NATIONAL WETLANDS INVENTORY PROGRAM: 50 Years of Guiding Conservation!

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Chief Scientist NWI

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HAPPY ANNIVERSARY NWI!

For 50 years, the National Wetlands Inventory Program has shaped the understanding and conservation of wetlands, while supporting the vitality of America's communities and economy.

THE NATIONAL WETLANDS INVENTORY PROGRAM

Science-based information on wetlands and deepwater habitats to promote the understanding and conservation of the Nation's wetland resources through research, education, resource management, and policy development.

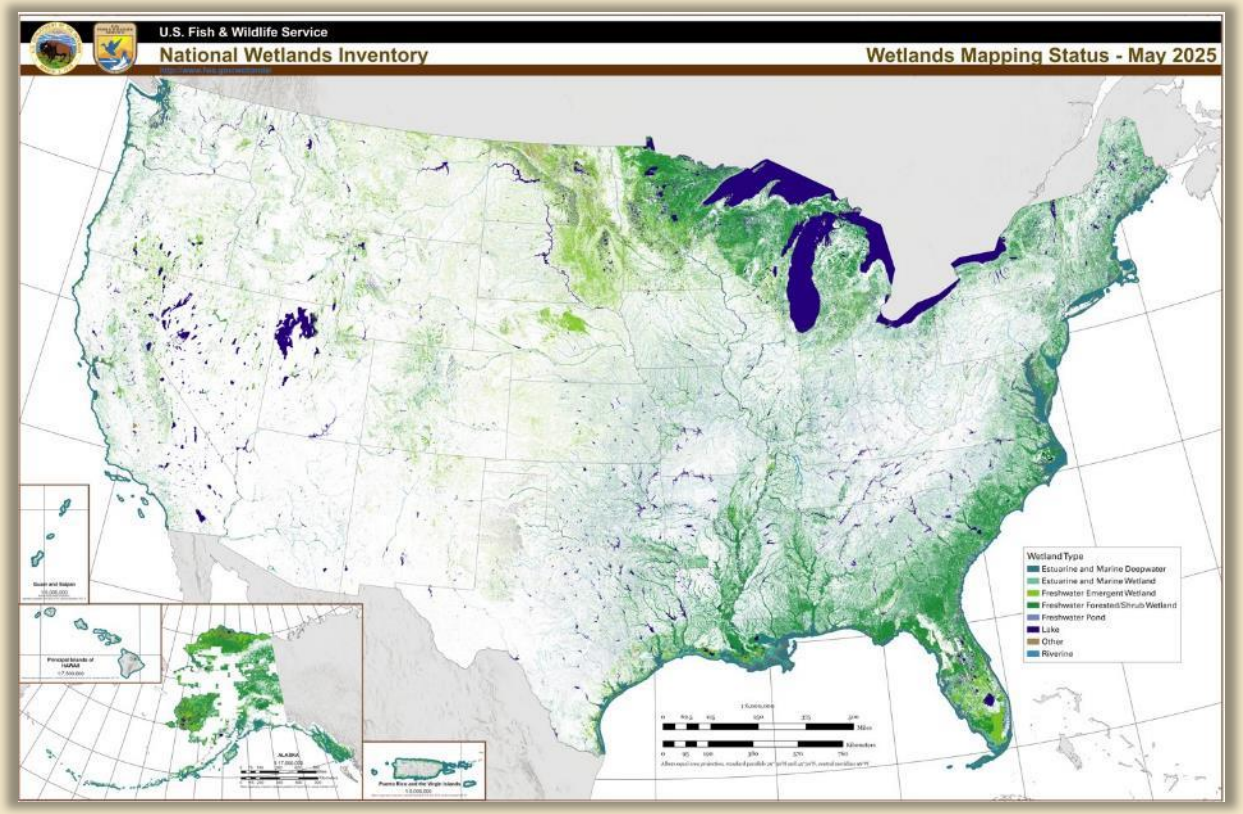
Who Are We?

Principal U.S. federal agency tasked with providing information to the American public on the extent and trends of U.S. wetlands

Emergency Wetlands Resources Act

- **Map U.S. wetlands** – NWI Geospatial Dataset
- **Provide decadal reports to Congress** – Wetlands Status and Trends Reports
  - Support a broad array of decision support needs

