



U. S. Fish and Wildlife Service

# Wetlands Status and Trends: A Step-down Strategic Plan



## Executive Summary

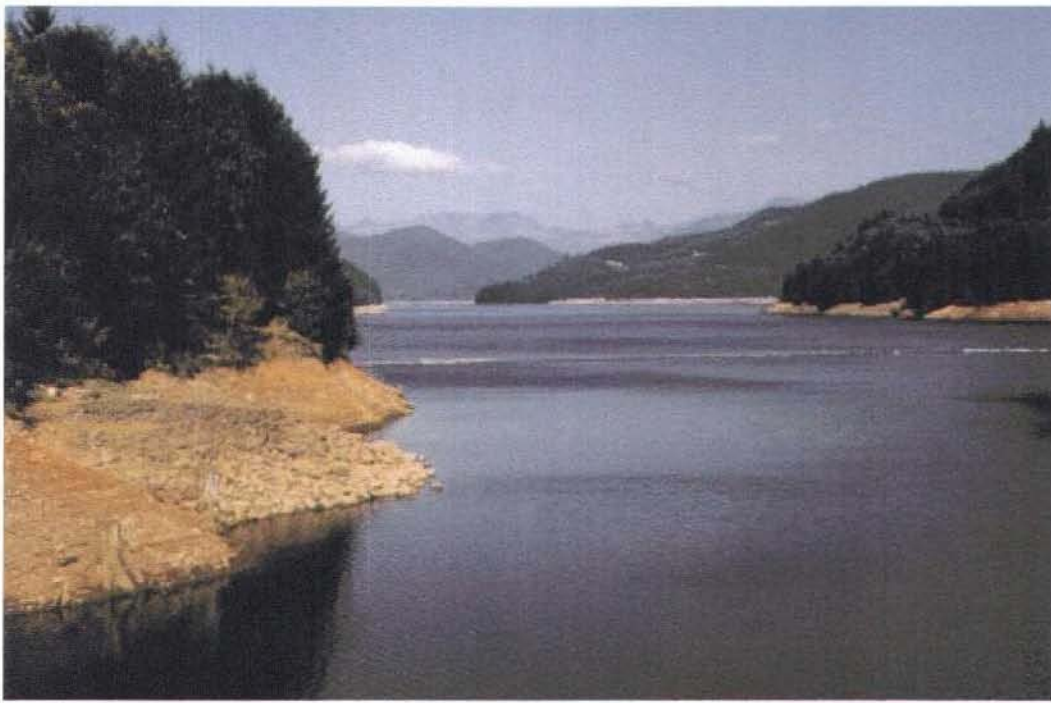
The U.S. Fish and Wildlife Service is the principal Federal agency that provides information to the public on the extent and status of the Nations wetlands. The Status and Trends component has had a successful history of success in providing scientific information to resource managers and decision makers about wetlands resource trends in the conterminous United States. Today, Status and Trends is again at the forefront of a Presidential directive to produce updated information on behalf of the Federal Government.

This stepped-down strategy builds on the National Strategy developed by the Service for the National Wetlands Inventory in FY 2002. As part of the National Strategy, *Trend and change Analyses of Wetlands and Other Aquatic Habitats* was one of three primary program goals. It provides a framework for the wetlands Status and Trends component and enumerates three core strategic objectives.

In addition to addressing how to achieve the core objectives, this stepped-down strategy is needed to address future challenges that will need to be address by the Service. These challenges relate to preserving scientific and capital investments, providing more frequent and extensive data about our nation's aquatic habitats, identifying and assessing habitats at risk, and becoming institutionalized as an essential Federal resource monitoring tool.

## Goal Statement

*The goal of Wetlands Status and Trends is to provide the Nation with current scientifically valid information on the status and extent of wetland, riparian, and related aquatic resources, and monitor trends of these resources over time.*



## Introduction

The Division of Habitat and Resource Conservation provides national oversight for a number of Fish and Wildlife Service programs that promote the protection, conservation and restoration of our Nation's fish and wildlife resources. The Division's involvement includes expert habitat planning and ecological technical assistance; forming collaborative partnerships for technology development and to support habitat work; conservation of coastal habitats and;



inventorying and monitoring the Nation's wetlands. Within the Division, the Branch of Habitat Assessment focuses on addressing the Service's ecological data needs. The Branch collects and develops scientific information on Fish and Wildlife habitats to be used in making decisions about resource policy, management and research. One of the functions of the Branch is to oversee the Wetlands Status and Trends component.

