



# Wetlands Spatial Data 101:

## How to Access Data on the NWI Mapper and Other Resources

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National Standards and Support Team  
Ecological Services  
U.S. Fish and Wildlife Service  
Madison WI



# National Wetlands Inventory

- Emergency Wetland Resource Act of 1986
  - Map wetlands of the U.S. - **National Wetlands Inventory**
  - Provide 10 year Reports – **Wetlands Status and Trends Reports**
- National Geospatial Data Asset (NGDA)
  - Supports mission goals of multiple federal agencies
  - Statutorily mandated
  - Supports Presidential priorities as expressed by OMB
    - OMB Circular A-16 identifies the Wetlands Layer as a National Spatial Data Infrastructure (NSDI) layer
    - Stewards of National Wetland Classification Standard
    - Stewards of the FGDC Wetland Mapping Standard

- Over 20 million polygons
- 40 years and \$220+ million
- Over 165 contributors
- Nearly 1 million website views annually
- 335,000+ Mapper unique users annually
- First DOI application hosted in the Cloud







# Wetlands Mapper - Layers

**U.S. Fish and Wildlife Service**  
**National Wetlands Inventory**

Tools | Print Map | Streets | Imagery/Labels | Topo | USGS Topo

Type Address, Landmark, etc... | Find Location | Zoom to: select

Zoom History

**Available Layers**

- Wetlands
- Riparian
- Riparian Mapping Areas
- Data Source
  - Source Type
  - Image Scale
  - Image Year
- Areas of Interest
- FWS Refuges
- Historic Wetland Data

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

**Wetlands Mapping Status**

- Digital Data
- No Data

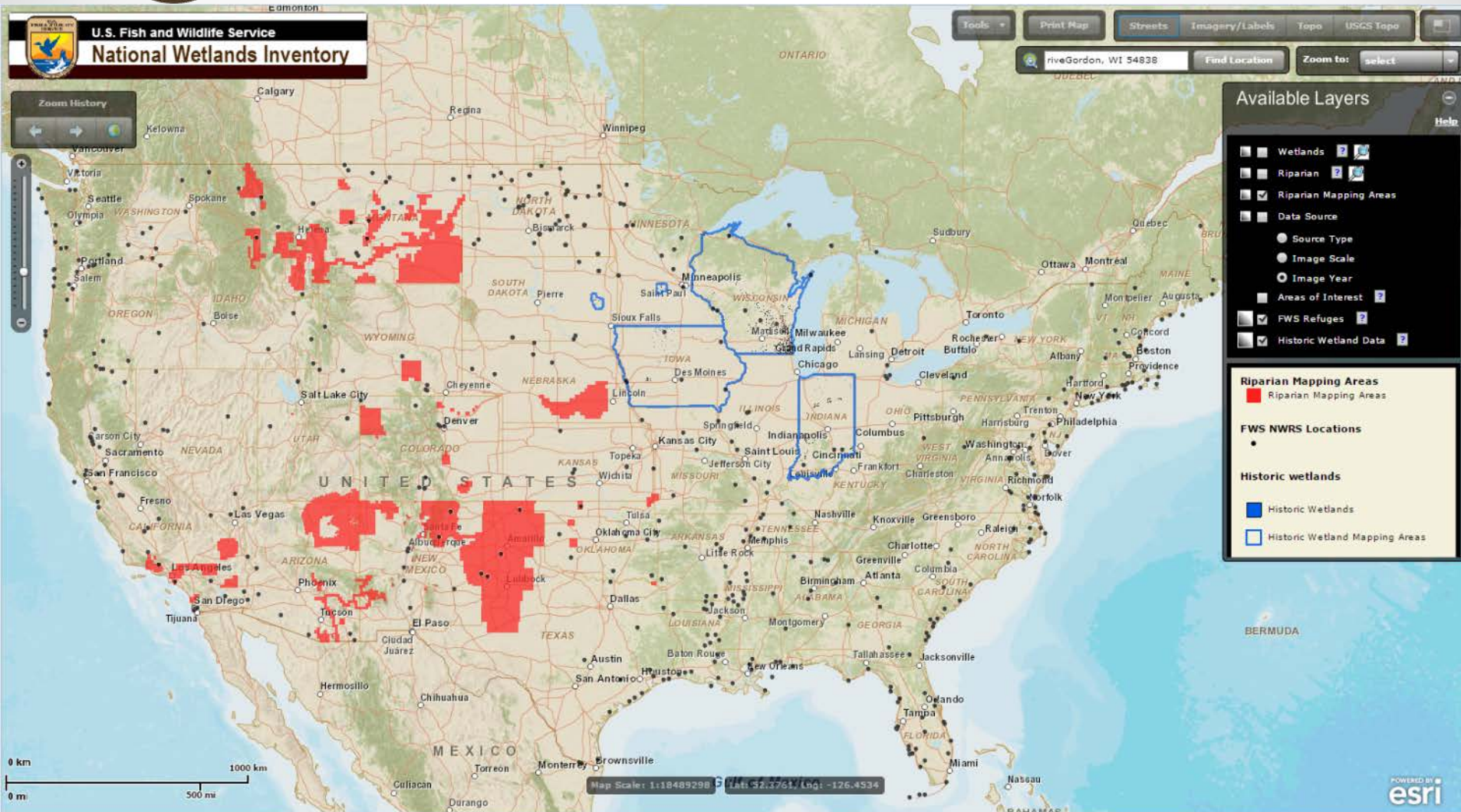
Map Scale: 1:18489298 | Lat: 26.0377, Lng: -109.6663

