



Wetlands Mapping Consortium (WMC) *of the Association of State Wetlands Managers*

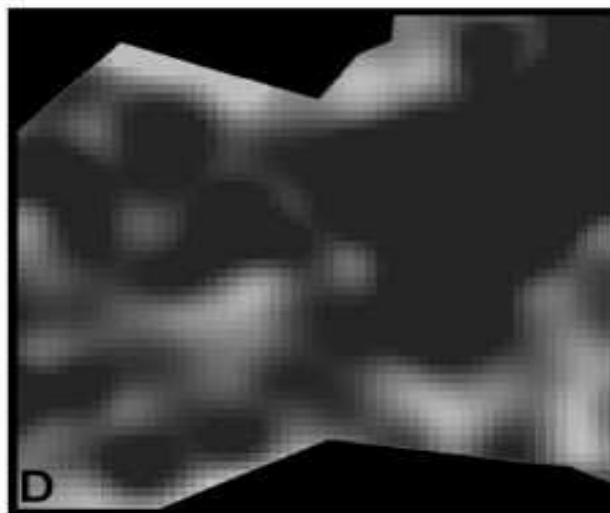
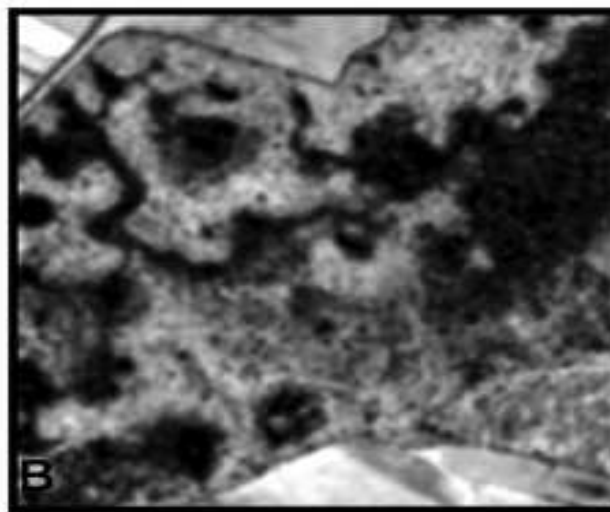
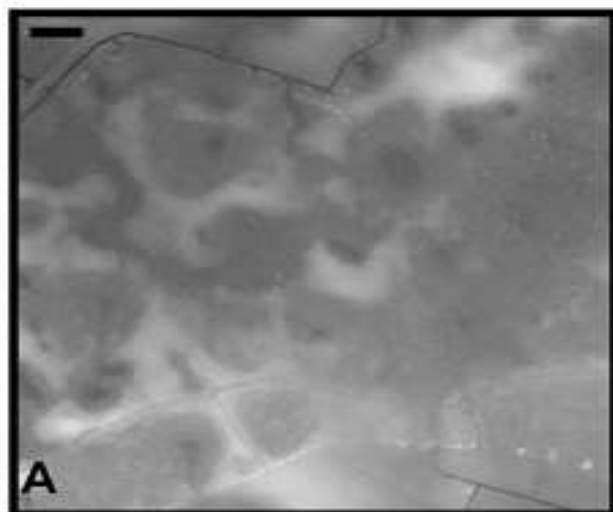
Jane Awi (ASWM)
Jeanne Christie (ASWM)
Megan Lang (USDA)
John Galbraith (VTI)

Wetland Mapping Consortium (WMC)

- Formed in Fall 2008 in partnership with the Association of State Wetlands Managers (ASWM)
- The WMC is an interdisciplinary group of wetland scientists and managers interested in mapping and monitoring wetlands with remotely sensed images and/or using the resultant products to best manage wetland resources.
- Goal is to improve the management of wetland resources through enhanced wetland mapping and monitoring and dissemination of this information.

Remotely Sensed Data

Four different types of remotely sensed data or data products displayed for a U.S. Department of Agriculture study site located in Caroline County, Maryland. All images illustrate the same forested wetland complex but provide complementary information that can be used to map or characterize wetlands.



0 310 620
Meters

Image A is a one-meter horizontal spatial resolution, 16-centimeter vertical resolution digital elevation model where wetlands are generally exhibited as areas of lower elevation (darker).

Image B illustrates LiDAR intensity derived from ground returns that were collected during a period of average yearly peak wetland inundation (darker areas are inundated).

Image C is a one-meter spatial resolution false color near-infrared aerial photograph that was collected at the same time as image B. Note that the darker forested areas correspond with the inundated areas seen on image B but that these areas are much easier to visualize on image B.

Image D is a 30-meter spatial resolution RADAR-derived map of forested wetland hydroperiod where the darker areas are wetter for longer periods of time. This type of product can also be produced using newly available three-meter spatial resolution RADAR data and depicts not only variations in inundation but also differences in soil moisture. Note that there is strong general agreement between all data sources.

WMC Membership 2010

- 118 members as of August 31, 2010 (up from 24 members as of January 2010).
- The Southeast Wetland Workgroup (SEWWG) has joined the WMC as a group. Participants represent state and federal personnel and scientists from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. SEWWG membership focuses on both users and developers of wetland monitoring and assessment tools.



WMC Online 2010

- **Gateway Webpage** created and linked from the ASWM Mapping webpage
<<http://clic.cses.vt.edu/WMC/>>.
- **Introductory Training** presentation developed "Using the Wetland Mapping Consortium (WMC) Scholar Site (June 23, 2010)" and available on the ASWM State Mapping page
- **Resource Directory Structure** implemented for the Scholar site; over 30 electronic documents have been uploaded to the WMC Scholar site since January 2010.

