work with partners to develop habitat assessments throughout the Gila, Colorado, and Yaqui river drainages.</p> <p>New Mexico FRO: Cooperate with federal land management agencies, state, and tribes on habitat assessments.</p> | 155 | 205 | 355 | 660 | 1260 |

| | | | | | |
|---|-------|-------|-------|-------|-----|
| # miles of in-stream and riparian habitat assessed | 55 | 65 | 165 | 185 | 205 |
| Arizona FRO: Will work with partners to develop habitat assessments throughout the Gila, Colorado, and Yaqui river drainages. New Mexico FRO: Cooperate with federal land management agencies, state, and tribes on habitat assessments. | | | | | |
| % of technical assistance requests fulfilled on DOI managed and influenced lands and waters | 74% | 74% | 80% | 84% | 88% |
| 17/23 | 17/23 | 20/25 | 21/25 | 22/25 | |
| Targets based on previous years fulfillment of technical assistance requests and expectation of increased staff expertise and resources in achieving higher levels of support on DOI managed or influenced lands. Stations will meet regularly with partners to determine and meet technical assistance requests. | | | | | |

Goal Purpose

Habitat is fundamental for self-sustaining populations of fish and wildlife. Loss and alteration of aquatic habitats are principal factors in the decline of native fish and aquatic biodiversity. The Fisheries Program works with partners to conserve fish and wildlife by protecting and restoring the habitats on which they depend.

To achieve results in aquatic habitat conservation and management, there must be a close partnership between landowners and the Fisheries Program. Nearly 70% of all fish and wildlife habitat in the United States is in private ownership, so partnerships must include private landowners. The Fisheries Program has begun to make a difference in aquatic habitat conservation and management through its National Fish Passage Program, through cooperative efforts with other Service programs such as Partners for Fish and Wildlife, and through creative partnerships with states, tribes, other federal agencies, and non-governmental organizations.

Nevertheless, degradation of aquatic habitat is the most pressing challenge facing fisheries and aquatic resources in the United States today, requiring concerted effort and focus to reverse declines in habitat and associated species.

Goal Achievement and Strategies

To achieve the Fisheries Vision goal for aquatic habitat conservation and management, the Fisheries Program will:

- **Facilitate management of aquatic habitats on national and regional scales.** The Southwest Region Fisheries Program will work with partners and stakeholders to identify water quality and aquatic habitat restoration needs, prioritize restoration efforts and include these efforts in the Fish and Operational Needs system to request funding, as well as work with the Partners for Wildlife program, National Fish Passage Program, and stakeholders to implement these priority actions.
- **Expand the use of Fisheries Program expertise to avoid, minimize, or mitigate**

impacts of habitat on fish and other aquatic species. The Southwest Region Fisheries Program will increase its involvement in addressing issues and threats related to hydropower re-licensing, development of wetlands, and other issues that affect aquatic habitats.

- **Increase the quantity and improve the quality of aquatic and riparian habitat on Service lands.** The Southwest Region Fisheries Program will expand its involvement in coordination with the National Wildlife Refuge System, to identify and implement opportunities for increasing the quantity and improving the quality of aquatic and riparian habitats on Service lands.

Spotlight on Aquatic Habitat Conservation and Management

Salmon migrations are storied. But small resident fishes also migrate to find spawning habitat or refuge in certain seasons from heat and cold. Small dams and road crossing culverts block access to habitats upstream. The Fish Passage Program removes barriers on a cost-share basis with partners. John Hancock Timber Industries and the Oklahoma Department of Wildlife Conservation partnered with Region 2 Fisheries to give the imperiled leopard darter and the endemic Ouachita smallmouth bass ready access to more habitat, benefiting fish, foresters, and fishermen.

Program and Budget Changes to Meet Performance Targets

The Fisheries Program, except for its National Fish Hatchery System, is not a land-owning program. However, its fishery resource offices have the technical expertise to help others manage their aquatic and riparian habitats. Fisheries biologists advise refuge managers and military base commanders on fishery-related issues. They advise tribes on grazing and big game management issues, especially near streams. They report habitat problems to landowners. Fisheries biologists also manage the National Fish Passage Program where migration bottlenecks are removed so fragmented fish populations can reach native habitats. However, habitat restoration is expensive as it typically involves heavy equipment and lots of manpower. Therefore, Fisheries has been limited in habitat restoration by its limited budget.

Funding is needed to increase the National Fish Passage Program. Historically, only a few passage projects could be completed each year in the Southwest due to limited funds and lack of staff to monitor them. In order for the Southwest Region Fisheries Program to successfully complete 25 fish passage projects per year, additional funding (\$10,000 per project) plus one administrator (\$150,000) is needed. Partners are expected to contribute matching funds. This is a 400 percent increase above historic levels (Total: \$400,000 per year).

WORKFORCE MANAGEMENT

| |
|---|
| Fisheries Outcome Goal (from the Vision): Maintain and support an adequately-sized, strategically positioned workforce with state-of-the-art training, equipment, and technologies in their career fields. |
| DOI Strategic Goal: Manage the Department to be highly skilled, accountable, modern, functionally integrated, citizen-centered and results-oriented. |
| DOI End Outcome Goal: Workforce has job-related knowledge and skills necessary to accomplish organizational goals. |
| DOI Intermediate Strategies: Increase Partnerships, Volunteer Opportunities, and Stakeholder Satisfaction; Human Capital Management |

Goal Purpose

Achieving the goals in this plan requires that the Fisheries Program keep its workforce aligned with changing priorities. The Fisheries Program relies on a broad range of professionals to accomplish its mission: biologists, managers, administrators, clerks, animal caretakers, and maintenance workers. Employees must be trained, equipped and supported in order to perform their jobs safely, often under demanding environmental conditions, and to keep current with the constantly expanding science of fish and aquatic resource management and conservation. In addition, the thousands of hours donated by dedicated volunteers are critical to the Fisheries Program mission. Without the collective skill and dedication of employees and volunteers, the Fisheries Program cannot succeed.

Goal Achievement and Strategies

To achieve the *Fisheries Vision* goal for workforce management and to support achievement of other goals in this plan, the Fisheries Program will:

- **Staff Fisheries Program field stations at levels adequate to effectively meet the Service’s goals and objectives in fish and other aquatic resource conservation.** The Southwest Region Fisheries Program will analyze positions and organizational structures at all Fisheries field stations, identify the critical staff and functions needed to support various types and sizes of hatcheries and Fishery Resources Offices, and fill critical vacancies or gaps in the workforce with well-qualified individuals.
- **Provide employees with opportunities to maintain competencies in the expanding knowledge and technologies needed to improve opportunities for professional achievement, advancement and recognition.** The Southwest Region Fisheries Program will identify training and developmental learning opportunities both inside and outside the Service for all skills utilized, as well as preparing staff for future leadership positions.
- **Provide employees with access to facilities and equipment needed to effectively, efficiently and safely perform their jobs.** The Southwest Region Fisheries Program will provide its employees with state-of-the-art biotechnology, information technology, and maintenance and safety equipment.

Fisheries field stations will identify workforce needs (FTEs and skills) in conjunction with

resource and operational needs, by entering these data into FONS. As FONS projects are prioritized and selected for funding, workforce needs will be identified.

Spotlight on Workforce Management

The Southwest Region has joined the electronic age. Its workforce has now switched from paper forms to computer databases to make purchases, track budget expenditures, measure performance and to report its accomplishments. Virtually every program and field station also has developed a website to inform its employees and the public of its activities.

Program and Budget Changes to Meet Performance Targets

Declining operating funds within the Fisheries Program have resulted in increasing numbers of positions remaining vacant, training postponed and facilities/equipment not maintained or replaced (Funding for critically needed staff has been requested under the goals above so will not be repeated here).

The Fisheries Program is facing an ensuing staffing deficiency, as approximately 50 percent of its present employees will be eligible for retirement by FY2008. Further, approximately half of the approved positions at Fisheries field stations in the Southwest Region are already vacant due to lack of funding. New funding is needed in order to train new managers and develop leaders for tomorrow.

In addition, a region-wide training budget (\$125,000 per year) is needed to restore professional knowledge at all levels within Fisheries. This includes funds for mandatory training such as supervision, SAMMS, safety, and EEO. This funding would allow our employees also to fully participate in both National Conservation Training Center classes as well as locally offered courses.