The Emergency Wetlands Resources Act (Public Law 99-645) was enacted to promote the conservation of our Nation's wetlands. Congress recognized that wetlands are nationally significant resources and that these resources have been affected by human activities. The Act requires the Service to conduct wetland status and trends studies of the Nation's wetlands at 10 year intervals. As of 2005, this remains the only Congressionally authorized mandate applicable to any component of the National Wetlands Inventory. The Service will continue to collect wetland status and trends information at regional, State or local scales while preparing to take advantage of technological innovations in the fields of remote sensing and computerized mapping for incorporation to the next National update report to Congress.



The National Wetlands Inventory was the first Fish and Wildlife Service program to complete and implement a strategic plan that conformed with the DOI Strategic Plan. With the plan's implementation in 2002, operational components included in the plan were encouraged to develop "step-down" strategic documents that would be compatible with the National Plan and provide further clarification of future direction and actions. This is the step-down plan for the Wetlands Status and Trends component.



## The Service's Wetlands Status and Trends: A History of Success

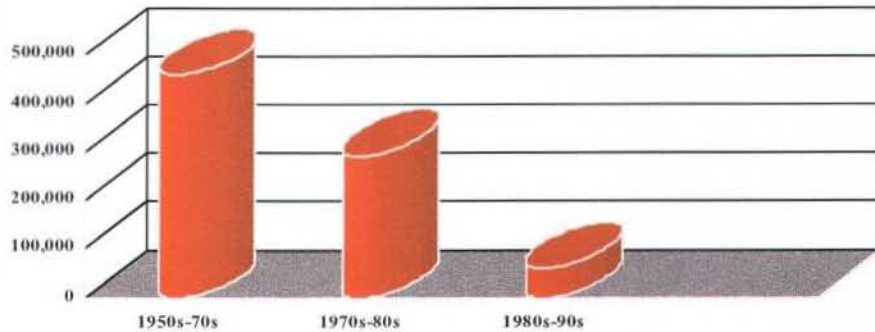
Data from wetlands status and trends provide important long-term trend information about specific changes and places and the overall status of wetlands in the United States. The historical data base that the Service has developed through Status and Trends provides photographic evidence of land use and wetlands extent dating back to the 1950s. This provides an accurate record that can be used for a variety of purposes, including assessing restoration potential.



*Color infrared aerial photographs showing changes to coastal features between 1994; and 1999 (Georgetown, South Carolina).*

The Service's wetland trends monitoring effort provides comprehensive information to decision makers and the general public. The Service has rigorously documented the historic downward trend in wetland losses since the 1950s. At that time the average annual wetland loss rate was 458,000 acres. During the mid-1970s to mid-1980s the loss rate had declined to 290,000 wetland acres annually. More recently, the Service reported to Congress in 2001 that the Nation's wetland loss rate was about 59,000 wetland acres annually.

*Status and Trends studies have tracked wetland loss rates since the 1950s.*



The Service has produced four national reports on wetland trends. All are referenced in scientific literature and are used by Federal and State agencies, the scientific community and conservation groups for planning, decision making and wetland policy formulation and assessment. An assessment recently conducted for the Service indicated that wetlands status and trends information was widely distributed and used extensively by industry, all levels of government, university researchers, educators and the general public. Three hundred and seventy private businesses, 94 state government agencies, 29 Federal agencies and the Congress are actively using the wetlands information contained in recent status and trends reports or data summaries. Our wetlands data are being used in various ways: wetland resource management activities, policy and planning represent 69 percent of the current uses, wetland assessment and evaluation 18 percent and research and education 13 percent.

*Ninety four state government agencies are actively using the wetlands status and trends data.*





**Habitat Information for Service Programs and People:** Although the Service's Wetlands Status and Trends component was designed to produce wetland habitat trends on the national scale, our data also provide important information about specific changes on the landscape at the state and regional level. The Service's status and trends reports are used for planning, decision making, on-the-ground management, wetland policy formulation and assessment by state resource and planning agencies and every Service Region.



