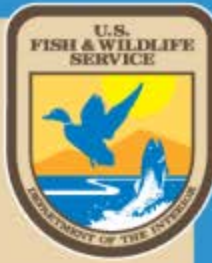


Updated Data Collection Procedures and Requirements for Meeting FGDC Wetland Mapping Standards

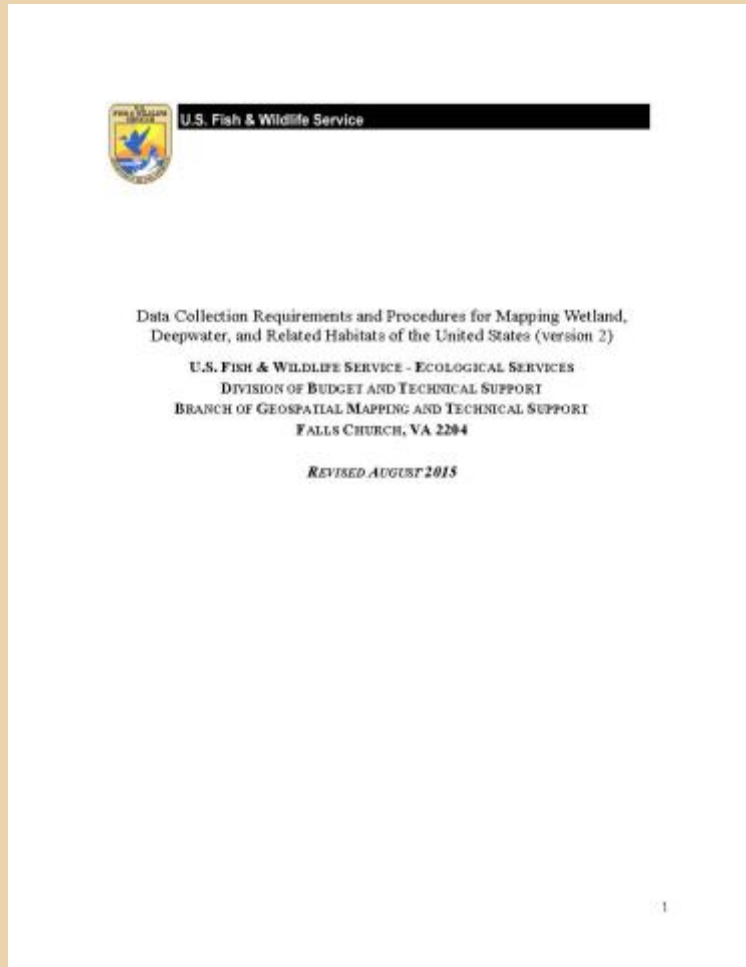
Rusty Griffin –National Coordinator
for Quality Assurance and Consistency
USFWS National Standards and Support Team
Madison, WI



Wetland Mapping Training

- <http://www.aswm.org/wetland-science/wetlands-one-stop-mapping/5041-wetland-mapping-training>
- Past webinars
 - Interaction with NWI
 - Standards
 - Cowardin 2.0
 - Data Requirements/Mapping Conventions

Data Collection Requirements and Procedures for Mapping Wetland, Deepwater, and Related Habitats of the United States (version 2)



