National Wetland Condition Assessment: Planning Progress to Date

AMAAB Meeting

April 1, 2009

Michael Scozzafava
Regina Poeske
EPA Wetlands Program

Outline

- Wetlands Information

- National Wetland Condition Assessment (NWCA) Goals

- Wetland Monitoring 1-2-3's

    - Level 1: Survey Design

    - Level 2: USA-RAM

    - Level 3: Biotic & Abiotic

- Reference Condition

- Plans for 2009-2010

NWCA Goals

1. Produce a national report that describes the ecological condition of the nation's wetlands

2. Help States and Tribes implement wetland monitoring and assessment programs

3. <u>Advance the science of wetlands monitoring and assessment</u>

Photo by Jim Newton

3-Level Approach

Level 1 Indicators - Landscape Assessment:

Use GIS and remote sensing to gain a **landscape view of watershed and wetland condition.** Typical indicators include wetland coverage (NWI), land use, and land cover.

Level 2 Indicators – Rapid Wetland Assessment:

Evaluate the **general condition of individual wetlands using relatively simple field indicators**. Akin to a physical habitat assessment for wetlands. Assessment can also be based on the characterization of stressors known to limit wetland services. (e.g. road crossings, tile drainage, ditching).

Level 3 Indicators – Intensive Site Assessment

Indicators requiring intensive field measurements. Often involves developing an index of biological integrity. Used to validate Level 1 or 2 indicators or diagnose the causes of wetland degradation.

- **Target Population**

  - All Wetlands – tidal and non-tidal and farmed, specifically wetted areas with rooted vegetation or shallow open water


Photo courtesy of Janet Nestlerode

Wetland Classes in NWCA

CLASSFICATION	COMMON NAME (eg.)
Estuarine Intertidal Emergents	Saltwater Marsh, Brackish Marsh
Estuarine Intertidal Shrub/Scrub	Mangrove Forest, Swamp Tupelo
Palustrine Forested	Bottomland Hardwoods, Pine Savannah, Cypress Swamps, Vernal Pools
Palustrine Shrub/Scrub	Bogs, Pocosins, Buttonbush Marsh, Bayberry Fen, Meadowsweet Marsh
Palustrine Emergents	Prairie Potholes, Freshwater Marsh, Fens, Seeps & Springs, Wet Meadows
Palustrine Unconsolidated Bottom/Palustrine Aquatic Bed	Open Water Ponds (Natural or Urban)
Palustrine farmed	*Rice paddies, 'wet' agricultural fields*

Status and Trends 2005 Plot Locations
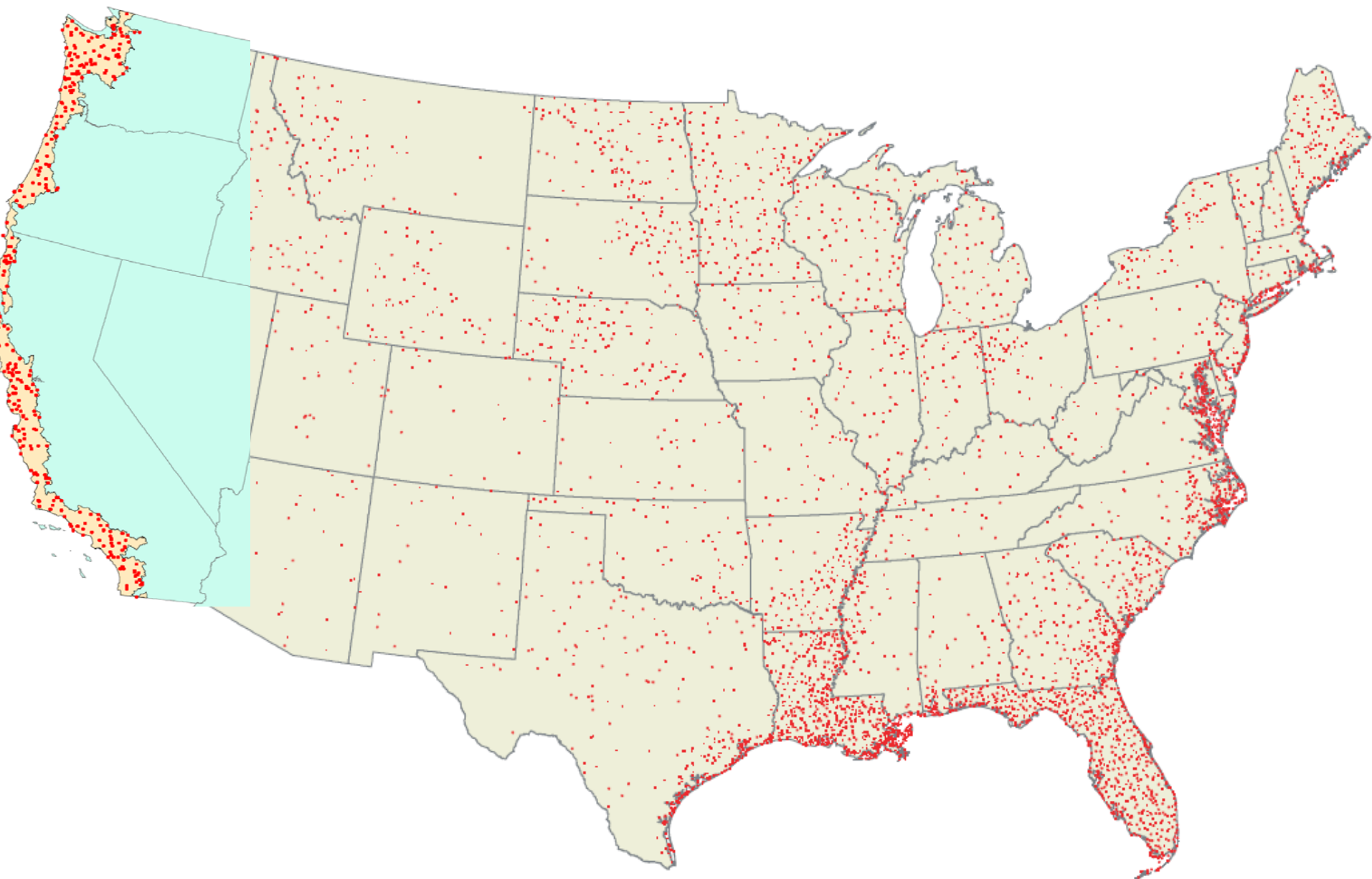
Level 2 – Rapid Assessment