Information on wetland distribution, type, increasing or decreasing trends is needed by many Service biologists and programs. Wetlands status and trends data are used by Refuges to update wetland acquisition priority plans, Fisheries use data on increasing numbers and distribution of artificial ponds to assess Asian Carp and proliferation of other invasive species. The Partners for Wildlife Program is provided an objective assessment of their efforts to restore and create wetlands on the landscape, and the Service's waterfowl researchers match wetland habitat data trends with migratory bird populations and breeding success.

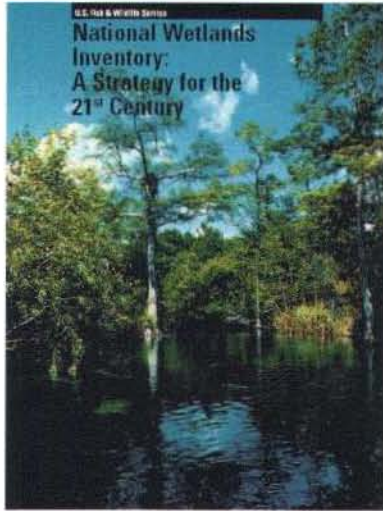
**Inter-Agency Collaboration:** The Service's efforts to monitor wetland status and trends have been enhanced by the multi-agency involvement in the study's design, data collection, verification, and peer review of the findings. The study design for the national wetlands status and trends sampling effort was developed by an interagency group of statisticians. For the national update report completed in 2000, five Federal agencies, four state agencies and one private organization provided imagery to the Service. During field verification of the wetland trends work, Service biologists were accompanied by representatives from six Federal agencies.

In an unprecedented unified effort to report the Service's study findings, six Federal Departments prepared a summary report "*Status and Trends of the Nation's Wetlands*".

**The Yardstick for Federal Agencies to Measure Success:** A consortium of 11 Federal agencies (including the U. S. Army Corps of Engineers, the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the Department of Agriculture and the Department of Interior) has been working on administrative reform actions aimed at halting wetland loss and accelerating the process of regaining wetlands through restoration and creation. A goal of this effort is to achieve a net increase of wetland acres each year. The Service's effort to monitor wetland trends provides the only comprehensive performance measure for these agencies to know if they are achieving their goal. Currently, 29 Federal agencies are actively using the Service's wetlands status and trends information.







## Our Strategic Plan and the Wetlands Status and Trends Component:

Contemporary scientific information on wetlands should be the bedrock of good policy. The Service's strategic plan is focused on the development and dissemination of wetlands information to Service resource managers and the public. The Service's wetlands expertise positions the Agency to assume an even greater future role in aquatic habitat policy development. How can the Service work with other Federal agencies and Congress to meet the no-net-loss goal? What are the greatest pressures on wetlands today? Where are wetlands being lost? Can we target Federal and State partnership programs in high-risk locations?

The National Strategy states that the Service should continue to obtain scientifically sound information on national wetland loss or change rates supplemented with strategic status and trends analyses for wetland regions of particular concern to resource managers.

This strategic plan provides a framework for the Wetlands Status and Trends component well into the 21<sup>st</sup> century. The **Program Goal** enumerates three core strategic objectives:

*Timely information on wetland trends is important to assess the status of these important aquatic habitats. To continue obtaining scientifically sound information on national loss or change rates, the Service will need to:*

- 1) Conduct status and trend analyses at regional, State, or local scales;*
- 2) Increase the number of sample plots to obtain statistically rigorous findings; and*
- 3) Establish national reporting intervals of every five years.*

The Service will need to continue to produce assessments that illustrate where wetlands are most at risk, but also provide information about wetland restoration and creation that will allow policy makers to consider conservation strategies and measure progress.

### Achieving National Program Objectives

**Strategic assessments of vulnerable wetland habitats in specific ecoregions and watersheds are timely and needed to provide up-to-date information to decision-makers.**

Council on Environmental Quality

*National Strategy Objective #1: Conduct status and trend analyses at regional, State, or local scales.* Regional and state wetlands trend analyses by the Service augment our knowledge of habitat changes on a more local scale. The Service has completed numerous regional status and trends analyses including the Texas Gulf Coast, the Central Valley of California, and the

Chesapeake Bay Watershed. These analyses have provided more detailed trend and resource condition information that Federal, State and local governments use in planning and decision making.

