

Wetland Mapping and Monitoring: Challenges, Opportunities, & Current Initiatives

8th National Monitoring Conference

Panel: Using Wetlands Monitoring and Assessment Information to
Support Decision-Making

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Wetland Mapping Consortium (WMC)

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Wetland Mapping & Monitoring Challenges & Opportunities

- * Limited pre-existing wetland mapping data (incomplete US coverage, much of which is 20+years old and lacks stable unique identifier codes)
- * Meeting the FGDC Standards (Mapping and Classification) for new wetland data
- * Cost-effective integration of new wetland mapping technologies (LiDAR, etc) → WMC Monthly Webinar Series
- * Training & Collaboration resources
- * Hydric Soils data utilization (including wetland mapping and identifying restorable wetlands)
- * Database Integration and Analysis Needs (Stable Unique Identifier Codes)

Training & Collaboration Resources

- * U.S. Fish and Wildlife Service (USFWS) Wetland Mapping Training
http://www.fws.gov/habitatconservation/nwi/wetlands_mapping_training/index.html
- * Wetland Mapping Consortium (WMC)
<http://clic.cses.vt.edu/WMC/>
- * Association of State Wetland Managers (ASWM)
<http://aswm.org/>

SSURGO Package for Wetland Mappers

Requirements Document

Soil Survey Geographic (SSURGO) Package for Wetland Mappers

(with gSSURGO map layer and Potential Wetland Soil Landscapes query)
5/2/2012

1. Business Problem Statement

Wetlands Mappers (Association of State Wetland Managers, the Wetlands Mapping Consortium [WMC], and others) need access to state-wide NCSS Soil Survey Geographic Database (SSURGO) information (Geographic Information Systems [GIS] ready digital maps and attributes) to support effective wetland mapping activities.

2. Current Business Process

Currently, in order to obtain state-wide SSURGO datasets, users need to download (or order on DVD or HD) either state collections of individual SSURGO datasets or download each traditional soil survey area independently from NRCS web sites for use in desktop GIS environments. This is a staff time consuming process and requires expert knowledge to manipulate each SSURGO dataset into state-wide map layers with combined attribute tables.

Reliable extraction of wetland mapping related attributes (percent of map unit containing a hydric soil component, map unit dominant condition soil drainage class, etc.) also requires expert knowledge. The Soil Data Viewer (SDV) software provided by NRCS for use with ArcGIS® and Microsoft (MS) Access® software works well, but only with datasets that have sizes less than 2 GB. Many state-wide SSURGO vector data sets exceed the 2 GB limit. Without assistance from SDV, attribute table query is prone to human error and incomplete or incorrect identification of wetlands related soil attributes often results.

Stable Unique Identifiers: Key Issues

- * Codes must function within a relational database context to support robust analysis. The national level is the missing puzzle piece to putting state and regional databases together for analysis.
- * Codes need to reflect wetland dynamism: expansion/contraction, disappearance/reappearance, and fragmentation over time.
- * Will there be a target minimum or maximum wetland size for coding? The wetland Mapping Standard specifies a target mapping unit of 0.5 acres. Some smaller wetlands have significant biological functions which there may be need to monitor.
- * Length of code may become unwieldy.
 - * Alpha-numeric code packs more info in field space.
 - * Multiple fields may be required to store components of code and to aid in analysis.

Stable Unique Identifiers: State Projects

- * Numeric Codes for the Identification of Basins in Minnesota
<http://mn.gov/oet/policies-and-standards/geospatial/gis-pages/mn-basin-identification-codes.jsp> --This standard has been developed to improve the sharing and exchange of information about lake and wetland basins.
- * Generation of unique identifiers for complexes of NWI polygons based on the updated New Hampshire Method
<http://nhmethod.org/index.htm>. See “NHWetlands Base Map” at <http://www.granit.unh.edu/data/downloadfreedata/category/databycategory.html>.

Stable Unique Identifiers: Recommendations:

- * Use of only these codes and names would **NOT be mandated**, states and others would still be free to use their own systems. The intent is to build methods that will solve fundamental problems and be so useful that everybody will want to use it as a complement to their data set.
- * The names and codes should remain **separate from any wetland/upland determination** (even currently drained wetlands or planned/future wetlands could be issued national wetland names and identifier codes).
- * Utilize **multiple approaches** and relational tables for robust usage possibilities.
- * Code(s) should be informationally robust enough to allow for **multiple levels of aggregation and splitting**. Potentially include HUC and NHD in identifier code, ending with assigned value.
- * Develop a **new FGDC standard and National Coverage** for Wetland Names and Stable Unique Identifier Codes (work towards grants and funding to develop)
- * Stable Unique Identifier Code assignment by **online web-based tool and database lookup**.
- * **Develop a regional pilot project.**

Join the WMC

Wetland Mapping Consortium (WMC) membership is FREE. Members have access to email updates, online collaboration tools, as well as the monthly Webinar Series (3rd Wednesdays at 3pm Eastern). For registration information see

http://clic.cses.vt.edu/WMC/WMC_Organizers.htm

If you are interested in joining the Wetland Names Working Group (WNWG) or being notified of our future activities, please send an email to wetlandmappingconsortium@gmail.com with the subject line "Join WNWG". WNWG Conference Calls are held 2nd and 4th Wednesdays at 3pm Eastern.

QUESTIONS or COMMENTS?

- **Wetland Mapping Training**
- **Wetland Mapping Consortium (WMC)**
- **SSURGO Package for Wetland Mappers**
- **Stable Unique Identifier Codes**
- **Wetland Names Working Group (WNWG)**

For more information please contact:

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