Regional Contact Information

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P.O. Box 1306

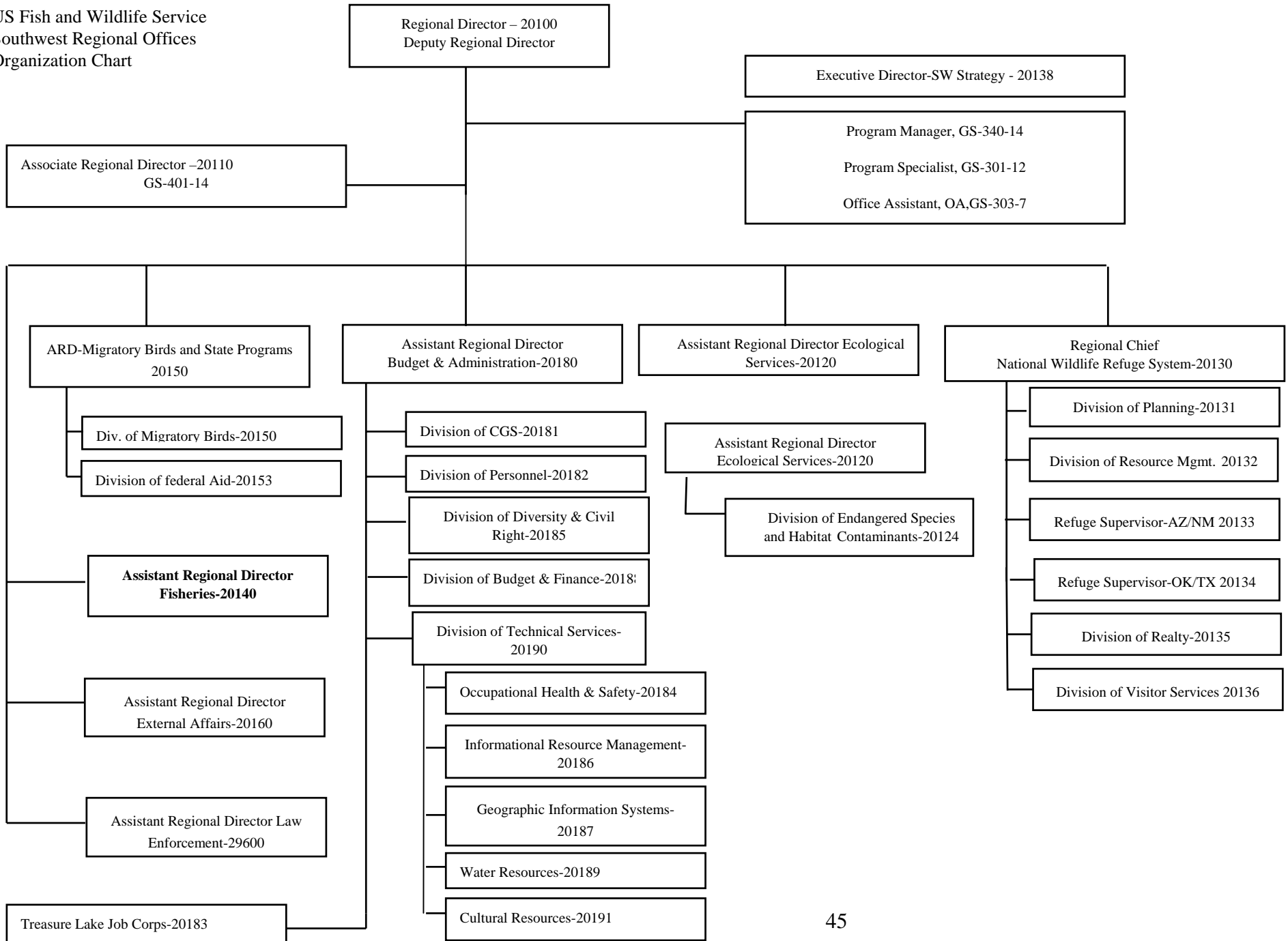
Albuquerque, NM 87103

Phone: (505) 248-6620

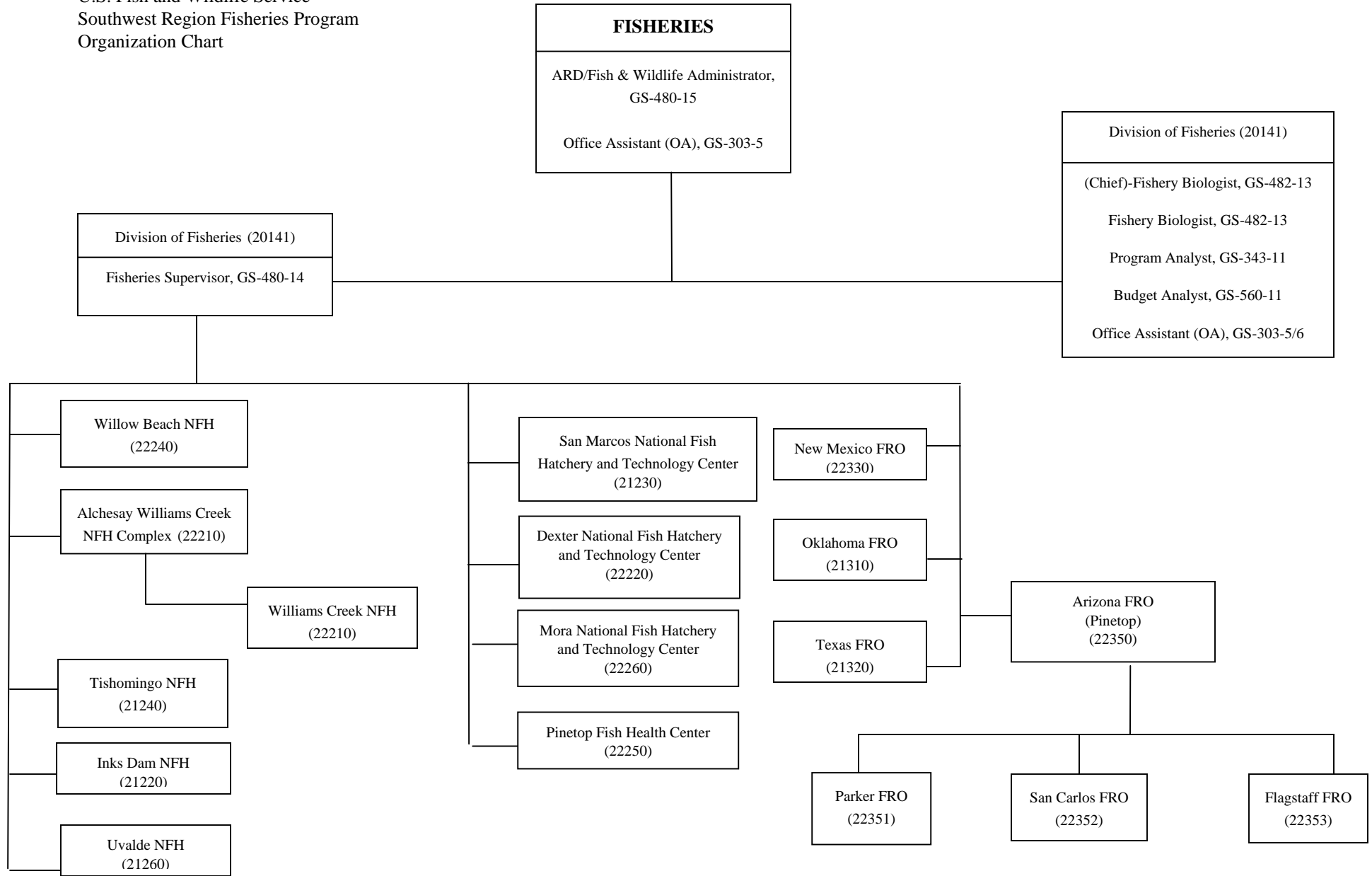
Email: Lynn_Starnes@fws.gov

Appendix A:
**Organization Charts for Southwest Region and Southwest Region-
Fisheries Program**

US Fish and Wildlife Service
 Southwest Regional Offices
 Organization Chart



U.S. Fish and Wildlife Service
 Southwest Region Fisheries Program
 Organization Chart



Appendix B:

Southwest Region Fisheries Program Partners and Stakeholders

SOUTHWEST REGION FISHERIES PROGRAM PARTNERS AND STAKEHOLDERS

Absentee-Shawnee tribe
Ak-Chin Indian Community
Alabama-Coushatta tribe
Alabama-Quassarte tribal Town
American Fisheries Society
American Sportfishing Society
Anglers United
Apache tribe, Anadarko
Arizona Department of Water Resources
Arizona Fish and Wildlife Cooperative
Research Unit
Arizona Game and Fish Department
Arizona-Sonora Desert Museum
B.A.S.S.
Caddo Indian tribe
California Department of Fish and Game
Chemehuevi tribe
Cherokee Nation
Cheyenne-Arapaho tribe
Chickasaw Nation
Choctaw Nation
Citizen Potawatomi Nation
Cocopah tribe
Colorado Division of Wildlife
Colorado River Fish and Wildlife Council
Colorado River Indian tribes
Colorado State University
Comanche tribe
Delaware tribe
Eastern Shawnee tribe
Edwards Aquifer Authority
Fort Sill Apache tribe
Fort McDowell Yavapai Nation
Fort Mojave Indian tribe
Gila River Indian Community
Grand Canyon Monitoring and Research
Center
Gulf of Mexico Fishery Management Council
Gulf States Marine Fishery Commission
Havasupai tribe
High Country BASS Anglers
Hopi tribe
Hualapai tribe
Iowa tribe
Jicarilla Apache tribe
Kaibab Paiute tribe
Kaw Nation
Kialegee tribal Town
Kickapoo tribe
Kickapoo Traditional tribe
Kiowa tribe
Lake Havasu Fishery Improvement Program
Langston University
Lower Colorado River Authority
Lower Colorado River MultiSpecies Conservation
Plan
Mescalero Apache tribe
Mesilla Valley Flyfishers
Metropolitan Water District of Southern
California
Miami tribe
MICRA - Mississippi Interstate Cooperative
Resource Association
Modoc tribe
Muscogee (Creek) Nation
National Fish and Wildlife Foundation
Native American Fish and Wildlife Society
Navajo Nation
Nevada Division of Wildlife
New Mexico Trout
New Mexico Fish and Wildlife Cooperative
Research Unit
New Mexico Wilderness Alliance
New Mexico Department of Game and Fish
New Mexico Wildlife Federation
Northern Ute tribe
Oklahoma Department of Wildlife Conservation
Oklahoma Fish and Wildlife Cooperative
Research Unit
Osage tribe
Otoe-Missouria tribe
Ottawa tribe
Pascua Yaqui tribe
Pawnee tribe
Peoria tribe
Ponca tribe
Pueblo of San Felipe
Pueblo of San Juan

| | |
|--|---|
| Pueblo of Santo Domingo | United Keetoowah Band of Cherokees |
| Pueblo of San Ildefonso | Utah Department of Natural Resources |
| Pueblo of Zia | White Mountain Apache tribe |
| Pueblo of Taos | Wichita and Affiliated tribes |
| Pueblo of Santa Ana | World Wildlife Fund |
| Pueblo of Tesuque | Wyandotte tribe |
| Pueblo of Santa Clara | Wyoming Game and Fish Department |
| Pueblo of Pojoaque | Yavapai Apache Nation |
| Pueblo of Nambe | Yavapai Prescott tribe |
| Pueblo of Jemez | Ysleta Del Sur Pueblo |
| Pueblo of Sandia | <i>Department of Defense:</i> |
| Pueblo of Isleta | Camp Navajo |
| Pueblo of Cochiti | Davis-Monthan Air Force Base |
| Pueblo of Zuni | Florence Military Reservation |
| Pueblo of Laguna | Fort Huachuca |
| Pueblo of Acoma | Goldwater Range (Luke AFB / MCAS Yuma) |
| Pueblo of Picuris | Luke Air Force Base / Aux Field 1 / Fort Tuthill |
| Pueblo of Sandia | Naval Observatory Flagstaff Station |
| Pure Fishing | Yuma Proving Ground |
| Quapaw tribe | Cannon Air Force Base |
| Quechan tribe | Fort Bliss |
| Sac and Fox Nation | Fort Wingate |
| Salt River Pima-Maricopa Indian Community | Holloman Air Force Base |
| San Juan Southern Paiute tribe | Kirtland Air Force Base |
| San Carlos Apache tribe | NM National Guard Training Sites (4 ea) |
| Seminole Nation | NSSS Gila River/NSSS Elephant Butte |
| Seneca-Cayuga tribe | White Sands Missile Range |
| Shawnee tribe | Altus Air Force Base |
| Southern Ute Indian tribe | Camp Gruber |
| Southwest tribal Fisheries Commission | Fort Sill |
| Sport Fishing and Boating Partnership Council | McAlester Army Ammunition Plant |
| Texas Department of Parks and Wildlife | Tinker Air Force Base |
| Texas Fish and Wildlife Cooperative Research Unit | Vance AFB / Kegelman Auxiliary Airfield |
| Thlopthlocco tribal Town | Brooks Air Force Base |
| Tohono O'Odham Nation | Camp Barkeley |
| Tonkawa tribe | Camp Bowie |
| Tonto Apache tribe | Camp Mabry |
| Trout Unlimited | Camp Maxey |
| U.S. Army Corps of Engineers | Camp Swift |
| U.S. Department of Defense | Dyess Air Force Base |
| U.S. Bureau of Indian Affairs | Fort Hood |
| U.S. Bureau of Reclamation | Fort Sam Houston / Camp Bullis |
| U.S. Forest Service | Fort Wolters |
| U.S. Geologic Survey - BRD | Goodfellow Air Force Base |
| U.S. Bureau of Land Management | |