POWERED BY **esri**





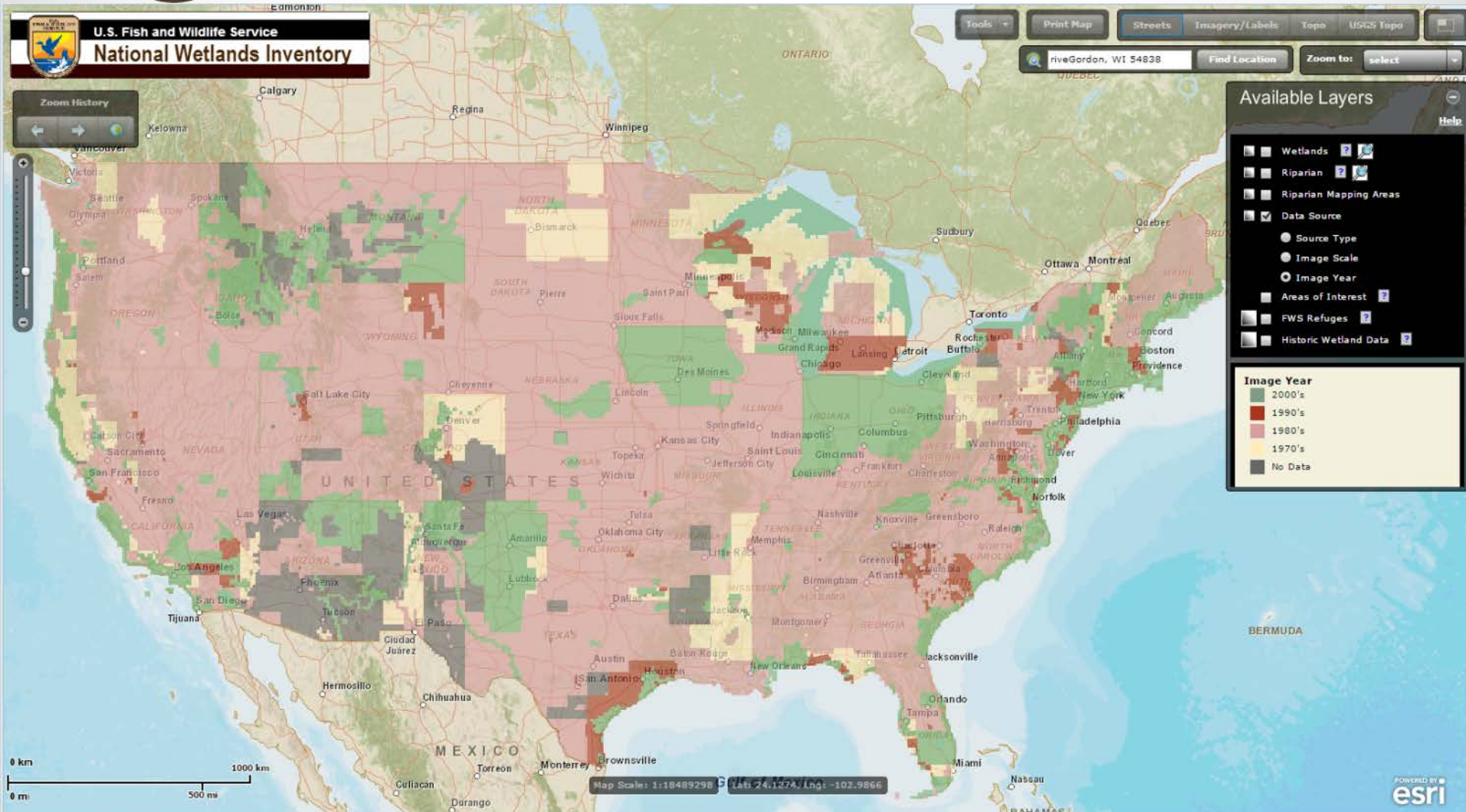
# Wetlands Mapper - Layers







# Wetlands Mapper - Layers







# Wetlands Mapper - Navigation

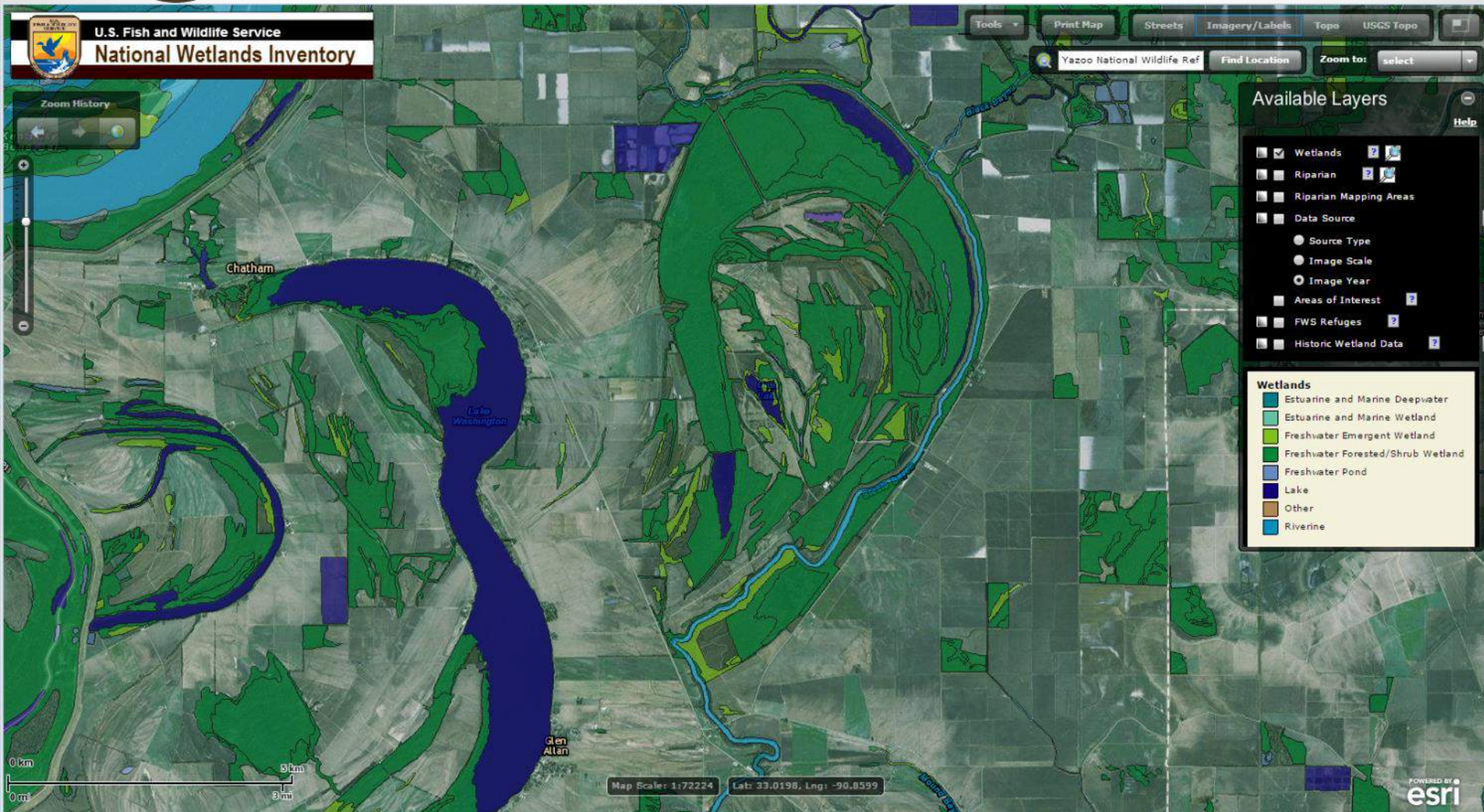
The screenshot displays the Wetlands Mapper web application interface. The main map shows the United States with various wetland types color-coded. The interface includes several key navigation and control elements:

- Top Left:** U.S. Fish and Wildlife Service logo and "National Wetlands Inventory" header.
- Top Right:** Search bar with "Type Address, Landmark, etc..." and "Find Location" button. Other tabs include "Tools", "Streets", "Labels", "Topo", and "USGS Topo".
- Left Side:** "Zoom History" panel with navigation arrows and a vertical zoom slider.
- Right Side:** "Available Layers" panel with checkboxes for:
  - Wetlands (checked)
  - Riparian (unchecked)
  - Riparian Mapping Areas (unchecked)
  - Data Source (unchecked)
  - Source Type (radio buttons)
  - Image Scale (radio buttons)
  - Image Year (radio buttons)
  - Areas of Interest (checkbox)
  - FWS Refuges (checkbox)
  - Historic Wetland Data (checkbox)
- Bottom Right:** Legend for "Wetlands" and "Wetlands Mapping Status".
- Bottom:** Scale bar (0 to 1000 km / 0 to 500 mi) and map coordinates (Map Scale: 1:18489298, Lat: 26.0377, Lng: -109.6663).





# Wetlands Mapper - Navigation







# Wetlands Mapper - Navigation

U.S. Fish and Wildlife Service  
National Wetlands Inventory

Tools | Print Map | Streets | Imagery/Labels | Topo | USGS Topo

Yazoo National Wildlife Ref | Find Location | Zoom to: select

Zoom History

Chatham

Lake Washington

Glen Allan

Map Scale: 1:72,224 | Lat: 33.1286, Lng: -90.9095

POWERED BY esri

**Wetland**

Zoom To Feature | Opacity:

Classification Code: PFO1C ( [decode](#) )  
Wetland Type: Freshwater Forested/Shrub Wetland  
Acres: 569.37  
Status: Digital  
Image Date(s): 08/06  
Source Type: CIR  
Image Scale: 12000  
24k Quad Name: Percy  
100k Quad Name: INDIANOLA  
Project Metadata: [click here](#)  
Historic Map Info: [click here](#)  
FGDC Metadata: [click here](#)

**Available Layers**

- Wetlands
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# Wetlands Mapper - Navigation



U.S. Fish & Wildlife Service  
**National Wetlands Inventory**  
Ecological Services

Enter Classification code:  (Example: L1UB1Hx)

For geographically specific information\* (optional), please enter a State code:  (Example: TX for Texas)

**DECODE**

Description for code **PFO1C** :

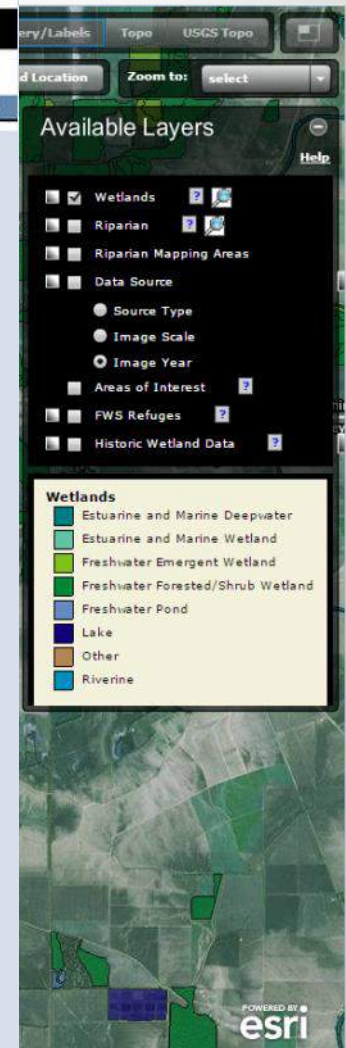
**P** System **PALUSTRINE**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 ppt. Wetlands lacking such vegetation are also included if they exhibit all of the following characteristics: 1. are less than 8 hectares ( 20 acres ); 2. do not have an active wave-formed or bedrock shoreline feature; 3. have at low water a depth less than 2 meters (6.6 feet) in the deepest part of the basin; 4. have a salinity due to ocean-derived salts of less than 0.5 ppt.  
Subsystem :