WMC Outreach 2010

- An **outreach presentation on the WMC** by ASWM was developed and presented on a webinar hosted by the FWS, ASWM, and Wetlands Classification Standard Maintenance Working Group on May 27, 2010.
- An outreach collaboration to develop and provide a demo webinar for the **Wetlands Classification Image Gallery** was hosted by the FWS, USGS, ASWM, and Wetlands Classification Standard Maintenance Working Group on June 10, 2010.
- Outreach has also included **collaboration with the Southeast Wetlands Working Group (SEWWG)**. A webinar focusing on the WMC and WCIG was hosted by SEWWG, ASWM, and USGS was presented July 23, 2010.

National Wetlands Newsletter

September-October 2009, (31:5) pages 6-11

Improved Wetland Mapping

Through the Use of Advanced Geospatial Technologies

Recently developed remote sensing technologies and techniques have the potential to improve the detail and reliability of wetland maps, update existing National Wetlands Inventory wetlands data, monitor changes in the wetland layer of the National Spatial Data Infrastructure, and improve the ability to monitor key parameters that impact the ability of wetlands to provide ecosystem services at a watershed scale.

BY MEGAN LANG, JANE AWL, BILL WILEN, GREG McCARTY, AND JOHN GALBRAITH

A New Mapping Standard

BY JANE AWL, JEANNE CHRISTIE, MARGARETE HEBER, MEGAN LANG, AND BILL WILEN

Mapping Coalitions

BY JEANNE CHRISTIE AND LEAH STETSON
Association of State Wetland Managers

National Wetlands Newsletter

September-October 2010, (32:5) pages 10-17 and 36-37

National Standards for the Mapping and Classification of Wetlands: Implementation and Maintenance



The Federal Geographic Data Committee adopted national standards for classifying wetlands in 1996, but added national standards for mapping wetlands in 2009. This update addresses the implementation of these standards, the maintenance review of the classification standard, and how wetlands scientists can participate and provide input.

By JANE AWL, BILL WILEN, REBECCA ALLEE, LARRY HANDLEY, MARGARETE HEBER, PAMELA BLASEDELL, JOHN GALBRAITH, AND MEGAN LANG

Light Detection and Ranging:

New Information for Improved Wetland Mapping and Monitoring

To best preserve wetlands and associated ecosystem services, wetlands must be routinely monitored. Wetland mapping is an essential part of this monitoring program. Recently developed remote-sensing technologies and techniques have the potential to improve the detail and reliability of wetland maps and the ability to monitor important drivers of wetland condition and function, such as hydrology. One of these relatively new and rapidly developing technologies is laser altimetry, or light detection and ranging (LiDAR), which provides fine-scale information regarding 3-D topography, vegetation height, and plant structure, as well as hydropattern, across large areas.

By MEGAN LANG, GREG McCARTY, BILL WILEN, AND JANE AWL

*WMC 2011 Organizational Meetings
to be held in conjunction with SWS and ASWM*

SWS SAC/MAC Joint Chapter Meeting:

The South Atlantic and Mid-Atlantic Chapters of the Society of Wetland Scientists joint chapter meeting, *Wetlands, Water Resources, and People* to be held **March 7-8, 2011** at the USGS Headquarters in Reston, Virginia.



**State/Tribal/Federal
Coordination Meeting**

March 22-24, 2011

**National Conservation Training Center
Shepherdstown, WV**

WMC Invited to host Mapping Session at SWS SAC/MAC Joint Chapter Meeting (March 2011)

Session: Improved Mapping of Wetland Dynamics

Wetland dynamics both challenge the creation of accurate wetland maps and provide valuable information which can be used to help determine wetland function. Contributors to this session will present and discuss new approaches for mapping and monitoring wetlands and wetland dynamics, and implications for the estimation of wetland ecosystem service provision and/or management of wetland resources.

WMC Invited to host Mapping Session at SWS SAC/MAC Joint Chapter Meeting (March 2011)

Planning at least one WMC session, will organize an additional session if a sufficient number of presenters can participate.

➤ ***Contact Jane Awl or Megan Lang if you are interested.***

Confirmed Speakers:

John Galbraith (VT)

John Jones (USGS)

Jane Awl (ASWM)

Megan Lang (USFS)

Doug Newcomb (US FWS)

WMC Online

<http://clic.cses.vt.edu/WMC/>



2 Basin Road
Windham, ME 04062
207-892-3399
FAX: 207-892-3089
aswm@aswm.org

Wetland Mapping Consortium

Scholar Web Site for Communication Among Registered Users*

* [How do I Register?](#)

Wetland Mapping Information For Visiting Users

- [Links to Wetland Mapping Data](#)
- [Information about Wetland Mapping From ASWM](#)
- [Links to Wetland Mapping Standards](#)
- [Objectives of the Wetland Mapping Consortium](#)
- [Contact Us](#) (Subject: Wetland Mapping Consortium)

ASWM Links

ASWM



Wetlands Classification
Image Gallery



WMC



VA Tech
Scholar Site



ASWM: State Wetland Programs: Wetland Mapping - Windows Internet Explorer

http://www.aswm.org/swp/mapping/index.htm#ms

File Edit View Favorites Tools Help

ASWM: State Wetland Programs: Wetland Mappi...



State Wetland Programs



ASWM News ■ Wetlands Mapping Standard ■ Media Coverage
State Programs ■ Publications/Reports/ Research ■ Events
Links of Interest ■ Job and Research Opportunities ■ Mapping Resources

(This page last updated on 0/25/10.)