Lackland Air Force Base
Laughlin Air Force Base
Naval Air Station Corpus Christi
Naval Air Station / Joint Reserve Base,
Fort Worth
Naval Air Station Kingsville
Naval Station Ingleside
Randolph Air Force Base
Red River Army Depot / Lonestar Army
Ammo Plant
Sheppard Air Force Base

Appendix C:
Recovery Plans Contributed to By Southwest Region Fisheries Program

SPECIES IN RECOVERY PLANS CONTRIBUTED TO BY SOUTHWEST REGION FISHERIES PROGRAM

Over thirty species for which recovery plans have been prepared include recovery actions requiring commitment of staff expertise and operational funding from the Southwest Region Fisheries Program:

Apache trout
Arkansas River shiner
Beautiful shiner
Big Bend gambusia
Bonytail chub
Chihuahua chub
Clear Creek gambusia
Colorado pikeminnow
Comanche Springs pupfish
Desert pupfish
Devils River minnow
Fountain darter
Gila topminnow (including Yaqui topminnow)
Gila trout
Humpback chub
Leon Springs pupfish
Leopard darter
Little Colorado spinedace
Loach minnow
Neosho madtom
Pecos bluntnose shiner
Pecos gambusia
Razorback sucker
Rio Grande silvery minnow
San Marcos gambusia
Sonora chub
Spikedace
Virgin River chub
Woundfin
Yaqui catfish
Yaqui chub
Barton Springs salamander
San Marcos salamander
Texas blind salamander
Texas wildrice

Appendix D:

**Fisheries Operating Needs System (FONS)
List of Unfunded Operational Needs**

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|---|---------------------|-----------------------|--|
| 1.1. Develop and improve long-term partnerships with States, Tribes, other federal agencies, non-governmental organization, and other Service Programs to develop collaborative conservation strategies for aquatic resources. | | | |
| 050 | Dexter NFH & FTC | 1999-003 | Volunteer Assistance |
| 057 | Arizona FRO - | 2003-044 | Habitat Enhancement on Private Lands in Arizona |
| 112 | Texas FRO | 2001-005 | Management, Conservation, & Recovery Of Endangered Aquatic Species in Texas |
| 212 | Arizona FRO - | 2003-040 | Getting The Word Out |
| 216 | ARD - Fisheries R2 | 2004-001 | Leverage Resources Through Partnerships |
| 1.2. Develop and implement performance measures to determine the efficiency and effectiveness of Fisheries Program resource activities and financial accountability. | | | |
| 006 | ARD - Fisheries R2 | 2003-003 | Improved Management of Fisheries Data |
| 105 | New Mexico FRO | 2004-011 | Improvement of data management and reporting capabilities |
| 2.1. Recover fish and other aquatic resource populations protected under the Endangered Species Act. | | | |
| 001 | Arizona FRO - | 2003-001 | The Final Assault: Delisting the Apache Trout |
| 007 | New Mexico FRO | 2004-001 | Gila trout restoration and recovery |
| 012 | Oklahoma FRO | 2000-003 | Monitoring Native Fish Populations in the Arkansas-Red River Basins |
| 013 | Inks Dam NFH | 2002-001 | Enhance Native Fish Capability |
| 015 | Uvalde NFH | 2004-004 | Genetic Refugium for the Rio Grande Silvery Minnow |
| 019 | Uvalde NFH | 2004-005 | Propagation and Reintroduction of the Rio Grande Silvery Minnow |
| 020 | Alchesay - Williams | 2001-109 | Isolation and Spawning Facility for Wild Strains of Apache Trout |
| 022 | Alchesay - Williams | 2003-002 | Apache Trout Broodstock Genetics Maintenance Program |
| 023 | Mora NFH & TC | 2002-009 | Gila Trout Broodstock Development for Recovery Efforts |
| 024 | Arizona FRO - | 2003-037 | Apache Trout Restoration-Monitoring of Apache Trout Populations |
| 027 | San Marcos NFH & | 2003-004 | Genetics of Devils River Minnows for Refugium and Restoration |
| 028 | San Marcos NFH & | 1999-011 | Native plant production for habitat restoration of the San Marcos and Comal rivers |
| 035 | San Marcos NFH & | 2003-006 | Survey of Aquatic Spring Species in the central and west Texas regions |
| 036 | Dexter NFH & FTC | 2000-001 | Future broodstock development of bonytail chub |
| 037 | New Mexico FRO | 2004-002 | Nonnative channel catfish removal and transplantation |
| 038 | Arizona FRO - | 2003-034 | Apache Trout Restoration-Genetic Tissue Collection and Analysis |
| 039 | Arizona FRO - | 2003-035 | Apache Trout Restoration-Renovation of Candidate Streams |
| 040 | Mora NFH & TC | 2002-010 | Gila Trout Production for Recovery Efforts |
| 041 | Tishomingo NFH | 2004-004 | Safe Haven Capability for Receiving Wild Fish |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|-------------------|------------------|-----------------------|--|
| 042 | Uvalde NFH | 2004-003 | Propagation and Reintroduction of the Devils River Minnow |
| 043 | San Marcos NFH & | 2001-001 | Safe Haven Capability for Receiving Wild Fish |
| 046 | Oklahoma FRO | 2004-002 | South Canadian River Riparian Habitat Restoration Project |
| 049 | Dexter NFH & FTC | 2002-002 | Endangered Rio Grande Silvery Minnow Culture Development. |
| 053 | Dexter NFH & FTC | 2002-009 | Razorback Sucker Broodstock Management and Genetic Monitoring |
| 054 | Dexter NFH & FTC | 2002-003 | Scientific Technical Assistance in Establishing a New Razorback Sucker Population. |
| 056 | Arizona FRO - | 2003-023 | Stocked Endangered Species Evaluation |
| 059 | Tishomingo NFH | 1999-003 | Develop Techniques for Mussel Culture |
| 060 | Tishomingo NFH | 2000-003 | Captive propagation of leopard darters |
| 062 | Mora NFH & TC | 2001-002 | Southwestern Trout Propagation for Recovery and Restoration |
| 063 | Mora NFH & TC | 2003-001 | Evaluation of Gila trout reared in naturalistic environments |
| 065 | Arizona FRO - | 2003-036 | Apache Trout Restoration-Replication of Pure Apache Trout Populations |
| 066 | Arizona FRO - | 2003-002 | Survey, Map, And Identify Threats To Native Fish On Tribal Lands In Arizona |
| 070 | San Marcos NFH & | 2003-005 | Development of Refugium Facility for Rare/Endemic Populations of Phantom Lake Spring Invertebrates |
| 075 | Oklahoma FRO | 2000-008 | Monitor Neosho madtom populations in Oklahoma and Kansas |
| 076 | Inks Dam NFH | 2001-002 | Safe Haven Capability for Receiving Wild Fish |
| 077 | San Marcos NFH & | 1999-003 | Expanded Salamander Refugium |
| 078 | Tishomingo NFH | 2001-004 | Isolation Capabilities for Holding Wild Fish. |
| 080 | Pinetop FHC | 2004-006 | Fish Health Assessment of Fountain Darters |
| 083 | New Mexico FRO | 2004-012 | Recovery of Chihuahua Chub in the Mimbres Basin, New Mexico |
| 084 | Arizona FRO - | 2003-024 | Apache Trout Restoration - Barrier Construction East Fork of the Little Colorado River |
| 086 | Dexter NFH & FTC | 2001-002 | Additional shallow water rights for threatened and endangered fish species. |
| 089 | San Marcos NFH & | 1999-002 | Texas Wildrice Refugium |
| 090 | Tishomingo NFH | 2000-001 | Propagation of Arkansas River shiners |
| 093 | Uvalde NFH | 2004-009 | Genetic Refugium for the Clear Creek Gambusia |
| 094 | Uvalde NFH | 2004-002 | Genetic Refugium for the Devils River Minnow |
| 095 | Uvalde NFH | 2004-015 | Nutritional Analysis of Fountain Darter Feed Used at National Fish Hatcheries |
| 100 | Arizona FRO - | 2003-025 | Apache Trout Restoration-Barrier Construction South Fork of the Little Colorado River |
| 102 | Arizona FRO - | 1999-005 | Native fish monitoring |
| 104 | New Mexico FRO | 2004-003 | Recovery of endangered plains stream minnows |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|------------|------------------|----------------|--|
| 109 | San Marcos NFH & | 1999-004 | Expansion of Refugia for Edwards Aquifer Species |
| 114 | Uvalde NFH | 2004-012 | Genetic Analysis of the Devils River Minnow |
| 117 | Oklahoma FRO | 2004-003 | Life History/vulnerability of Red River shiner |
| 121 | Dexter NFH & FTC | 2004-004 | Genetic Status and Monitoring of Gila trout Broodstock by Microsatellite Analysis |
| 122 | Dexter NFH & FTC | 2000-003 | Emergency Response to Aquatic Species in the Southwest |
| 123 | Dexter NFH & FTC | 2000-002 | Bonytail chub production and reintroduction |
| 124 | Willow Beach NFH | 2000-001 | Reintroduction of Endangered Fishes in the Lower Colorado River |
| 125 | Willow Beach NFH | 2000-005 | Endangered and Imperiled Native Fish Propagation |
| 127 | New Mexico FRO | 2004-004 | Trans-Pecos native species recovery and restoration |
| 129 | Arizona FRO - | 2003-026 | Apache Trout Restoration-Barrier Construction West Fork of the Little Colorado River |
| 130 | Arizona FRO - | 2003-028 | Apache Trout Restoration-Barrier Construction on West Fork Black River |
| 131 | Arizona FRO - | 2003-029 | Apache Trout Restoration-Barrier Re-Construction on Centerfire Creek |
| 136 | Uvalde NFH | 2004-010 | Genetic Refugium for the San Marcos Salamander |
| 137 | Oklahoma FRO | 2004-001 | Status of Arkansas River shiner with respect to biotic and abiotic limiting factors. |
| 139 | Oklahoma FRO | 2000-004 | Improved Passage for Leopard Darter in Little River Drainage, Oklahoma (Phase 1 of 7) |
| 140 | Dexter NFH & FTC | 2003-002 | Develop feed formulation to support the production of native fish for restoration and recovery. |
| 141 | Dexter NFH & FTC | 2004-001 | Suitability of Humpback Chub currently at Willow Beach National Fish Hatchery for use as Broodstock. |
| 142 | Arizona FRO - | 2003-033 | Apache Trout Restoration-Barrier Re-Construction on Little Bonito Creek |
| 143 | Willow Beach NFH | 2000-002 | Razorback Sucker Brood Stock Collection |
| 144 | Willow Beach NFH | 2000-009 | Extensive Fish Culture for Bonytail Chub |
| 145 | Willow Beach NFH | 2000-006 | Technology Development and Equipment |
| 147 | Mora NFH & TC | 2002-011 | Performance and Fitness of Fish Produced from Cryopreserved Milt |
| 149 | Arizona FRO - | 2003-030 | Apache Trout Restoration-Barrier Re-Construction on Fish Creek |
| 150 | Arizona FRO - | 2003-031 | Apache Trout Restoration-Barrier Re-Construction on Hayground Creek |
| 151 | Arizona FRO - | 2003-059 | Conduct Monitoring Surveys and Develop Refugia Sites for Little Colorado River Spinedace |
| 153 | Arizona FRO - | 2003-049 | Survey Native Fish On The San Carlos Apache Reservation in Arizona |
| 154 | Uvalde NFH | 2004-011 | Genetic Refugium for the Texas Blind Salamander |
| 156 | Oklahoma FRO | 2002-005 | Improved Fish Passage in Honobia Creek, Little River Drainage, Oklahoma (Phase 2 of 7) |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|------------|--------------------|----------------|--|
| 157 | Oklahoma FRO | 2002-006 | Improved Fish Passage in Glover River, Little River Drainage, Oklahoma (Phase 3 of 7) |
| 158 | Oklahoma FRO | 2002-007 | Improved Fish Passage in Robinson Creek, Little River Drainage, Arkansas (Phase 4 of 7) |
| 159 | Oklahoma FRO | 2002-008 | Improved Fish Passage in Mountain Fork, Little River Drainage, Oklahoma (Phase 5 of 7) |
| 160 | Oklahoma FRO | 2002-009 | Improved Fish Passage in Buffalo Creek, Little River Drainage, Oklahoma (Phase 6 of 7) |
| 161 | Oklahoma FRO | 2002-010 | Improved Fish Passage in Jack Fork Creek, Little River Drainage, Oklahoma (Phase 7 of 7) |
| 164 | Willow Beach NFH | 2000-010 | Imperiled Species Refugia |
| 167 | Mora NFH & TC | 2004-005 | Physiological Effects of Fungus Outbreaks on Gila Trout |
| 169 | Arizona FRO - | 2003-032 | Apache Trout Restoration-Barrier Re-Construction on Big Bonito Creek |
| 173 | Mora NFH & TC | 2004-004 | Evaluate Effects of a Diet Consisting of Available Live Feeds Fed To Wild Fish Held In Captivity |
| 174 | ARD - Fisheries R2 | 2003-004 | Develop humpback chub captive propagation/genetics management options |
| 177 | Texas FRO | 2000-011 | Habitat Restoration for Endangered Fountain Darter and Texas Wild-rice |
| 178 | Texas FRO | 2000-003 | West Texas Spring Ecosystem Monitoring |
| 179 | Uvalde NFH | 1999-005 | Update Environmental Outreach Materials |
| 182 | Dexter NFH & FTC | 1999-006 | Recovery of twelve additional listed fishes in the Southwest and Intermountain West |
| 183 | Dexter NFH & FTC | 2002-004 | Razorback sucker population monitoring and population dynamics analyses for upper Lake Mohave, AZ. |
| 184 | Dexter NFH & FTC | 2003-003 | Comanche Springs Pupfish: A Genetic Reserve Population and Stock Management Process. |
| 185 | Willow Beach NFH | 2002-001 | Extensive Fish Culture for Bonytail Chub - Phase Two |
| 189 | Mora NFH & TC | 2004-006 | Determine Infectivity Rates of Gila Trout to Bacterial Kidney Disease |
| 193 | Texas FRO | 2000-012 | Salt Creek Fish Barrier Installation |
| 194 | Texas FRO | 2000-004 | Recovery of Devils River Minnow |
| 205 | Dexter NFH & FTC | 2003-004 | Cryogenic Technology in Genetic Conservation and Management of Razorback Sucker |
| 206 | Dexter NFH & FTC | 2004-005 | Safe Haven Capability for Receiving Wild Fish |
| 207 | Dexter NFH & FTC | 2004-003 | Factors Influencing Comanche Springs pupfish (<i>Cyprinodon elegans</i>) reproduction in ponds. |
| 214 | Arizona FRO - | 2003-061 | Desert Pupfish Monitoring, Reintroduction, Habitat Improvements, and Refugia Development |
| 220 | Texas FRO | 2000-001 | Captive Propagation for Texas Imperiled Aquatic Species |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|------------|------------------|----------------|--|
| 221 | Willow Beach NFH | 2000-012 | Characterize Water Quality Releases From Hoover Dam , Willow Beach NFH's Water Source. |
| 999 | San Marcos NFH & | 1999-012 | Refugium and Research for Devils River Minnow, Comanche Springs pupfish, and Pecos gambusia [FUNDED] |
| 999 | San Marcos NFH & | 1999-013 | Development of Culture Methods for Darters in the Genus <i>Percina</i> [FUNDED] |

