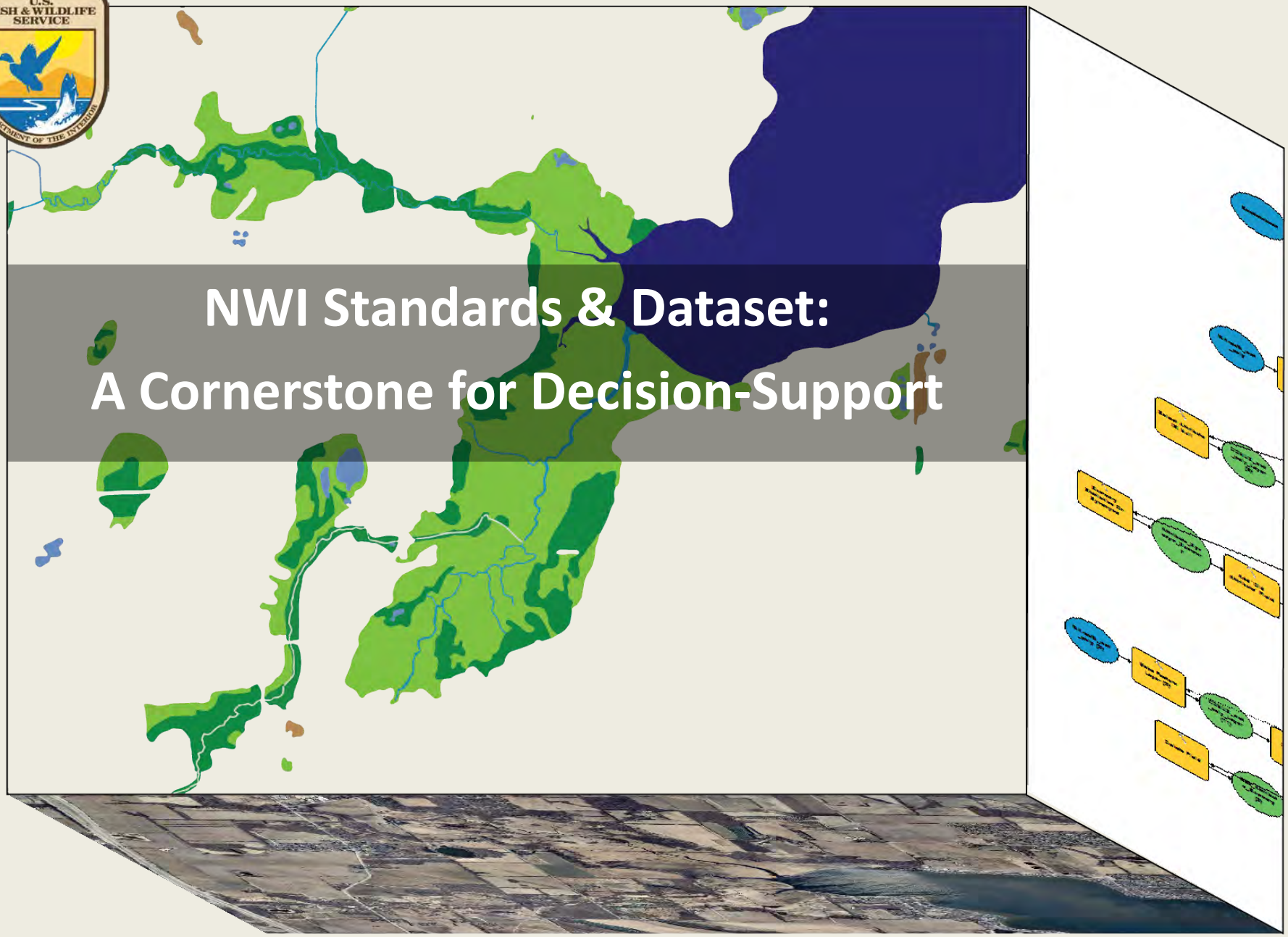
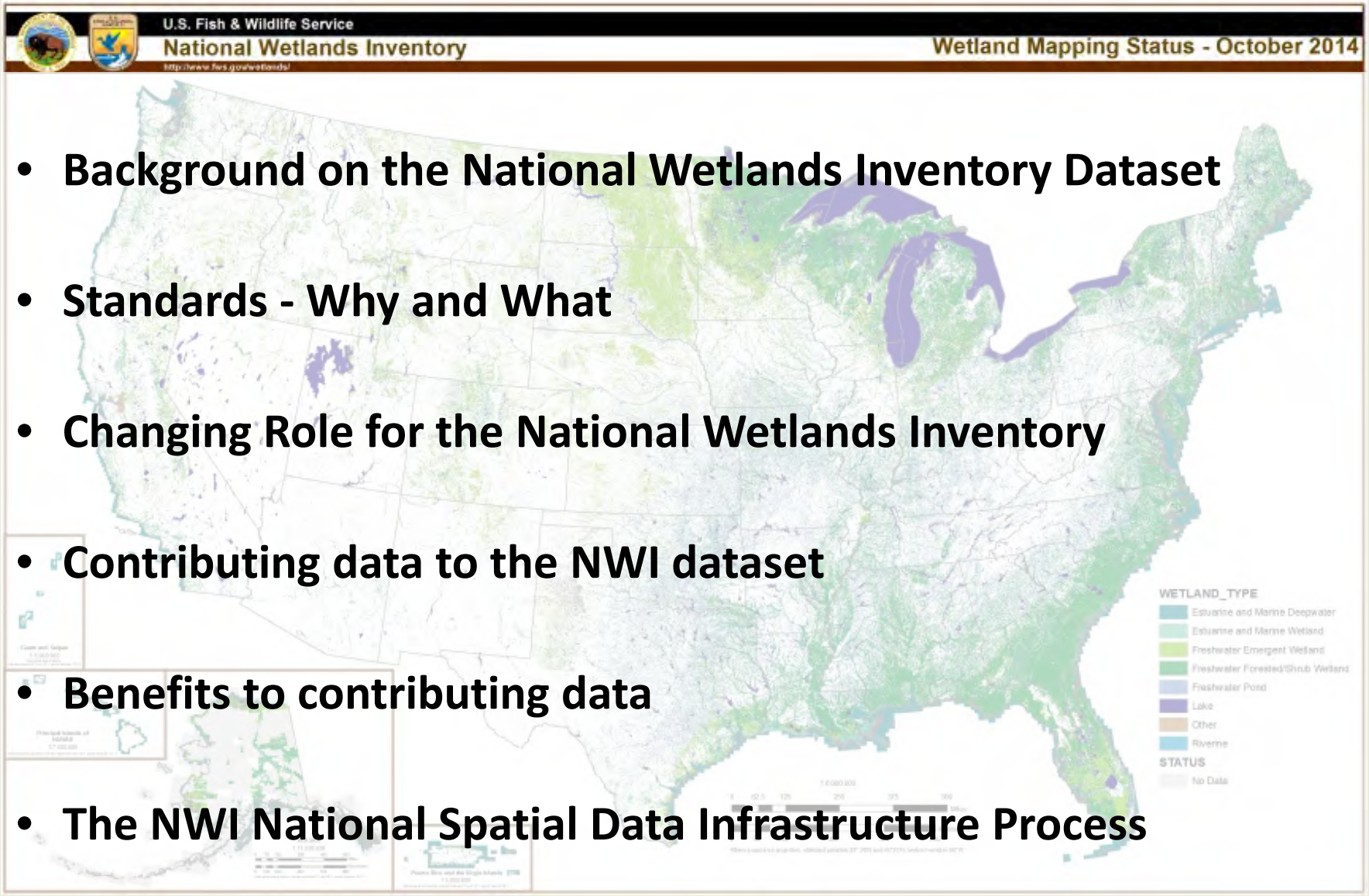
NWI Standards & Dataset:
A Cornerstone for Decision-Support