**FO** Class **FORESTED**: Characterized by woody vegetation that is 6 m tall or taller.

**1** Subclass **Broad-Leaved Deciduous**: Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (Fraxinus nigra).

Modifier(s):

**C** WATER REGIME **Seasonally Flooded**: Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding







# Wetlands Mapper - Print

U.S. Fish and Wildlife Service  
National Wetlands Inventory

Tools **Print Map** Streets Imagery/Labels Topo USGS Topo

Find Location Zoom to: select

Available Layers

- Wetlands
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0 km 5 km  
0 mi 3 mi

Map Scale: 1:72224 Lat: 33.0198, Lng: -90.0599

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# Wetlands Mapper - Print

Wetlands Mapper



[close form](#)

**Print Options**

Title:

Remarks:

Print Ready. Fill out the form to title and add remarks.





# Wetlands Mapper - Print

Wetlands Mapper



## U.S. Fish and Wildlife Service National Wetlands Inventory

Yazoo NWR

Mar 4, 2015

### Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other



This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

### User Remarks:

Waterfowl habitat management ponds.

close form

Options

NWR

owl habitat  
ement ponds.

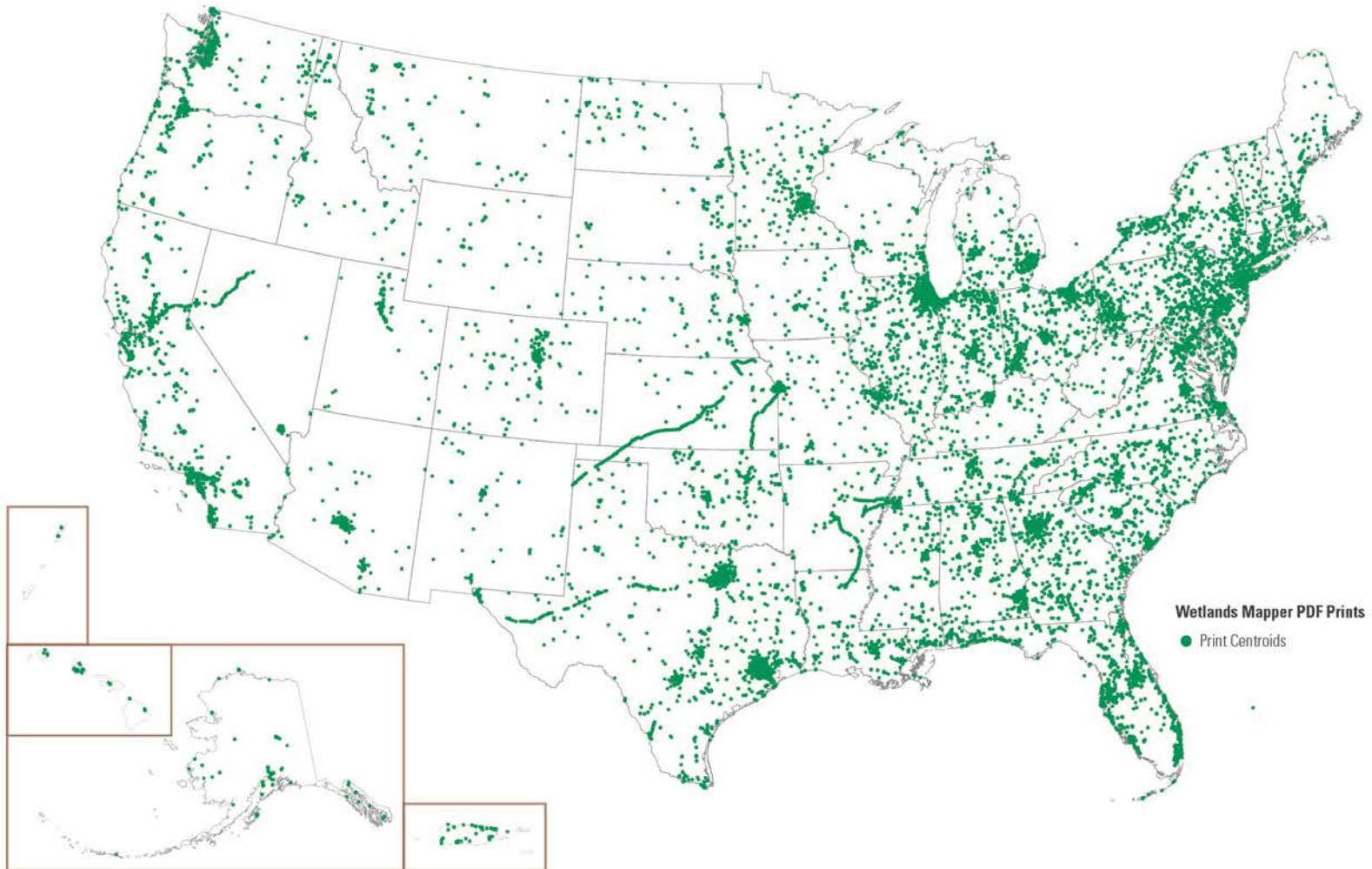
nit

form to title and add





# Wetlands Mapper – Print 13,947 Maps Printed – Feb 2015







# Wetlands Mapper - Data

The screenshot displays the Wetlands Mapper Data interface. The top left corner features the U.S. Fish and Wildlife Service logo and the text "U.S. Fish and Wildlife Service National Wetlands Inventory". The top right corner contains a toolbar with buttons for "Tools", "Print Map", "Streets", "Imagery/Labels", "Topo", and "USGS Topo". A red circle highlights a "Measure" dropdown menu with options for "Download Data by State" and "Download Data by Watershed". The main map area shows a satellite view of a wetland area with various colored overlays representing different wetland types. The bottom left corner has a "Zoom History" panel and a scale bar. The bottom center shows the map scale (1:36112) and coordinates (Lat: 33.1326, Lng: -90.9665). The bottom right corner features the "Available Layers" panel with a legend for "Wetlands" and "Historic Wetland Data".