2.2. Restore declining fish and other aquatic resource populations before they require listing under the Endangered Species Act.

| | | | |
|-----|------------------|----------|---|
| 010 | Tishomingo NFH | 1999-001 | Restoration of Paddlefish in Arkansas-Red River Basin |
| 029 | San Marcos NFH & | 2004-001 | Propagation and Reintroduction of the Guadalupe Bass |
| 030 | Uvalde NFH | 2004-008 | Propagation and Reintroduction of the Guadalupe Bass |
| 107 | Inks Dam NFH | 2004-002 | Development of culture techniques and fish production for restoration of imperiled Guadalupe bass |
| 108 | Inks Dam NFH | 2003-001 | Improved Nutrition for Imperiled and Sport Fish Programs |
| 110 | Tishomingo NFH | 2004-001 | Captive propagation of alligator snapping turtles |
| 135 | Uvalde NFH | 2004-006 | Genetic Refugium for the Rio Grande Darter |
| 155 | Uvalde NFH | 2004-007 | Propagation and Reintroduction of the Rio Grande Darter |
| 208 | Willow Beach NFH | 2003-001 | Rana onca, the Relict Leopard Frog - Quarantine facility and habitat development |

2.3. Maintain diverse, self-sustaining fish and other aquatic resource populations.

| | | | |
|-----|-----------|----------|---|
| 003 | Texas FRO | 2001-001 | Management And Conservation Of Texas Rivers |
| 079 | Texas FRO | 2000-007 | Rio Grande Biological Evaluation and Status of Species of Concern |
| 113 | Texas FRO | 2001-003 | Fishery Management On Federal Lands Of Texas |
| 195 | Texas FRO | 2001-002 | Management Of The Texas Gulf Coast |