National Wetlands Inventory



- Background on the National Wetlands Inventory Dataset
- Standards - Why and What
- Changing Role for the National Wetlands Inventory
- Contributing data to the NWI dataset
- Benefits to contributing data
- The NWI National Spatial Data Infrastructure Process

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 Wetlands Inventory Dataset
    - Over 20 million polygons
    - 40 years and $220+ million
    - Over 165 contributors
    - Nearly 1 million website view/year
    - 335,000+ Mapper unique users/year
    - Over 500 maps downloaded/day
    - Over 30 datasets download/day

National Wetlands Inventory

NWI identified as a National Geospatial Data Asset (NGDA)

- Supports mission goals of multiple federal agencies
- Statutorily mandated (Emergency Wetland Resource Act of 1986)
- Supports Presidential priorities as expressed by OMB
  - OMB Circular A-16 identifies the Wetlands Layer as a National Spatial Data Infrastructure (NSDI) layer

What is the National Spatial Data Infrastructure (NSDI)?

The NSDI assures that spatial data from multiple sources (federal, state, local, and tribal governments, academia, and the private sector) are available and easily integrated to enhance the understanding of our physical and cultural world.

- The NSDI honors several key public values and components including:
  - Access for all citizens to spatial data, information, and interpretive products
  - Interoperability of federal information systems to enable the drawing of resources from multiple federal agencies and their partners.
  - Standard Metadata compliance
  - Data Standards

fgdc
Federal Geographic Data Committee

NWI is an NGDA and NSDI Layer

- FWS is responsible for the Development and maintenance of the wetlands data layer

- Data Stewards must be compliant with:
  - OGC format standards (KML, Shapefile, REST…)
  - FGDC data standards
  - FGDC Content Standards for Digital Geospatial Metadata

- Data must be compliant with:
  - FGDC Wetlands Mapping Standards
  - FGDC Wetlands Classification Standard

What is a standard?

- A standard is a technical document designed to be used as a **rule, guideline or definition for common and repeated use**.
- Standards might include requirements and/or recommendations for products, systems, processes or services. They might describe a measurement or test method or **establish common terminology so that there is no misunderstanding among users.**
- NSDI is made possible by the universal use of standards and protocols for **data development, documentation, exchange, and geospatial services**.

How are standards developed?

- Standards are developed through sharing knowledge and building consensus among technical experts who are nominated by interested parties and stakeholders.
  - For wetlands 'voluntary consensus standards' were developed which are characterized by openness, balance of interest, due process, an appeals process, and consensus.

Wetland Mapping Standard

- **Objective**
  - The purpose of this standard is to support accurate mapping and classification of wetlands, while ensuring mechanisms for their revisions and update as directed under OMB Circular A-16, Revised. It is designed to direct the current and future digital mapping of wetlands.
- **Scope**
  - The mapping standard **will be used for all wetland mapping** nationally including Federal Agencies, States, Tribes, especially if that mapping data will be uploaded into NWI/The National Map as a data layer. Specifically, **if Federal funding is involved , then use of the proposed Standard is required**. For all other efforts, use of the standard is strongly encouraged.

Document	Version	Date	Custodian
Proposal		2006/02	FGDC Standards Working Group
Committee draft		2007/04/03	FGDC Standards Working Group
Public review draft		2007/08/06	FGDC Secretariat
Regulations.gov		2007/11	FGDC Wetlands Subcommittee
Final draft (. doc) (. pdf)		2008/07	FGDC Standards Working Group
Public review comments		2008/07	FGDC Standards Working Group
Final draft		2009/01	FGDC Coordination Group
FGDC-endorsed standard		2009/07	Fish and Wildlife Service

https://www.fgdc.gov/standards/projects/FGDC-standards-projects/wetlands-mapping

Wetland Classification Standard

- **Objectives**
  - The primary objective of the Classification of Wetlands and Deepwater Habitats of the United States, as originally drafted by Cowardin et al. (1979:3), was "to impose boundaries on natural ecosystems for the purposes of inventory, evaluation, and management." The FGDC Wetlands Classification Standard (WCS) provides minimum requirements and guidelines for classification of both wetlands and deepwater habitats that are consistent with the FGDC Wetlands Mapping Standard (FGDC-STD-015-2009).
- **Scope**
  - **Any new, updated, or revised mapping of wetlands or deepwater habitats shall conform to the FGDC Wetlands Classification Standard.** More general mapping activities may incorporate wetlands data from the National Spatial Data Infrastructure (NSDI), rather than conducting new wetlands classification (see further information in the FGDC Wetlands Mapping Standard). The Classification of Wetlands and Deepwater Habitats of the United States was **developed by wetland ecologists, with the assistance of many private individuals and organizations and local, state, and Federal agencies.** It was **designed for use over a broad geographic area**—all U.S. States and Territories—by individuals and organizations with varied interests and objectives. The definition of wetland in this classification **delimits the biological extent of wetland**, as influenced by substrate properties and the hydrologic characteristics at each site. This robust classification system has been successfully applied throughout the United States and its Territories since the mid-1970s, making it a truly national system