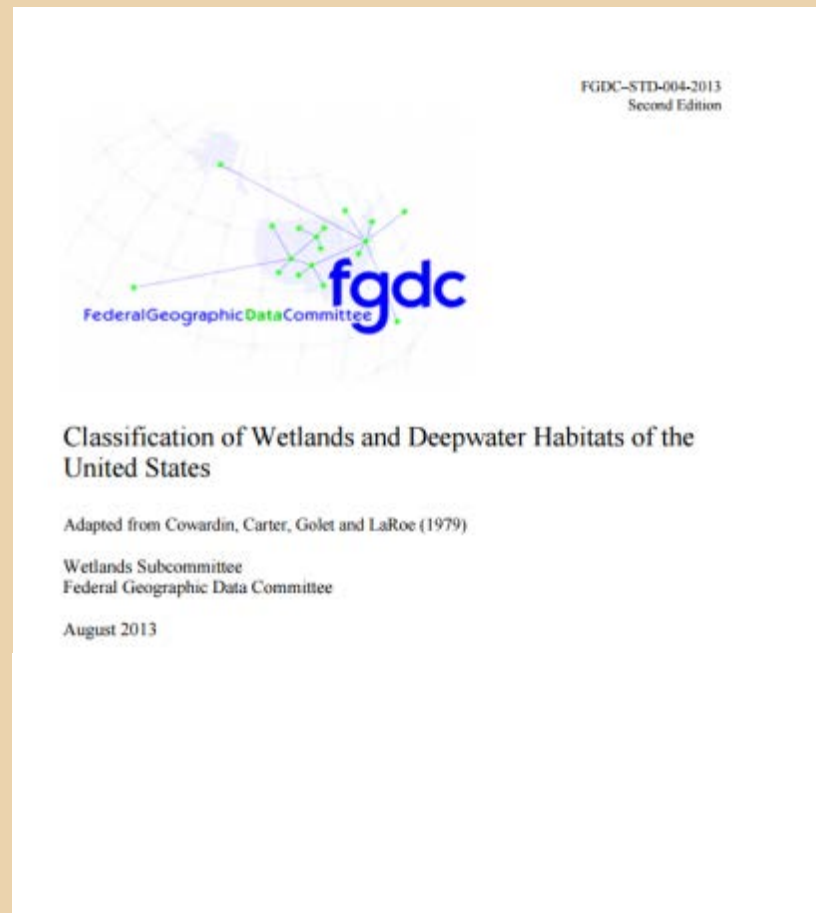
- Updated August 2015
 - Mapping Conventions
 - Mapping Procedures
 - Implementation of Mapping/Classification Standards
 - QA/QC Procedures
 - Technical Instructions

<http://www.fws.gov/wetlands/Data/Contributed-Data.html>



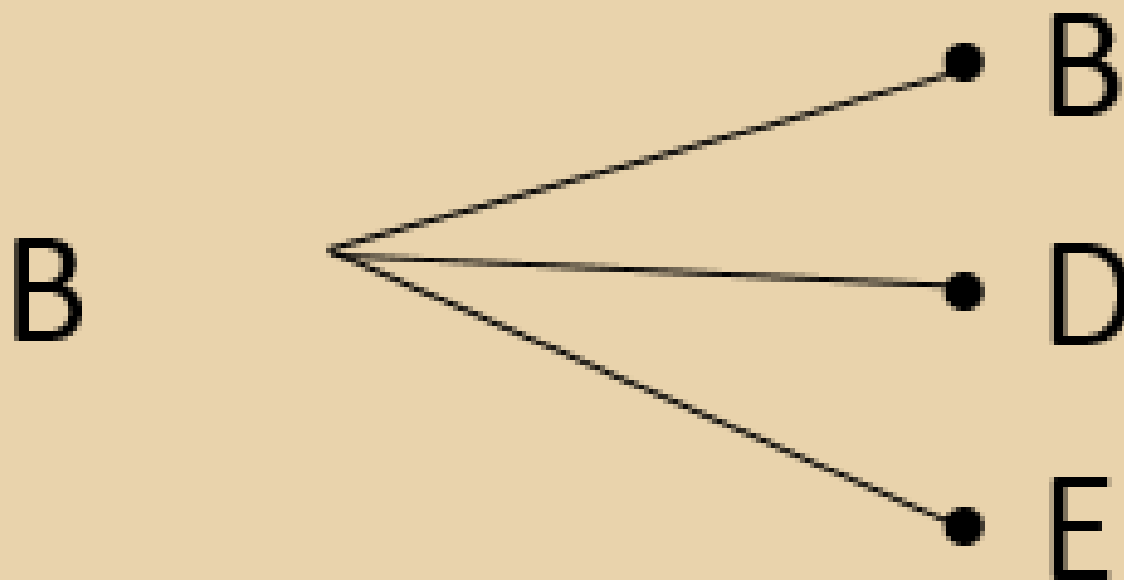
Major Revisions

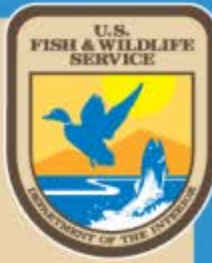
- Cowardin 2.0 additions included
 - New water regimes and special modifier
 - Assigned mapping codes
- Arc 10.x update reflected
 - Use of automated QA/QC tool





Saturated Water Regimes





Seasonally Saturated – (B)

- **Definition:**

- The substrate is saturated at or near the surface for extended periods during the growing season, but unsaturated conditions prevail by the end of the season in most years. Surface water is typically absent, but may occur for a few days after heavy rain and upland runoff.