**U.S. Fish and Wildlife Service**  
**National Wetlands Inventory**

Tools | Print Map | Streets | Imagery/Labels | Topo | USGS Topo

Measure  
Download Data by State  
Download Data by Watershed

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Lake  
Other  
Riverine

Map Scale: 1:36112 | Lat: 33.1326, Lng: -90.9665

POWERED BY esri





# Wetlands Mapper - Data

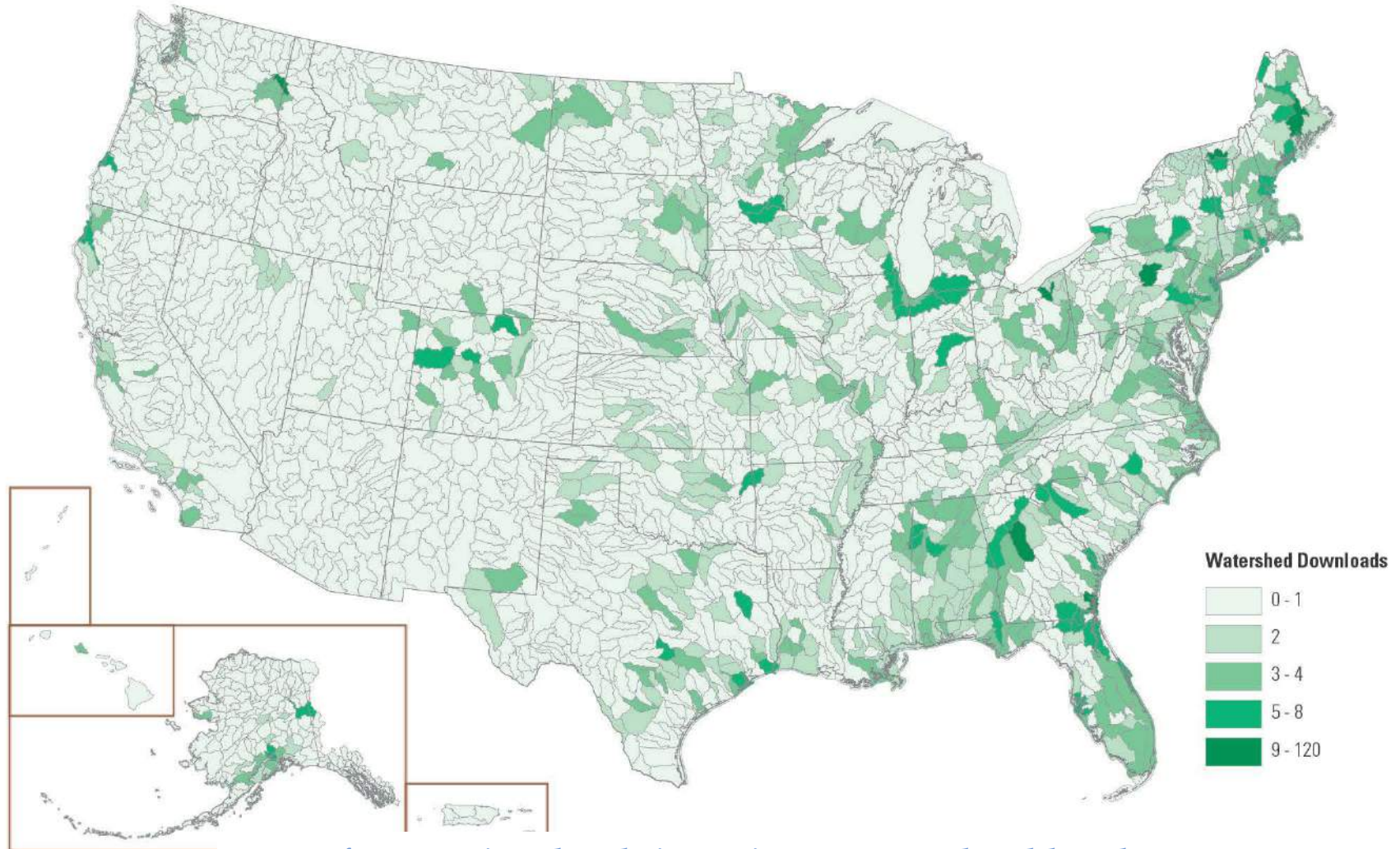






# Wetlands Mapper – Data

## 952 Watershed Downloads – Feb 2015



[www.fws.gov/wetlands/Data/Data-Download.html](http://www.fws.gov/wetlands/Data/Data-Download.html)





# Wetlands Mapper - Data



U.S. Fish & Wildlife Service

## National Wetlands Inventory

Ecological Services

Search NWI Site

Home Wetlands Data Status and Trends Wetlands Layer Other Topics National Wetlands Inventory Contact Information

### Download Seamless Wetlands Data by State

#### Before You Begin

- Each State data download is available as either a compressed file [Geodatabase](#) or a [Shapefile](#). Both files are compressed by using the [.zip](#) format and contain the following layers:
  - Wetlands polygon data
  - Wetlands Project Metadata (includes image dates and project information)
  - Wetlands Historic Map Information\*
  - Riparian polygon data\*
  - Riparian Project Metadata (includes image dates and project information)\*
  - Historic Wetlands\*
  - Historic Wetlands Project Metadata (includes image dates and project information)\*

\* If available at the requested location Information about each of these layers can be found on our [Metadata](#) page.

- Not all of Alaska has been digitally mapped by the U.S. Fish and Wildlife Service. Please refer to the Wetlands Mapper Wetlands Mapping Status layer to view where wetlands have been mapped in Alaska. The state downloads include a Wetlands Project Metadata layer that identifies where and when wetlands were mapped within the state.
- NOTE:** Due to the variation in use and analysis of this data by the end user, each of states wetlands data extends beyond the state boundary. Each state includes wetlands data that intersect the 1:24,000 quadrangles that contain part of that state (1:2,000,000 source data). This allows the user to clip the data to their specific analysis datasets. Beware that two adjacent states will contain some of the same data along their borders.

#### Downloading Tips

- If an error occurs during your download, or if your downloaded file(s) is corrupted, we strongly recommend the use of a download manager. Please visit the [Frequently Asked Questions](#) page for more information on this topic. For security reasons, we are not allowed to served data via FTP.
- Due to the amount of data being downloaded, the resulting time to download each file may take up to 60 minutes or more, and each file can range in sizes from 1MB to approximately 1GB.

#### State Downloads (file downloads last updated October 6, 2014)

State	Download Type	State	Download Type
Alabama	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>	Nebraska	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>
Alaska	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>	Nevada	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>
Arizona	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>	New Hampshire	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>
Arkansas	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>	New Jersey	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>
California	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>	New Mexico	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>
Colorado	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>	New York	<a href="#">Geodatabase</a> <a href="#">Shapefile</a>

[www.fws.gov/wetlands/Data/Data-Download.html](http://www.fws.gov/wetlands/Data/Data-Download.html)

Find Location Zoom to: select

### Available Layers

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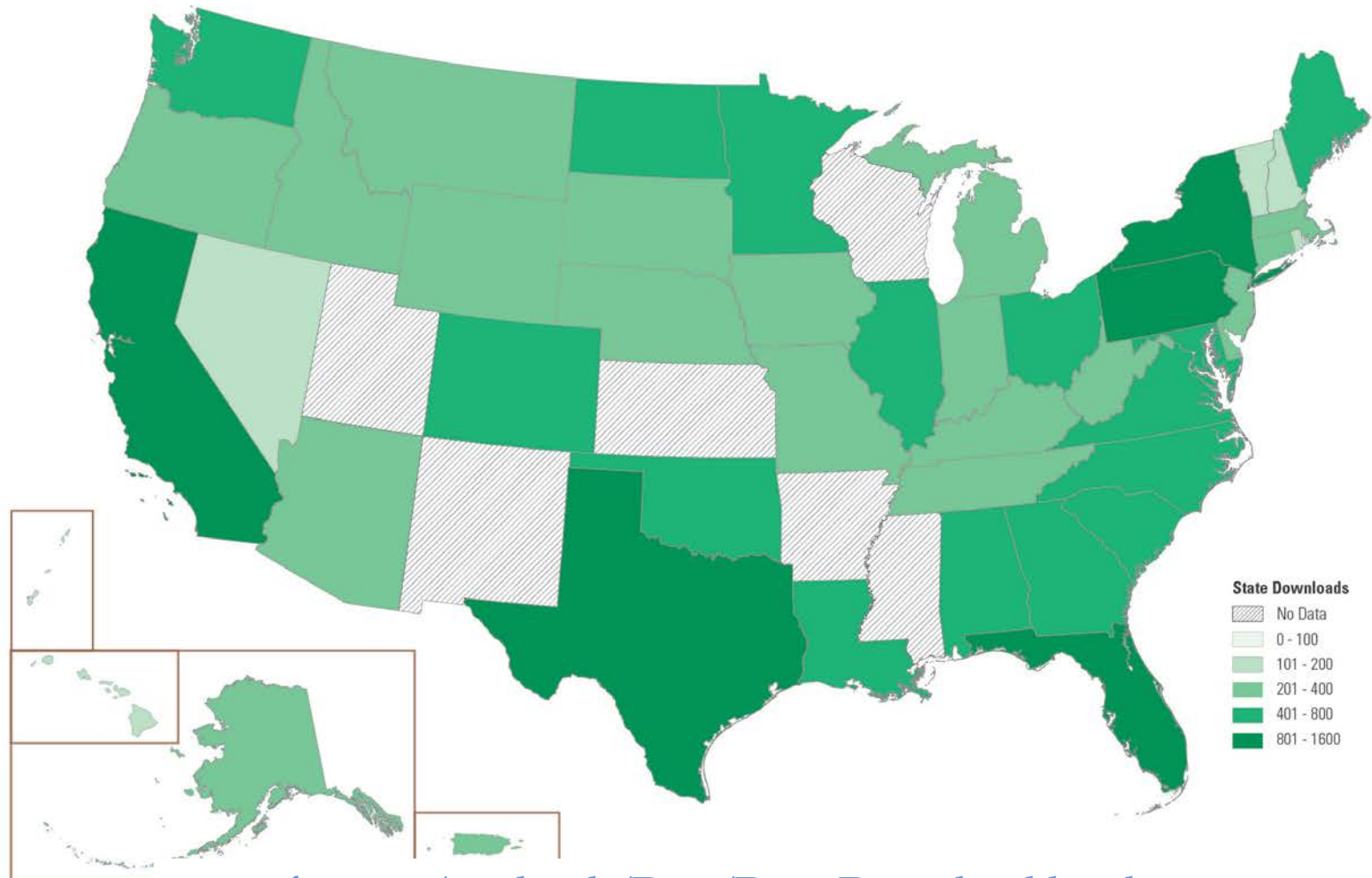
### Wetlands Mapping Status