NWI GEOSPATIAL DATASET

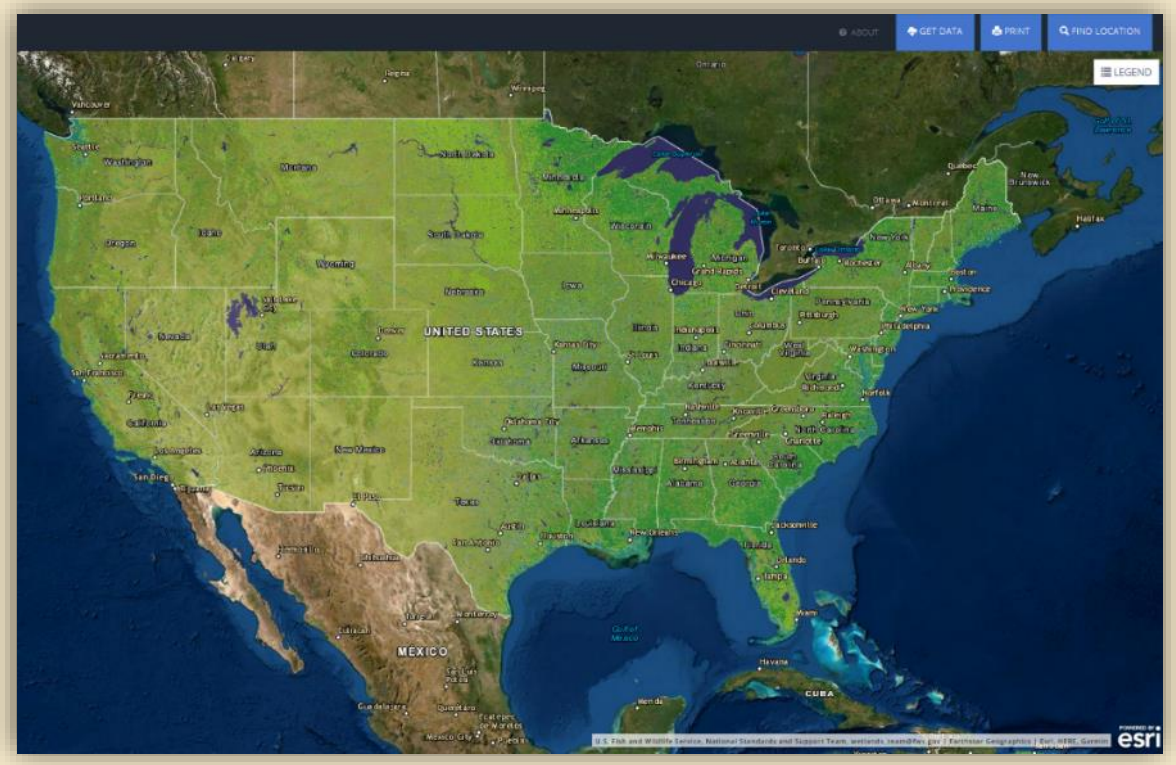


Dataset Facts

- **America's only wetlands data layer!**
  - Most spatially and categorically detailed land cover data on U.S. wetlands
- Identified by OMB as the **Wetlands Layer** of **National Spatial Data Infrastructure**
- A **National Geospatial Data Asset**
- Over 165 data contributors
- ~50 - 150M+ acres updated annually
  - Rigorous quality control maintains Federal Geographic Data Committee mandated Wetland Mapping and Classification Standards.
- Codes for all 37M+ features are searchable through a SQL database.

THE WETLANDS MAPPER

Delivering easy-to-use, map like views of America's wetland resources



www.fws.gov/program/national-wetlands-inventory/wetlands-mapper

Delivering Geospatial Data

Explore by manually panning or use the location tool to view your area of interest

Print a .pdf to share with others

View mapping information, wetland descriptions and related documents through pop-up windows

Download by watershed or state

Integrate NWI data with web map services

- U.S. Fish and Wildlife Service Information for Planning and Consultation Tool (IPaC)
- U.S. Army Corps of Engineers Operations and Maintenance Business Information Link Regulatory Module (ORM)
- U.S. Environmental Protection Agency NEPAssit
- Esri ArcGIS Online
- U.S. Geological Survey National Map
- U.S. Geological Survey Topo Maps

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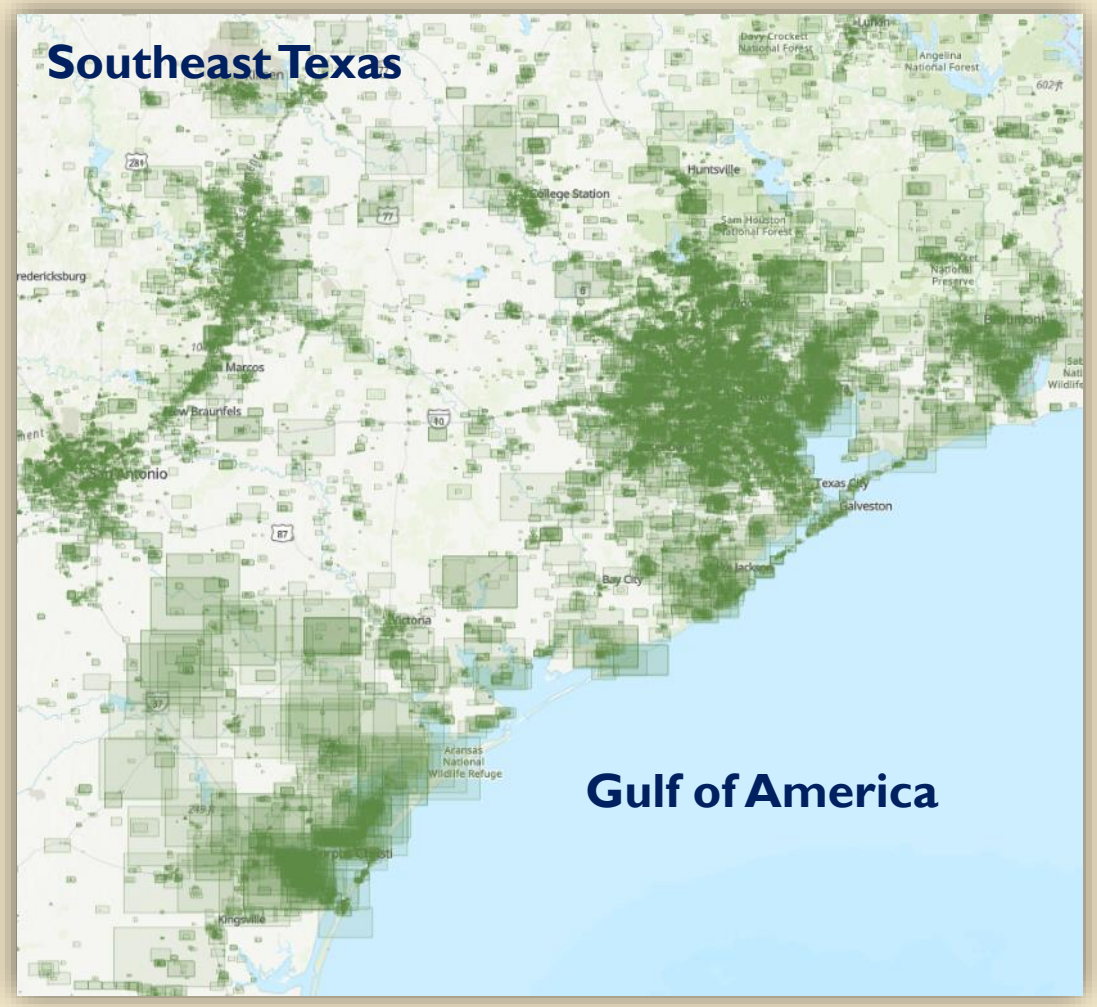


Since 2015, over 2.3 million maps were printed from the Wetlands Mapper.

Frequently Relied Upon

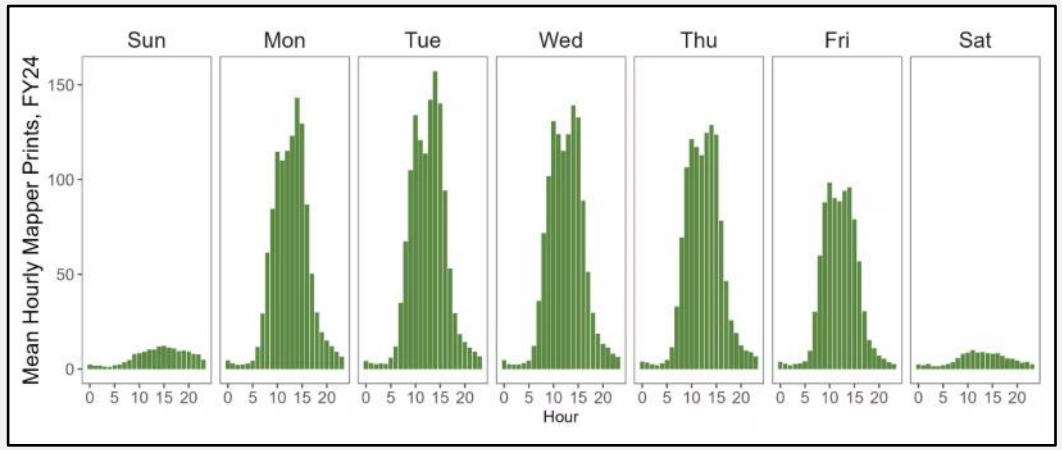
One of the **most frequently visited** FWS webpages

Mapper is viewed **over half a million times** annually

- In 2024, nearly 300 thousand maps were printed and data were downloaded over 286 thousand times.