- ## USA RAM under development
    - Use existing methods

- ## **Purpose 1:**
    - Wetland "structure" assessment (HGM condition)
    - ID stressors (ditching, buffer disturbance, etc.)

- ## **Purpose 2:**
    - Tech transfer to States and Tribes

Level 3 Indicators
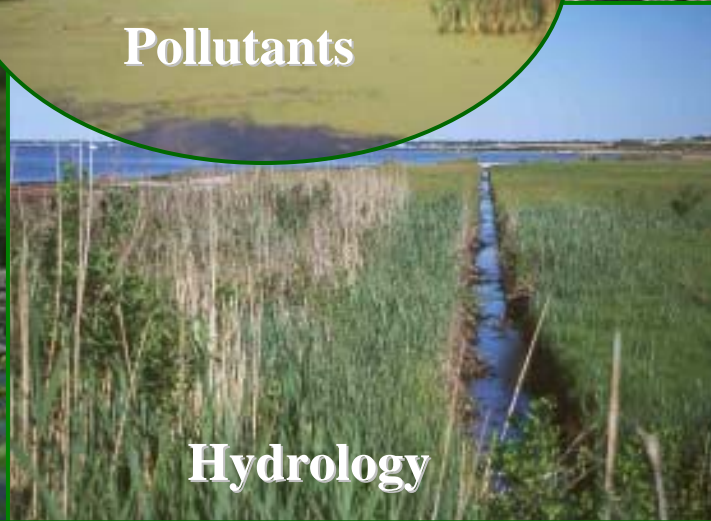
Fish

Algae

Macroinvertebrates

Plants

Amphibians

Pollutants

Birds

Hydrology

Soils

Candidate Indicators

Indicator Class	Details
Vegetation	Botanist needed
Soils	Non-soil scientist protocol
Hydrology	Inferred saturation and inundation
Algae	Soft algae and diatoms
~~Macroinvertebrates~~	Difficult to standardize field collection
Birds	Overlay existing data?
~~Fish~~	Need Water
Stressors	Includes Buffer Analysis
Water Chemistry	Where possible, limited parameters

Biological Indicators

- Plants
  - **Why:** Biological Integrity (VIBI, FQAI)
  - **How:** OH, MN, other state protocols
  - **What:**
    - Tailored to dominant vegetation
    - Community Composition
    - Vegetation Structure
- Algae
  - **Why:** Inferred nutrients, inferred hydrology, biological integrity
  - **How:** ME, MSU, NAWQA
  - **What:**
    - Soft Algae and Diatoms
    - Multi-Habitat Composite Sample
    - Quicker Response to Stressors

Photo courtesy of Janet Nestlerode

Abiotic Indicators

- Soils
    - **Why:** Pollutants, Inferred Hydrology, Geomorphic Condition
    - **How:** NRCS, NC State, NRSA
    - **What:**
        - Basic soil profile (auger)
        - Hydric Soil Field Indicators
        - Soil chemistry

- Water (*field method still TBD*)
    - **Why:** Pollutants, Hydrologic Condition
    - **How:** Pore Water Sample, Surface Water Probe
    - **What:**
        - Water Depth
        - Water Chemistry
        - Contaminants (?)

Photo courtesy of Janet Nestlerode

Reference Condition: Condition Based on Reference Standard

Inland Marsh

Timeline: 2009 - 2010

- **Winter/Spring 2009:** Reference Condition and Indicator Calibration Work Group Discussions

- **June 2009:** Technical Work Shop to finalize DRAFT field methods

- **Summer 2009:** Preliminary Methods Testing

- **September 2009:** Draft Final Methods and QAPP; Site Selection

- **2010**
  - Indicator Peer Review
  - Methods Testing
  - Select Candidate Reference Sites

Photo courtesy of Janet Nestlerode

State and Tribal Capacity

- Develop scalable methods and indicators

- Provide field training and equipment

- Encourage/support state or tribal intensification studies

- Share survey data, including reference data

- Develop plans for continued monitoring, post survey, to identify wetland condition trends through time

For More Information

- **WEBSITE:** www.epa.gov/wetlands/survey

- **EPA Office of Water**
  - Michael Scozzafava (scozzafava.michaele@epa.gov)
  - Chris Faulkner (faulkner.chris@epa.gov)
  - Gregg Serenbetz (serenbetz.gregg@epa.gov)
  - Lynda Hall (hall.lynda@epa.gov)
  - Susan Holdsworth (holdsworth.susan@epa.gov)

- **EPA Region 3**
  - Regina Poeske (poeske.regina@epa.gov)

- **EPA ORD**
  - Mary Kentula (kentula.mary@epa.gov)
  - Rich Sumner (sumner.richard@epa.gov)