United States
Department of
Agriculture

Forest Service

FS-802

April 2004

Report to the Chief—USDA Forest Service

Rise to the Future Task Force 2003

Fisheries and Watershed Program

Vision Statement

The fisheries and aquatic resources managed by the USDA Forest Service, in cooperation with its many partners, constitute a national legacy. The Forest Service is recognized nationally and internationally for excellent aquatic resource management, sportfishing opportunities, and outstanding application of the best scientific information. The agency will manage these resources for the benefit and enjoyment of the public, as essential components of sustainable ecosystems and will value them on an equal basis with all other resources.

Task Force Members

Task Force members included a regional forester; three Washington Office staff directors; a forest supervisor; North Carolina and Idaho State Fish Chiefs; and representatives from the American Sportfishing Association, Trout Unlimited, and The Nature Conservancy.

Ex Officio
Dave Cross, Fisheries Program Leader, USDA Forest Service
Chris Knopp, Watershed Program Leader, USDA Forest Service

Contents

Executive Summary 1
Rise to the Future Task Force 2003 1
Towards Building a Strong Fisheries Program 1

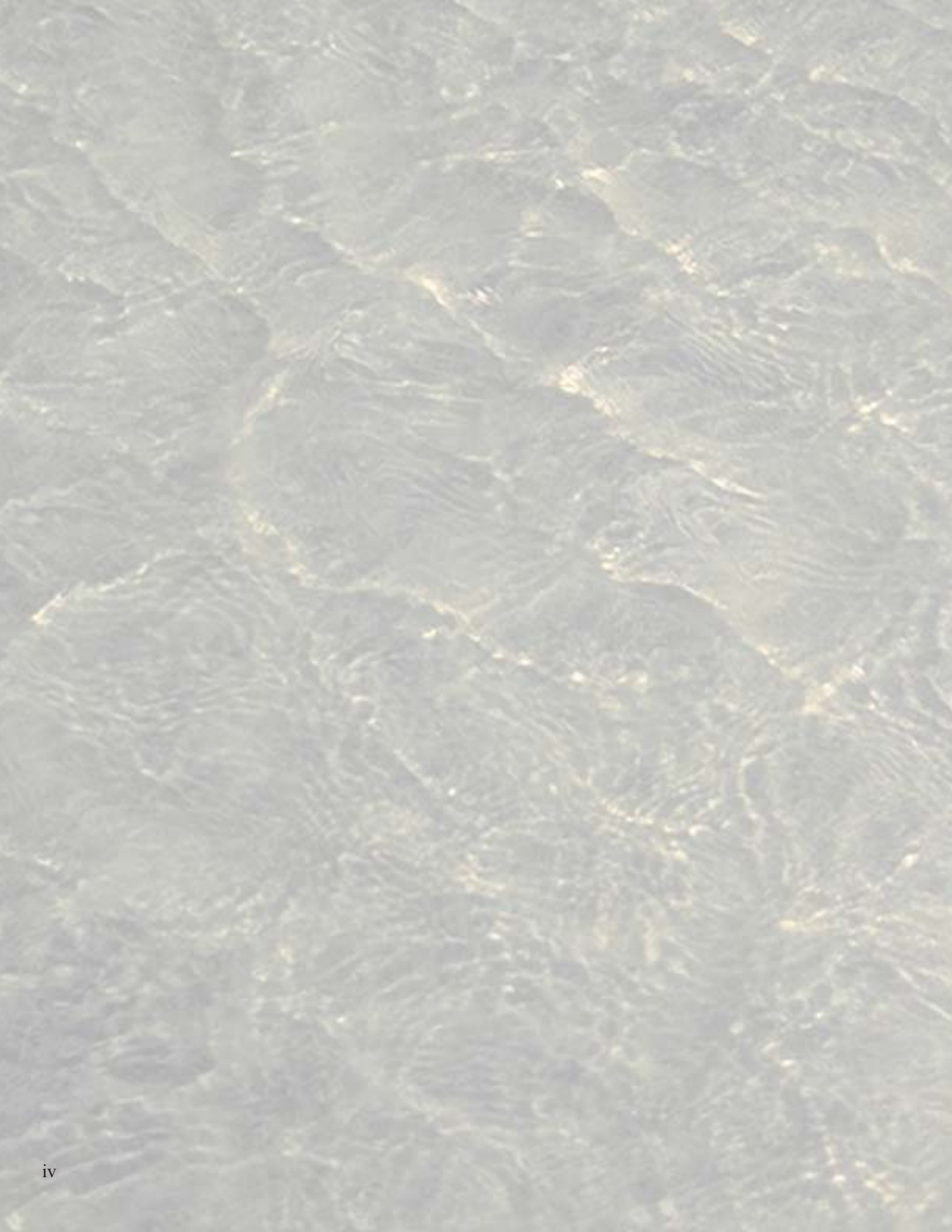
Introduction **5**
Our National Forests 5
America's Playground and Source of Livelihood 5
Rise to the Future Task Force 2003 5

Background **6**

Evaluation of the 1986 Task Force Goals **9**
Goal 1 9
Goal 2 9
Goal 3 10
Goal 4 10
Goal 5 10

Challenges in the 21st Century **11**
Challenge 1 11
Challenge 2 12
Challenge 3 12

Findings and Recommendations **13**
1. Strategic Planning and Accountability 13
2. Program Leadership 15
3. Sportfishing on the National Forest System 15
4. Staffing and Professional Development 17
5. Development and Use of Aquatic information 18
6. Partnerships 19
7. Endangered Species Act and Clean Water Act 20



Executive Summary

Rise to the Future Task Force 2003

This report is the culmination of the work performed by the *Rise to the Future Task Force 2003: Fish and Watershed Program*. It consists of 39 sets of findings and recommendations.

