U.S. Fish & Wildlife Service

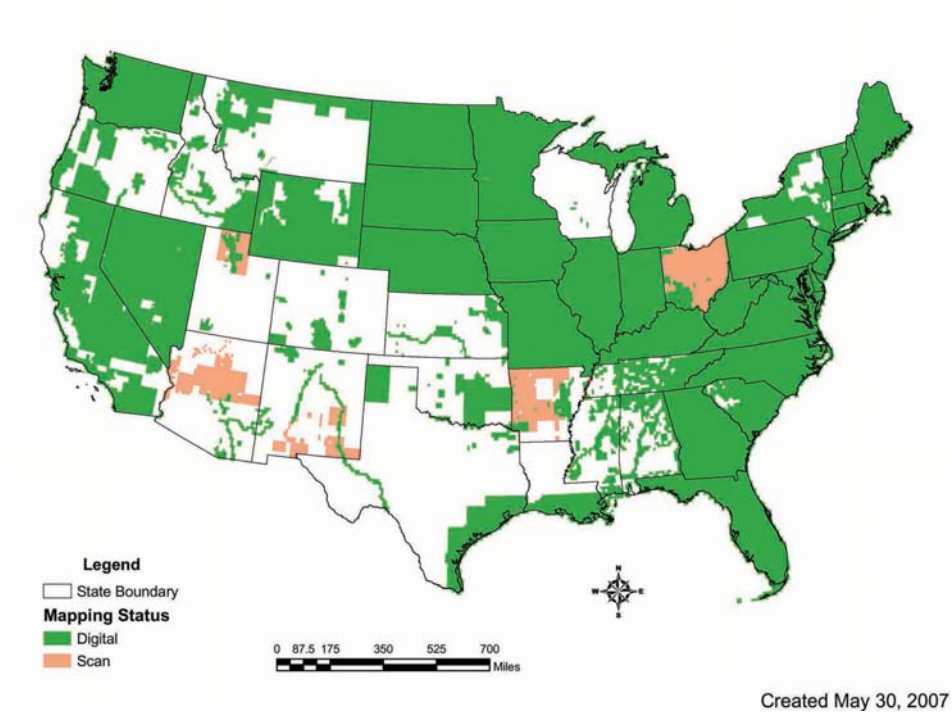
Wetlands Layer of the National Spatial Data Infrastructure

National Wetlands Inventory

What is the Wetlands Layer?

The Office of Management and Budget created and assigned the Federal Geographic Data Committee (FGDC) the responsibility of coordinating the National Spatial Data Infrastructure (NSDI). The NSDI is comprised of spatial data from various sources for 34 data themes or layers which form the core, most commonly used set of base data for the nation. Responsibility for coordinating the Wetlands Layer was assigned to the U.S. Fish and Wildlife Service (Service).

The Wetlands Layer includes geospatial data with attributed wetlands and deepwater polygons and linear stream features classified under the National Wetlands Classification Standard (Cowardin et al.) and a related riparian habitat data layer under the Service's Riparian Mapping System.



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How are data being used?

Wetlands are the cornerstone of many ecologically and economically important ecosystems and related riparian habitats in the arid West are critical to most species and water quality. Federal, State, regional, Tribal, county and city agencies; business, conservation, and educational organizations, and concerned individuals, use wetlands and riparian geospatial data for habitat and species conservation, restoration, or protection. Some also use the data for planning to avoid, reduce impacts on, or mitigate impacts to wetlands for transportation or community infrastructure, or for uses such as energy development.

Wetlands locations available to include in a geographic information system (GIS) makes the data available for layering for any application in many agencies. Examples of recent uses of data include modeling or planning for adaptations to sea-level rise using the SLAMM (Sea Level Affecting Marshes Model) in Georgia/South Carolina, Chesepeake Bay, Puget Sound, and areas in Florida; linking marsh bird habitat to NWI habitat classifications; and planning and remediation after Hurricanes Katrina and Rita. The U.S. Army Corps of Engineers often uses NWI data where available during its permit review process and has included a link to the Wetlands Layer in its ORM2 online permit tracking system. States use the data for effective monitoring and for state wetland protection and regulatory needs.

The Service uses the data to identify and prioritize habitat to purchase for waterfowl in the prairie potholes (using "Thunderstorm" maps), locate wetlands dependent endangered species such as the Hines emerald dragonfly, plan for management of each National Wildlife Refuge, and plan and account for accomplishments in wetlands restoration in the Coastal and Partners for Fish and Wildlife programs.

Private landowners or buyers use the data to help determine selection of land to buy, restore natural habitat, or to avoid or reduce impacts to wetlands during development. Others concerned about threats to or losses of wetlands or wildlife use the maps to help protect or restore wetlands in their communities.

How is mapping done and distributed?