- Digital Data
- No Data





# Wetlands Mapper – Data 20,850 State Downloads - 2014



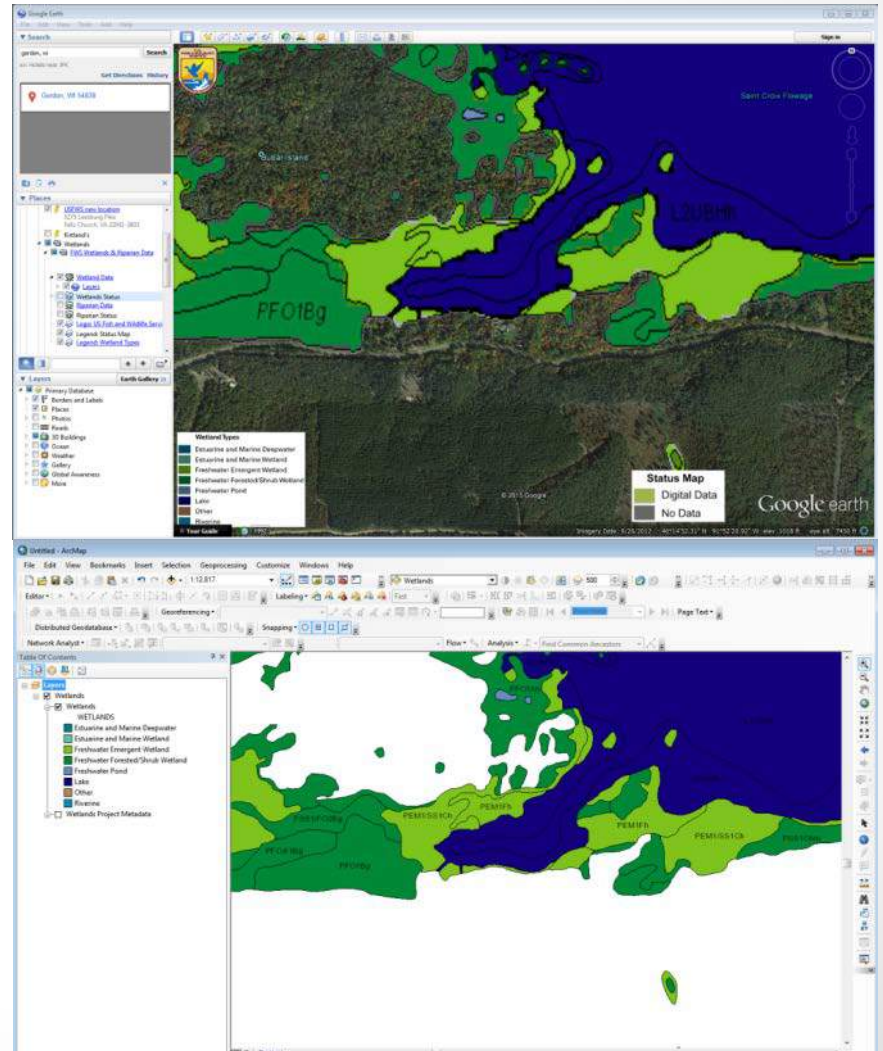
[www.fws.gov/wetlands/Data/Data-Download.html](http://www.fws.gov/wetlands/Data/Data-Download.html)





# Wetlands Mapper – Map Services

- Google Earth – KML
- Web Mapping Service – WMS
- Rest Services
  - FWS – IPAC system
  - Army Corps – ORM system
  - EPA NEPAAssit system
  - USGS National Map
  - USGS US Topo
  - GeoSpatial Platform.gov
  - Data.gov
  - ESRI ArcGIS Online
  - GIS User's – Desktop Software
  - .....