U.S. Department of Agriculture (USDA) Forest Service Chief Dale Bosworth created the task force in 2002 at the request of representatives of FishNet, an association of more than 20 fisheries organizations.

The work of the task force parallels and reflects the *Rise to the Future* initiative created in 1986 by then Chief Max Peterson and implemented the following year by then Chief Dale Robertson. Recommendations developed from that initiative provided the parameters for the evaluation of the fisheries and aquatic resources (including staffing, budgeting, skills capacity) by the current task force.

The recommendations in this report address programmatic and strategic objectives, accountability, and staffing. Institutional investments are needed to ensure that the USDA Forest Service can fulfill its stewardship responsibilities, reach its full potential to lead fisheries and aquatic resource management, and continue to provide exceptional outdoor recreational opportunities.

Towards Building a Strong Fisheries Program

Significant changes in land management concepts and responsibilities have dramatically increased workloads and expectations since the original *Rise to the Future* initiative in 1987. Workloads have increased substantially for activities such as administration of landscape-level partnerships and endangered species recovery while available funding has decreased.

There is a real and urgent need for improvements in the USDA Forest Service's fisheries and watershed programs to prevent the unraveling of splendid gains accomplished since 1987.

On the basis of its evaluation, the 2003 task force presents five major findings and recommendations, as follows:

Finding 1: The priority given fisheries and aquatic resources has weakened within the agency since the mid-1990s because of a shift in program emphasis, which has limited the agency's effectiveness in generating continued support and investments.

Recommendation: *Create a USDA Forest Service Sportfishing and Aquatic Resource Advisory Council to provide the Secretary of Agriculture, the Chief of the USDA Forest Service, and the Forest Sservice National Leadership Team, with advice concerning fisheries and aquatic resource management, aquatic biodiversity conservation and sportfishing on national forests.*

Finding 2: Current core staffing and professional development programs are inadequate to meet current and future stewardship responsibilities in this area, considering the volume and complexity of work associated with fisheries conservation, aquatic resource management, endangered species recovery, and the increasing demand for sportfishing**.**

Recommendation: *Conduct a national assessment of fisheries and watershed program staffing needs with participation of program leaders, field line officers, and technical staff in a special task force. This comprehensive assessment should include a review of existing professional training programs to determine if these programs meet the needs for employee and leadership development. Staffing organization, core competencies, priority programs, and funding for effective aquatic resource management are desired outcomes from the task force to be completed by October 2005.*

Finding 3: The USDA Forest Service can do better in showcasing and promoting the exceptional sportfishing opportunities offered on the national forests.

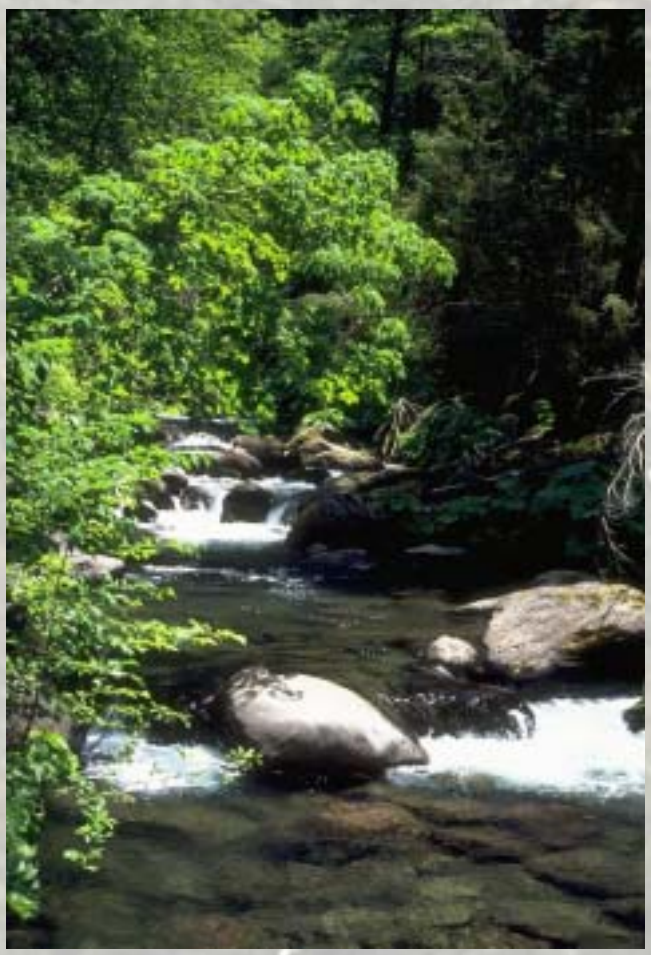
Recommendation: *Develop and initiate a coordinated sportfishing program by October 2005. The Washington Office staff in Recreation and Fish, Wildlife and Rare Plants need to undertake a strong partner-endorsed marketing strategy to promote sportfishing opportunities on national forests.*