ASWM Partners to Create Wetland Mapping Consortium (WMC)



Fall 2008: The WMC is an interdisciplinary group of wetland scientists and managers interested in mapping and monitoring wetlands with remotely sensed images and/or using the resultant products to best manage wetland resources. For more information on this developing group, see http://aswm.org/swp/mapping/wetland_mapping_consortium_010509.pdf

New Webpage
Wetland Mapping Consortium: <http://olc.cses.vt.edu/WMC/>

New
Using the Wetland Mapping Consortium (WMC) Scholar Site (June 23, 2010)
http://aswm.org/swp/mapping/using_the_wmc_scholar_site_062310.pdf

ASWM Feature Articles

New
A New Mapping Standard*
By Jane Awl, Jeanne Christie, Margarete Heber, and Bill Wilen
Association of State Wetland Managers, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service

Home
About ASWM
Support ASWM
Membership
State
Federal
Local
Science
Wetlands
Legal
Landowner
News
Calendar
Publications
Links

Find us on Facebook

Search by keywords: GO

In Association with Amazon.com

Sign Up for Wetland Breaking News!
Enter your e-mail below

Subscribe

Wetland Mapping Consortium (WMC)

Communication Tools and Resources

- Utilize Virginia Tech's *Scholar Site*
<https://scholar.vt.edu/portal>
- Based on Sakai Project open source suite of learning, portfolio library and project tools.
- Sakai is distributed as free and open source software under the Educational Community License <http://sakaiproject.org/>

Project Sites:

- Project/Research sites are designed to facilitate collaboration.
- You can invite anyone you wish to join your project site.
- Using a web browser, you can choose from features and functions to create project sites that meet your needs.
- Examples:
 - A group can electronically work on documents or materials collaboratively
 - A project director can make announcements and share resources, such as electronic documents or links to other websites and collaborate with other colleagues
 - An online discussion board

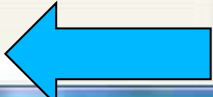


Logout

My Workspace Wetland Mapping Consortium Enter Participant View



- Home
 - Announcements
 - Calendar
 - Forums
 - Mailtool
 - Email Archive
 - Chat Room
 - Blogger
 - Polls
 - Sign-up
 - Lessons
 - Resources
 - Drop Box
 - Podcasts
 - Wiki
 - 4help
 - Site Editor
 - Sections
 - Roster
 - Search
 - Help
- Users present:
Jane Aivi



Site Information Display

Options

Links on the left that have content or expected content.

Wiki (for co-authored documents such as articles or papers),

Drop Box (repository for documents) -
Wetland_Mapping_Standard_Implementation_Plan

Discussion Board (Interaction - ask an expert, post timely information),

Forum (Static - Facts and FAQ),

Active Chat Room (Like a Messenger or on-line chat),

Roster (a list of individual registered users).

Click on the links they are interested in and use the Help section - lower left.

Recent Announcements

Options

[Webinar on WMC Resources for FGDC Standards Working Groups](#)
(Jane Aivi - May 27, 2010 11:11 am)

Recent Chat Messages

Options

Hi!
(Main Chat Room - Jane Aivi - May 25, 2010 2:48 PM EDT)

Calendar

Options

May, 2010

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-----|-----|-----|-----|-----|
| 25 | 26 | 27 | 28 | 29 | 30 | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | 1 | 2 | 3 | 4 | 5 |



Logout

My Workspace

Wetland Mapping Consortium

Exit Participant View

- Home
- Announcements**
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help

Users present: Jane Awt

Announcements

Add

Announcements

View:

Viewing 1 - 5 of 5 items

show 10 items...

| Subject | From | For | Date | Beginning Date | Ending Date | Remove? |
|--|----------------------|---------------------|--------------------------|--------------------------------|-----------------------------|--------------------------|
| Webinar on WMC Resources for FGDC Standards Working Groups Edit | Jane Awt | site | May 27, 2010 11:11 am | | | <input type="checkbox"/> |
| Final Comments Due 12-15-09 on Implementation Plan for Wetlands Mapping Standard Edit | Jane Awt | site | Dec 10, 2009 3:24 pm | | | <input type="checkbox"/> |
| Final Wetlands Mapping Standard | John Galbraith | site | Aug 18, 2009 5:19 pm | | | <input type="checkbox"/> |
| Wetlands Mapping Standard News Release BQA Edit | Jane Awt | site | Aug 18, 2009 5:00 pm | Aug 18, 2009 5:00 pm | Aug 18, 2010 5:00 pm | <input type="checkbox"/> |
| Draft Implementation Plan added to Wiki Section | John Galbraith | site | Jul 18, 2009 6:00 pm | Jul 18, 2009 6:00 pm | | <input type="checkbox"/> |



Logout

My Workspace

Wetland Mapping Consortium

Exit Participant View

- Home
- Announcements
- Calendar**
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help

Calendar

Calendar by Month

View

MAY 2010

< Previous Month Today Next Month >

Printable Version

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|--------------------|--------------------|--------------------|--------------------|-------------------------------------|--------------------|--------------------|
| 25 | 26 | 27 | 28 | 29 | 30 | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 🕒 WEBINAR:... | 28 | 29 |
| 30 | 31 | 1 | 2 | 3 | 4 | 5 |

Users present:
Jane Ayl

Legend

My Workspace

Wetland Mapping Consortium

Exit Participant View

- Home
- Announcements
- Calendar
- Forums
- Mailtool**
- Email Archive
- Chat Room
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help



Mailtool

Compose

From: Jane Awl <jane_awl@earthlink.net>

- To:
- All Participants - [Select Participants](#) | [Select Groups](#) | [Select Sections](#)
 - All Tech Supports - [Select Tech Supports](#)
 - All Guests - [Select Guests](#)
 - All Organizers - [Select Organizers](#)

Other Recipient(s):

Separate additional email addresses with commas or semicolons.

Subject:

[Attach a file](#)

Rich text editor toolbar with icons for source, undo, redo, bold, italic, text color, background color, bulleted list, numbered list, link, unlink, insert image, link icon, unlink icon, and a help icon. Below the icons are dropdown menus for Style, Format, Font, and Size.