2.4. Prevent new introductions of aquatic nuisance species.

| | | | |
|-----|---------------------|----------|--|
| 026 | Inks Dam NFH | 2004-004 | Filtration and Sterilization of Incoming Hatchery Water to Exclude Invasive Species |
| 074 | Alchesay - Williams | 2004-003 | Alchesay National Fish Hatchery Disinfection Station |
| 162 | Alchesay - Williams | 2002-002 | Implement HACCP strategy to prevent spread of non-target species. |
| 181 | Oklahoma FRO | 2003-003 | Regional Representative to the Aquatic Nuisance Species Committee |
| 199 | Uvalde NFH | 2003-001 | Implement HACCP (Hazard Analysis & Critical Control Point) planning strategies |
| 213 | Arizona FRO - | 2002-011 | Fishery Field Station - Hazard Analysis Critical Control Plan Development |
| 218 | Oklahoma FRO | 2003-004 | Evaluate Range Expansion, Population Characteristics of Invasive Asian Carp In Mississippi Basin |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|--|---------------------|----------------|--|
| 2.5. Minimize range expansion and population growth of established aquatic nuisance species. | | | |
| 009 | San Marcos NFH & | 2003-003 | Removal of Invasive Aquatic Plant, <i>Cryptocoryne</i> , from a 2-mile Stretch of the San Marcos River |
| 087 | ARD - Fisheries R2 | 2004-005 | Aquatic Nuisance Species Regional Management |
| 132 | Arizona FRO - | 2002-009 | Aquatic Nuisance Species Control - Exotic Crayfish Control |
| 211 | Arizona FRO - | 2002-007 | Aquatic Nuisance Species - Giant Salvinia Control |
| 215 | Arizona FRO - | 2003-063 | Aquatic Nuisance Species - Bullfrog Control |
| 2.7. Co-manage interjurisdictional fisheries. | | | |
| 044 | Uvalde NFH | 2000-010 | Develop Spawning and Rearing Techniques for Endangered Yaqui Catfish |
| 138 | Oklahoma FRO | 2000-009 | Alligator Snapping Turtle Population Demographics, Microhabitat Use and Movement Study |
| 2.8. Support, facilitate, and/or lead collaborative approaches to manage interjurisdictional fisheries. | | | |
| 018 | Oklahoma FRO | 2000-005 | Improved paddlefish population survey program |
| 072 | Tishomingo NFH | 2004-002 | Alligator Gar Life History Investigations |
| 3.1. Enhance recreational fishing opportunities on Service and Department of Defense lands. | | | |
| 111 | Tishomingo NFH | 2004-003 | Recreational Fish Production for the Wichita Mountains NWR |
| 148 | New Mexico FRO | 2003-009 | Upper Rio Grande Basin Acequia Fish Passage Modification |
| 180 | Oklahoma FRO | 2002-011 | Fisheries Management on Service Lands in Oklahoma/North Texas |
| 3.2. Provide support to States, Tribes, and other partners to identify and meet shared or complementary recreational fishing and aquatic education and outreach objectives. | | | |
| 051 | Alchesay - Williams | 2001-105 | Promotion of National Fishing Week on Indian Reservations |
| 067 | New Mexico FRO | 2003-022 | Improving Recreational Fishing on Service and Tribal Lands |
| 071 | San Marcos NFH & | 1999-006 | Environmental Outreach |
| 120 | Alchesay - Williams | 1999-006 | Environmental Outreach |
| 133 | Arizona FRO - | 2003-022 | Improving Recreational Fishing on Service and Tribal Lands |
| 163 | Dexter NFH & FTC | 1999-002 | Environmental Outreach |
| 176 | San Marcos NFH & | 2002-001 | Fire Safety / Prairie Restoration and Maintenance |
| 202 | Oklahoma FRO | 2003-022 | Improving Recreational Fishing on Service and Tribal Lands |
| 204 | Dexter NFH & FTC | 2001-001 | Outreach/Education Enhancement |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|--|---------------------|----------------|--|
| 3.3. Recognize and promote the value and importance of recreational fishery objectives in implementation of other Service responsibilities. | | | |
| 017 | Alchesay - Williams | 2003-001 | Survey of FWS Supported Recreational Fishing Programs on Indian Lands |
| 069 | Inks Dam NFH | 1999-009 | Aquatic Environmental Education and Outreach |
| 091 | Tishomingo NFH | 2001-002 | Fish production for Service sponsored Outdoor Classrooms, Fishing Derbies |
| 096 | Alchesay - Williams | 2000-001 | Apache Trout Recreational Fisheries Initiative |
| 3.4. Identify the mitigation responsibilities of Federal agencies for Federal water projects. | | | |
| 219 | Oklahoma FRO | 2003-009 | Mitigation Fisheries Administrator |
| 4.1. Provide technical assistance to Tribes. | | | |
| 033 | Oklahoma FRO | 2002-001 | Development Of Fishery Management Plans On Native American Reservations In Oklahoma |
| 068 | New Mexico FRO | 2004-007 | Development Of Fishery Management Plans On Native American Reservations In New Mexico |
| 085 | Arizona FRO - | 2003-004 | Development Of Fishery Management Plans On Native American Reservations In Arizona |
| 4.3. Provide fish for Tribal resource management. | | | |
| 008 | Willow Beach NFH | 2004-001 | Restore Trout Production for Region 2 Indian Reservations and Lake Mohave. |
| 031 | Tishomingo NFH | 2004-005 | Restore Sport Fish Production for Indian Reservations |
| 052 | Alchesay - Williams | 2004-004 | Restore Sport Fish Production for Indian Reservations |
| 088 | Inks Dam NFH | 2004-001 | Improve water quality |
| 191 | Inks Dam NFH | 2004-007 | Restore Sport Fish Production for Indian Reservations |
| 4.4. Recognize and promote the Service's distinct obligations toward Tribes within the Fisheries Program. | | | |
| 016 | New Mexico FRO | 2004-006 | Restoration of Rio Grande Cutthroat Trout in Tribal Waters |
| 061 | Alchesay - Williams | 1999-004 | Hatchery Contaminant Survey |
| 5.1. Utilize appropriate scientific and technologic tools in formulating and executing fishery management plans and policies. | | | |
| 011 | Mora NFH & TC | 2001-005 | Fish Fitness Evaluation for Recovery and Restoration |
| 021 | Pinetop FHC | 2002-004 | Survey of Largemouth Bass Virus in Oklahoma, Arizona, and New Mexico |
| 081 | Pinetop FHC | 2002-008 | Testing Investigational New Animal Drugs (INAD) in Fish Hatcheries |
| 082 | Mora NFH & TC | 2004-002 | Develop Protocols for Injecting Exogenous Hormones for Spawning Imperiled Southwestern Native Trout. |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|-------------------|------------------|-----------------------|--|
| 097 | Dexter NFH & FTC | 2004-002 | Development of diagnostic molecular markers for assessing hybridization between humpback chub. |
| 098 | Pinetop FHC | 2004-001 | Fish Health Assessment of Rio Grande Silvery Minnow |
| 103 | Mora NFH & TC | 2001-001 | Water Conservation Development for Restoration and Recovery |
| 126 | Mora NFH & TC | 2004-001 | Monitoring the Reproductive Maturation of Gila Trout |
| 165 | Pinetop FHC | 2002-006 | Whirling Disease Survey of Free Ranging Salmonids in New Mexico |
| 166 | Pinetop FHC | 2002-005 | Whirling Disease Survey of Free Ranging Salmonids in Arizona |
| 172 | Mora NFH & TC | 2003-002 | Discernment of Nutritional Requirements for Imperiled Native Fishes |
| 187 | Mora NFH & TC | 2004-003 | Evaluation of Long-Term Hormone Use on Salmonid Fishes |
| 188 | Mora NFH & TC | 2002-003 | Water Management Plans for Southwest National Fish Hatcheries. |
| 190 | Arizona FRO - | 2003-039 | Strengthening Our Science |
| 203 | Dexter NFH & FTC | 2003-001 | Integrated Genetic Data Management System: A Tool for Fisheries. |
| 210 | Mora NFH & TC | 2001-009 | Safe Haven Capability for Receiving Wild Fish |

5.2. Develop and share applied aquatic scientific and technologic tools with partners.

| | | | |
|-----|------------------|----------|--|
| 045 | Uvalde NFH | 2002-001 | Borderlands Imperiled Yaqui Catfish Conservation and Breeding. |
| 055 | New Mexico FRO | 2004-008 | Habitat Enhancement on Private Lands in New Mexico |
| 058 | San Marcos NFH & | 2003-001 | Program for Monitoring Movement and Location of T&E Species |
| 186 | Pinetop FHC | 2004-005 | Fish Health Surveys for Spring Viremia of Carp Virus. |
| 192 | Inks Dam NFH | 2004-005 | Establish refugia and develop research capabilities for the Houston toad |

6.1. Facilitate management of aquatic habitats on national and regional scales.

| | | | |
|-----|---------------------|----------|--|
| 034 | ARD - Fisheries R2 | 2004-004 | Improved Fish Passage Program |
| 092 | Tishomingo NFH | 1999-009 | Hatchery Contaminant Survey |
| 119 | Alchesay - Williams | 2001-108 | Compliance With EPA Discharge Permit Limits For Hatchery Effluents |
| 170 | Arizona FRO - | 2003-041 | Healing Our Watersheds - Working With Others |

6.2. Expand the use of Fisheries Program expertise to avoid, minimize or mitigate impacts of habitat alteration on fish and other aquatic species.

| | | | |
|-----|-----------|----------|---|
| 197 | Texas FRO | 2002-001 | Habitat Enhancement on Private Lands in Texas |
|-----|-----------|----------|---|

6.3. Increase the quantity and improve the quality of aquatic and riparian habitat on Service lands.

| | | | |
|-----|----------------|----------|---|
| 101 | Arizona FRO - | 2003-003 | Management Of Backwater Habitats On The Lower Colorado River As Native Fish Refugia |
| 168 | New Mexico FRO | 2004-010 | Fisheries Management on Service Lands in New Mexico |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|-------------------|----------------|-----------------------|--|
| 175 | Inks Dam NFH | 2004-003 | Enhance Riparian Habitat on Colorado River and Peters Creek |
| 196 | Texas FRO | 2000-015 | Restore Passage by Marine Organisms to Coastal Marshes on Nine Texas Coastal Refuges |
| 198 | Uvalde NFH | 1999-004 | Hatchery Contaminant Survey |
| 200 | Oklahoma FRO | 2004-005 | Big Devil Bayou Fish Passage Project |
| 201 | Oklahoma FRO | 2004-004 | Brundett Lake Fish Passage Project |
| 217 | Texas FRO | 2001-006 | Foester Lake Fish Passage Restoration Program |

7.1. Staff Fisheries Program field stations at levels adequate to effectively meet the Service's goals and objectives in fish and other aquatic resource conservation.

| | | | |
|-----|---------------------|----------|--|
| 002 | Uvalde NFH | 2004-001 | Operational Costs for New Hatchery Facilities |
| 004 | Alchesay - Williams | 2001-101 | Restore Efficiency in Fish Distribution and Facility Maintenance |
| 005 | Pinetop FHC | 2001-001 | Fish Health Activities for Federal, Tribal, and State Partners. |
| 014 | Dexter NFH & FTC | 1999-001 | Staff and Equip Research Facilities |
| 032 | Pinetop FHC | 2002-001 | Expansion of Wild Fish Health Survey for Federal, Tribal and State partners. |
| 048 | Alchesay - Williams | 2002-001 | Hatchery Volunteer Program |
| 073 | Tishomingo NFH | 1999-008 | Environmental Outreach |
| 134 | Inks Dam NFH | 2004-006 | Improved Management of Aquatic Resource Populations |
| 146 | Pinetop FHC | 2002-003 | Maintaining Health of Native Fish Species in Hatcheries and in the Wild |

7.2. Provide employees with opportunities to maintain competencies in the expanding knowledge and technologies needed to improve opportunities for professional achievement, advancement and recognition.

| | | | |
|-----|--------------------|----------|---|
| 064 | ARD - Fisheries R2 | 2004-006 | Addressing Impending Workforce Retirements |
| 106 | ARD - Fisheries R2 | 2004-003 | Developing a Well Trained Staff |
| 152 | Arizona FRO - | 2003-057 | Conduct Annual Department of Interior Required Motorboat Operator Certification Courses |
| 171 | Pinetop FHC | 2004-002 | Maintaining Laboratory Skills Through Training |

7.3. Provide employees with access to facilities and equipment needed to effectively, efficiently and safely perform their jobs.

| | | | |
|-----|---------------------|----------|---|
| 025 | ARD - Fisheries R2 | 2004-002 | Increased Efficiency in Facilities Management |
| 047 | Alchesay - Williams | 2004-002 | Enhance Personal Safety and Increase Survival of Apache Trout |
| 099 | Pinetop FHC | 2002-002 | Temporary Rent and moving costs for a New GSA Building |
| 118 | Alchesay - Williams | 2004-001 | Enhanced Fry Production and Personal Safety at Williams Creek |
| 128 | New Mexico FRO | 2004-005 | Enhanced Operational Efficiency While in the Field |

**FONS Projects - by Vision Objective and Regional Rank
Fisheries, Southwest Region**

| Reg'l Rank | Station | Project Number | Project Title |
|-------------------|----------------|-----------------------|---|
| 209 | Pinetop FHC | 2004-004 | Updating Laboratory Equipment and a Library of Current Publications |

Appendix E:
Region 2 Fisheries Program Station Profiles



U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program

Alchesay-Williams Creek National Fish Hatchery



Alchesay-Williams Creek National Fish Hatchery is a two-station complex, operating to fulfill a federal trust responsibility for stocking trout on Indian Reservations and other federally managed waters. The primary mission of the Complex is to provide trout for economically important recreational fishing programs on 18 Indian Reservations in Arizona and New Mexico.



Four year-old Apache trout broodstock

Employs ten permanent full time staff

Recreation fishing provides Tribes with a source of funds for wildlife and natural resources conservation programs, wildlife law enforcement, and sensitive species restoration, where federal aid dollars are unavailable.

Supports the annual production of 1.2 million rainbow, brook, brown, cutthroat, and Apache trout weighing over 200,000 pounds and represents the largest Indian Trust, recreational fishing program in the National Fish Hatchery System.

Developed culture protocols and remains the only source of Apache trout for recovery and restoration of this threatened native species slated to be the first fish ever removed from the endangered species list. Received the Director's National Fisheries Conservation Award in 2003.