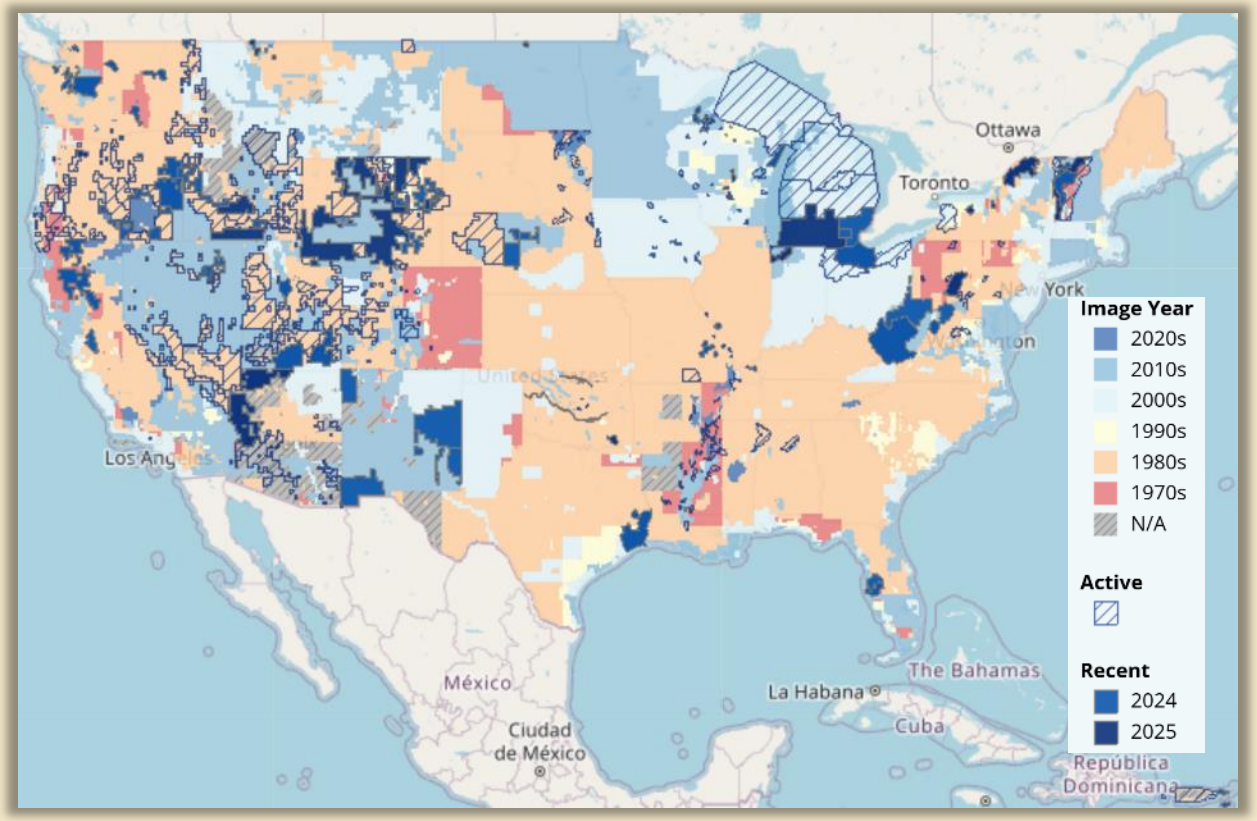
Each year, NWI's web map services receive **several tens of millions** of requests for information.

- Peak use: Over two million daily data requests



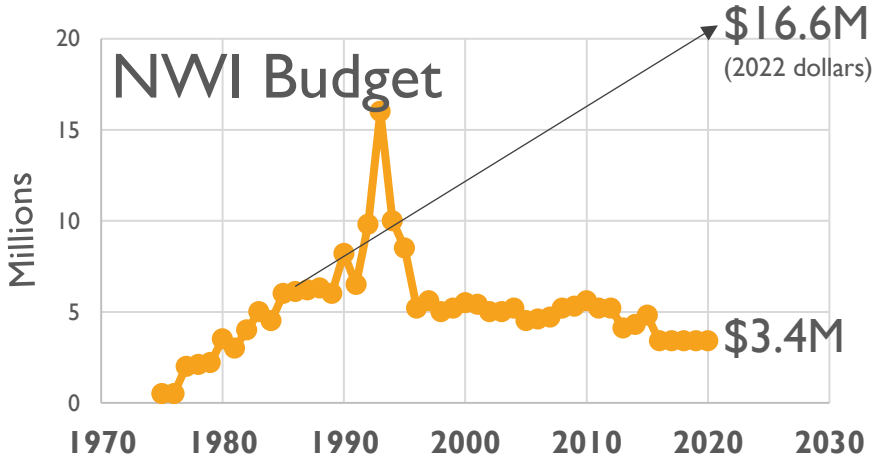
Most maps are printed during the workweek, indicating NWI data support decision-making across the American workforce.

DATASET STATUS



NWI's primary challenge is to support a contemporary dataset with a declining budget.