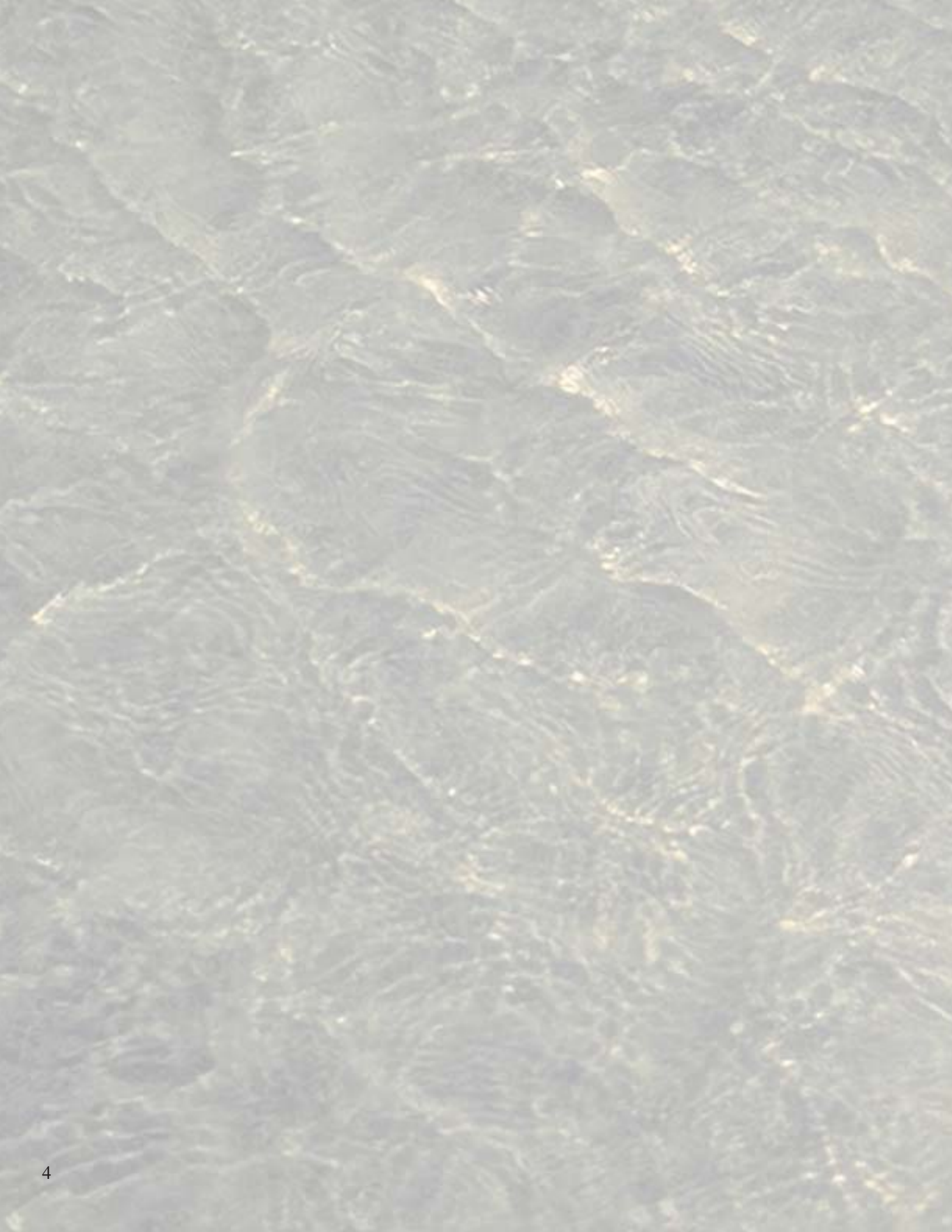
Finding 4: Funding for fisheries and aquatic resource programs can no longer be effectively tracked and accounted for under the Budget Formulation and Execution System (BFES) where fisheries and three other Expanded Budget Line Items (EBLIs) were combined. Priorities within this program have not been established or articulated nationally, whereupon field programs suffer inconsistencies and are uncoordinated.

Recommendation: *Combine the fisheries and watershed program budgets into a single budget line item to provide increased accountability for budget allocations and reporting of accomplishments. This move will also ensure coordination of fisheries and watershed program leaders at the national and regional level in budget formulation.*

Finding 5: Success of the fisheries and aquatic resource management programs today depend on partnerships. While the number of partnerships is expanding, there are widespread inconsistencies in meeting partnership needs. The USDA Forest Service has inadequate resources to develop and sustain partnerships that capitalize on the significant opportunities available.

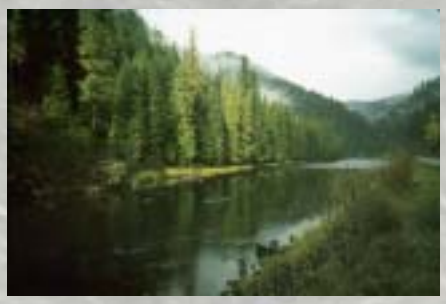
Recommendation: *Produce and distribute a partnership guide that clarifies roles and responsibilities of existing and potential partners, simplifies the process for establishing partner agreements, and improves understanding of the full range of authorities and opportunities for both the USDA Forest Service and partners*.





Introduction

Our National Forests



The U.S. Department of Agriculture (USDA) Forest Service manages 155 national forests across the country, covering nearly 200 million acres of land and water. This national treasure includes 220,000 miles of streams, over 2 million acres of lakes, and 15,000 miles of coastline—some of the most valuable fisheries and aquatic resources in the Nation are found here.

America's Playground and Source of Livelihood

Many of the 44 million anglers in the United States have made fishing streams and rivers in the national forests their destination of choice year after year. Sportfishing contributes $116 billion per year to the national economy. Of that amount, national forests contribute more than $8.5 billion.

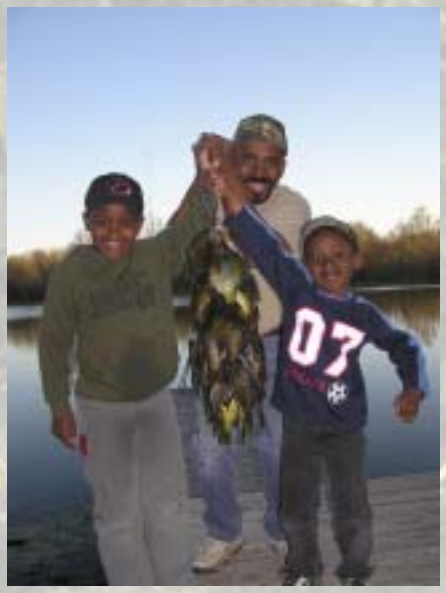
Rise to the Future Task Force 2003

FishNet, an association of fishery organizations interested in the quality and effectiveness of Federal fisheries programs such as those offered by the USDA Forest Service, met with Forest Service Chief Dale Bosworth in December 2002 and asked the Chief to set up a task force to evaluate the success of the 1987 *Rise to the Future* initiative.