Users present:
Jane Awl

Access to Site Editor Features with Organizer Permission Level

Site Editor

- Edit Site Information
- Edit Tools
- Page Order
- Add Participants
- Manage Groups
- Manage Access
- Import from Site
- Import from File

Wetland Mapping Consortium

Site Contact and email

John Galbraith, ttcf@vt.edu

Available to

Site participants only

Display in public site list (share public files / announcements / syllabus)

Yes

Creation Date

Apr 22, 2009 3:40 pm

Site Description

Links on the left that have content or expected content.

Wiki (for co-authored documents such as articles or papers),

Drop Box (repository for documents) - Wetland_Mapping_Standard_Implementation_Plan

Discussion Board (Interaction - ask an expert, post timely information),

Forum (Static - Facts and FAQ),

Active Chat Room (Like a Messenger or on-line chat),

Roster (a list of individual registered users).

Click on the links they are interested in and use the Help section - lower left.

Wetland Mapping Consortium Participant List (# 30)

Viewing 1 - 30 of 30 items

- Home
- Announcements
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Participants
- Wiki
- 4
- Site Editor**
- Sections
- Roster
- Search
- Help

Access to Site Editor Features with Organizer Permission Level

My Workspace

Wetland Mapping Consortium

[Enter Participant View](#)

- Home
- Announcements
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Podcasts
- Wiki

Site Editor

Create New Group

Select members of the site member list and add to group. Select members of group list and remove. Click Update to save changes.

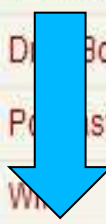
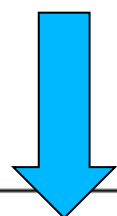
* Title

Description

Members of NEW Working Group

Membership Site Member List

Group Member List





Logout

My Workspace

Wetland Mapping Consortium

Enter Participant View

Access to Site Editor Features with Organizer Permission Level

- Home
- Announcements
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Dropbox
- Podcasts
- Wiki
- 4th
- Site Editor**

Site Editor

Choose a Role for Participants
Choose the role for the participants you are adding.

Roles

- Participant
- Tech Support
- Guest
- Organizer

Participants

newmember@email.org(newmember@email.org)

- Home
- Announcements
- Calendar
- Forums**
- Mailtool
- Email Archive
- Chat Room
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help

Users present:
Jane Awt

Forums

Forums

[Wetland Mapping Training](#)

[FGDC Wetland Standard Training](#) (0 message - 0 unread)

[Wetland Mapping Training Providers](#) (0 message - 0 unread)

[Classification Standard](#)

FGDC Wetlands Classification Standard Maintenance

[Classification Standard - Discussion](#) (0 message - 0 unread)

[Wetland Mapping Research](#)

Those who conduct research into improvement of wetland mapping

[Read Full Description](#)

[Mapping Research - Information](#) (0 message - 0 unread)

- Home
- Announcements
- Calendar
- Forums
- Mail
- Email Archive
- Chat Room**
- Blogger
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help

Users present:
Jane Awt

Chat Room

Currently viewing messages for 'Main Chat Room'

View View messages from...

Only the past 10 messages are archived and can be read by any site participant.

Jane Awt (Apr 22, 2010 2:16 PM EDT) Bill and Becky will meet on May 20th

Lawrence Handley (Apr 22, 2010 2:19 PM EDT) Why does Pam get to be blue?

Jane Awt (Apr 22, 2010 2:59 PM EDT) Don't know how it chooses colors :)

Jane Awt (Apr 22, 2010 3:00 PM EDT) Larry, is it "FGDC Wetlands Classification System Gallery"--where is the hyphen?

Pamela Blasdell (Apr 22, 2010 3:03 PM EDT) I have this FGDC Wetland Classification System - Image Gallery

Lawrence Handley (Apr 22, 2010 3:04 PM EDT) "FGDC Wetland Classification System -- Image Gallery"

Pamela Blasdell (Apr 22, 2010 3:04 PM EDT) System, Subsystem, Type
 Dominant plants, common name, scientific name
 Location
 Conditions
 date
 Author

Jane Awt (Apr 22, 2010 3:18 PM EDT) Wetland Mapping Consortium Resources / FGDC Wetlands Standards Working Groups / Classification Standard / 2010 / 1. DROPBOX for NEW Files

Jane Awt (May 25, 2010 2:48 PM EDT) HI!

Users in Chat

Jane Awt

Enter chat message

- Home
- Announcements
- Calendar
- Files
- Mail
- Archive
- Chat Room
- Blogger**
- Polls
- Sign-up
- Lessons
- Resources
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help

Users present:
Jane Axt

Blogger

[View all](#) | [View member's blog](#) | [View my blog](#) | [Create new post](#)

Post Editor

Title *:

Keywords:

Rich text editor toolbar with icons for source, undo, redo, bold, italic, underline, link, unlink, list, indent, outdent, text color, background color, font size, font face, style, and a help icon.

Abstract:

Access: **PRIVATE**
Read only:
Allow comments:

Rich text editor toolbar with tabs for Text, Images, Links, and Files. The toolbar includes icons for source, undo, redo, bold, italic, underline, link, unlink, list, indent, outdent, text color, background color, font size, font face, style, and a help icon.



My Workspace

Wetland Mapping Consortium

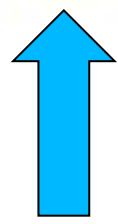
[Exit Participant View](#)

- Home
- Announcements
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blog
- Polls**
- Sign-up
- Lessons
- Resources
- Drop Box

Polls

Poll list

| Question | Opening | Closing | Results | Remove |
|--|-------------------------|-------------------------|-------------------------|--------|
| Have you used the Chat Room to chat with another WMC member? | May 27, 2010 7:00 AM | Jun 20, 2010 7:00 AM | Results | |



- Home
- Announcements
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blogger
- Podcasts
- Site Editor
- Resources
- Drop Box**
- Podcasts
- Wiki
- 4help
- Site Editor