Conducting regional analyses of aquatic habitat status and trends will enable the Service to more quickly and accurately measure change and resource conditions in key areas.

*The Service will actively pursue intensified wetland trends studies in areas where there is a need for resource information that compliments Service work, resource priorities, or where opportunities exist to establish partnerships at the State or regional level. Intensification studies will be planned to compliment national status and trends updates.*



**National Strategy objective #2: Increase the number of sample plots to obtain statistically rigorous findings.** Because declining wetland loss rates require more finite measurement techniques to ensure a high degree of statistical reliability, periodically the sample size will be re-evaluated and if necessary, will be augmented with additional sample plots. This is done



using established technical protocols, study parameters and with oversight provided by the project manager working with the project statistician.



For the national update that was completed in 2000, 725 supplemental sample plots were added to parts of Maine, Vermont, New York, Pennsylvania, Ohio, West Virginia, Kentucky, Tennessee, Nebraska, Kansas, Oklahoma, New Mexico, Arizona, Nevada, Washington, and three physiographic zones of the northern Rocky Mountains and the Snake River Lowlands in Wyoming, Montana, and Idaho. The total number of sample plots in that study was 4,375. In 2004, a five year update of wetland trends will require additional plots to augment the sample size.

*The Service will maintain the integrity of the project sample design, plot location and allocation process by ensuring statistical expertise and oversight are provided by project statistician(s) and by staying current with geospatial sampling techniques and technologies.*

**National Strategy Objective #3: Establish national reporting intervals of every five years.** On Earth Day (April 2004) the President announced that the Fish and Wildlife Service would complete an updated wetlands status and trends study five years ahead of schedule. The Service and the Department are moving to meet this Presidential Directive. The next report on the status and trends of wetlands for the nation is scheduled to be completed by December 2005.

The Presidential Directive also directed that the study would be updated at more frequent intervals thereafter. The Service interprets this to mean every five years in concert with the National Strategy.



*The Service will produce updated wetlands status and trends information for the conterminous United States by December 2005 and at five year intervals thereafter. This information will be supplied to the Congress and the public in keeping with the requirements of the Emergency Wetlands Resources Act of 1986.*

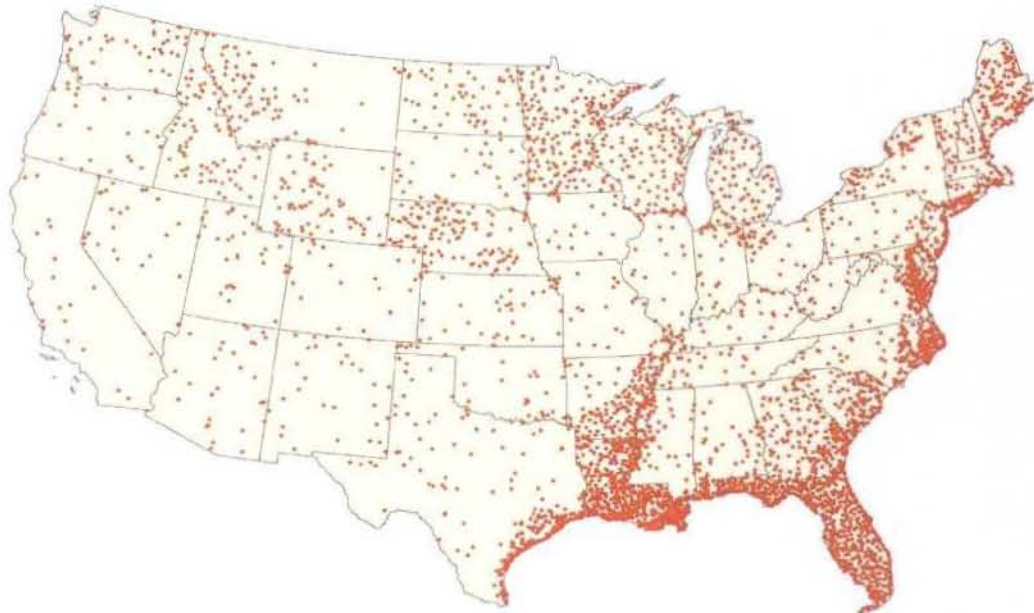


## A Strategic Roadmap for the Future

Beyond the specific objectives identified in the National Strategy, the status and trends component will position itself to meet future challenges. These challenges relate to preserving scientific and capital investments, providing more frequent and extensive data about our nation's aquatic habitats, identifying and assessing habitats at risk, and becoming institutionalized as an essential Federal resource monitoring tool.