The task force would provide recommendations to USDA Forest Service leadership for reinvigorating the *Rise to the Future* initiative and guidance to define a more viable USDA Forest Service fisheries and watershed program.

Field interviews with unit leaders (three weeklong field visits each to Region 2—Colorado and Wyoming, Region 6—Oregon and Washington, and Region 8—Southeastern United States) and National Leadership Team members in the Washington Office were conducted. Results of those interviews form the basis of this report.

Background



Exclusive of the value of its fisheries, the economic value of water from national forests is estimated at $3.7 billion annually.

Freshwater supply originating from the national forests contributes 14 percent of the stream volume in the entire country. In Western States, the contribution to stream volume is 33 percent. These lands feature significant aquatic resources, aesthetic value, sportfishing opportunities, clean water, and aquatic biodiversity.

In 1996, there were nearly 47 million user-days dedicated to sportfishing on national forests, generating $8.5 billion to local economies. As access to private land becomes restricted, especially near urban areas, national forests play an important role in meeting the sportfishing needs of the public.

National forests in a number of States also support significant coastal sport and commercial fisheries. Well over 50 percent of the spawning and rearing habitats for salmon and steelhead in the Pacific Northwest are located in national forests. The 9-year average annual value of commercial fishery from national forests in Alaska is $80 million. The value of the Alaska-guided and chartered fisheries with over 1,000 State permits issued is estimated to be more than $25 million annually.

Rivers, streams, and lakes on national forests contain viable—and in some cases, the only extant—populations of endangered aquatic species. Additionally, national forests provide important aquatic biodiversity reserves. For example, national forests in the Tennessee-Cumberland River Basins and the Mobile basins contain 35 percent of all vulnerable and imperiled fish and mussel species in the Nation, 70 percent of which occur nowhere else in the world.

Since the 1987 *Rise to the Future* initiative, there have been significant advances in fisheries and aquatic resource science, and increased complexity in resource management. These changes prompted organizational realignments within the USDA Forest Service, such as the 2001 transition to combine the Washington Office's fisheries and watershed staffs.

Responsibilities of field fisheries and watershed professionals also have changed dramatically. For example, the primary focus used to be resource protection and tactical mitigation for aquatic resources. Today, fieldwork requires extensive consultation with regulatory agencies, and development and implementation of strategies for the protection and restoration of watershed processes and native aquatic species.

At the time of the 1987'*Rise to the Future* initiative, there were few fish species listed as threatened or endangered. Today, many salmon stocks in the West; most native fishes in the Southwest; and large numbers of native aquatic fauna in the Southeast, including fishes, mussels, and crayfishes, are listed under the Endangered Species Act.

For much of the 1980s and early 1990s, the focus of the USDA Forest Service's aquatic habitat management was local in nature: erosion control structures, fish habitat structures, and fish passage solutions were high on the list of accomplishments.

Today, the focus of fisheries and aquatic resource management is to implement tactical treatments on a strategic basis. Maintaining the long-term natural watershed processes that create and maintain in-stream and in-lake habitat at the appropriate scale and timeframe is a primary concern. The move from localized projects to understanding and integrating ecological processes into land management prescriptions at the watershed scale is a complex challenge. Integrating a number of staff skills from watershed, soils, hydrology, and fisheries is essential to effectively meet current and future management challenges that reach beyond forest boundaries. In addition, interest in sportfishing and other recreation on national forests continues to increase and challenge USDA Forest Service staff.

For these reasons, the USDA Forest Service's responsibilities for fisheries and aquatic resource management have become significantly more complex and demanding in the past two decades. Financial resources, staff expertise, programmatic strategic objectives, and integrated approaches have not kept pace with the rate of change.

The workload, strategic and technical knowledge, and social complexity associated with the conservation of listed aquatic species, and consultations with the regulatory agencies, are overwhelming USDA Forest Service staff in many areas of the country. The need for effective interpersonal skills for aquatic biologists has become a core requirement, as important as technical knowledge, for effective conservation of aquatic species and their habitats. In addition, the speed with which new information and technology for resource management is developed and deployed makes continued investments in USDA Forest Service staff training imperative.

Because many aquatic species of concern spend a portion of their lives off national forest lands, efforts to conserve native fish communities and their habitats must include collaborative efforts with private landowners and managers. This necessitates the formation of basin-wide partnerships with land managers representing State, tribal, private, and conservation organizations. Today, partnerships are no longer just opportunities; they are necessary to define strategic vision and to implement effective fisheries and watershed resource management.

Evaluation of the 1986 Task Force Goals

The 1986 Rise to the Future Task Force produced five major goals. Chief Dale Robertson implemented these recommended goals in 1987. They form the baseline of the evaluation conducted by the current task force. This evaluation is intended to serve as a general measure of where progress has been made and to provide context for the recommendations of the 2003 Task Force. The goals of the 1986 Task Force evaluation were as follows:

Goal 1: Improve the identity of the program by clarifying national goals, policies, roles, internal directives, and improve its overall accountability.

The Rise to the Future initiative led to establishment of strong national and regional program leadership, with support from agency line officers at all levels. It provided program identity, clarity of purpose, aquatic inventory and restoration initiatives, and effective accomplishment tracking. As a result, the USDA Forest Service fisheries and watershed programs received acclaim as the most progressive in the Nation.

Substantial increases in funding allowed an increase of 300 percent in personnel hiring, development of resource specific databases, and typing of aquatic habitats in the National Forest System streams.