Drop Box

Site Resources | Upload-Download Multiple Resources

Location: janeawl@earthlink.net

Copy | Remove

| <input type="checkbox"/> | <u>Title</u> | Access | <u>Created By</u> | <u>Modified</u> | <u>Size</u> |
|--------------------------|--------------------------|--------|-------------------|-----------------------|-------------|
| <input type="checkbox"/> | janeawl@earthlink.net | | | | |
| <input type="checkbox"/> | FGDC Wetlands | | Jane Awl | Apr 14, 2010 11:37 am | 4 items |
| <input type="checkbox"/> | Standards Working Groups | | | | |

- Upload Files
- Create Folders
- Add Web Links (URLs)
- Add Citation List
- Create HTML Page
- Create Text Document
- New Form Item

- Home
- Announcements
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blog
- Podcasts
- Sign up
- Lessons
- Resources**
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help

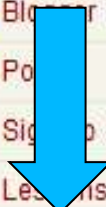
Resources

Location: **Wetland Mapping Consortium Resources / FGDC Wetlands Standards Working Groups**

Copy | Remove | Move

| Title | Access | Created By | Modified | Size |
|---|--------|----------------|----------------------|---------|
| FGDC Wetlands Standards Working Groups | | | | |
| Classification Standard | | John Galbraith | Apr 15, 2010 9:43 am | 1 item |
| Implementation Plan | | John Galbraith | Apr 15, 2010 9:44 am | 1 item |
| Mapping Standard | | John Galbraith | Apr 15, 2010 9:43 am | 0 items |
| OUTREACH | | Jane Awl | Apr 22, 2010 2:45 pm | 0 items |
| Wetland Image Gallery | Public | John Galbraith | May 25, 2010 2:59 pm | 3 items |
| Wetlands Subcommittee | Public | John Galbraith | Apr 15, 2010 9:43 am | 1 item |

- Upload Files
- Create Folders
- Add Web Links (URLs)
- Add Citation List
- Create HTML Page
- Create Text Document
- New Form Item



- Home
- Announcements
- Calendar
- Forums
- Mailtool
- Email Archive
- Chat Room
- Blog
- Poll
- Sign
- Lessons
- Resources**
- Drop Box
- Podcasts
- Wiki
- 4help
- Site Editor
- Sections
- Search
- Help

Resources

Location: [Wetland Mapping Consortium Resources / FGDC Wetlands Standards Working Groups / Classification Standard / 2010 / Discussion Papers](#)

Copy | Remove | Move

| <input type="checkbox"/> Title | Access | Created |
|---|---------|------------------|
| <input type="checkbox"/> Discussion Papers | Add | Actions |
| <input type="checkbox"/> Contributions+from+students+or+Wetlanders.doc | Actions | Public Jan |
| <input type="checkbox"/> Discussion+Regionalization+for+the+Classification+System.docx | Actions | Public John Galt |
| <input type="checkbox"/> Discussion+of+the+limit+between+wetlands+and+deepwater+habitats.docx | Actions | Public John Galt |
| <input type="checkbox"/> Discussion+on+Salinity+scale.docx | Actions | Public John Galt |
| <input type="checkbox"/> Discussion+on+adding+Seasonally+Saturated+as+a+new+Water+Regime+vA2.docx | Actions | Public John Galt |

Users present:
Jane Awl

Wetlands Classification Image Gallery

The screenshot shows the website's navigation menu with options: Main Page, Gallery Information, NWI Guide, Review Process, and Image Submission. The main content area is titled "Wetland Image Gallery" and features a large image of a wetland. To the right of the image is a "Wetland Information" section with the following details:

- Wetland Category: Submerged and Floating Aquatics
- SWI Classification: E1ABU1

Below this is the "Image Data" section:

- Date: Looking north
- Direction: In Tampa Bay on east side of Woodrow Island
- Location: Looking north
- Description: Submerged Aquatic in Tampa Bay Estuary. A continuous bed, greater than 1 acre, of seagrass.
- Conditions: Seagrass in this location are in good condition and are gradually re-establishing and beds are expanding after decades of habitat destruction and degradation.

At the bottom right, there is a table for "Dominant Plants" and "Scientific Name":

| Dominant Plants | Scientific Name |
|-----------------|-----------------------------|
| Turk's-Coin | <i>Thalassia testudinum</i> |

Below the table, it says "Disturbances: None".

On the left side of the main content area, there is a "Gallery Search" section with a "Wetland Category" dropdown menu, a "County" dropdown menu, a "Year" dropdown menu, and a "Go" button. Below the search section is a small map showing the location of the wetland in Tampa Bay.

www.wetlandgallery.cnlworld.org

How easy is it to submit imagery?

The gallery has been designed to facilitate submission and retrieval of documented images to support future wetland classification efforts. Submissions will be reviewed by wetland experts who will confirm the classification codes.

Who are the sponsors of the gallery?

- Environmental Protection Agency
- Fish and Wildlife Service
- United States Geological Service
- Association of State Wetland Managers – Wetland Mapping Consortium

Who can contribute?

The general public, academic researchers and students, government personnel, wetland scientists, geographers, environmentalists, and other interested parties are encouraged to contribute to the Wetlands Classification Image Gallery.

Larry Handley, USGS
larry_handley@usgs.gov

Bill Wilen, FWS
bill_wilen@fws.gov



Wetlands Classification Image Gallery

What is it?

The Wetlands Classification Imagery Gallery is a compilation of wetland images and corresponding information for the FGDC maintenance review of the current National Wetlands Classification Standard (a.k.a. Cowardin et al. 1979). The gallery provides an image framework for the classification of the various and multitude of possible wetland habitats.

Intent/purpose of the gallery

- To support an updated and more robust version of the images critical to the widespread use of the Cowardin Classification System.
- To take advantage of the power of readily available geo-coding applications now incorporated into mobile phone technology, web applications, etc.
- To harness the power of the wetlands stakeholder community to provide current, geo-coded imagery in support of a national classification standard.