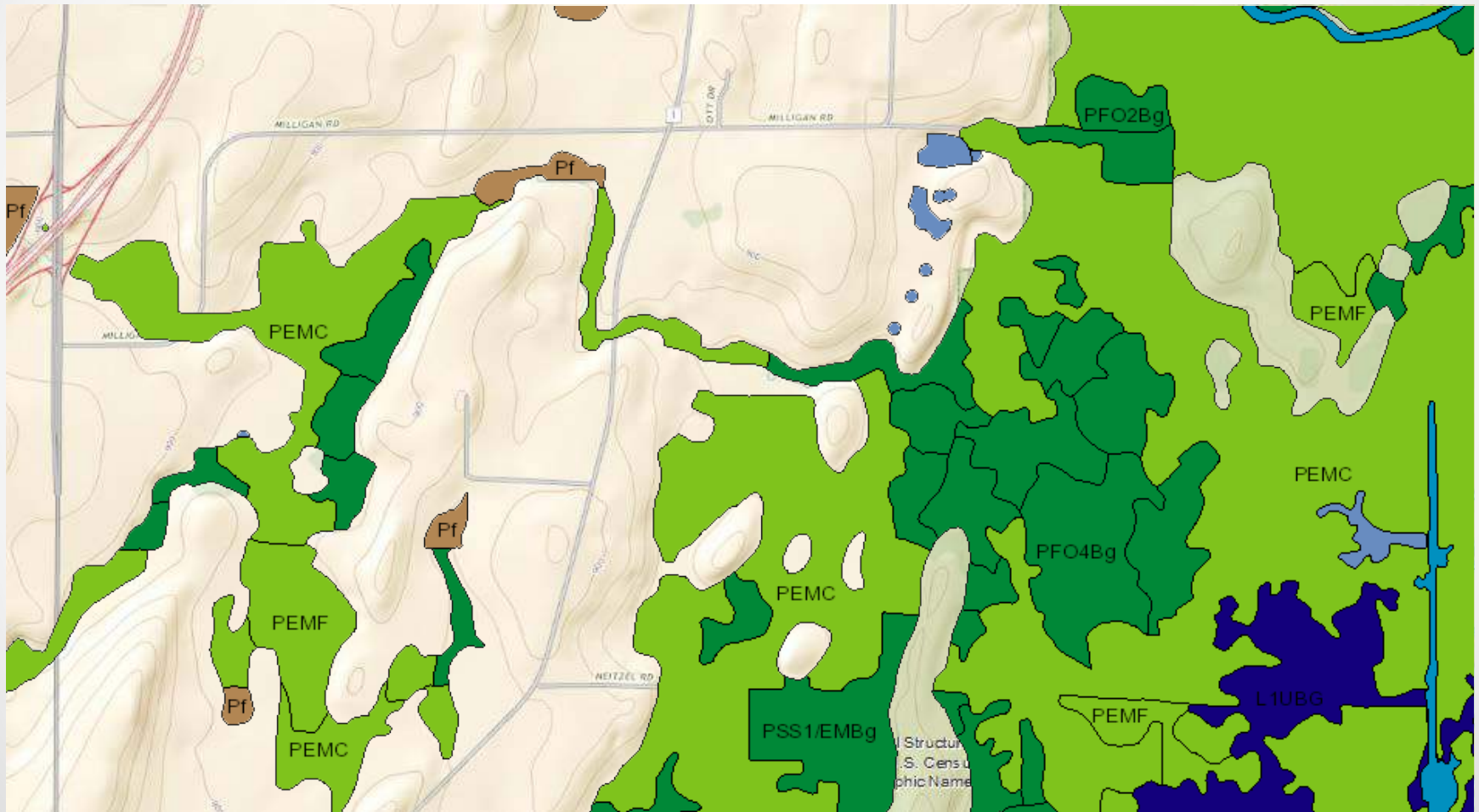






# Wetlands Services

## Mapper Service



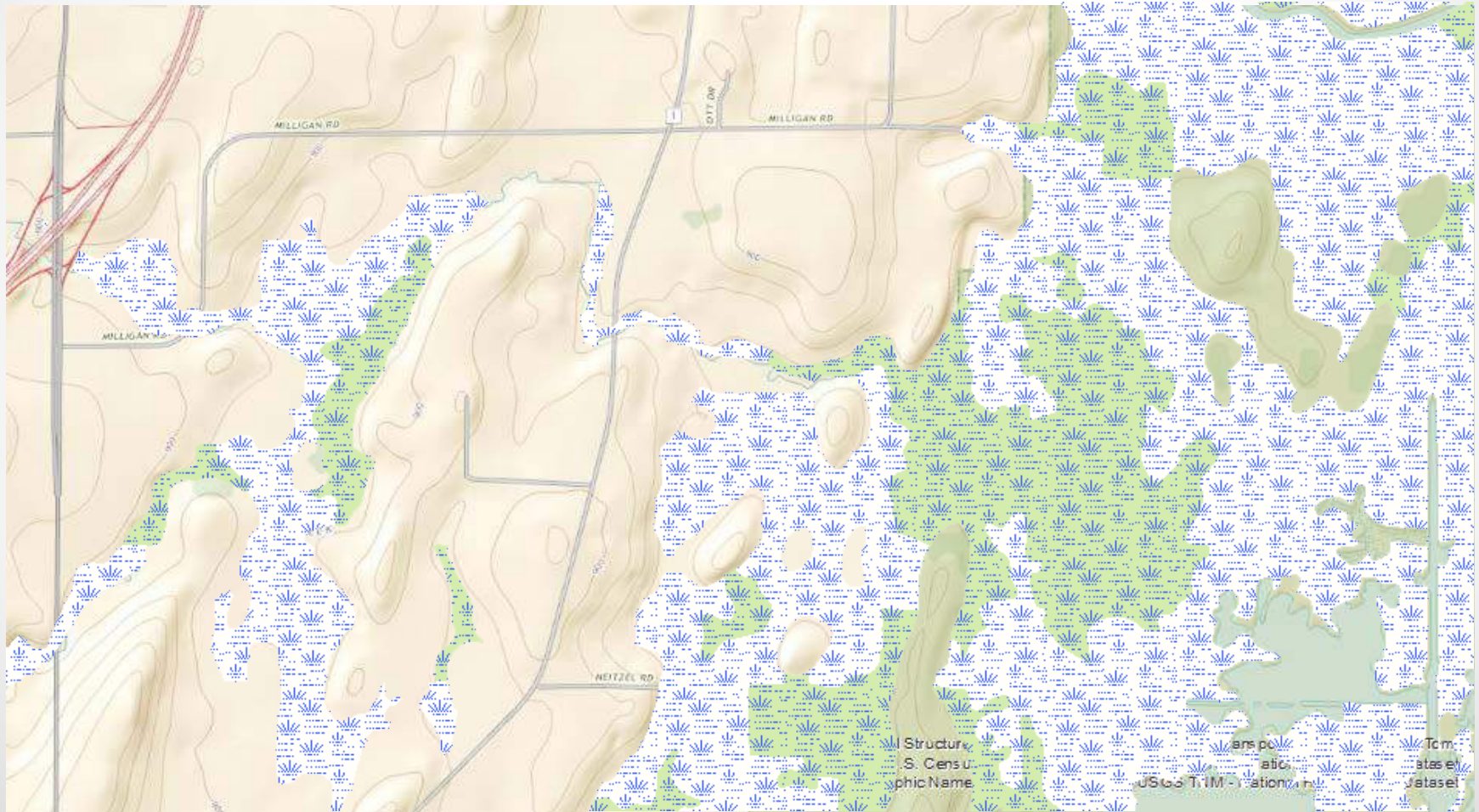
<http://107.20.228.18/ArcGIS/rest/services>





# Wetlands Services

## Topographic Service



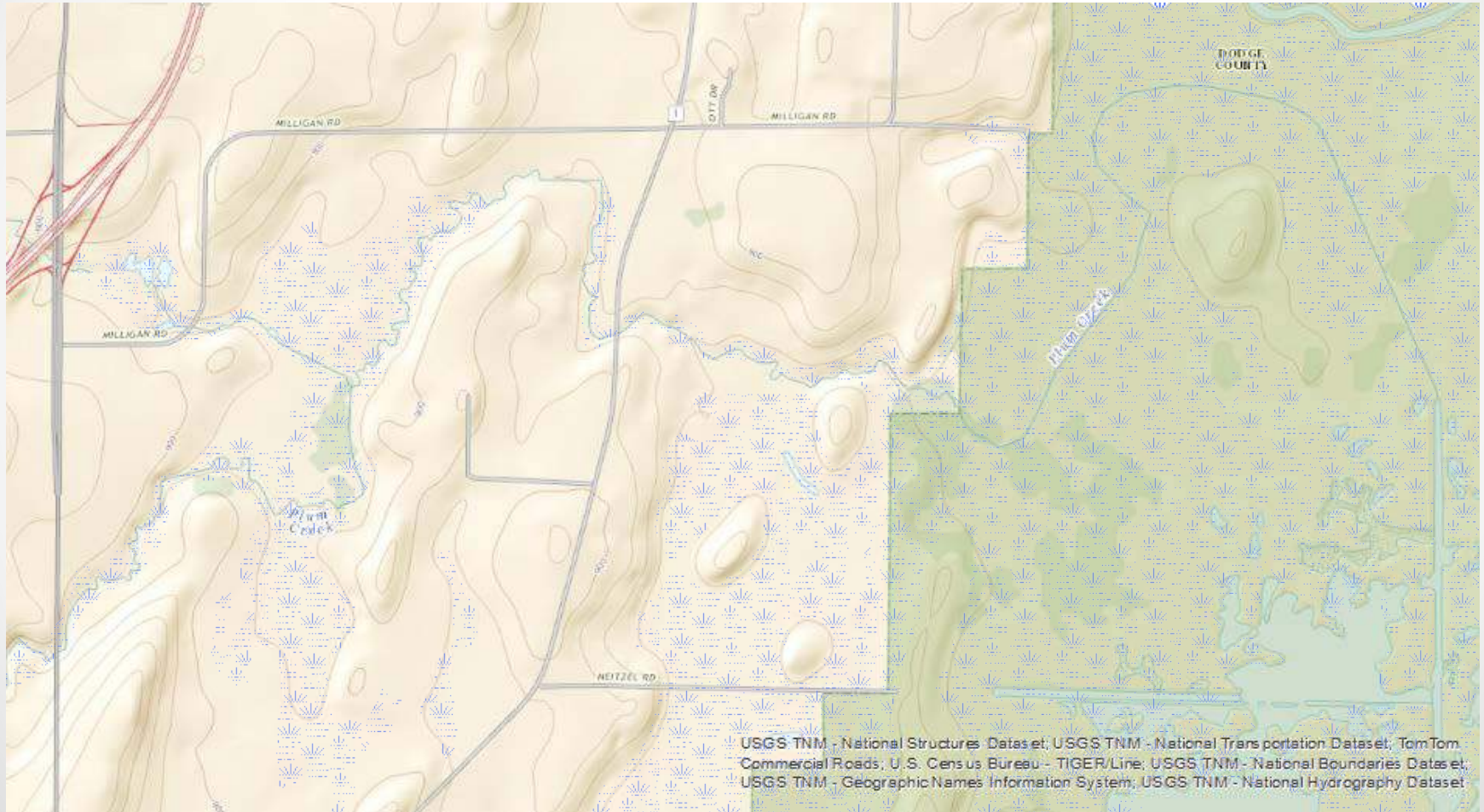
<http://107.20.228.18/ArcGIS/rest/services>