Current Status: The task force review shows that the fisheries program has seen a slow decline in personnel and its effective funding has decreased approximately 30 percent since 1996.

Goal 2: Improve the program's technical capabilities through improved inter-agency coordination, inventories, and assessment capabilities.

Overall, *Rise to the Future* was successful in meeting this goal. State-of-the-art procedures for habitat inventory, data storage, evaluation, interpretation, and field monitoring were developed and shared with field staff.

Current Status: The integration of watershed and fisheries programs into land management plans and on-the-ground projects has improved but still lags behind what is needed to be most effective and efficient.

Advancements in technologies, scientific approaches, tools, and methods require new staff expertise and continued updating of staff skills to maintain agency credibility and effectiveness. Information needs to keep pace with the rapidly expanding demands placed upon decisionmakers for science-based decisions. In addition, the fisheries and watershed programs' identity within the agency and with the full spectrum of partners, including Congress, has diminished.

Goal 3: Improve cooperation and public information through an aggressive marketing strategy.

Perhaps the greatest success of the *Rise to the Future* initiative was in the area of marketing. An increased understanding of the fisheries program was gathered from annual status reports, congressional staff briefings, video presentations, and development of the Wildlife Fisheries and Rare Plant (WFRP) reporting system.

The USDA Forest Service developed effective sportfishing Web sites, information plans, brochures, and presentations and conducted annual FishNet regional reviews. With a focus on sportfishing and native species conservation, marketing substantially elevated both internal and external support for the program.

Current Status: The emphasis of the current fisheries program focuses on invasive aquatic species, threatened and endangered species, and biological monitoring to demonstrate attainment of Total Daily Maximum Load (TMDL) objectives. The need is to bring the requirements of sport anglers on par with other program emphasis areas.

Goal 4: Build a foundation for valuing fisheries in economic terms.

The USDA Forest Service made only limited efforts to establish specific tracking and stronger linkages with the economic contribution of sportfishing to the National Treasury. Documenting and updating the annual economic impact of commercial and sportfishing are critical to marketing the successes of the agency's fisheries and watershed program.

Goal 5: Improve the technical capabilities of the fisheries workforce by providing training programs and updating the continuing education (X-118) standards.

With the implementation of the *Rise to the Future* initiative, staffing of fisheries biologists increased from 119 in 1986 to a high of 408 in 1996. Budgeting for the fisheries program increased from $10.9 million in 1986 to approximately $72.8 million in 1999, the last year for a single budget line item for fisheries. The development and implementation of the highly regarded continuing education program for fisheries and watershed staffs greatly supported professional development.

Current Status: There are currently 388 fisheries biologists and aquatic resources personnel. From 1987 through 2003, 433 fisheries biologists and 26 hydrologists completed the Fish Habitat Management, Leadership and Communications, and Program Management course. This training and continued education needs to be expanded in scope and partnerships to provide for the agency's current and future professional development.

Challenges in the 21st Century

There have been significant changes in the management landscape for the fisheries and watershed programs of the National Forest System in the more than two decades since the *Rise to the Future* initiative.

There has been a substantial reduction in commodity production from national forests, with an increase in emphasis on conservation of native aquatic species and service functions. Timber harvest has decreased about 60 percent during the past decade, with some areas such as the Pacific Northwest down approximately 85 percent from mid-1980s levels.

During this same period, the demand for sportfishing, clean water, and conservation of native aquatic communities has continued to increase, expanding the focus and increasing the workload for fisheries and watershed managers. The reduction in timber receipts has significantly diminished Knutson-Vandenberg Act revenues, which in the past played a significant role in funding our aquatic programs of work.

The challenges facing fisheries and watershed management in the national forests are as follows.

Challenge 1 **Substantial increase in expectations regarding the technical competencies of fisheries and watershed management staff.**

New computer technologies and updated approaches to aquatic resource management and landscape ecology have improved the ability to identify, quantify, and manage the resources of national forests. The skills required to use spatial assessment tools in conjunction with current scientific approaches are now additional criteria used in hiring and training staff. There is a new emphasis on evaluating and managing forest resources at multiple spatial and temporal scales. Spatially accurate and environmentally comprehensive inventories are essential to informed assessments and management prescriptions. Spatially explicit and biologically comprehensive habitat trend data make multiple-scale evaluations of the effectiveness of Land and Resource Management Plans possible.

Increased regulation associated with threatened and endangered species and TMDLs have created an urgent need for management decisions based on sound resource information, technically rigorous monitoring, and data from multiple disciplines. The contents of many appeals of Forest Service Land and Resource Management Plan

revisions are based on highly technical, complex issues, requiring skills above the level of most USDA Forest Service employees.

Challenge 2

Other organizations are more effective in performing research and addressing many issues relevant to the management of fisheries and aquatic resources on the national forests.

Developing partnerships with conservation organizations with strong, current aquatic databases to inform and assist in formulating strategies at the national, regional, and forest levels could increase the quality of information and rigor to support management decisions.

Challenge 3

Increased listings of aquatic species and new regulations on water quality have elevated the competition for scarce resources, such as water and habitat, resulting in increased litigation over endangered species and water quantity and quality.

At the inception of the *Rise to the Future* initiative in 1987, few aquatic species were listed under the Endangered Species Act. Today, work on endangered species issues consumes 30 percent of fisheries biologists' time in the West, with the potential for similar expansion nationally.

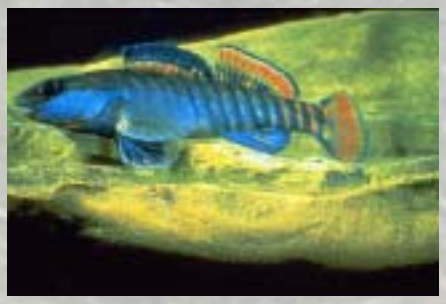
In addition, nearly 2,500 streams and lakes across the country are listed as impaired and require TMDLs. Few national forests have the staff or the technical capabilities to adequately address this need. Efforts to meet the challenge have been at the expense of traditional fisheries and watershed programs.