SYSTEM Upland
CLASS: Forested Wetland
SUBCLASS: Dead
Location: Rolla, MO
Date: May 2010
Photo by L. Handley



SYSTEM Palustrine
CLASS: Forested Wetland
SUBCLASS: Dead
Location: Humphreys County, TN
Date: September 1975
Photo by V. Carter

In addition to images, participants will submit information such as the dominant and scientific plant names, wetland category, National Wetlands Inventory Classification code (if known), and locational information. Easy-to-use templates are available to facilitate field use and submission

Main Page of the Wetland Classification Image Gallery

Main
Page

Gallery
Information

NWI
Guide

Review
Process

Image
Submission



Wetland Image Gallery

The Wetland Image Gallery is a compilation of wetland images and corresponding information for the FGDC Wetland Classification System. The Gallery provides an image framework of the various and multitude of potential wetlands habitats.

The general public, government personnel, wetland scientists, geographers, environmentalists, and other interested parties can contribute to the Wetland Image Gallery.

FGDC
Wetland Classification
Image Gallery

Gallery Search



Image Submission Page of the Wetland Classification Image Gallery



F G D C
Wetland Classification
Image Gallery

Gallery Search

Wetland Category:

Country:

State:

Key Word:

Submitter's Information

* Full Name:

* E-Mail Address:

* Date Photo was Taken:

* Location:

* State or Province etc:

* Country: USA

Latitude:

Longitude:

Note - Use decimal degrees

* Direction:

Note - Direction you were facing when the photo was taken

* Wetland Category:

NWI Classification Code:

Dominant Plants:

1.

2.

3.

Scientific Plant Name:

1.

2.

3.

* Wetland Description:

* Conditions:

Image Data Page of the Wetland Classification Image Gallery

Tampa Bay, FL.

[Download Data](#)

[Aerial/Satellite Image](#)



F G D C

Wetland Classification
Image Gallery

Gallery Search

Wetland Category:

Wetland Image Gallery

Wetland Information

NWI Classification: E1AB3L

Wetland Category: Submerged and Floating Aquatics

Image Data

Date:

Location: In Tampa Bay on east side of Weedon Island

Direction Taken: Looking east

Description:

Submerged Aquatic in Tampa Bay Estuary. A continuous bed, greater than 1 acre, of seagrass

Conditions:

Seagrass in this location are in good condition and are gradually re-establishing and beds are expanding after decades of habitat contraction and degradation.

Dominant Plants: Scientific Name:

Turtle Grass

Thalassia testudinum

Disturbances:

None

Author: Larry Handley

Implementation & Maintenance of National Geographic Data Standards for Wetlands



What are the current FGDC endorsed National Standards for Wetlands?

- **Classification Standard** *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al, 1979) was endorsed by FGDC in 1996 (http://www.fgdc.gov/standards/projects/FGDC-standards-projects/wetlands/index_html)
- **Mapping Standard** was endorsed by FGDC in 2009 (http://www.fgdc.gov/standards/projects/FGDC-standards-projects/wetlands-mapping/2009-08%20FGDC%20Wetlands%20Mapping%20Standard_final.pdf)

National Wetlands Standards

*Specify minimum data quality components
for inclusion into the National Spatial Data Infrastructure (NSDI)*

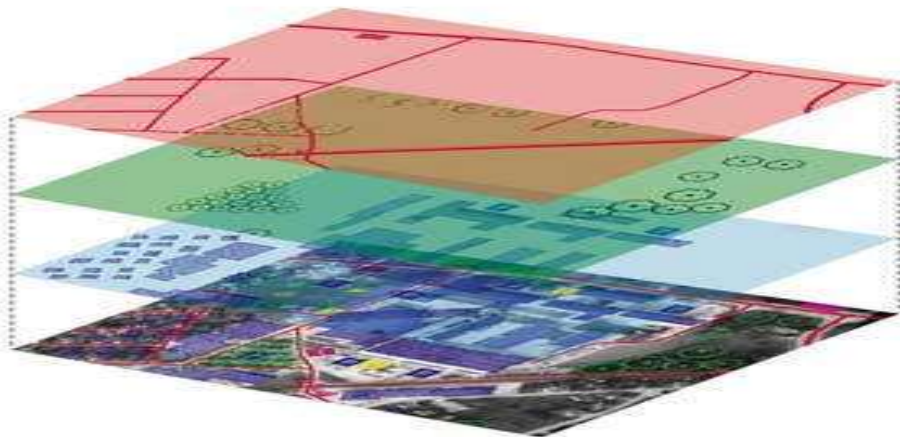
FGDC Document Number FGDC-STD-015-2009



Wetlands Mapping Standard

FGDC Wetlands Subcommittee

July 2009



- ✓ Source Imagery
- ✓ Base Imagery
- ✓ Classification
- ✓ Accuracy
- ✓ TMU (Targeted Mapping Unit)
- ✓ Producer's Accuracy
- ✓ Horizontal Accuracy
- ✓ Data Verification
- ✓ Logical Consistency
- ✓ Edge Matching
- ✓ Attribute Validity
- ✓ Datum and Projection
- ✓ Metadata
- ✓ FWS Coordination and Quality Control

National Wetlands Standards: Technical Guidance

“Data Collection Requirements and Procedures for Mapping Wetland, Deepwater and Related Habitats of the United States” published in 2009

(http://www.fws.gov/wetlands/_documents/gNSDI/DataCollectionRequirementsProcedures.pdf)

National Wetlands Mapping Standard Implementation Plan

FGDC requested an *Implementation Plan* for the wetlands standards after endorsing the mapping standard

- First Implementation Plan developed for any FGDC standard
- Dynamic document to be updated by the Wetlands Subcommittee of the FGDC as needed
- Published in January 2010
http://www.fws.gov/wetlands/_documents/gNSDI/DRAFTImplementationPlanFGDCWetlandsMappingStandard.pdf

Implementation Plan -- Key Issues

- Developing a forum to address ongoing technical challenges using existing partnerships
- Accelerating availability of data to update NWI
- Outreach/training related to standard requirements
- Building funding coalitions, identifying grant opportunities
- Using technical knowledge of wetland community to provide technical transfer
- Providing a framework to prioritize wetland mapping needs based on decision-making requirements

Role of Association of State Wetland Managers (ASWM) Identified in Implementation Plan

- provide on-going support for implementing new technologies used in wetland mapping, such as data collection procedures;
- assist in the development of online and instructor-lead training programs;
- add discussion group capabilities to address technical mapping challenges;
- foster coalitions that may purchase imagery;
- post maps of imagery status;
- publish case studies of applications that use the wetlands data; and
- help develop and provide a gateway to training opportunities.

