National Wetlands Condition Assessment (NWCA)

EPA w/ NRCS Assistance

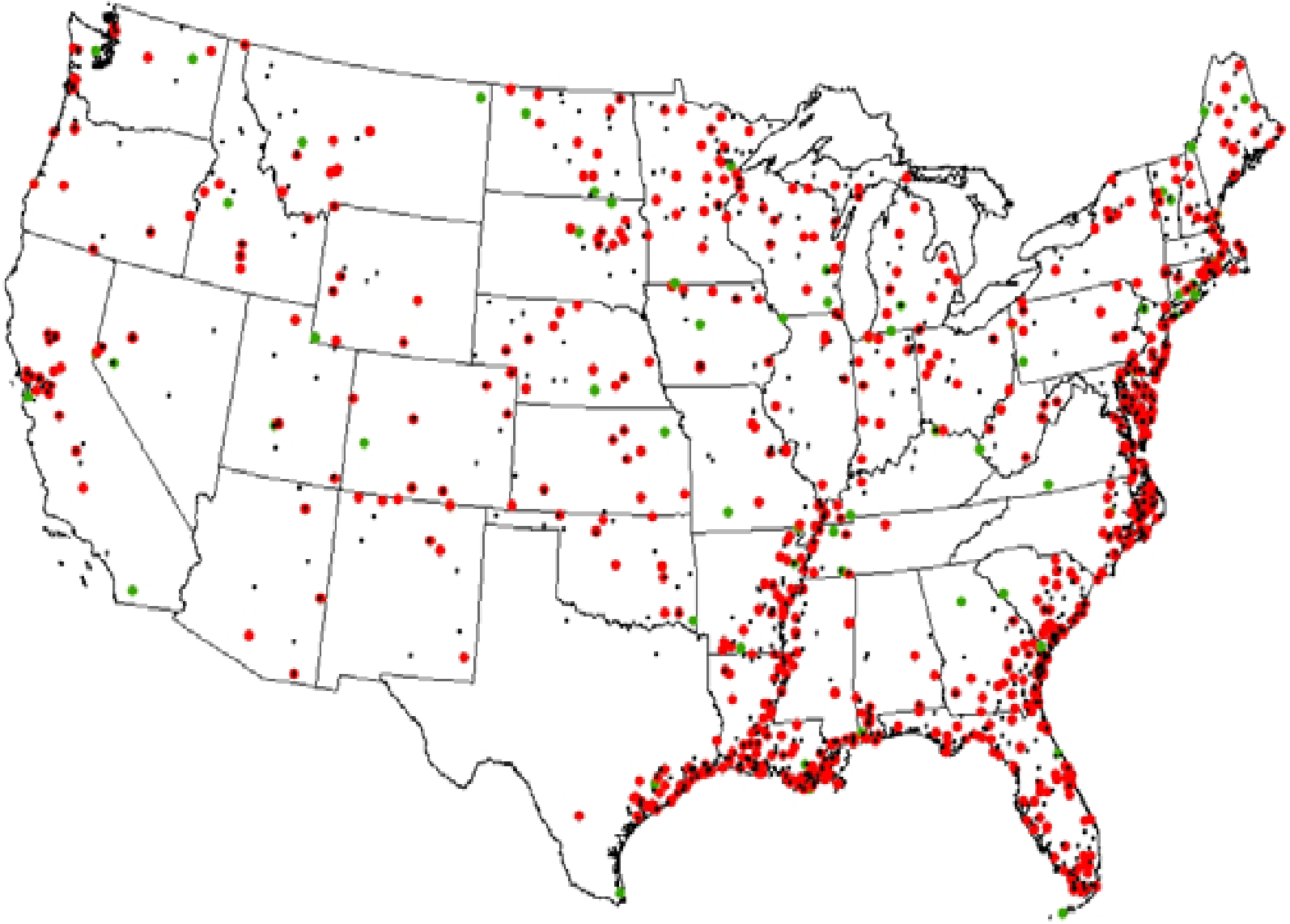
What is the National Wetland Condition Assessment (NWCA)?