# Wetlands Services

## Symbol Service

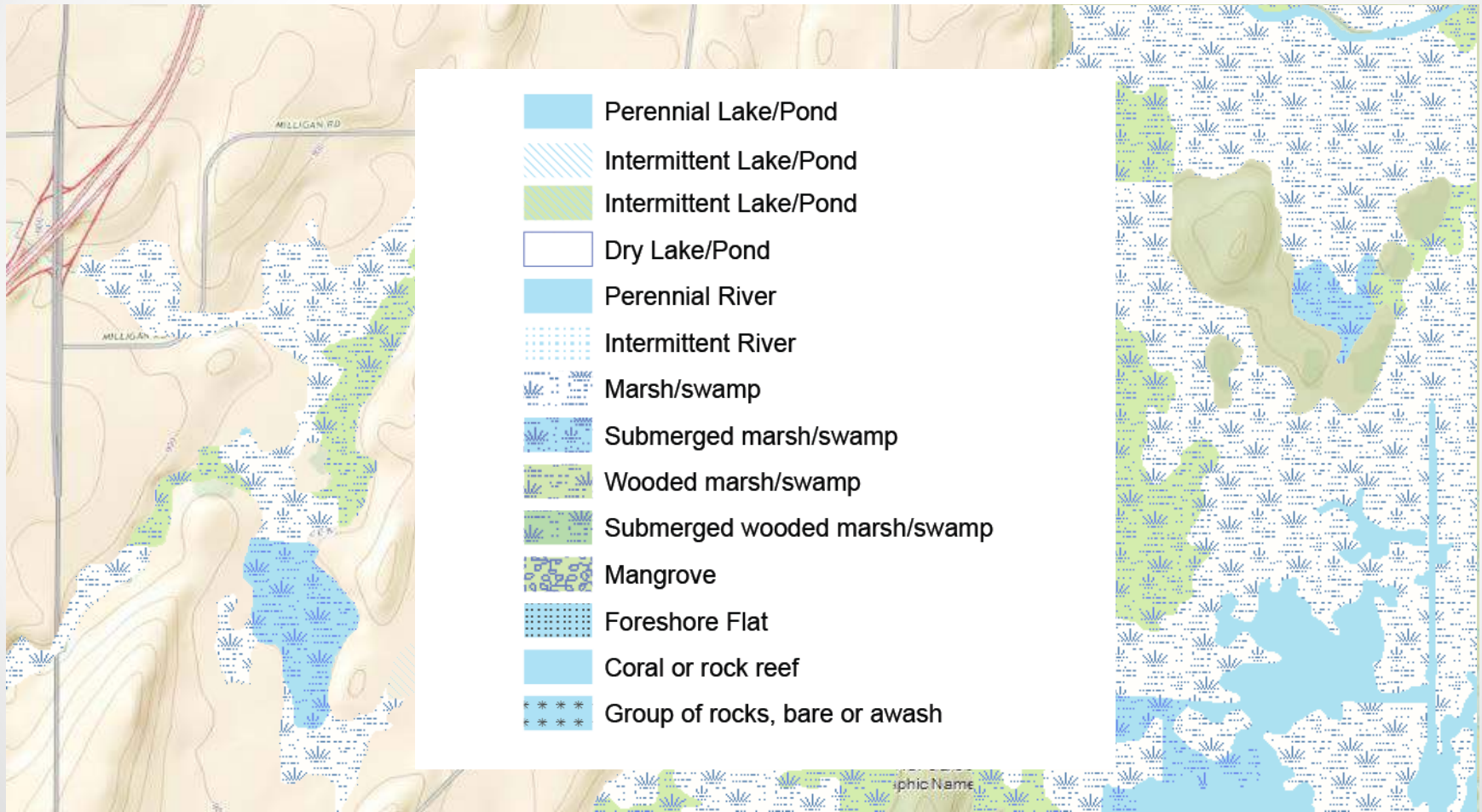


<http://107.20.228.18/ArcGIS/rest/services>



# Wetlands Services

## Complete Topographic Service

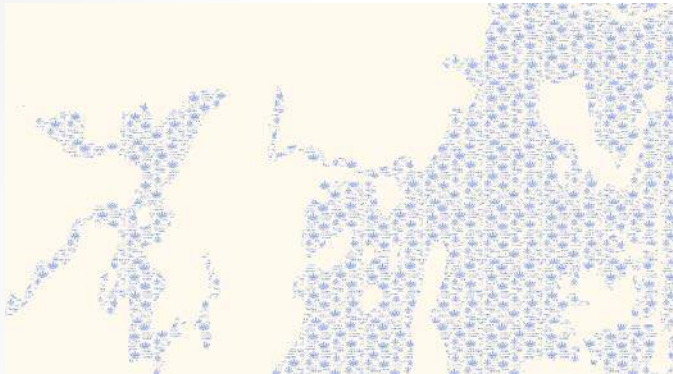


<http://107.20.228.18/ArcGIS/rest/services>





# Wetlands Services



Symbol Service



Topo Service



Mapper Service



Complete Topo Service

<http://107.20.228.18/ArcGIS/rest/services>



# Wetlands Publications and Reports



U.S. Fish & Wildlife Service

## National Wetlands Inventory

Ecological Services

### Document Search Engine

Enter one or more words to search for documents. Documentation about the topics, document categories, and status choices, is available [here](#) (PDF). This page contains links to .PDF documents that may not be fully accessible. If you need help with accessing a document please call: 608-238-9333 or email at: [wetlands\\_team@fws.gov](mailto:wetlands_team@fws.gov).



Search for:   Results per page:  ▼

Match:  any search words  all search words

Category:  All  Documents  Website Pages

Status:  ▼ Topic:  ▼ Document Category:  ▼

Document ID:

Search results for: Status and Trends in category "Documents"

*71 results found containing all search terms. 5 results found containing some search terms.*

8 pages of results.

Sorted by relevance / [Sort by date](#)

1. [Technical Procedures for Conducting Status and Trends of the Nation's Wetlands](#) [Documents]

Status: Current

Topic: Status and Trends

Doc. Category: Technical Document or Procedure Manual

Document ID: 904200931

... , Procedures, Conducting, Status, Trends, Nation's, ... Wetlands Thomas E. Dahl and Mitchell T. Bergeson ...

Terms matched: 3 - 1 Mar 2009 - 1k - URL: <http://www.fws.gov/wetlands/Documents/Technical-Procedures-for-Conducting-Status-and-Trends-of-the-Nations-Wetlands.pdf>

2. [Status and Trends of Wetlands in the Conterminous United States 2004 to 2009](#) [Documents]

Status: Current

Topic: Status and Trends

Doc. Category: Scientific Publication Journal or Text

Document ID: 1110061107

... Status, Trends, Wetlands, Conterminous, United States ... Status and Trends of Wetlands in the Conterminous United States ... to 2009 ...

Terms matched: 3 - 1 Jan 2011 - 1k - URL: <http://www.fws.gov/wetlands/Documents/Status-and-Trends-of-Wetlands-in-the-Conterminous-United-States-2004-to-2009.pdf>

3. [Technical Procedures for Wetlands Status and Trends](#) [Documents]

Status: Archive

Topic: Status and Trends

Doc. Category: Technical Document or Procedure Manual

Document ID: 904200930

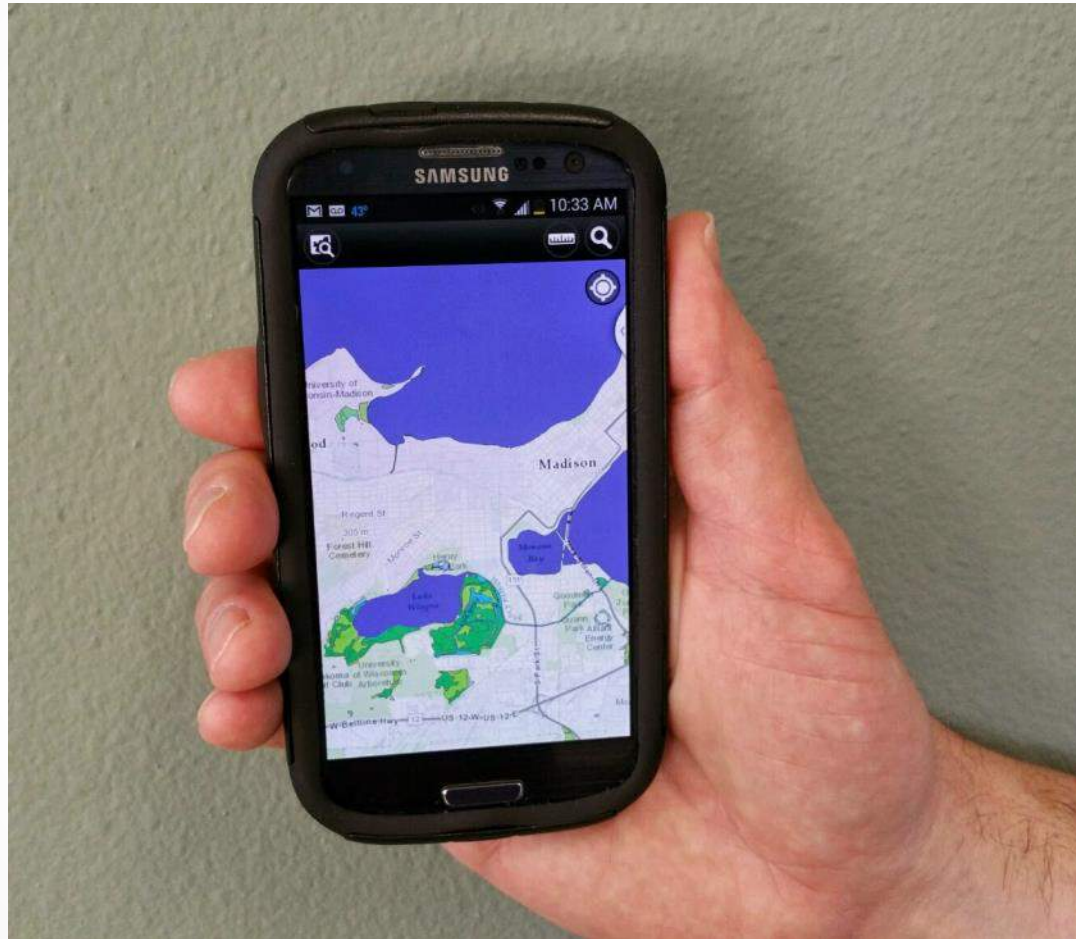
... , Procedures, Wetlands, Status, Trends ...