Role of Wetland Mapping Consortium (WMC) Identified in Implementation Plan

- Fostering collaborations
- Providing on-going support for implementing new technologies
- Adding discussion group capabilities to address technical challenges
- Developing new applications to meet the needs of decision makers

In 2010 we also began a Maintenance Review of the FGDC National Wetlands Classification Standard (Cowardin et al 1979)

- *FGDC Standards are reviewed and updated on 5 year cycles*
- *Development of the Wetlands Mapping Standard lead to specific recommendations for corresponding updates to the Wetlands Classification Standard on which it relies.*
- *See more information online at FGDC. gov*
<http://www.fgdc.gov/standards/projects/FGDC-standards-projects/maintenance-review-wetlands-classification-std>

Proposal for the Maintenance and Review of the National Wetland Classification Standard

FGDC Directive # 9 Maintenance and Support directs the maintenance authority of an endorsed standard to evaluate the standard at least every five years.

Objective:

- Produce a newly edited and updated version
- formatted to be consistent with recently endorsed standards,
- reflecting advances in the science and
- recommendations endorsed as part of the mapping standard development and supported by the National Wetlands Inventory's *Data Collection Requirements and Procedures for Mapping Wetland, Deepwater, and Related Habitats of the United States*

SCOPE

of the Maintenance and Review of the National Wetland Classification Standard

- **There will be no changes to the definition of wetlands or regulatory jurisdiction.**
- **There will not be any changes in the hierarchical structure of the classification system nor changes to the top three levels of the hierarchy including System, Subsystem, and Class. *This means that there will not be any changes in the categories of wetlands that have been used to produce in the four reports to Congress of the status and trends in the conterminous United States. This continuity will also provide EPA's National Wetland Condition Assessment wetlands categories that have been monitored for 60 years.***

Classification Standard Maintenance - Project Time Line and Resources

Proposal Stage

Step 1 Develop Proposal

January 2010

Wetlands Subcommittee

Step 2 Review Proposal

February 2010

Standards Working Group

Project Stage

Step 3 Set Up Project

March 2010

Wetlands Subcommittee

Draft Stage

Step 4 Produce Working Draft

March – December 2010

Wetlands Subcommittee

Step 5 Review Working Draft

January 2011

Standards Working Group

Review Stage

Step 6 Review and Evaluate

February 2011

Standards Working Group

Step 7 Act on Recommendation

March 2011

FGDC Coordination Group

Step 8 Coordinate Public Review

April – June 2011

FGDC Secretariat

Step 9 Respond to Comments

July – September 2011

Wetlands Subcommittee

Step 10 Evaluate Responsiveness

October – November 2011

Standards Working Group

Step 11 Act on Recommendation

December 2011

FGDC Coordination Group

Final Stage

Step 12 FGDC Steering Committee

January – March 2011

FGDC Steering Committee

Endorsement Review

Questions

- Can you provide **INPUT** for the update of the Classification Standard (Cowardin et al)?
 - ✓ Example photos (Cowardin et al contains 86 black & white photo plates illustrating classifications)
 - ✓ References/citations in Cowardin et al (now 30+ years old, pre-1979)

Proposed FWS Training Modules

- I. What is the National Wetlands Inventory?
- II. Wetland Definition Used in Mapping
- III. FGDC Wetlands Standards
- IV. Process and Getting Started with Wetland Mapping
 - Required forms/reports/metadata
- V. Imagery Interpretation
 - Tips and Tricks for wetland mapping

ASWM Proposed Mapping Training Products

- Online Training Module Series (10-30 minutes each)
- Instructor-lead Classes (1-2 days)
- Supplements (References, Guides, Quick-Starts)
- Demo Video Clips
- Website Resources (Course Descriptions, Schedules, Registration, Links)
- Testing
- Certificates, Certifications, and/or CEU credits
- Maintenance Funding

Multiple Audiences with Differing Roles and Information Needs

- **Executive and Managerial Staff**
 - ❖ Responsible for budgets, resource allocation, and workflow.
- **Data Users (biologists, wetland scientists, analysts, etc.)**
 - ❖ Active in data collection, mapping and development of data products, and data analysis.
 - ❖ Need to understand data sources, capabilities, and limitations.
- **GIS Technicians and Information Technology (IT) Staff**
 - ❖ Need detailed information on procedures and technical specifications for data collection, data entry, quality control, and product delivery.
- **Others???**



[Glossary](#)

[Learn More](#)

[Course Menu](#)



Wetland Mapping Training

Module 1: What is the National Wetlands Inventory?