- The NWCA is a statistical survey of the quality of

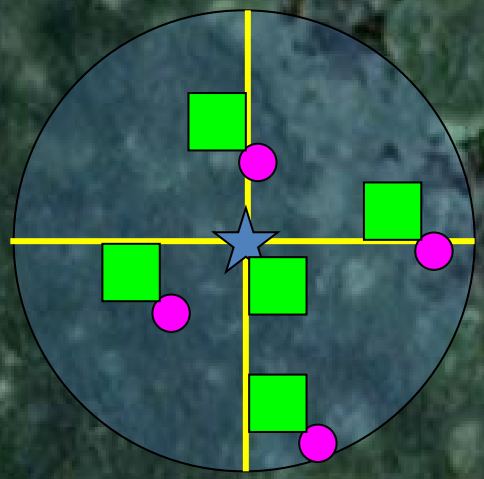
our Nation's wetlands. Designed to:

- Determine the ecological integrity of wetlands at regional and national scales.
- Build state and tribal capacity for monitoring and analyses.
- Promote collaboration across jurisdictional boundaries.
- Achieve a robust, statistically-valid set of wetland data.
- Develop baseline information to evaluate progress.

NWCA Site Locations



Standard AA Layout



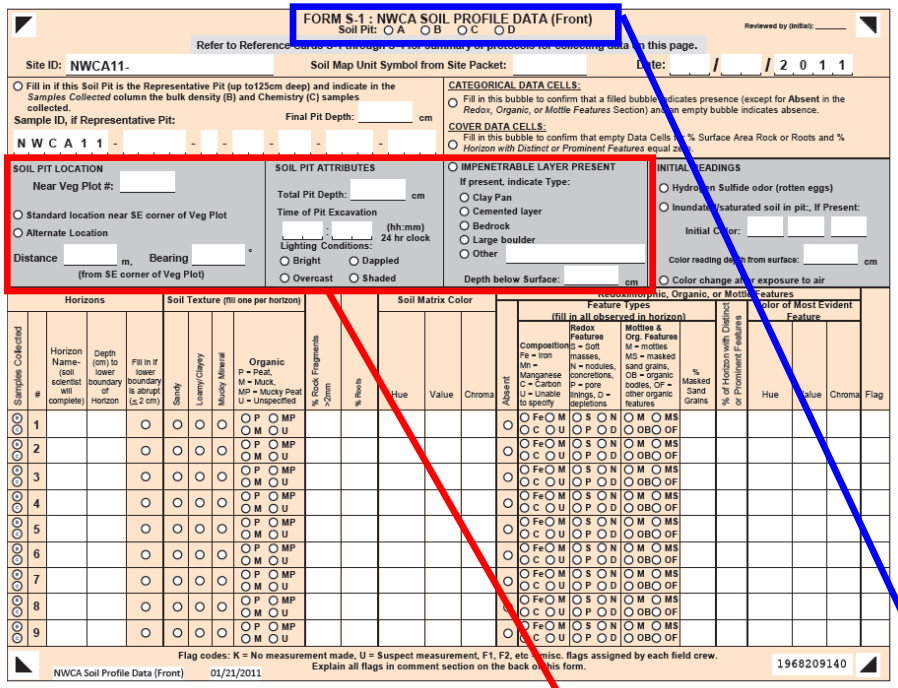
- Soil Pits are placed just off the SE corner of the 4 Veg Plots furthest from the CENTER.
- One will be chosen as the *Representative Soil Pit*

Special Tools for Difficult Soils

Form S-1 (Front)

4 copies of Form S-1 are used per site.

(one per soil pit)


FORM S-1 : NWCA SOIL PROFILE DATA (Front)
Soil Pit: ○ A ○ B ○ C ○ D

Reviewed by (Initial): _____

Refer to Reference Guide S-1 through S-4 for summary of protocols for collecting data on this page.

Site ID: NWCA11- Soil Map Unit Symbol from Site Packet: Date: / / 2011

○ Fill in if this Soil Pit is the Representative Pit (up to125cm deep) and indicate in the *Samples Collected* column the bulk density (B) and Chemistry (C) samples collected.

Sample ID, if Representative Pit: NWCA11-

Final Pit Depth: cm

CATEGORICAL DATA CELLS:
○ Fill in this bubble to confirm that a filled bubble indicates presence (except for **Absent** in the *Redox, Organic, or Mottle Features* Section) and an empty bubble indicates absence.