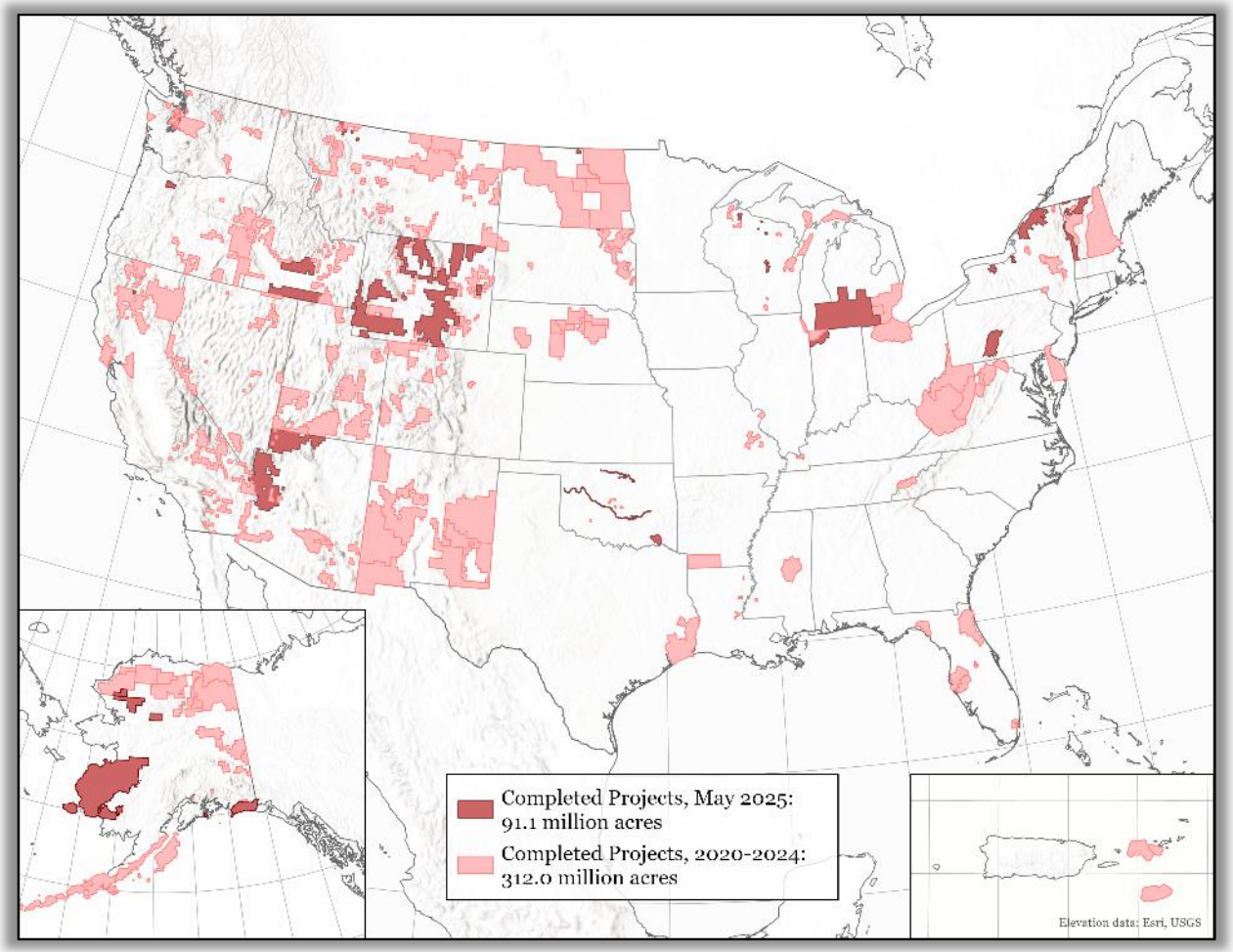
- After accounting for inflation, NWI's budget is ~1/5th of its 1986 budget (year NWI mapping was mandated).
- We are working towards meeting this challenge by leveraging partnerships and advanced technologies.



RECENT NWI UPDATES

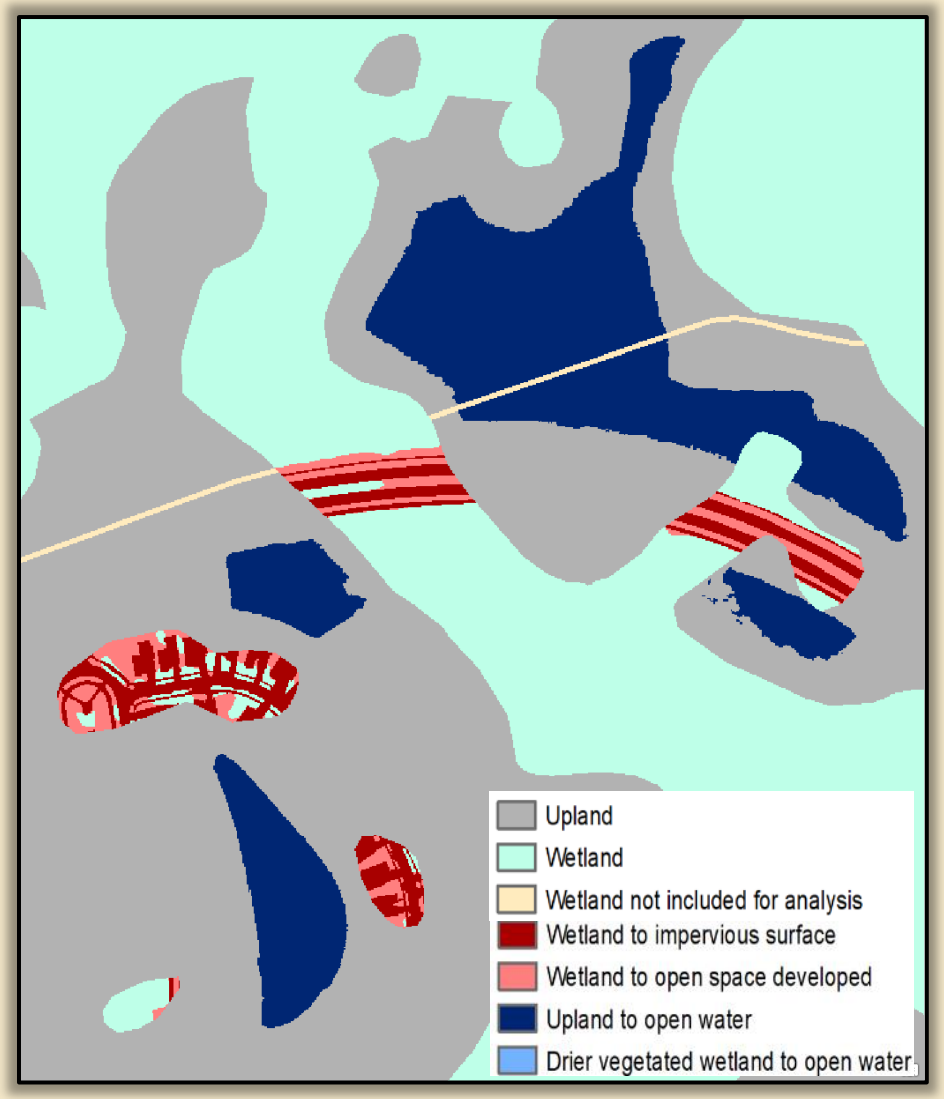
AREA UPDATED

- **2019:**
  - 15 states
  - 29.2M Acres
- **2020:**
  - 22 states
  - 45.2M Acres
- **2021:**
  - 15 states
  - 58.1M Acres
- **2022:**
  - 19 states
  - 43.2M Acres
- **2023:**
  - 25 states
  - 92.5M Acres
- **2024:**
  - 18 states
  - 156M Acres



Majority of mapping is funded by states, as well as federal agencies, including BLM, EPA, NRCS and FS.