Module 2: National Wetland Classification Standard

Part 1: Definition of Wetlands

Part 2: Wetlands Classification System (Cowardin et al)

Part 3:

Part 4:

Part 5:

Module 3: National Wetland Mapping Standard

Part 1: Introduction (Objectives, Scope, Applicability)

Part 2: Standard requirements and quality components

Module 4: Image Interpretation of Wetlands

Module 5: How to get started

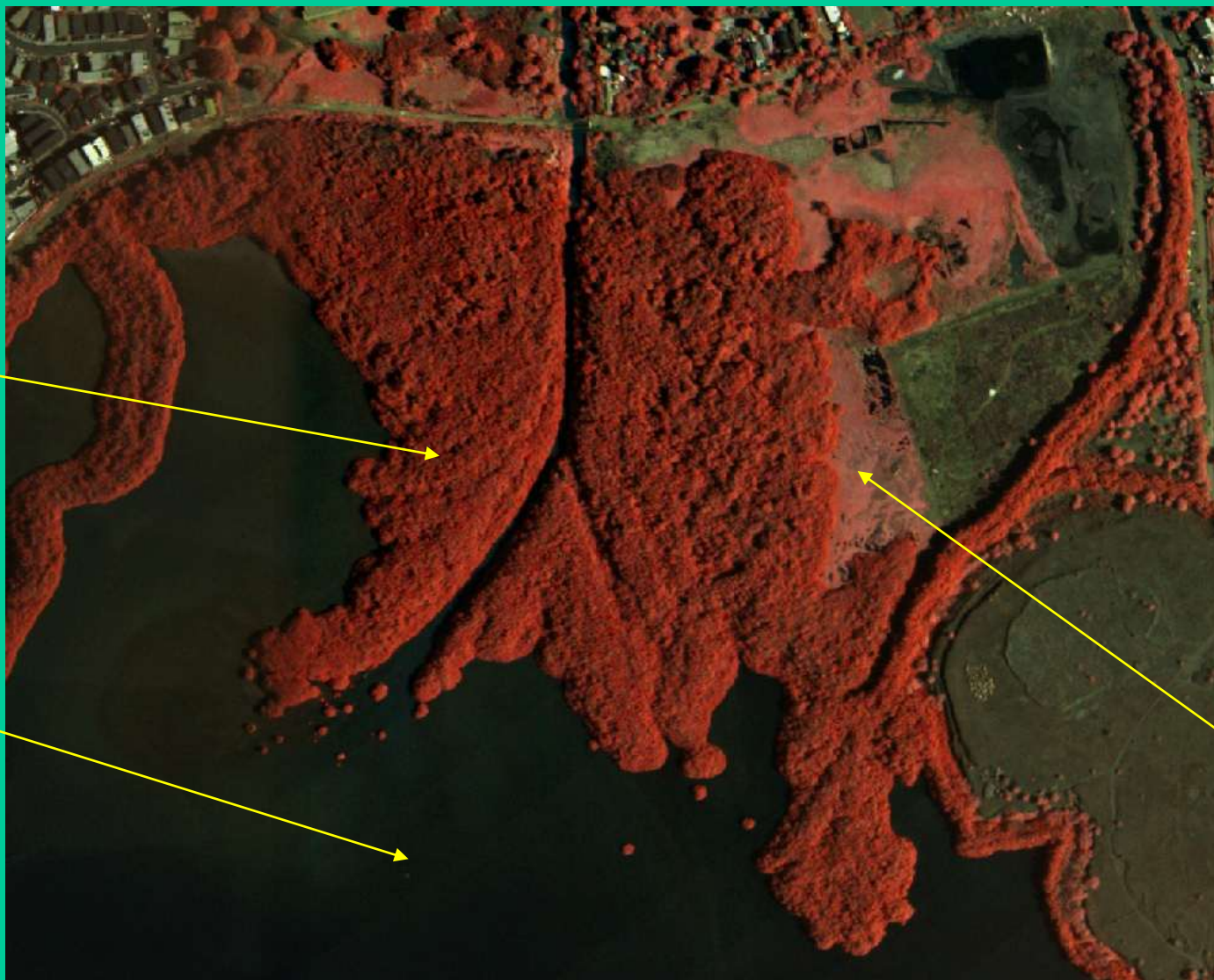
This training module is part of a series to assist our cooperators and data contributors in successfully submitting standards-compliant wetlands geospatial data to the National Wetlands Inventory (NWI), U.S. Fish and Wildlife Service.

These data become part of the NWI-managed Wetlands Layer of the National Spatial Data Infrastructure.



National Wetlands Inventory

Estuarine Examples:



E2F03N

E1UBL

E2EM1N

Pearl Harbor, Oahu, Hawaii
Rhizophora mangle (red mangrove)



Image Interpretation

Principles of Object Recognition: **Tone**



Irrigated crops and wetlands show a brighter, richer tone.

Non-irrigated pasture and grasslands are duller.

Tone (also called hue or color) refers to the relative brightness of color of elements on a photograph.

Other Proposed FWS Training Modules

- Riparian standard
- Using the Verification tool
- Using the new Wetlands Mapper
- **What would you like to see?**

Training Recommendations

Input Needed:

- Target Audiences, Roles & Training Needs?
- Educational/Reference Products and Resources?
- Maintenance Funding Sources?
- Volunteers for Training Materials Development?

Question: How can this benefit you?

- ✓ Could your project benefit from using Wetland Mapping Consortium (WMC) resources (Scholar Site)?
- ✓ Would you benefit from **TRAINING** in mapping and classifying wetlands? What level and form of training would be most helpful to you?
- ✓ Can you provide **INPUT** for the update of example images and references/citations in the Classification Standard (Cowardin et al)?

SAVE THE DATES!

WMC Organizational Meetings to be held at

SWS SAC/MAC Joint Chapter Meeting:

The South Atlantic and Mid-Atlantic Chapters of the Society of Wetland Scientists joint chapter meeting, ***Wetlands, Water Resources, and People*** to be held **March 7-8, 2011** at the USGS Headquarters in Reston, Virginia.



**State/Tribal/Federal
Coordination Meeting**

March 22-24, 2011

**National Conservation Training Center
Shepherdstown, WV**

QUESTIONS ?



Jane Awl

Association of State Wetland Managers

<http://www.aswm.org/swp/mapping/>

jane.awl@earthlink.net