Five lakes on the Ft. Apache Indian Reservation returned 184,368 angler days in 2001, which translates to an estimated total angler expenditure and economic benefit of over \$17,000,000. These five lakes are among 58 Indian waters stocked by the Complex region-wide.

Maintains the largest fisheries volunteer program in Region 2 with seven volunteers contributing over 5,000 hours annually. Received the President's Volunteer Award in 2003.

Station Physical Layout and Attributes



Spawning Apache trout

Both hatcheries are located on the 1.7 million-acre Ft. Apache Indian Reservation in the White Mountain Region of east-central Arizona; a popular outdoor recreation paradise for Phoenix and Tucson located 100 miles to the south.

An economical gravity flow of spring and river water at over 8,000 gallons per minute serves three indoor facilities housing 180 incubation trays and 56 rectangular tanks for rearing fry and fingerling trout.

Outdoor grow-out facilities include 42 concrete raceways and 11 earthen ponds.

All trout rearing facilities are equipped with solar-powered automatic fish feeders delivering computer-generated feed regimes that control growth to within 1/100th of an inch per day.

Contemporary feed formulations combined with state-of-the-art delivery systems often produce greater than one pound of fish growth per pound of feed fed.

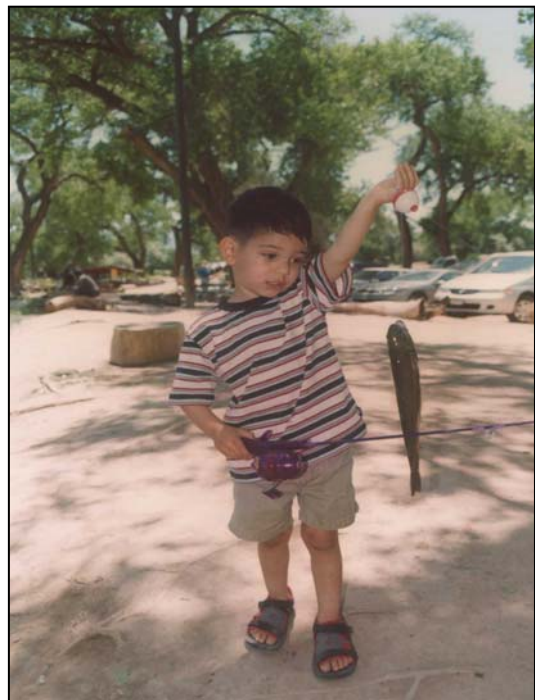
Water treatment facilities under construction including modern passive settling zones, vacuum waste removal, and micro screening filters that polish hatchery effluent to ensure compliance with national hatchery discharge standards.

Public use areas include two picnic areas, two information kiosks, a nature trail and wildlife viewing deck, self-guided tour routes, audio-visual supported display room, and public rest rooms.

Facilities host over 5,800 visitor days annually.

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Results of our efforts – Landed a big one!



U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program



Arizona Fishery Resources Office

The mission of the Arizona Fishery Resources Office is to work with others to conserve, protect, and enhance fish and other aquatic organisms and their habitats in Arizona and the Southwest. Three primary focus areas drive our daily activities: Aquatic Species Conservation and Management, Aquatic Habitat Conservation and Management, and Cooperation with Native Americans.



AZFRO staff sampling an Apache trout stream in the White Mountains of Arizona.

Employs twelve permanent staff, four term appointments, and two full-time temporary staff.

Provide technical fishery management assistance to all Native American tribes in the State of Arizona.

Serves as “lead” station for recovery of threatened and endangered fish species that include:

- Apache trout
- Little Colorado spinedace
- Bonytail
- Humpback chub
- Razorback sucker
- Colorado pikeminnow

Inventories native and introduced fish on Service, Tribal, and other Federal lands.

Develops Fish Management Plans.

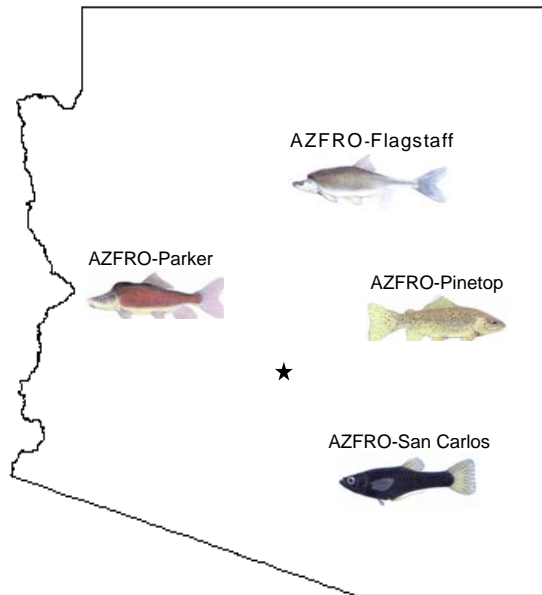
Provides technical fishery assistance to national wildlife refuges.

Conducts evaluations of hatchery stockings.

Administers Arizona’s Partners for Fish and Wildlife Program.

Supports Youth Conservation Corps programs designed to identify and recruit talented Native American youth with natural resource interests.

Station Locations and Attributes



The Arizona Fishery Resources Office (AZFRO) comprises four offices, with our headquarters located in Pinetop and satellite offices in San Carlos, Parker, and Flagstaff.

AZFRO-Pinetop (est. 1959) – Headquarters

- Located in Pinetop, AZ
- Fishery management assistance for northeastern AZ
- Recovery for Apache trout, Little Colorado spinedace, and loach minnow

AZFRO-Parker (est. 1962) – Satellite

- Located on Bill Williams National Wildlife Refuge, Parker, AZ
- Fishery management assistance for western AZ
- Recovery for bonytail, razorback sucker, and Colorado pikeminnow

AZFRO-San Carlos (est. 1989) – Satellite

- Located on the San Carlos Apache Indian Reservation, Peridot, AZ
- Fishery management assistance for southeastern AZ
- Recovery for Gila topminnow

AZFRO-Flagstaff (est. 1991) – Satellite

- Co-located with the Service's Arizona Ecological Service's Office, Flagstaff, AZ
- Fishery management assistance for northern AZ
- Recovery for humpback chub

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U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program



Pinetop Fish Health Center

The mission of the U.S. Fish and Wildlife Service and the Pinetop Fish Health Center (PFHC) is working with its 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. To that end the PFHC is responsible for fish pathogen testing and fish health issues in Region 2, which is comprised of Oklahoma, Texas, New Mexico, and Arizona.



Fish health biologist, Phil Hines, explains to a national TV audience, the value of the National Wild Fish Health Survey.

Employs five permanent full-time staff.

Inspects federal hatcheries annually.

Diagnostic examinations are provided at the request of Federal hatcheries experiencing excessive fish mortality.

Investigational New Animal Drug (INAD) studies conducted at Service hatcheries in Region 2 are overseen by PFHC.

Under the guidelines of the Service's National Wild Fish Health Survey (NWFHS), initiated in 1997, the PFHC conducts fish health inspections of wild fish populations of sport fish, native and T&E fish species and provides test results for a Web site available to all interested parties.

Involved in the enhancement and support of ecosystem management by participation and contribution to ecosystem teams in Region 2.

Reviews all fish transfers between culture stations, stream-to-stream transfers, and fish salvage efforts when wild fish are brought onto culture stations.

Evaluates and tests new or modified pathogen detection methods.

Staff serves on the Aquatic Animal Health Policy revision committee, the Standard Procedures for Aquatic Animal Health Inspections Revision and Oversight committee, and the National Wild Fish Health Survey review committee.

Participate with Federal, State, Tribal, and educational partners on fish health issues of regional and national importance.

Evaluates and comments on the fish health components of recovery plans for T&E species.

Makes recommendations on prevention, and treatment of fish pathogens to fish culturists and fisheries resource managers.

Station Location and Attributes

The Pinetop Fish Health Center is co-located with the Arizona Fisheries Resource Office in the city of Pinetop, Navajo County, Arizona. Pinetop is located near the east - central border of Arizona.

The elevation is approximately 7,200 feet; the predominant vegetation type is ponderosa pine forest.

The local economy is based on outdoor recreation and tourism including fishing, camping, hiking, skiing, and hunting.

As part of a cooperative agreement with the Arizona Game and Fish Department, their Fish Health Laboratory is co-located with the PFHC.

Contact Information

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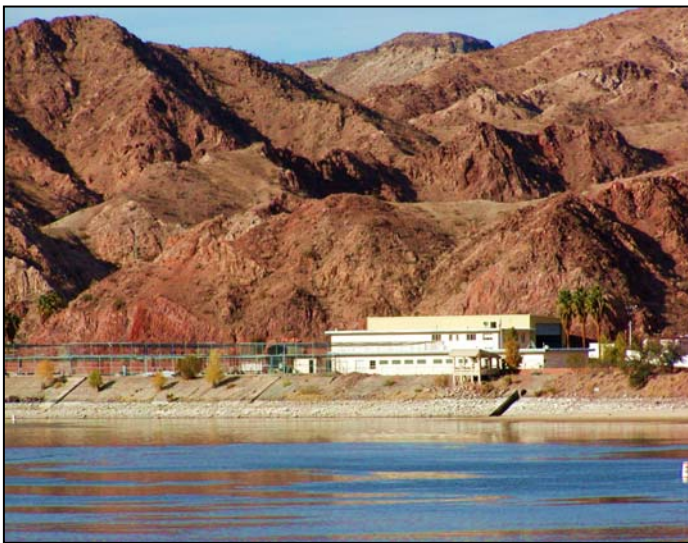


U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program



Willow Beach National Fish Hatchery

The Willow Beach National Fish Hatchery actively carries out the U.S. Fish and Wildlife Service Fishery Resource Priorities and mandated Federal Indian Trust responsibilities. These include the production of rainbow trout for recreational fishing and economic development on five Native American tribal reservations and along the Colorado River. In addition, the hatchery plays a very active role in developing culture protocol for endangered razorback suckers and bonytail chub.



Employs six permanent full-time staff.

Produces 135,000 (12-inch) rainbow trout for the Lower Colorado River.

Annually produce 150,000 rainbow trout for recreational fishing.

Produces 15,000 (10-inch) rainbow trout for tribal nations.

Annually rear, tag, and release over 10,000 razorback suckers and 6,000 bonytail into the Colorado River.

Rears up to 75,000 bonytail for lakes Mohave and Havasu.

Rears up to 150,000 razorback sucker for lakes Mohave and Havasu.

Successfully examined the effects of temperature on growth of razorback suckers, bonytail chub and humpback chub for captive propagation recovery.

Assisted in surveys of environmental contaminants and their effects on razorback suckers and carp in the Colorado River Basin.

Successfully cryopreserved sperm from razorback sucker and bonytail chub to aid recovery of these fishes.

Worked with the Colorado River Indian Tribes in developing a native fish rearing facility on tribal land.