Document	Version	Date
FGDC-endorsed standard		1996
FGDC-endorsed standard (revision)		2013

https://www.fgdc.gov/standards/projects/FGDC-standards-projects/wetlands/

Benefits of Wetland standards

- Allow for the creation of a foundation or cornerstone of wetland information that can be used across agencies, programs, jurisdictions and fields of study.
  - Common Ecological Wetland Definition
  - Common Wetland Classification System
    - 'Cowardin Language'
  - Common Wetland Mapping Standard
  - Common Metadata Standards
    - Cut down the time to find or discover wetlands information
  - Common data distribution standards
    - Improves distribution and usability of wetlands information

Changing Role for NWI

- With the completion of the lower 48 states in May of 2014, Dan Ashe, Director of the USFWS announced:
  - ***"The Service is now moving from our vision of building the wetlands layer to maintaining and updating it as a Federal Geospatial Data Layer. We are asking our stakeholders such as Federal, State, Tribal, and territorial agencies to assume more wetland mapping responsibilities and to produce new and updated existing data for their areas of interest."***
- The role of the NWI and the USFWS has therefore changed from primary ***data producers*** to ***data stewards***.

Contribute Wetlands 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 ↓

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.

New: The Wetland Mapping Consortium (WMC) Webinar:

"Mapping Standards and Procedures – The NWI and You"

Part 1; Part 2; Part 3

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 consists of wetland polygon and linear features only. All point data should be buffered and added to the polygon feature class.

Available Training

ASWM's Wetland Mapping Training Webpage

http://www.aswm.org/wetland-science/wetlands-one-stop-mapping/5041-wetland-mapping-training

Training Webinars

Mapping Standards & Requirements – "Mapping Standards and Procedures: The NWI and You"

Rusty Griffin, U.S. Fish & Wildlife Service (10/15/14)

Wetlands Spatial Data 101: How to Access Data on NWI Mapper and Other Resources

Mitch Bergeson, USFWS, National Standards Support Team (3/25/15)

From Fen to Floodplain: Steps in a Successful Landscape Level Wetland Inventory in Northeastern New Mexico

Andy Robertson, Saint Mary's University and Maryann McGraw, New Mexico Environment Department (10/21/15)

Why Contribute Data

- **Contribution to wetland science, management, conservation, policy and restoration at the local, regional and national level**

- **Data Hosting**
  - The data is managed, stored and archived in the Wetlands Master Geodatabase
  - The data is also hosted in the cloud via our Wetlands Mapper
  - www.fws.gov/wetlands/Data/Mapper.html
- **Visibility**
  - The Wetlands mapper has over 335,0000 unique users annually
- **Distribution**
  - Users can download wetlands data and maps for use in data modeling, analysis and planning
  - Over 500 maps downloaded/day
  - Over 30 datasets download/day
  - www.fws.gov/wetlands/Data/Data-Download.html
- **Recognition**
  - Project specific metadata is served with the data
  - All data contributors are acknowledged on the NWI website
  - www.fws.gov/wetlands/Data/Data-Contributors.html
- **Compliance**
  - Federal mandate states that all data produced using federal funding must comply with the federal standards and be submitted to the national layer

U.S. Fish & Wildlife Service

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




Wetlands



QAQC Tools

Wetlands DBA

GEOPLATFORM.gov

fgdc

Wetland Classification and Mapping Standards

FWS Wetlands Master Geodatabase

fgdc

FGDC Metadata

Wetland Data Contributors

DATA.GOV

Wetlands Data Extraction
www.fws.gov/wetlands/Data/Data-Download

Wetlands Applications
www.fws.gov/wetlands/Data/Mapper

Wetlands Web Mapping Services
www.fws.gov/wetlands/Data/Web-Map-Services

Arc Clients | GIS Software | Wetlands Mapper | Mobile App | USERS | Arc Clients | GIS Software | The National Map | Other Mobile Apps | Other Mapping Applications

Restoration

Analysis

Education

Policy