A shift in agency priorities, reduction of trust funds, and increased funding to reduce the damage of wildfires have resulted in the decline of effective funding for fisheries programs by approximately 30 percent in the past 5 years. Fisheries and watershed personnel numbers have also begun to fall.

To fill the gap, most national forests compensated by increasing their reliance on partnerships; however, with declining funding, the ability to support partnerships is limited. The shift in resources has further reduced funding and staff normally available for fish and watershed work.

It is clear that much progress has been made over the past 16 years through implementation of *Rise to the Future*, providing the USDA Forest Service with one of the most envied fisheries and aquatic resource programs in the Nation. It is also evident that significant changes in the scope and complexity of public land management coupled with advancements in technologies and science will affect the future of the fisheries and watershed programs within the USDA Forest Service.

Findings and Recommendations



The 2003 Task Force interacted with USDA Forest Service and community leaders, fisheries and watershed program managers, scientists, and partners across the country. USDA Forest Service staff exhibited extraordinary dedication, pride, commitment, and creativity in implementing their complex fisheries and watershed resource program responsibilities. The team also found that obligations far exceeded staffing capacities, resulting in staff frustration at missed opportunities and procedural burdens.

The findings and recommendations that follow were developed around seven major topics:

- **Strategic Planning and Accountability**
- **Program Leadership**
- **Sportfishing on the National Forest System**
- **Staffing and Professional Development**
- **Development and Use of Aquatic Information**
- **Partnerships**
- **Endangered Species Act and Clean Water Act**

Each of the topics is discussed below.

1. Strategic Planning and Accountability

A key to the success of the agency's fish and watershed programs is developing strategic goals with accountability systems linked to performance and budget. Past efforts to establish integrated strategic goals and objectives for these resource programs have not resulted in an agency-supported strategy. Currently, the lack of strategic objectives and performance accountability systems is resulting in the implementation of projects in a random and somewhat opportunistic basis with little linkage to the agency or partners' highest priorities.

Outcome

Clear and integrated strategic objectives for fisheries and watershed management are essential components of the agency's strategic plan. Agency employees and partners are knowledgeable and engaged in the implementation and measurement of progress on these objectives.

Recommendations

Strategic Objectives

- Develop a Federal Advisory Committee Act (FACA) chartered Sportfishing and Aquatic Resource Council to assist in strengthening strategic objectives, priorities, and performance measures at multiple levels within the USDA Forest Service and to provide advice to the Chief and Secretary. This council, consisting of major partners, will provide advice on strengthening partnerships and marketing opportunities for the agency's fisheries and watershed programs.
- Clearly articulate national fisheries and watershed program priorities to ensure field level efforts are focused on addressing issues of national scope and importance, including the provision of sportfishing opportunities.

Budget

- Increase the accountability of the fisheries and watershed budgets and their resource accomplishments by providing strong national program oversight. Combine the fisheries and watershed budget line items to provide program accountability and strengthen support from partners. Provide adequate funding to the national program and regional leaders for program oversight and consistent implementation of select national priorities at national, regional, and forest levels.
- Improve the coordination on budget development and allocation with national and regional program leaders and field units to ensure a focus on priorities. The budget process needs to be adjusted to reflect national and regional priorities.
- Display funding levels and outputs for out-year budgets for the national fisheries and aquatics program. National and regional program leaders should be able to clearly delineate outputs to stakeholder groups to allow for greater leverage in long-term projects, programs, and partnerships.

Accountability

- Include measures of success for strategic objectives for all fisheries and watershed program work.
- Prepare an annual "stockholder" report that highlights program accomplishments, and provides an assessment of progress toward the goals. Ensure this information is shared appropriately with partners and at all agency levels.

- Invite FishNet to continue conducting annual regional assessments of the fisheries and watershed programs to complement this national assessment. A comprehensive review of the programs by agency and FishNet representatives should be conducted at 5-year intervals.

2. Program Leadership

Effective and visible leadership and advocacy of the fisheries and watershed programs by the Chief, Forest Service National Leadership Team, director, and national program leaders are essential to successful programs. Identifying and developing future leaders with fisheries and watershed knowledge and experience will allow sustained program success. Fiscal constraints, low levels of new hiring, and declining training programs are jeopardizing the agency's ability to develop such leaders for the future. Sportfishing and clean water to support recreation are among the most important economic engines of national forests, yet the profile of agency leaders on these issues is relatively low.

Outcome

Agency leaders are recognized and appreciated as advocates and leaders of the fisheries and watershed programs. New program leaders with fisheries and watershed knowledge and experience are identified and provided with development opportunities to ensure effective future leadership.

Recommendations

- Develop a strategy for agency leaders' involvement in national fishery events such as the American Fisheries Society's annual conference, International Association of Fish and Wildlife Agencies annual conference, Trout Unlimited's annual meeting, North American Wildlife and Natural Resources annual conference, and the American Sportfishing Association's Sportfishing Summit.
- Convene an aquatics leadership forum in partnership with the fisheries community to identify opportunities for advancing fisheries and watershed health on national forests.

3. Sportfishing on the National Forest System

National forests provide more fishable waters than lands managed by any other Federal resource management agency. Each year, sportfishing on USDA Forest Service lands conservatively contributes more than $8.5 billion to the Nation's economy and provides more than 47 million days of angler recreation. The USDA Forest Service is positioned to be even more of a national leader in providing quality sportfishing.