Developed solar-heated warm water recirculating systems for the production of native endangered fishes.

Hatchery personnel work in close concert with federal, state, and local groups to produce native fish for future use as broodstock, or released into the Colorado River to satisfy conditions of the Endangered Species Act – Biological Opinions issued by the U.S. Fish and Wildlife Service in 1994.



Bontail Chub



Razorback Sucker

Station Location and Attributes

Willow Beach National Fish Hatchery is located on the Colorado River (upper Lake Mohave) 11 miles downstream from the Hoover Dam.

Campus consists of a 7,580 square-foot hatchery/office building, a 3,012 square foot maintenance garage building with an attached 3,500 square-foot pre-engineered light steel building, five houses (1,050 square feet each), and two mobile homes (800 square feet each).

River water for rearing fish can be pumped from the Colorado River using one of several motors: a 75-hp pump; two 50-hp pumps; or one 25-hp pump. Additionally, there is a 125'-deep well that provides warmer water for rearing endangered fish.

Outside fish rearing facilities consist of 40 concrete raceways, 24 flow-through trout raceways, and 16 separate re-circulation systems designed to provide high-density fish production with solar-heated warm water.

The hatchery building houses 12 flow-through trout raceways, four separate re-circulation systems, and 24 circular tanks.

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U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program

Dexter National Fish Hatchery and Fish Technology Center



The Dexter National Fish Hatchery and Fish Technology Center is the only facility in the nation dedicated to holding, studying, culturing, and distributing endangered fish for restocking in waters where they occurred naturally. It is the central component for the protection, restoration, and recovery of the endangered and threatened fishes of the Southwest.



Endangered bonytail chub culture technologies developed at Dexter NFHTC promote fish recovery.

Employs ten permanent full-time staff.

Maintains 17 federally listed threatened and endangered fish species.

Develops culture techniques for native fish and studies their behavioral requirements.

Provides live and preserved fish specimens to authorized agencies and educational institutions.

Provides technical assistance and information to other Technology Centers, National Fish Hatcheries, State agencies, and Recovery teams and programs.

Develops and tests new technologies to improve survival of threatened and endangered species and publishes findings.

Examined the effects of intensive culture, relating to feed, growth and density, of bonytail and razorback sucker.

Participated in developing stocking protocols, including calcein marking, and distributing 200,000 (52mm) Colorado pikeminnow annually in the San Juan River for recovery.

Annually rear, PIT-tag and release over 2,000 bonytail in Lake Havasu and 1,000-razorback sucker in Lake Mohave.

Developed water reuse/recycling system to meet life history requirements of the Rio Grande silvery minnow, bonytail chub and razorback sucker.

Conducts genetics studies to aid in the development of captive stock pedigrees for application to controlled propagation programs, and development of management plans.

Develops and tests new fish marking techniques and methods.

Develops, improves and tests diets to meet nutritional requirements of captive fish populations.

Conducts an environmental science education program for students from Dexter, New Mexico Consolidated schools.



Dexter National Fish Hatchery and Fish Technology Center

Station Physical Layout and Attributes



Ariel view of campus and facilities - Dexter, New Mexico

Located 1.5 miles east of Dexter, New Mexico, in the Southeast corner of the state.

Facilities include an administrative office and laboratory building, a fish culture building, a maintenance-shop building, and two vehicle/equipment storage buildings.

Campus consists of 71 ponds and four raceways.

Five wells (18°C) provide pumped water to the fish culture building, ponds and raceways for rearing threatened and endangered species.

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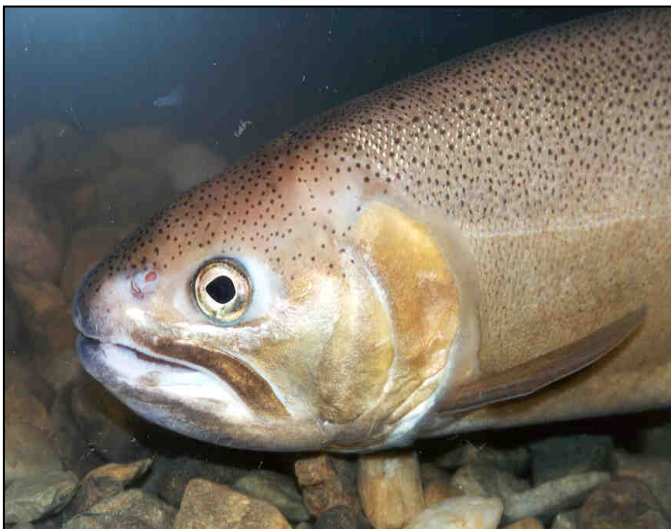


U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program

Mora National Fish Hatchery and Fish Technology Center



The Mora National Fish Hatchery and Fish Technology Center investigates, develops, and demonstrates high-density fish production using leading-edge water conservation methods. The station was designed to develop fish culture technology for aquatic fauna of national significance, explore water re-use and conservation technologies, and maintain threatened and endangered species.



Gila trout produced at Mora National Fish Hatchery and Fish Technology Center (Photo courtesy of Garold Sneegas)

Employs six permanent full-time staff

Provides assistance and advice to other National Fish Hatcheries, State agencies, Native Americans and the aquaculture industry

Improves the quality, genetic diversity, and post-release survival of captive-reared fish

Identifies and reduces detrimental effects of hatchery fish on wild fish populations

Develops technologies to reduce water consumption and pollutant discharge at hatcheries

Develops and improves diets to meet nutritional requirements of captive fish populations

Assisted with the completion of a feasibility study for captive propagation of the endangered humpback chub to aid in recovery.

Stocks over 5,000 Gila trout per year, as directed by the Gila Trout Recovery Program, into renovated streams for recovery efforts

Received three lots of wild Gila trout over the past two years from streams affected by drought or wildfire affected streams to hold as refugia.

Implements the "Gila Trout-Genetic Broodstock Management Plan" to ensure conservation of all available diversity of the four relict genetic lineages.

Studies underway to experiment with various manipulations of hatchery rearing units to mimic conditions the fish would face in the wild (i.e. substrate, structure, and natural live feeds).

Assisting with the Arkansas River shiner collection efforts in the Pecos River drainage that will be used for phylogeographic studies to gain baseline genetic information aiding captive propagation population selections.

Studies underway to build on past research investigating propagation techniques to maximize gametic output and offspring survival.

Physiological studies are underway to assess effects of stressors associated with captivity to determine ways to reduce or eliminate these to ensure quality of propagated species.

Cryopreservation of genetic resources continues to be a major focus for research at the facility. These techniques help aid in the recovery of threatened and endangered fishes.

Station Physical Layout and Attributes



Located in north-central New Mexico on the edge of the Sange de Cristo mountain range.

Campus consists of a 30,000-square-foot hatchery building, an office/maintenance garage building, an office/laboratory building, visitor's center and four mobile homes.

Support facilities consist of a 150,000-gallon reservoir, two concrete settling ponds, a fishing pond, 12,000-gallon propane tank and 900-gallon liquid oxygen tank, and a 400kw emergency generator.

Well field complex located 1.4 miles south near the Mora River is comprised of four well houses, a 135kw generator, and discharge meter house.

The hatchery building houses three separate re-circulation systems designed to provide high-density fish production with limited amounts of water.

The facility has the ability to keep broodfish separated in four specially designed systems, as well as hold wild fish in four separate isolation facilities. These systems are also used for emergency rescue of fish threatened by wildfire.

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U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program

New Mexico Fishery Resources Office



The primary mission of the New Mexico Fishery Resources Office is to provide fish and wildlife management assistance, to conserve native and recreational fisheries in the drainage basins of San Juan, Pecos, upper Gila and Canadian rivers and the Rio Grande in New Mexico, on tribal lands and in adjacent states.



Electrofishing on San Juan River near Bluff, Utah

Employs five permanent full-time, one permanent intermittent, five term full-time, and four student part-time staff.

Provides fish and wildlife management assistance to 18 Native American tribes in and adjacent to New Mexico, including management of hatchery stockings for recreational fisheries.

Provides fish and wildlife management assistance to five national wildlife refuges.

Conducts research on federally protected native fish and non-native fish species interactions in the San Juan River and provides management recommendations for conservation of Colorado pikeminnow and razorback sucker.

Conducts research on federal reservoir operation impacts on federally protected fishes (Pecos bluntnose shiner, Rio Grande silvery minnow, Colorado pikeminnow, razorback sucker), associated fish communities, and aquatic habitats in the Rio Grande, San Juan and Pecos rivers.

Implements recovery actions for federally endangered Gila trout in the headwaters of the upper Gila River Basin, including emergency rescue of populations threatened by wildfire and drought.

Assists Native American tribes with management of native Rio Grande cutthroat trout in tribal waters, including maintenance for both recreation and species preservation and emergency management actions as a response to wildfires.

Assists Native American tribes with Endangered Species Act issues regarding recovery of listed species on tribal lands.

Through use of electrofishing removes nonnative channel catfish from riverine habitats and stocks into closed systems to both increase quality of recreational fisheries and minimize negative interactions with native fishes.

Provides expertise in remote backcountry work, including use of whitewater rafting and riding/packing mules and horses



Emergency evacuation of Gila trout from Mogollon Creek in New Mexico's Gila Wilderness

Station Physical Layout and Attributes



New Mexico Fishery Resources Office

Located in Albuquerque, New Mexico.

Facilities include a 10,000 square foot building providing thirteen individual offices and meeting room facilities for FRO personnel and visiting cooperators.

Pull through warehouse and workshop space, capable of supporting all types of equipment fabrication and repair duties and holding two vehicles with equipment/boat trailers.

Covered and secured parking for FRO vehicles, trailers and boats.

Closed systems are housed in an isolated and separate portion of the warehouse for maintenance of captive refuge populations of Rio Grande silvery minnow and Rio Grande cutthroat trout.

Wet lab space is provided for processing of fish and macroinvertebrate specimens, analyses of fish bony structures for aging, and preparation of specimens for curation at university collections.

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U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program



Oklahoma Fishery Resources Office

The primary mission of the Oklahoma Fishery Resources Office is to assist in the conservation of imperiled aquatic species in the Arkansas and Red River basins, including paddlefish, Arkansas River shiner, leopard darter, and alligator gar.



Paddlefish examination on Red River, OK

Employs one permanent full-time staff.

Recreational fish stocked in 2003 resulted in over 12,000 angler-days valued at over \$700,000 to local economies.

Championed successful restoration of paddlefish to three drainages in Oklahoma, Texas and Kansas after a 50-year hiatus.

Area volunteers donated over 400 hours in 2003.

Completed annual status surveys of the threatened Arkansas River shiner in Oklahoma and Texas and has been asked to serve on the Arkansas River Shiner Recovery Team when that team is formed.

