

#### **Monitoring Area Changes in the Nation's Wetlands**-**Study Design**

The U.S. Fish and Wildlife Service's Wetlands Status and Trends study was developed specifically for monitoring the Nation's wetland area using a single, consistent definition and study protocols. An interagency group of statisticians developed the design for the national status and trends study.



The study design consists of 4,682 randomly selected sample plots. Each plot is 4 square miles in area. The plots are examined, with the use of remotely-sensed data in combination with field verification, to determine wetland change.

All geographic data are stored in an ArcSDE Geodatabase. Custom ArcMap tools are a vital component in the overall QA/QC process.

Wetland changes were determined by extensive analysis of the imagery, interpolation of wetland types and wetland conditions, and determination of the changes that occurred between the respective target dates.

#### Interagency **Collaboration**







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

The Service's Division of Resource and Habitat Conservation and the USGS Office of Water Information have a close working relationship and are collaborating on a number of wetland projects and scientific reports. The USGS tests and applies emerging technologies in cartography and develops and maintains information databases and geographic information systems to support the USGS and other Federal agencies.

http://www.fws.gov/wetlands/StatusAndTrends/

# **Monitoring Wetlands Status and Trends in the United States**



### **Sound Science and New Technologies**

Technologic advances for this study included the extensive use of high resolution satellite imagery, use of computerized mapping techniques, and modernization of data management systems. The Service captured more detailed and timely information about the nation's wetlands.

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 wetland restoration potential.



nfrared Ikonos satellite image of bogs lakes and wetlands in northern Wisconsin.





U.S. Fish & Wildlife Service

This is the latest in a series of reports produced by the Service that provides the Nation with conclusive scientific and statistical results on the progress that has been made toward achieving national wetland goals.

http://wetlandsfws.er.usgs.gov/status trends/ National Reports/trends 2005 report.pdf

# 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 the Interior) have been working on administrative reform actions aimed a 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.







Color infrared aerial photographs showing changes to coastal features (Georaetown, South Carolina)





#### **Intensification Studies**

Intensified wetlands trend studies involving additional sampling plots have been completed where there is a need for resource information that compliments resource priorities, or where opportunities exist to establish partnerships at the State or regional level.



Efforts have been advanced by the multi-agency involvement in the study's design, data collection, verification, and peer review of findings.





## **EPA-FWS Cooperation to Monitor** Wetland Quality and Quantity

The Environmental Protection Agency (EPA) anticipates conducting a probabilistic national survey of wetland condition in 2011, with a final report issued in 2013. This survey will be one in a series of National Water Quality Assessments carried out by the EPA to provide the public with a better understanding of the condition of the nation's waterways.

EPA and the Fish and Wildlife Service (FWS) are committed to working in close collaboration to ensure the national condition assessment effectively compliments the FWS Status and Trends Study. While the Status and Trends reports document trends in wetland acreage, the National Wetland Condition Assessment will evaluate the ambient health of the nation's wetland resources. Together these reports will offer the most comprehensive ecological evaluation of the nation's wetlands and provide valuable information to support policy and resource management decisions.

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