The Recreational Fishing Executive Order emphasizes the importance of Federal agencies' role in providing sportfishing opportunities. While sportfishing use has markedly increased on national forests, the agency's public use and economic data are outdated and significantly underestimate visitation and participation. Inadequate investments in sportfishing continue to result in low emphasis on increasing sportfishing opportunities. In addition, limited staffing, limited funding, and increased Endangered Species Act-related work are decreasing the agency's ability to promote important sportfishing opportunities. The integration of sportfishing and other aquatic resource needs into the agency's strategic planning has been weak.

On issues related to sportfishing, program managers for recreation, fisheries, and aquatic resources often operate independently. This uncoordinated approach limits the ability to integrate sportfishing projects with other projects. Program efforts should focus on maximizing the efficiencies and benefits from a team approach.

The USDA Forest Service has many partnerships with sportfishing groups at the national, regional, and local levels. There are opportunities to strengthen these partnerships and add numerous new groups as partners. The use of Sikes Act agreements with States was observed to be highly variable across the country. In addition, many opportunities to strengthen the working relationship with States through cooperative agreements designed to improve sportfishing, stream habitat, stream access, and facilities have not been maximized.

Outcome

The USDA Forest Service is recognized as an outstanding provider of sportfishing opportunities. Information on sportfishing opportunities is readily available in multiple media formats and sportfishing facilities are provided to meet the demands of anglers.

Recommendations

- Use sportfishing opportunities to build local coalitions to accomplish broader aquatic resource management objectives.
- Revise the current RecFish Web site to ensure all forests present sportfishing information in a manner that is easily understood and is directly accessible from a single Web address and from the USDA Forest Service homepage.
- Develop stronger cooperative relationships with State fish and wildlife agencies for the management of sportfishing on national forests. Cooperatively work with the American Sportfishing Association and the International Association of Fish and Wildlife Agencies to increase the participation of States in Sikes Act

programs. In coordination with State fish and wildlife agencies, ensure the USDA Forest Service's strategic and operational plans (National Forest Plan revisions) include strong linkages to sportfishing opportunities on national forests.

- Develop educational materials to promote public understanding of aquatic resource conservation and the connection to sportfishing. Leaders for recreation and fisheries programs should jointly develop with partners shared performance expectations for improving sportfishing and providing conservation information, facilities, and fishing opportunities on the National Forest System.
- Work with partners such as the Recreational Boating and Fishing Foundation and State fish and wildlife agencies to develop and implement a marketing strategy for sportfishing opportunities on national forests.

4. Staffing and Professional Development

Fisheries staffing has declined by 20 full-time equivalents since 1996, reversing a staff-building trend that began with implementation of *Rise to the Future* in 1987. Considerable progress was achieved since the initiative began, but the fisheries and watershed staffs have declined since 1996, and in some key areas threatens the loss of critical mass. Meanwhile, workloads are increasing in volume and complexity, training and professional development are low, distribution of skills is inconsistent, and the advancement track is unclear.

Outcome

Agency staffing is of sufficient size and distribution to address current and future workloads for fisheries and aquatic resources management, creating an environment with a high premium on professional development and leadership advancement for a skilled and motivated workforce.

Recommendations

- Conduct a Needs Assessment for fisheries management and aquatic research. This assessment should identify current staff capacity as well as project future staffing needs. The Needs Assessment would determine and recommend technical and leadership skill levels for effective fisheries and watershed management on public lands in the future.
- Conduct an analysis for the appropriate use of the Cooperative Education Program to meet current and projected needs.
- Implement a comprehensive training program to provide staff with skills required for competency in core work performance areas. Include mentoring as a component of this training program.
- Ensure that the fish and watershed program Needs Assessment includes adequate staff time for the collection and management of information.

- Based on the Needs Assessment, develop a strategy for funding and staffing for the fisheries and watershed programs, including a response to declining trust funds and use of alternative funding streams.

5. Development and Use of Aquatic Information

Science-based decisionmaking is critical to successful accomplishment of the agency's mission. To strengthen the agency's decisionmaking process, comprehensive, high-quality data and scientific assessments and summaries are essential. Currently, an inventory of aquatic systems lacks sufficient frameworks and standards to identify appropriate sampling priorities, consistency, and comprehensiveness. This undermines the ability of agency decisionmakers to base their conclusions on sound science. Much of the data gathered on aquatic habitats and biota are not available in an electronic format that partners can access. This results in inadequate and incomplete information being available on forest resources and collection of data or information summaries that may already be available from partners. This is a chronic problem across many agencies in the United States but is compounded in the USDA Forest Service from the lack of consistent annual reporting. The USDA Forest Service Natural Resource Information System (NRIS) is designed to remedy this issue, but there is skepticism in the field that it will be completed and that adequate funds and staff will be available to keep it updated.

Watershed analysis provides foundational information for better project design and implementation. Currently, watershed analysis is variable across the agency in quality, cost, products, and expectations. Completions of basin-wide assessments are critical to long-term agency success.

The aquatics, watershed, and air research programs in the USDA Forest Service have achieved national renown. The linkage between national forest managers and USDA Forest Service researchers to prioritize, develop, and use aquatic science within the agency is highly variable, but generally low. Large-scale research of environmental issues has been a USDA Forest Service success, which is particularly valuable because of the difficulty for universities and private research institutions to fund and sustain research of that magnitude. Support for this type of research is declining, yet it is essential for land managers.

Outcome

Agency managers and partners are using consistent, comprehensive, high-quality aquatic data. Watershed analysis is an integral tool for informing project managers of the comprehensive array of prioritized actions from which to develop projects. The aquatics and watershed research programs are fully supported, and appropriate methodologies are applied in the agency's aquatic resource management.