### **1.) Preserve and Expand Wetlands and Aquatic Habitat Trend Data**

The historical data base that the Service has developed through Status and Trends, provides photographic evidence of land use and wetlands extent dating back to the 1950s. The Service has rigorously documented the historic downward trend in wetland losses over the past five decades, and is now the most extensive source of wetland habitat change information in the Nation. This visual and geographic database will provide an accurate record to assist in future wetland and habitat restoration efforts. The study is one of the very few remaining national habitat monitoring programs for the U.S.



*Wetland Status and Trends sample plots blanket the conterminous U.S.*

- *The Service's Status and Trends component was designed to track wetland gains and losses on all lands within the conterminous U.S. In the future, the Service will expand status and trends studies to produce resource information where it may be needed, in Alaska, Hawaii, Puerto Rico, the U.S. Virgin Islands and the Pacific Trust Territories.*
- *In addition to continuing to improve and expand the dataset on wetland trends, the Service must ensure the preservation the historic database of wetland loss*



*information that spans the past 50 years. These data represent a major capital investment by Service that must be preserved. Avenues to physically archive the data as well as put it in a technically contemporary format need to be pursued.*

## **2.) Identifying and Assessing Threats to Aquatic Habitats at Risk**

Aquatic and riparian habitats are linked in direct and complex ways and are fundamentally dependent on natural flows of water. Due primarily to human activities and disturbances, aquatic and riparian habitats have been severely altered and continue to deteriorate, leading to the loss of native species, ecosystem functions, and services to human society. Water and water related habitats will take on ever increasing importance to our Nation in future years. Monitoring the status and assessing risk to these aquatic habitats provides vital information to the Service.



- *The Status and Trends component will be positioned to address relevant, contemporary resource issues on behalf of the Service. Questions relating to numbers and location of wetlands and wetland types, watershed composition, riparian resource trends, stressors on surface waters and landscape characterization will play an ever increasing role in resource decision making and planning activities. The Status and Trends dataset will be planned, updated and positioned to provide this type of information.*
- *Status and trends data, analytical tools and personnel will conduct aquatic habitat assessment studies to aid national, regional or field office operations.*
- *The status and trends data will be used as a guide to help determine where potential resource conflict areas exist, the nature of the conflict and the resources at risk. In addition, data from national and regional trends studies will be used as a factor in determining area(s) and urgency for updated wetland map information and conducting regional intensification studies.*



## **3.) Assisting Other Resource Programs and Projects**

*Critical Performance Factor: Scientifically documenting progress toward net gains of the nation's wetlands.* In 2004, the Service began the Five-Year Update to the National Wetland Status and Trends Report, as proclaimed by Presidential directive on Earth Day. The nation is on the historic threshold of achieving key wetland gains. The Service's status and trends



report will provide the Administration and the nation with conclusive scientific and rigorous statistical results of the progress being made towards achieving, and possibly surpassing, the President's goal of 'No-Net-Loss' of wetlands. More frequent status and trend updates thereafter will continue to guide the nation's wetlands conservation programs and document this legacy in the future. No other bureau has the specialized wetlands map and assessment expertise that can accomplish this Presidential directive. Accomplishing the President's directive in 2006 on behalf of the Department will be a critical performance factor for the Inventory. The report will provide the scientific information sought by both the Administration and conservation community about the national status and trends of wetlands.