LEVERAGING ADVANCED TECHNOLOGIES



Difference Product

NWI Implements Advanced Workflows to Enhance Efficiency

Goal: faster, cheaper, better data production

Approach: Adaptively manage NWI's targeting, acquisition, and maintenance procedures to **leverage the best of all datasets and techniques**

Collaboration: We work with partners to identify and test new approaches.

LEVERAGING ADVANCED TECHNOLOGIES

Aerial Photograph

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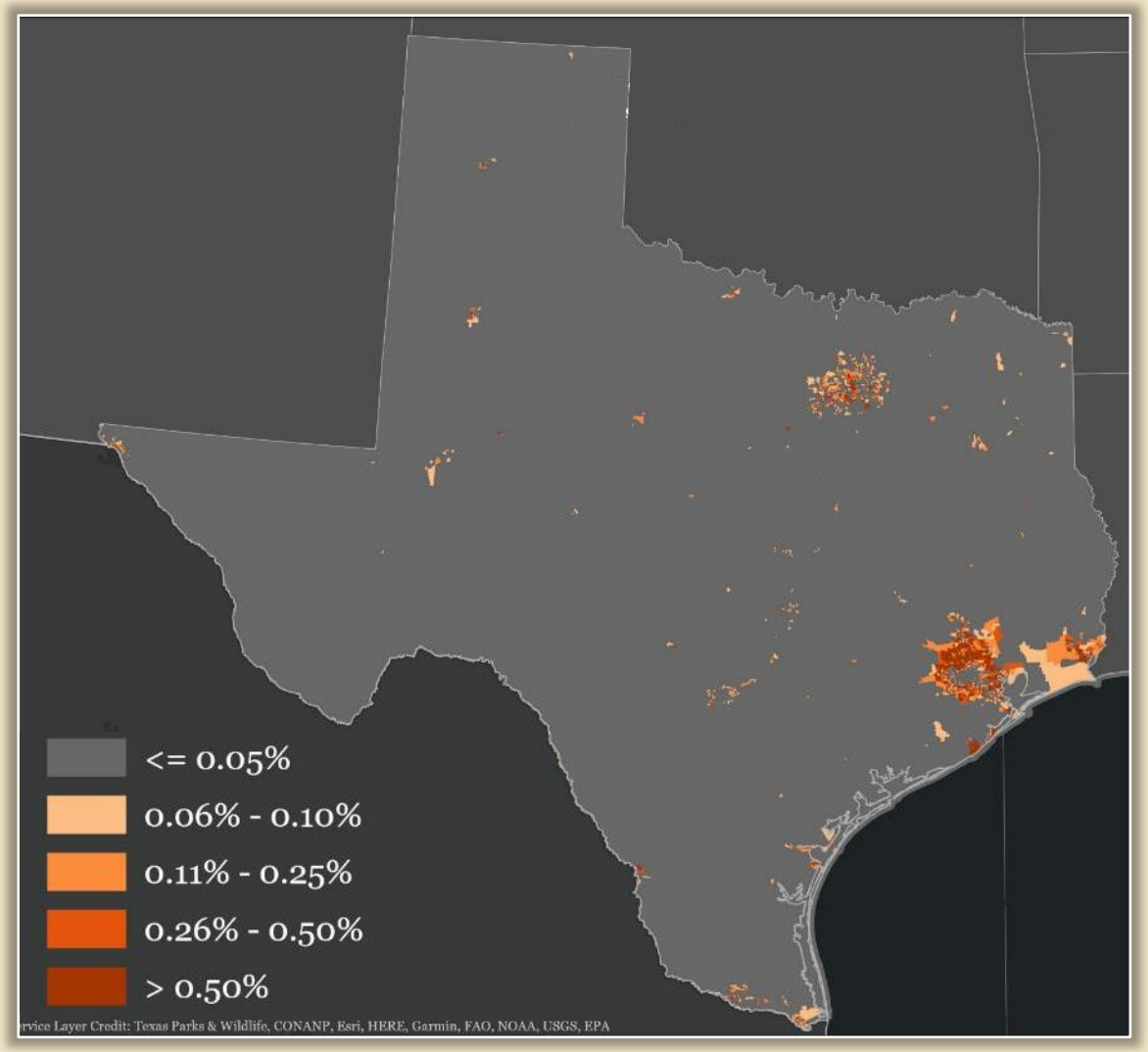

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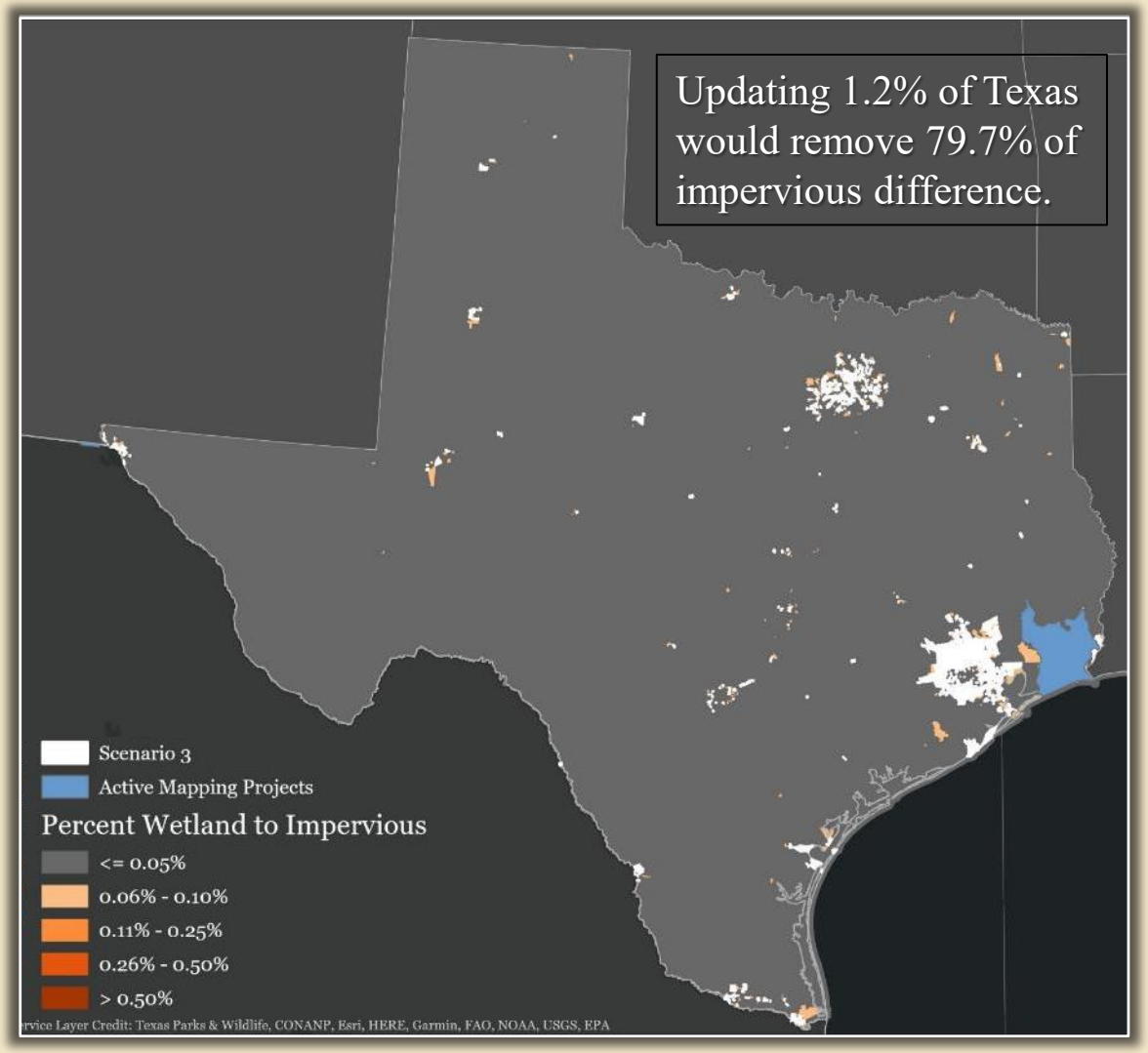