Recommendations

Information Management

- Develop and implement a strategy to comprehensively inventory aquatic systems on national forests.
- Ensure the completion of the aquatics portions of NRIS as the corporate database for the agency. Improve field staffs' understanding and commitment to update and utilize the NRIS databases.
- Complete reviews at the national and regional levels to assure consistency of inventory data and management of information resources.
- Develop and issue national and regional direction on the use of watershed analysis as an essential tool in project development. Provide adequate flexibility in implementation to ensure the level of analysis is commensurate with the scale of the project being implemented.
- Define or adopt standards and sampling methods for inventory and data management.

Research

- Develop a regular briefing schedule for line managers and field staff summarizing major research products, highlighting successful implementation and impacts to resource management.
- Include partners, agency line officers, and fisheries and watershed program leaders in the identification and implementation of priority research needs.
- Create an advisory panel of selected partners from fisheries, biodiversity conservation, resource management, and research institutes that will evaluate fisheries and aquatic staffing and training needs, and implementation of research products to help refine the agency's research agenda. The committee may be a prototype that would be evaluated for expansion into a broader science advisory committee for the agency.

6. Partnerships

Partnerships have become an essential tool for the USDA Forest Service to accomplish its fisheries and watershed program objectives. The number of partnerships has expanded greatly, but there are inconsistencies in the interpretation and application of policies to develop and maintain them. Partners are critical to accomplish work on national forests, and especially for collaboration on private lands that will benefit forest habitat, fisheries, and endangered species.

In many areas of the West, the Wyden amendment is utilized extensively to complete work in important watersheds containing both public and private lands. In other areas,

the ability to complete similar work is limited by a lack of understanding of this authority and the flexibility it provides to work outside traditional boundaries. In many areas, there is concern by partners and USDA Forest Service employees about the agency's ability to sustain its partnership commitments and adequately involve partners in setting priorities for projects. Some partnerships no longer supplement a program but have become programs in themselves.

Outcome

Excellent relationships with fisheries, conservation and aquatic resource management partners exist through expanded cooperative efforts. Agency employees and partners view partnerships as efficient and effective with minimal procedural burdens.

Recommendations:

- Work with the Washington Office Legislative Affairs Staff to develop language and justification for making Wyden Amendment authority permanent.
- Continue the cooperative relationship with FishNet to improve the fisheries and watershed programs within the agency.
- In the Needs Assessment staffing analysis, ensure that partnership coordination and development are included as a part of the essential workload.
- Produce and distribute the
- "National Partnership Guide" to improve the understanding and consistent application of the full range of relevant authorities.
- Provide an accurate way to include partner contributions in the annual report of progress and accomplishments.
- Further develop partnerships to address the public/private land and water matrix issues that are critical to fisheries and watershed resource management objectives.
- Nationally recognize a partner each year for outstanding contributions to the USDA Forest Service's fisheries program.

7. Endangered Species Act and Clean Water Act

Fifteen years ago, few aquatic species were listed as threatened or endangered under the Endangered Species Act. Today, many salmon stocks in the West; native fishes in the Southwest; and a significant percentage of native aquatic fauna, including fishes, crayfishes, and mussels, in the Southeast are listed. The workload and strategic and technical complexity associated with the conservation of listed aquatic species, and consultations with the regulatory agencies having oversight responsibilities, are overwhelming USDA Forest Service fisheries and aquatics resources staff in some areas of the country, especially the West. The scope and scale of this impact is predicted to grow significantly.

The increasing number of listed aquatic species is a reflection of habitat fragmentation and the poor condition of many native aquatic species populations. Many of these species are dependent upon habitats found on both private and national forest lands. Restoring populations of listed species and their habitats must be a high priority, often requiring coordinated work on USDA Forest Service and private lands. Additionally, the USDA Forest Service must ensure that Endangered Species Act and Clean Water Act tasks are carried out efficiently so that staff can accomplish other priorities, including the substantial watershed restoration work that must be done to recover listed species.

The USDA Forest Service has developed and implemented policies designed to improve the resource conditions for fish and other aquatic species. Policies such as the aquatics portion of the Northwest Forest Plan, InFish, PACFish, and 4E authorities (Federal Power Act) have provided habitat improvement and protection mechanisms that have resulted in significant resource conservation accomplishments. During the upcoming Forest Plan revisions, similar or strengthened program direction will be needed to sustain those gains.

Agency fishery staff is doing high quality work in the management and recovery of aquatic endangered species. The USDA Forest Service is actively implementing the Endangered Species Act; however, there is a concern by field biologists over increasing costs relative to benefits of the consultation processes. There is particular concern about aquatic restoration projects with potential short-term negative effects and long-term beneficial effects.

For example, consultation in the Southern Region of the USDA Forest Service is working well, but there is concern that future issues, such as Section 7 consultations, may increase dramatically without associated increases in staff, resources, or emphasis. In the Pacific Northwest, programmatic consultations are working well in some areas, such as culvert removals.

Outcome

High-quality aquatic habitats on USDA Forest Service lands support sensitive, threatened, and endangered species sufficiently to ensure their recovery, and in the case of sportfishing, to a level commensurate with State recreational management objectives. Strong relationships with fishery management and regulatory agencies have resulted in streamlined methods that effectively implement the Endangered Species and Clean Water Acts.

Recommendations:

- Explore, develop, and employ mechanisms (e.g., programmatic consultations) to improve efficiency of Endangered Species Act consultations, allowing faster coordination between USDA Forest Service fisheries staff and their Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries counterparts.
- Develop strong working relationships between USDA Forest Service leadership and their counterparts in regulatory agencies to facilitate consultation interactions between agency personnel.
- Coordinate closely with conservation partners to develop and implement strategies to protect and restore threatened and endangered species on public and private lands.
- Develop a strong relationship with State fish and wildlife agencies to meet sportfishing objectives for native fishes.

We gratefully acknowledge the support and effort of the following groups that participated in this assessment.