The Service's National Wetlands Inventory has been mapping wetlands and related habitats for over 30 years. The Emergency Wetlands Resources Act of 1986 requires the Secretary of the Interior, acting through the Director of the Service, to map, digitize, and distribute wetlands data. Historically, the Inventory interpreted aerial photography creating hand-drawn drafts then final hard copy maps, followed by hand digitizing of the maps. Now, using state-of-the-art technology, maps data are created on the computer screen using electronic aerial photography or satellite imagery in a one-step process. Image interpretation quality review and cartographic verification processes have been simplified but stressed for quality assurance of data interpretation and standards compliance.

Once the data have passed quality review and data verification they are added to the Inventory's master geodatabase, with separate seamless layers for wetlands and riparian data. After data are included in the database, the Wetlands Layer can be served to the public through the Inventory's online Wetland Mapper at http://www.fws.gov/nwi and through The National Map at http://nationalmap.gov where it is viewable with other national data layers.

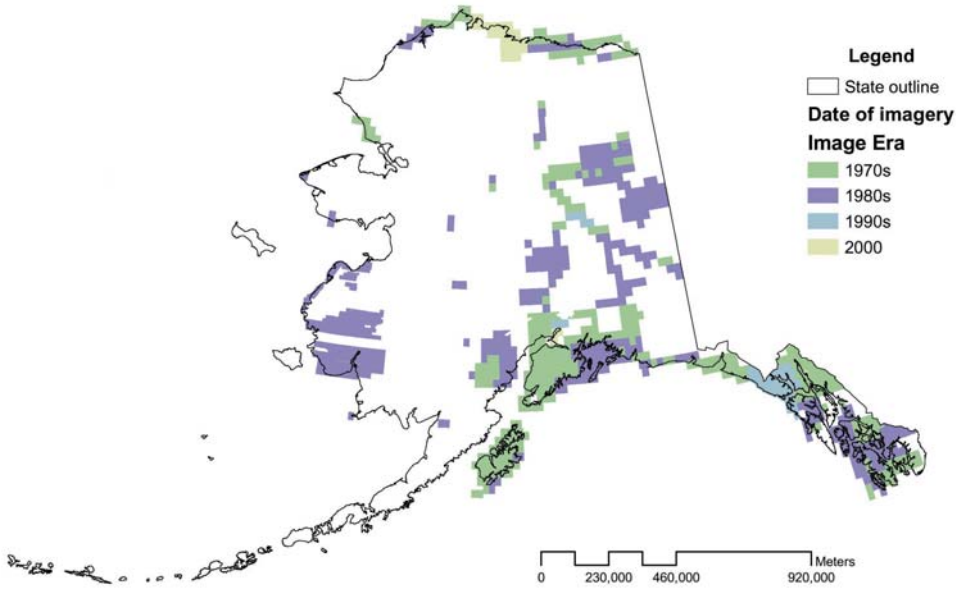
The Wetlands Mapper provides downloadable data with FGDC compliant metadata, such as dates and types of imagery used to make the map data. The Mapper also provides a host of tools for analyzing wetlands to determine things like type of wetlands, acres, perimeter, and distance, and allows customers to print maps in PDF format on their desktop printers.

What is the status of the Wetlands Layer?

Although the Inventory has over 80% of the Nation available in hardcopy maps, it currently has only 60% of the Nation's NSDI Wetlands Layer available online for use in GIS applications. Recently the Inventory has started adding scanned raster images of the hardcopy maps viewable through the Wetlands Mapper as an interim step before they are attributed, made GIS compatible, and added to the Layer. Hand-drawn map images for parts of Alabama, Arkansas, Arizona, Louisiana, Mississippi, Montana, New Mexico, Ohio, and Oregon are now available for viewing and printing.

The Inventory has worked with almost 100 funding partners to reach this level of coverage for the Nation. The current budget structure limits the Inventory's ability to complete the Wetlands Layer and have it reviewed and brought up to date within a ten-year cycle. The Service will emphasize and pursue cooperative partnerships for funding, mapping products, or services to create, maintain, and distribute a comprehensive, up-to-date Wetlands Layer to meet this ten year cycle.

As one aspect of this effort, working together under the auspices of the Wetlands Subcommittee of the FGDC, chaired by the Service, stakeholder agencies and organizations have started an initiative to scan and digitize the remaining hardcopy wetland maps, complete the mapping of the nation, and update and improve the quality of the data through modernized standards currently under development. Some of the organizations involved in this effort with the Inventory include the Environmental Protection Agency, U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, U.S. Forest Service, U.S. Geological Survey, Tennessee Valley Authority, National Park Service, U.S. Department of Transportation, the Association of State Wetland Managers, and the National Association of Counties.



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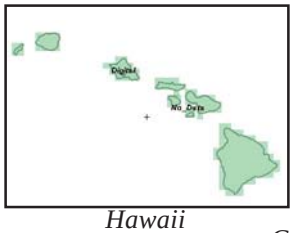
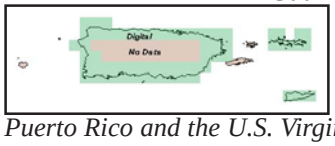


Hawaii

Guam and Saipan



Puerto Rico and the U.S. Virgin Islands

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