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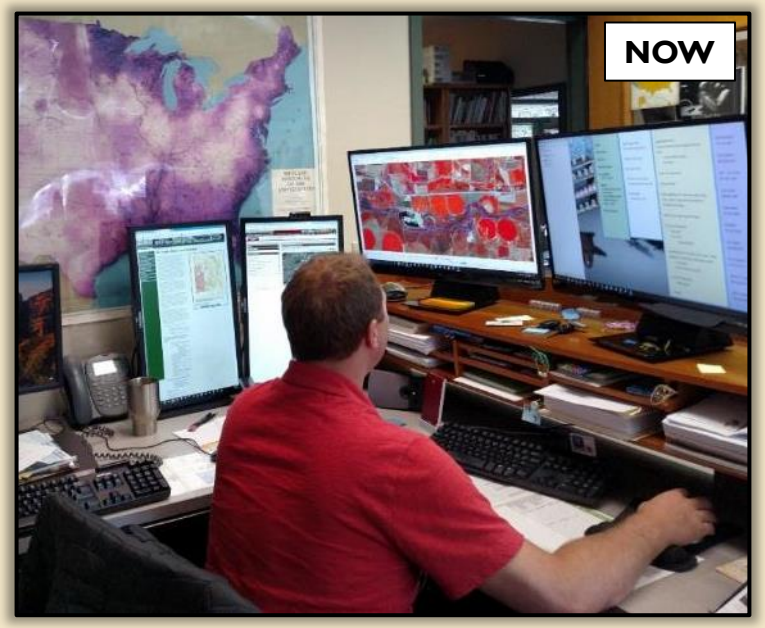
- Wetlands drawn using pen on mylar overlays
- 1:80,000 B/W analog images
- Stereoscopes used to find low-lying areas
- 1-800-USA Maps

- Wetlands mapped using a digital, semi-automated process
- <1m digital false-color NIR images
- Lidar data
- Web services



KEY ACCOMPLISHMENTS

Consistency and Quality: Federal Geographic Data Committee Wetland Classification and Mapping Standards support consistent, high-quality data.

Enhanced Information: NWI dataset is fully queryable, allowing for tailored data.

Innovation: NWI data producers make use of the newest techniques, e.g., artificial intelligence, when/where they increase efficiency and quality.

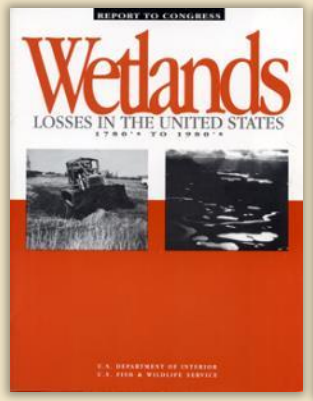
Enhanced Access: Web map services and the Wetlands Mapper make it easy for everyone to access and use NWI data.

Leveraging: Efficiency is gained by leveraging other datasets, e.g., 3DHP, as part of the mapping process.

Partnership: NWI coordinates with partners across America to better meet their needs.

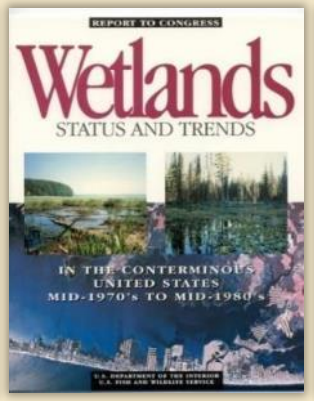
WETLANDS STATUS AND TRENDS

1780s to 1980s

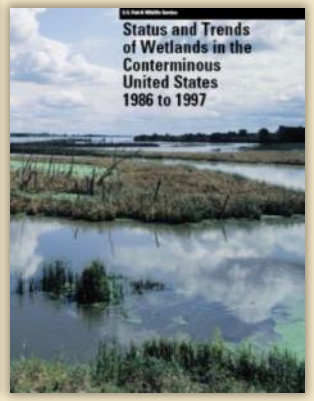


1950s to 1970s

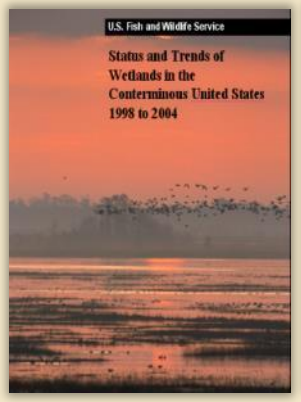
1970s to 1980s



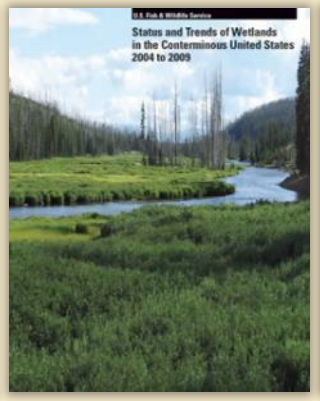
1986 to 1997



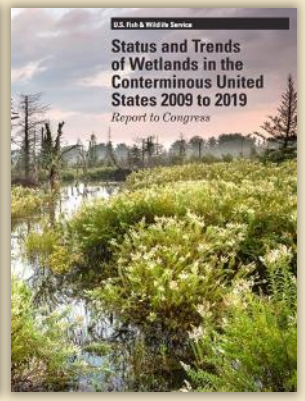
1998 to 2004



2004 to 2009



2009 to 2019



2019 to 2029

Starting Soon!