Terms matched: 3 - 1 Dec 2004 - 1k - URL: <http://www.fws.gov/wetlands/Documents/Technical-Procedures-for-Wetlands-Status-and-Trends.pdf>





# Wetlands Mobile App



**Coming Soon**



# Contribute Wetlands Data



U.S. Fish & Wildlife Service

## National Wetlands Inventory

Ecological Services

Home

Wetlands Data ↓

Status and Trends ↓

Wetlands Layer ↓

Other Topics ↓

National Wetlands Inventory

Contact Information ↓

### Contributed Data: Contribute your Data to the Wetlands Master Geodatabase

#### Introduction

Organizations or individuals have the opportunity to contribute wetlands data to the wetlands geospatial data layer maintained by the U.S. Fish and Wildlife Service. The wetlands data layer is the featured layer on the [Wetlands Mapper](#), is a National Geospatial Data Asset (NGDA) dataset designated by OMB Circular A-16 and the Federal Geographic Data Committee (FGDC) and is registered through [Geoplatform.gov](#) and [Data.gov](#).

The Service will provide proper acknowledgement of all [data contributors](#) and maintain data integrity consistent with DOI policy.

#### Data Submission

Because the Wetlands Master Geodatabase is a national data set, certain standards must be met before the data can be added. However, if you do not have the ability or resources to make your data meet these standards the Service may be able to assist in data conversions or modification.

The Wetlands data standards for acceptance into the Wetlands Master Geodatabase (MGD) are as follows:

- The data should comply with the [Wetlands Mapping Standards](#).
- Properly project all data. The projection for wetlands is the Albers Equal Area Conic Projection and the North American Datum of 1983. [Click here for additional projection information](#).
- ESRI shapefiles and Personal Geodatabases, or File Geodatabases, are the preferred spatial data formats for submission.
- Users are encouraged to verify their wetlands data by downloading and using the [Wetlands Data Verification Toolset](#)
- The Wetlands Master Geodatabase feature class. [www.fws.gov/wetlands/Data/Contributed-Data.html](http://www.fws.gov/wetlands/Data/Contributed-Data.html) and added to the polygon

**New:** The Wetland Mapping Consortium (WMC) Webinar:

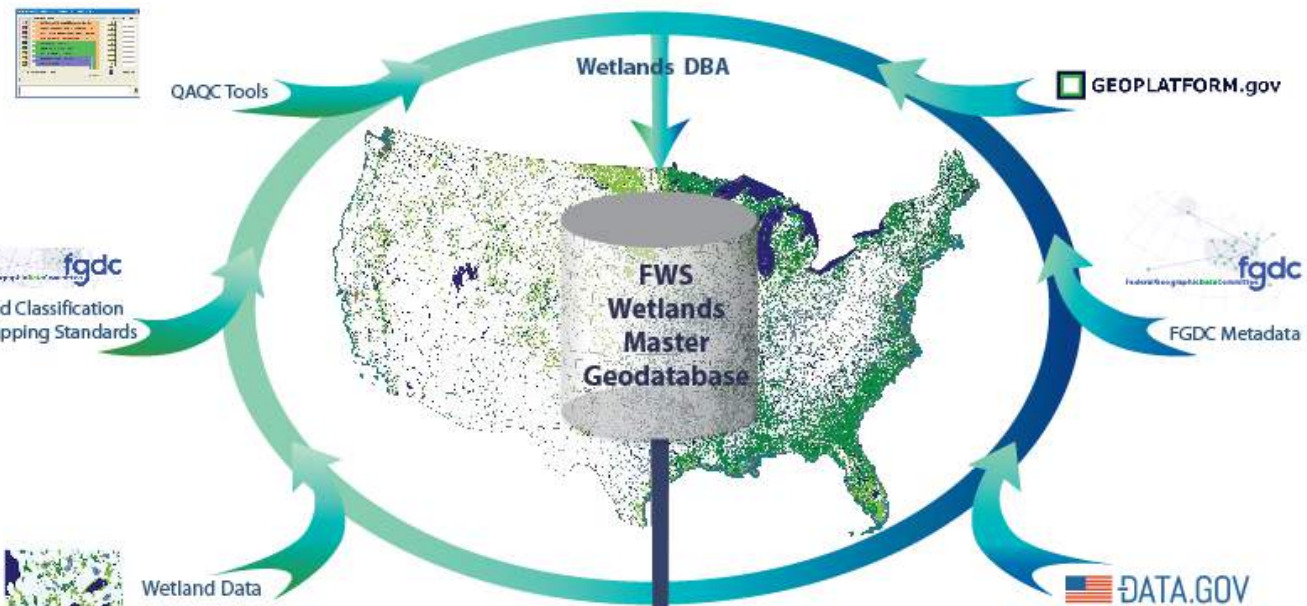
"Mapping Standards and Procedures – The NWI and You"

[Part 1](#); [Part 2](#); [Part 3](#)





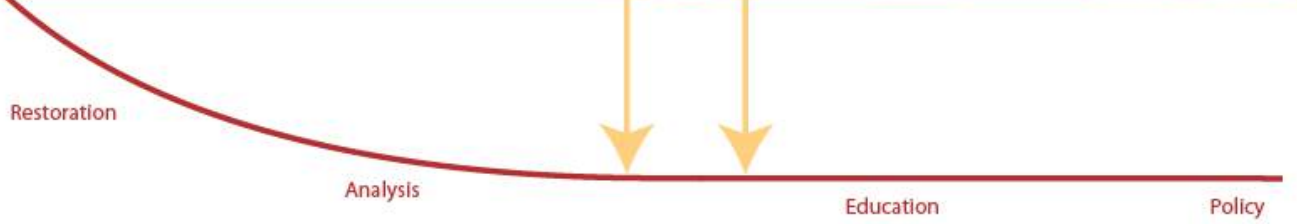
# Wetlands Layer of the National Spatial Data Infrastructure (NSDI) a National Geospatial Data Asset (NGDA)



Wetlands Data Extraction [www.fws.gov/wetlands/Data/Data-Download](http://www.fws.gov/wetlands/Data/Data-Download)

Wetlands Applications [www.fws.gov/wetlands/Data/Mapper](http://www.fws.gov/wetlands/Data/Mapper)

Wetlands Web Mapping Services [www.fws.gov/wetlands/Data/Web-Map-Services](http://www.fws.gov/wetlands/Data/Web-Map-Services)





# Questions?

Mitch Bergeson - [mitch\\_bergeson@fws.gov](mailto:mitch_bergeson@fws.gov)

Jane Harner – [jane\\_harner@fws.gov](mailto:jane_harner@fws.gov)

[www.fws.gov/wetlands/](http://www.fws.gov/wetlands/)

[www.fws.gov/wetlands/Data/Contributed-Data.html](http://www.fws.gov/wetlands/Data/Contributed-Data.html)