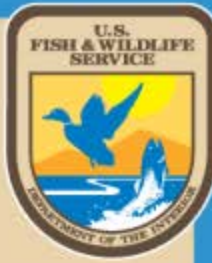




Continuously Saturated – (D)



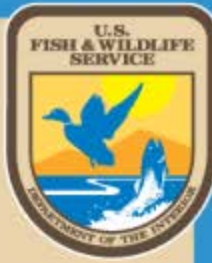
- Definition
 - The substrate is saturated at or near the surface throughout the year in all, or most, years. Widespread surface inundation is rare, but water may be present in shallow depressions that intersect the groundwater table, particularly on a floating peat mat.



Seasonally Flooded-Saturated – (E)



- **Definition**
- Surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface.



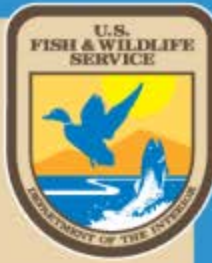
Regularly Flooded / Tidal Fresh – (Q)

- **Definition**

- Tides alternately flood and expose the substrate daily for variable periods (from a few weeks to several months) during the growing season. This Modifier is used for Riverine and Lacustrine habitats.



Photo Courtesy of SWCA, Portland, Oregon.



Managed – (m)



- **Definition**

- This modifier is used to identify wetlands where water inputs are controlled to achieve a specific water regime or habitat type. Water control structures in combination with dikes and impoundments are common.



QA/QC Tools

- Arc 10 format is similar to previous versions
- Collection procedures have been updated to reflect this most recent release.
- *Incorrect Wetland Codes* tool incorporates new water regime restrictions by sub-class

Name	Type
Adjacent Wetlands	Toolbox Tool
Incorrect Wetland Codes	Toolbox Tool
Lake and Pond Size	Toolbox Tool
Overlapping Wetlands	Toolbox Tool
QAQC Code Reset	Toolbox Tool
QAQC_Summary	Toolbox Tool
Silver Uplands	Toolbox Tool
Silver Wetlands	Toolbox Tool
Wetland Type Calc	Toolbox Tool