COVER DATA CELLS:
○ Fill in this bubble to confirm that empty Data Cells in % Surface Area Rock or Roots and % *Horizon with Distinct or Prominent Features* equal zero.

SOIL PIT LOCATION
Near Veg Plot #:
○ Standard location near SE corner of Veg Plot
○ Alternate Location
Distance m, Bearing °
(from SE corner of Veg Plot)

SOIL PIT ATTRIBUTES
Total Pit Depth: cm
Time of Pit Excavation : (hh:mm) 24 hr clock
Lighting Conditions: ○ Bright ○ Dappled ○ Overcast ○ Shaded

○ **IMPENETRABLE LAYER PRESENT**
If present, indicate Type:
○ Clay Pan
○ Cemented layer
○ Bedrock
○ Large boulder
○ Other
Depth below Surface: cm

INITIAL READINGS
○ Hydrogen Sulfide odor (rotten eggs)
○ Inundated/saturated soil in pit:, If Present:
Initial Color:
Color reading depth from surface: cm
○ Color change after exposure to air

Horizons				Soil Texture (fill one per horizon)							Soil Matrix Color			Redoximorphic, Organic, or Mottle Features										
														Feature Types (fill in all observed in horizon)						Color of Most Evident Feature				
Samples Collected	#	Horizon Name- (soil scientist will complete)	Depth (cm) to lower boundary of Horizon	Fill in if lower boundary is abrupt (≤ 2 cm)	Sandy	Loamy/Clayey	Mucky Mineral	Organic P = Peat, M = Muck, MP = Mucky Peat U = Unspecified	% Rock Fragments >2mm	% Roots	Hue	Value	Chroma	Absent	Composition Fe = Iron Mn = Manganese C = Carbon U = Unable to specify	Redox Features S = Soft masses, N = nodules, concretions, P = pore linings, D = depletions	Mottles & Org. Features M = mottles MS = masked sand grains, OB = organic bodies, OF = other organic features	% Masked Sand Grains	% of Horizon with Distinct or Prominent Features	Hue	Value	Chroma	Flag
⊙	1			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	2			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	3			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	4			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	5			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	6			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	7			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	8			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						
⊙	9			○	○	○	○	○ P ○ MP ○ M ○ U						○	○ Fe ○ M ○ C ○ U	○ S ○ N ○ P ○ D	○ M ○ MS ○ OB ○ OF						

Flag codes: K = No measurement made, U = Suspect measurement, F1, F2, etc = misc. flags assigned by each field crew. Explain all flags in comment section on the back of this form.

NWCA Soil Profile Data (Front) 01/21/2011 1968209140

FORM S-1 : NWCA SOIL PROFILE DATA (Front)
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If present, indicate Type:
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○ Cemented layer
○ Bedrock
○ Large boulder
○ Other
Depth below Surface: cm

Soil Sample Collection

- Soil samples are collected from the Representative Soil Pit after profile description down to 60cm has been completed for all four soil pits.
- Description of the lower soil profile (60 to 125cm) of the Representative Pit is also necessary.
- Four types of soil samples are collected at the Representative Pit in the following order:
  - Isotope Samples – collected from the surface layer of three locations near the Representative Pit.
  - Sediment Enzyme Samples – collected from the surface layer of three locations near the Representative Pit.
  - Bulk Density (BD) Samples – collected from each horizon greater than 8cm thick down to 60cm.
  - Chemistry/Particle Size Density Analysis (PSDA) Samples (*Chemistry*) – collected from each horizon greater than 8cm thick down to 125cm.

Future Possibilities

- 900 + pedons sampled nationwide
- Map unit (soil series/phase identified)
- Broad suite of analyses obtained (NSSC lab)
- Vegetation, hydrology, and HGM also determined
- Needs:

A semi-quantitative classification system for

Hydric Soil Function

Possible Hydric Soil Function Themes

- Sediment trapping ability
- Nitrogen trapping and transformation potential
- Phosphorous retention
- Carbon sequestration potential
- Heavy metal trapping and sequestration
- Methyl Hg production potential