Tracking America's Wetlands and Deepwater Habitats for Seventy Years!

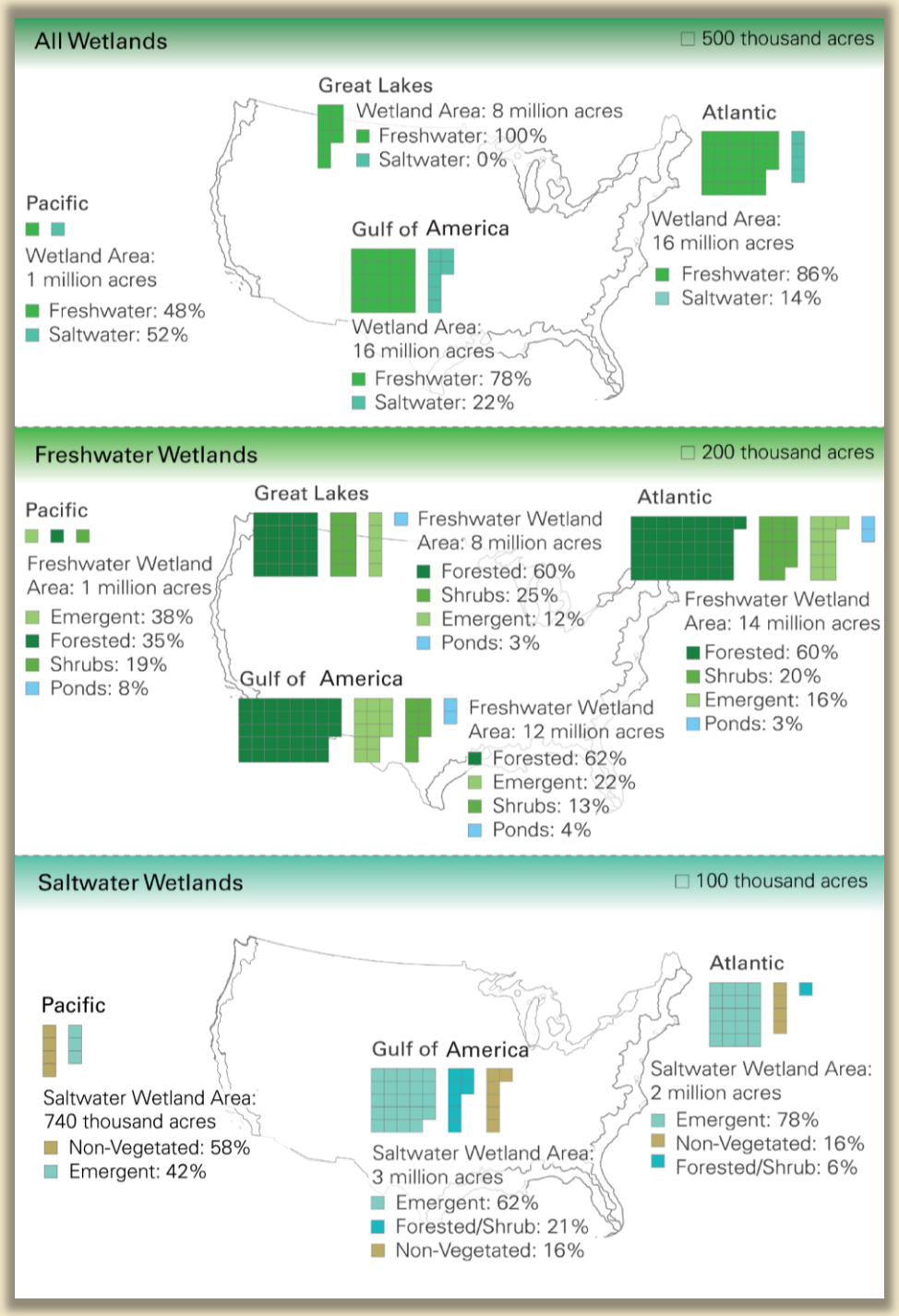
Statutorily mandated decadal reports to Congress on the extent of U.S. wetlands and deepwater habitats and their change over time

- One retrospective report covering two hundred years
- Six national reports
- Eight regional reports

Area of Wetlands in 2019

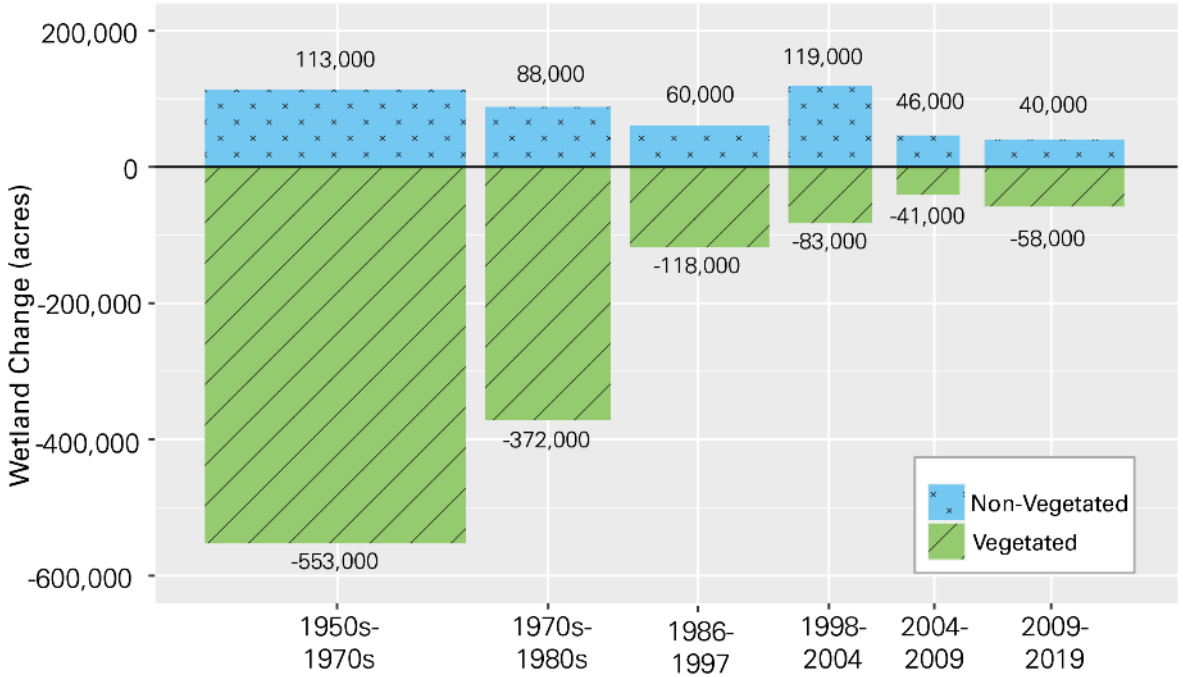
- **Wetlands occur in <6% of CONUS and the vast majority (95%) are freshwater.**
- **Most wetlands are vegetated (92% of freshwater and 80% of saltwater).**
- **Freshwater forested wetlands were most common overall.**
- **Wetlands were distributed unevenly among coastal regions**
  - Most found along the Atlantic (16.0M), followed by Gulf (15.8M), Great Lakes (8.4M), and Pacific (1.4M)