- *The Division of Habitat and Resource Conservation must lead in development of Federal plans to monitor progress towards achieving national habitat goals and establishing habitat monitoring programs. Status and trends will provide technical and staff support to the Division as a key member in the Federal consortium charged with monitoring wetland resource conservation, restoration and enhancement actions.*
- *Our Nation's wetlands goals have traditionally been based on wetland acreage. This standard has and will continue to serve us well as we strive to achieve sustained net gains of wetland acreage. The status and trends data provides a yardstick for measuring success and must become institutionalized as a Federal monitoring effort.*
- *Work with the Congress to update mandates to reflect a new era of monitoring our nation's aquatic resources.*

**Science and the Service Initiatives:** The history of the Service's Wetlands Status and Trends component is steeped in scientific excellence. Although there are several programs in the Federal Government that collect environmental data, the Service's wetland trends monitoring effort provides the only comprehensive and consistent wetlands trends information available to decision makers and the general public. The Service's Wetlands Status and Trends design, training and operations are aimed specifically at monitoring the nation's wetlands. The Service has specialized knowledge of wetland habitats, classification, and cover type changes. We report only on wetlands, and we report on all of the Nation's wetlands regardless of ownership. The Service's data have the credibility among Federal and State resource agencies and are used at all levels of government. The scientific integrity of the Wetlands Status and Trends Project is unchallenged as it represents the most comprehensive, technically advanced, and contemporary effort to track wetlands resources on a national scale.

**Status and Trends will provide the Nation with conclusive scientific and rigorous statistical results of the progress being made towards achieving, and possibly surpassing, the President's goal of 'No-Net-Loss' of wetlands.**

This legacy will guide current and future status and trends endeavors through four elements of science:



- *The Service’s standards for conducting scientific studies will be used. These include documentation of protocols and scientific control of data, adherence to the “Information Quality Guidelines”, maintaining integrity of the study design and scientific format for publication of results.*
- *Expand field data collection to support status and trends studies as well as related habitat assessments.*
- *Conduct Scientific peer review to strengthen science applications including the establishment of an internal “Operational Review and Acceptance Team” to review SOPs and an external “Expert Peer Review Team” to review products with national or policy implications.*
- *Pursue new technology developments including expanding the use of digital imagery through high resolution satellite imagery, digital camera technology and technologies that would facilitate rapid updating of status and trends information.*

#### **4.) Internal and External Outreach**

The Service relies heavily upon partnerships and cooperative agreement with other Federal agencies to help complete the wetlands status and trends studies. Following guidance from the Department, the Service has furthered strengthened its partnership with the U.S. Geological Survey. *Information Technology* improvements we have accomplished in collaboration with USGS have resulted in key benefits to both bureaus, the Department, and the public. The integration wetlands status and trends data into our new national wetlands geodatabase provides many technological advantages in digital data capture, analysis and storage.

- *Status and Trends must maintain strong partnerships that provide opportunities for the Service to capitalize on technological developments, leverage expertise and promote efficient use of limited resources.*
- *Status and trends will actively seek ways to support other Service Programs and Offices through the dissemination and interpretation of data, habitat monitoring expertise, and technology development and coordination efforts. Opportunities to assist in Fisheries and Habitat Conservation Program areas should be a priority.*
- *Status and trends will support E-Government initiatives through the automation and dissemination of data through a strong Internet presence in conjunction with the Branch of Habitat Assessment.*





## Summary

The Service's wetlands status and trends will continue to rely on sound scientific principles and provide quality products as an important monitoring component of the Federal Government. The national strategy provides a framework from which to accomplish three primary objectives:

- 1) *Produce regional, state or localized status and trends studies,*
- 2) *Increase the number of sample plots in the national study, and;*
- 3) *Produce national reports at five year intervals*

The stepped-down strategy further defines challenges and work to be accomplished. The Service will begin to implement this direction in FY 2005. This will require the following strategic actions:

- I Preserve scientific and capital investments.*
- II Provide more frequent and extensive data about our nation's aquatic habitats.*
- III Identify and assess habitats at risk.*
- IV Become institutionalized as a Federal resource monitoring indicator.*
- V Enhance partnerships within and external to the Service*





**Program Contacts:**

**Dr. Mamie Parker**  
**Assistant Director, Fisheries and Habitat Conservation**  
**U.S. Fish and Wildlife Service**  
**Telephone: 202 208-6394**

**Dr. Benjamin N. Tuggle**  
**Chief, Division of Habitat and Resource Conservation**  
**U.S. Fish and Wildlife Service**  
**Telephone: 703 358-2161**

**John Cooper**  
**Chief, Branch of Habitat Assessment**  
**U.S. Fish and Wildlife Service**  
**Telephone: 703 358-2161**

**Thomas Dahl**  
**Wetlands Status and Trends Biologist**  
**U.S. Fish and Wildlife Service**  
**Telephone: 608 783-8425**