Assists in successful completion of containments surveys in Oklahoma and Texas.

Completed six fish passage projects in Oklahoma to benefit the threatened Leopard darter and recreational fisheries. These projects were completed on a cost-share basis with the commercial timber industry and featured on ESPN Outdoors TV.

Serves as Fisheries consultant to ten national wildlife refuges in Oklahoma and North Texas.

Serves as Fisheries consultant to six Native American tribes in Oklahoma.

Member of the Paddlefish/Sturgeon committee of the Mississippi Interstate Cooperative Resource Association. Twenty-eight states have joined in this effort to restore the paddlefish and sturgeon of North America.

Currently studying alligator gar in Oklahoma and Texas. Member of the Interstate Alligator Gar Restoration Team with 10 states cooperating.

Station Physical Layout and Attributes

The Oklahoma Fishery Resources Office is co-located at the Tishomingo National Fish Hatchery, 12 miles north of Tishomingo, OK, 30 miles east of Ardmore, OK. Ardmore is approximately half way between Dallas-Ft. Worth, TX and Oklahoma City, OK on Interstate Highway 35.

Facilities include a 2000 square-foot office space, shop and storage buildings.

Contact Information

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U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program

Tishomingo National Fish Hatchery



The primary mission of the Tishomingo National Fish Hatchery is to assist in the conservation of imperiled aquatic species in the Arkansas and Red River basins, including paddlefish, Arkansas River shiner, leopard darter, alligator gar, and alligator snapping turtle.



Stock assessment of hatchery reared paddlefish on Lake Oologah, Oklahoma

Employs five permanent full-time staff.

Rears recreational fish species for stocking into federal waters on military reservations and national wildlife refuges.

Recreational fish stocked in 2003 resulted in over 12,000 angler-days valued at over \$700,000 to local economies.

Championed successful techniques for captive reproduction and rearing of threatened Arkansas River shiner.

Area volunteers donated over 1,000 hours in 2003.

Captive reproduction and rearing of alligator snapping turtle and alligator gar has unveiled critical information needed for the protection and management of these species in the wild.

Provides an educational service in a primarily rural, impoverished area. Numerous schools, civic groups, and individuals tour or contact the hatchery annually to supplement their formal education, or to gain information for their personal use.

Excellent survival and growth of hatchery-reared paddlefish after release to the wild have resulted in self-sustaining populations above two impoundments in the Arkansas River system.

Frequently partner with local, state, federal, tribal, and non-governmental agencies and interested public around Oklahoma and in other parts of the country in the conservation of imperiled aquatic species.

Station Physical Layout and Attributes



Aerial view of Tishomingo National Fish Hatchery

The hatchery is located 12 miles north of Tishomingo, OK, 30 miles east of Ardmore, OK. Ardmore is approximately half way between Dallas-Ft. Worth, TX and Oklahoma City, OK on Interstate Highway 35.

Facilities include 62 ponds, three fish holding houses, six in-ground concrete raceways, six 20' diameter-holding tanks, and several buildings for storage, offices, and shops on 225 acres of land.

Public use areas include a nature trail, visitor center, display pool, footbridge, and historic wooden water wheel, which attracts over 10,000 visitors annually.

Hosts the only public fishing areas on Pennington Creek between the headwaters and mouth of the creek.

Hatchery grounds along Pennington Creek hold significant numbers of seaside alder trees, an extremely rare tree with substantive medicinal values.

Water source is high-quality water from Pennington Creek, which runs through the hatchery. Water is gravity fed from the supply canal to all culture units eliminating any pumping costs.

Holds conservation easement to 4,000 acres comprising most of the watershed feeding Pennington Creek, which further assures the quality of water flowing in the creek.

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U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program



Inks Dam National Fish Hatchery

The primary mission of Inks Dam National Fish Hatchery (NFH) is to provide restoration and recovery of Gulf Coast striped bass and paddlefish, provide recreational channel catfish and largemouth bass for Native American tribal fishery management programs, and fulfill Native American tribal trust responsibilities.



Stocking Gulf Coast striped bass in the Tchefuncte River, Louisiana

Employs six permanent full-time staff.

Rears recreational fish species for stocking into federal waters on military reservations, National Wildlife Refuges and National Forests.

Fish produced and distributed at Inks Dam NFH generate approximately 56,000 angler days with an estimated value to local economies of \$3,179,720.

Partnered with New Mexico Game and Fish and now anticipate double the amount of angler days and value to local economies generated annually by the facility.

Assists Fort Hood in implementing its Integrated Natural Resource Management Plan by stocking 2,143 fish that provided 955 angler days of recreational fishing.

Advanced technologies focusing on the elimination and spread of aquatic nuisance species at Inks Dam NFH are now allowing safe and efficient rearing and development of refugia for threatened and endangered species.

Meets tribal trust responsibility goals by providing an estimated 43,000 angler-days of fishing and \$2.3 million in revenue to Native American tribes.

Produces approximately 4,500 Gulf Coast striped bass for the Tchefuncte River in Louisiana to aid in restoration and recovery purposes for this important commercial and recreational fishery.

Partners with the Tishomingo National Fish Hatchery in the restoration and recovery efforts for the imperiled paddlefish.



Public outreach at Inks Lake State Park hosted by hatchery staff

Provides environmental education and aquatic resource conservation and management information to many diverse groups such as the Wimberly Birding Society, Texas 4H Conglomerate, Lake Travis Middle School, Burnet Elementary, and Inks Lake State Park Heritage Committee.

Supports National Fishing Week derbies by providing fish and technical assistance for these important outreach and education events.

Station Physical Layout and Attributes



Adjacent to Inks Lake, the hatchery is located in the beautiful Hill Country of Texas.

Facilities include 25 acres of ponds constructed on a narrow "bench" along the river, which was once a farm.

The Regional Distribution Unit is operated by the Inks Dam National Fish Hatchery and hauls fish to hatcheries and stocking points throughout the Southwest and Southeast.

Large pecan trees remain along a strip between the river and the ponds.

Congressman Lyndon B. Johnson arranged an agreement between the Lower Colorado River Authority, the U.S. Bureau of Fisheries and the National Youth Administration to construct the hatchery in 1938.

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Beginning construction of Inks Dam NFH, May 1938



U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program



San Marcos National Fish Hatchery and Fish Technology Center

The primary mission of the San Marcos National Fish Hatchery and Fish Technology Center (Center) is to undertake research and provide support for endangered, threatened, and other aquatic species at risk. The Center is a refugium for Texas wild rice, Texas blind salamander, San Marcos salamander, fountain darter, and Comal Springs riffle beetle. Culture and habitat-related research on these species is inherent to this mission. Major consideration is placed on assessment of biological issues related to the Edwards Aquifer and San Marcos and Comal springs and rivers.



Texas blind salamanders held in refugium

Employs six permanent full-time staff.

Applies innovative culture techniques developed by staff to the study of threatened and endangered species.

Collects, maintains, and propagates threatened and endangered fishes, salamanders, plants, and invertebrates.

The first, in many cases, to successfully work with all life stages of listed species held in refugium.

Contributes to the development of the Edwards Aquifer Authority's Habitat Conservation Plan by providing information gained through research on life history, ecological requirements, genetics, and culture of listed and non-listed species native to the Edwards Aquifer ecosystem.

Researches the life history, distribution, and management of the exotic disease organisms, animals, and plants that are detrimental to central Texas threatened and endangered aquatic species.

Works on the control of an extremely aggressive aquatic plant in the upper San Marcos River.

Works on the development of new techniques to expand the coverage of Texas wild rice and other native aquatic plants in the San Marcos River.

Works closely with faculty of Texas State University to provide volunteer, work, and research opportunities to undergraduate and graduate students in biology and geography.

Station Physical Layout and Attributes

Located in central Texas halfway between Austin and San Antonio on the south side of San Marcos at the intersection of Interstate Highway 35 and McCarty Lane (Exit 201).

Campus consists of an office and laboratory building, a fish-holding house, a closed-system culture room, a covered test pad for tank culture, a glass-covered open-air building for aquatic plant culture, two metal buildings (containing a shop, feed room, office space, and vehicle and equipment storage), a small storage building; and two chemical/hazardous materials buildings.

Support facilities consist of eight shade-covered concrete raceways, forty 0.1-acre ponds and a one-acre pond. The Center's pumps are located approximately $\frac{1}{4}$ and $\frac{1}{2}$ mile from the main property. The 40-horse power primary pump can produce up to 400 gallons per minute and is connected to a 40-kilo watt backup-generator. The 30-horse power secondary pump can produce up to 475 gallons per minute. Both pumps remove water from the Edwards Aquifer.

Work has begun on converting 80 of the Center's 116 acres back to native black land prairie.

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U.S. Fish and Wildlife Service – Region 2 Southwest Region Fisheries Program



Uvalde National Fish Hatchery

The primary mission of Uvalde National Fish Hatchery is to provide restoration, recovery, and refugia for native, threatened and endangered fish species of Southwest Texas.



Fountain darters held in refugia at Uvalde NFH

Provides guided tours to a variety of groups, which includes a dialog on the mission of the hatchery, ecology, groundwater, species being held in refugia and their future outlook.



Uvalde NFH staff educates elementary students on the importance of restoration and recovery efforts of native fish.

Employs five permanent full-time staff.

Provides refugia and care for the endangered species of the Edwards Aquifer and southwest Texas including the Comanche Springs pupfish, fountain darters, Yaqui catfish, and Texas wild rice, an endangered aquatic native perennial.

Over the past five years, Uvalde has produced eight million fish weighing 208,000 pounds, distributed to seven states and Mexico.

Ensures that genetically viable broodstock are protected in the event that endangered species are extirpated from the wild.



Native Texas wild rice

International cooperative efforts with Mexico are developing culture techniques for the species and aquaculture training programs. Currently, have trained 11 Mexican students in modern fisheries techniques.

Station Physical Layout and Attributes



A Texas sunset over the many rearing ponds at Uvalde National Fish Hatchery



Constructing new state-of-the-art facilities

Contact Information

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The Uvalde National Fish Hatchery is located three miles southwest of Uvalde, Texas. The City of Uvalde is approximately 80 miles west of San Antonio.

The hatchery is situated on 100 acres of mesquite grasslands with 47 earthen ponds.

Water supply consists of two deep wells into the Edwards Aquifer, with excellent water quality.

The hatchery is currently at the midpoint of a significant reconstruction program to replace the original facilities, which are in poor condition due to wear and water damage from flooding.

Reconstruction includes a new rearing facility that will use a state-of-the-art water re-circulating system to rear additional imperiled species, as well as native fishes.

The ultimate goal of reconstruction is to increase the hatchery's capabilities in several areas: production of native fishes, refugia for threatened and endangered species, and research, while achieving highest levels of water conservation.

Eleven ponds have been lined with high-density polyethylene for enhanced water conservation purposes.