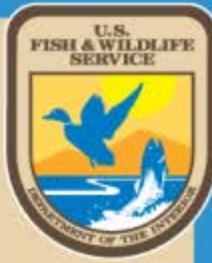


Water Regime Restrictions

NWI Water Regime Restriction Table

Class/Subclass	Code	Marine		Estuarine		Riverine				Lacustrine		Palustrine			
		Subtidal M1	Intertidal M2	Subtidal E1	Intertidal E2	Tidal R1	Lower Perennial R2	Upper Perennial R3	Intermittent R4	Limnetic L1	Littoral L2	P			
ROCK BOTTOM	RB	L		L		TV		FGH		V	GHK	TV	FGHK	FGHK	
Bedrock	RB1	L		L		TV		FGH		V	GHK	TV	FGHK	FGHK	
Rubble	RB2	L		L		TV		FGH		V	GHK	TV	FGHK	FGHK	
UNCONSOLIDATED BOTTOM	UB	L		L		TV	FGH	FGH		V	GHK	TV	FGHK	TV	FGHK
Cobble-Gravel	UB1	L		L		TV	FGH	FGH		V	GHK	TV	FGHK	TV	FGHK
Sand	UB2	L		L		TV	FGH	FGH		V	GHK	TV	FGHK	TV	FGHK
Mud	UB3	L		L		TV	FGH	FGH		V	GHK	TV	FGHK	TV	FGHK
Organic	UB4			L		TV	FGH			V	GHK	TV	FGHK	TV	FGHK
AQUATIC BED	AB	L	MN	L	MN	QTV	CFGH	CFGH		V	GHK	QTV	CFGHK	RTV	CFGHK
Algal	AB1	L	MN	L	MN	TV	FGH	FGH		V	GHK	TV	FGHK	TV	FGHK
Aquatic Moss	AB2					TV	FGH	FGH		V	GHK	TV	FGHK	TV	FGHK
Rooted Vascular	AB3	L	M	L	M	QTV	CFGH	CFGH		V	GHK	QTV	CFGHK	RTV	CFGHK
Floating Vascular	AB4			L	MN	QTV	CFGH	CFGH		V	GHK	QTV	CFGHK	RTV	CFGHK
REEF	RF	L	MN	L	MN										
Coral	RF1	L	MN												
Mollusk	RF2			L	MN										
Worm	RF3	L	MN	L	MN										
STREAMBED	SB				MNP	Q								ACJ	
Bedrock	SB1				MNP	Q								ACJ	
Rubble	SB2				MNP	Q								ACJ	
Cobble-Gravel	SB3				MNP	Q								ACJ	
Sand	SB4				MNP	Q								ACJ	
Mud	SB5				MNP	Q								ACJ	
Organic	SB6				MNP	Q								C	
Vegetated	SB7				MNP	Q								ACJ	
ROCKY SHORE	RS		MNP		MNP	Q	AC	AC				Q	ACJK		
Bedrock	RS1		MNP		MNP	Q	AC	AC				Q	ACJK		
Rubble	RS2		MNP		MNP	Q	AC	AC				Q	ACJK		
UNCONSOLIDATED SHORE	US		MNP		MNP	Q	ACEJ	ACEJ				Q	ACEJK	RS	ACEJK
Cobble-Gravel	US1		MNP		MNP	Q	ACJ	ACJ				Q	ACJK	RS	ACJK
Sand	US2		MNP		MNP	Q	ACJ	ACJ				Q	ACJK	RS	ACJK
Mud	US3		MNP		MNP	Q	ACJ	ACJ				Q	ACJK	RS	ACJK
Organic	US4		MNP		MNP	Q	E	E				Q	E		E
Vegetated	US5		MNP		MNP	Q	ACJ	ACJ				Q	ACJK		ACJK

Saltwater Tidal • BROWN Water Regimes, Freshwater Tidal • BLUE Water Regimes; Nontidal • RED Water Regimes.



Major Restrictions

- Purpose is to provide guidance to increase data quality
- Early version created restrictions based on class
- Each new restriction was highly contested.
 - Frank Golet, Ralph Tiner, Bill Wilen, Rusty Griffin
- Restricted Codes:
 - PFO_J
 - FO5 and SS5
 - H water regime
 - Cleaned up many tidal and fresh water tidal combinations



Coding Chart



MODIFIERS						
In order to more adequately describe the wetland and deepwater habitats, one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy.						
Water Regime			Special Modifiers	Water Chemistry		Soil
Nontidal	Saltwater Tidal	Freshwater Tidal		Salinity	pH Modifiers for Fresh Water	
A Temporarily Flooded	L Subtidal	S Temporarily Flooded-Fresh Tidal	b Beaver	1 Hyperhaline / Hypersaline	a Acid	g Organic
B Seasonally Saturated	M Irregularly Exposed	Q Regularly Flooded-Fresh Tidal	d Partly Drained/Ditched	2 Euhaline / Eusaline	t Circumneutral	n Mineral
C Seasonally Flooded	N Regularly Flooded	R Seasonally Flooded-Fresh Tidal	f Farmed	3 Mixohaline / Mixosaline (Brackish)	i Alkaline	
D Continuously Saturated	P Irregularly Flooded	T Semipermanently Flooded-Fresh Tidal	m Managed	4 Polyhaline		
E Seasonally Flooded / Saturated		V Permanently Flooded-Fresh Tidal	h Diked/Impounded	5 Mesohaline		
F Semipermanently Flooded			r Artificial Substrate	6 Oligohaline		
G Intermittently Exposed			s Spoil	0 Fresh		
H Permanently Flooded			x Excavated			
J Intermittently Flooded						
K Artificially Flooded						



- Left to Right
- Top to Bottom
- Allowed one water regime and one letter from each column

PEM1Cm2in



Summary

- Mapping Conventions have been updated
 - Cowardin 2.0
 - ArcGIS 10.x
- These changes are relatively small, but very meaningful
- Major combination restrictions to:
 - Dead woody subclasses
 - J water regime
 - H water regime
 - Tidal water regimes
- Seasonally Saturated (B)
- Continuously Saturated (D)
- Seasonally Flooded/Saturated (E)
- Regularly Flooded Fresh Tidal (Q)
- Managed modifier (m)



Questions?