Information on wetland type and area helps scientists and decision-makers better understand how wetlands function and the benefits provided to communities!

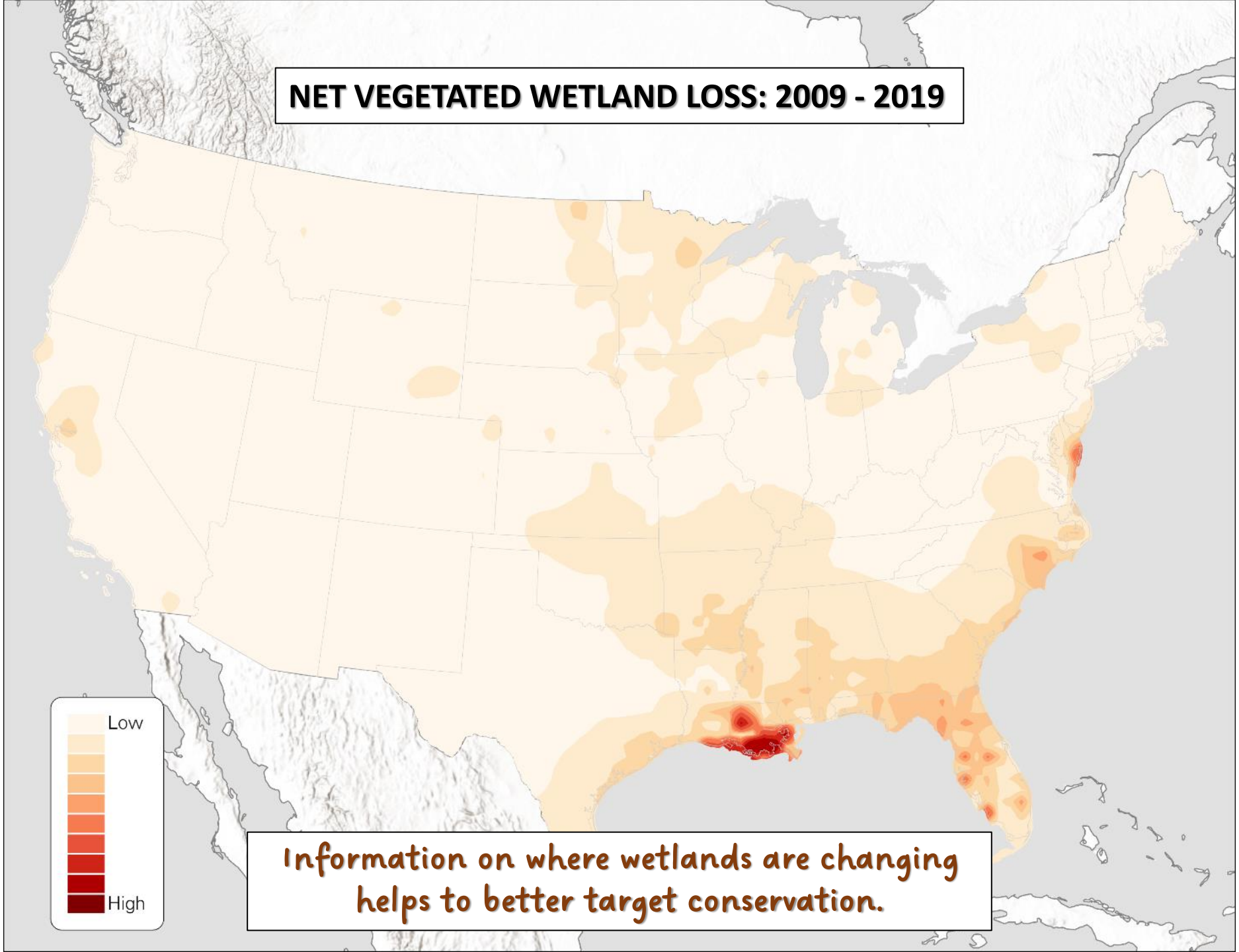


Annual Freshwater Wetland Net Change Across Study Periods

The pattern of vegetated wetland loss and pond gain has been consistent for the past 70 years.



Information on how wetlands are changing helps decision-makers identify more effective conservation actions.


NET VEGETATED WETLAND LOSS: 2009 - 2019
Low
High
Information on where wetlands are changing helps to better target conservation.

Wetlands Status and Trends reports support American communities!

Guide billions of dollars worth of government and private sector investments

Result in more effective conservation and strategic development

Help keep America's communities safer, healthier, and more prosperous!

- Clean water
- Abundant seafood
- Ecotourism and recreation
- Important cultural traditions
- Safety from natural disasters
- And more!

PLANNING FOR THE FUTURE

- Listening closely to data users and working hard to deliver the data they require
- Seeking out new partners in the government, commercial, and non-profit sectors
- Leveraging existing data in government and private sectors to enhance efficiency
- Maximizing interoperability with other datasets
- Working with partners to develop new approaches to better meet user requirements
- Continuing to adaptively manage mapping workflows to take advantage of the newest technologies (faster, cheaper, better)
- Maintaining national standards to ensure consistency
- **Leading the collection of wetlands data necessary to conserve wetlands and support American communities for the next 50 years!**

AMERICA DEPENDS ON NWI DATA

The use of NWI data helps people and organizations across the country —

- Farmers that depend on a consistent supply of water
- Energy companies seeking more efficient and cost-effective planning options
- Tribes wanting to conserve culturally important plants and animals
- Developers looking to streamline regulatory decision-making
- Small businesses that rely on fish and shellfish
- People who enjoy hunting, bird watching, and boating
- Homeowners who need protection from floods
- Families that need clean drinking water
- And more…

NWI STAFF CONTACTS

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