



An Overview of the National Wetlands Condition Assessment

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PRESENTATION OUTLINE

- National Aquatic Resource Survey History
- National Wetland Condition Assessment (NWCA) Goals and Objectives
- NWCA Design
- Using the NWCA results

National Aquatic Resource Surveys

Independent reviews of Water Monitoring Programs highlight monitoring limitations*

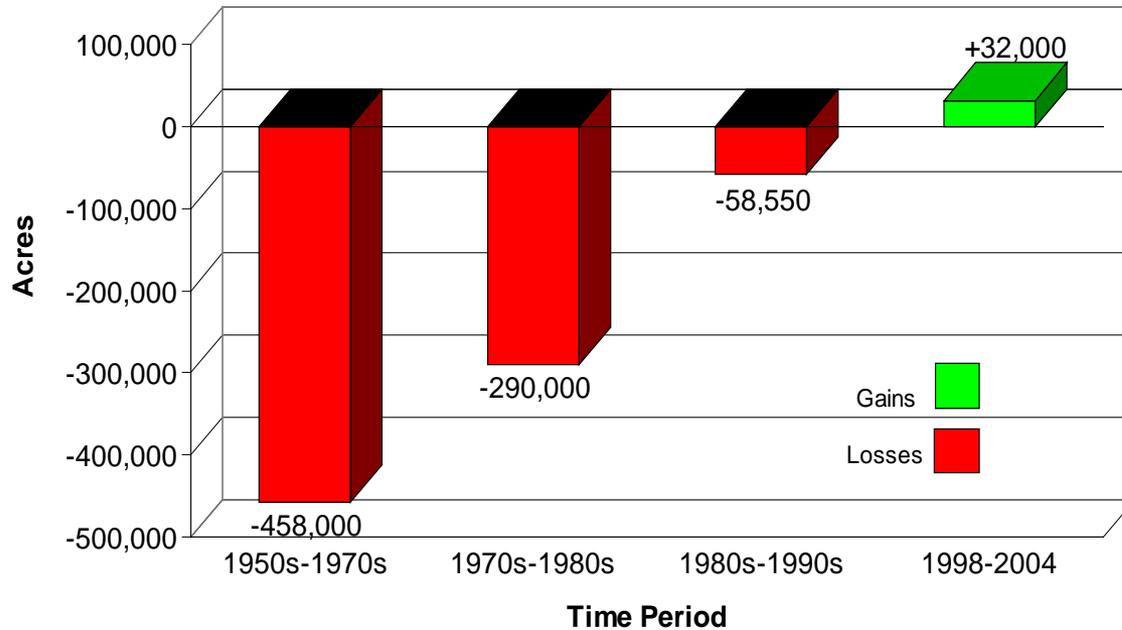
- Incomplete data for full range of needs
- Inability to support statistically-valid characterization of nation's waters, including wetlands.

*General Accounting Office (2000), National Research Council (2001), National Academy of Public Administration (2002) , Heinz Center Report (2002) Environmental Integrity Project, Flying Blind (2004)

What is the Condition of the Nation's Wetlands?

Existing sources of information do not provide a sufficient answer to this question.

Average Annual Net Loss and Gain Estimates for Wetlands in the Conterminous United States, 1954-2000



2004 CWA 305b Report

- 10 States reported
- 1.8 million acres
- 1.5% of the estimated 107 million acres in the conterminous United States

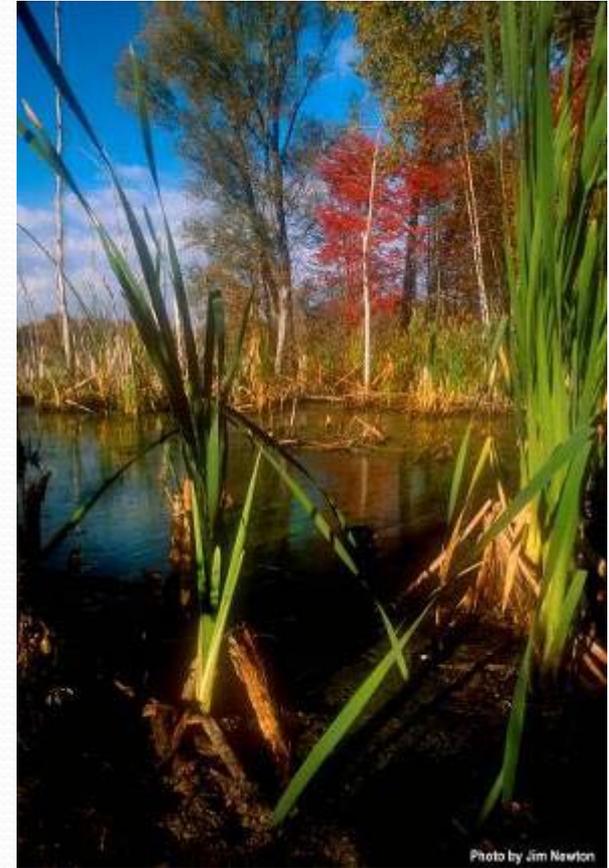
2005 FWS Wetland Status & Trends Report
(Trends in Wetland Acreage)

Partners and Planning Process

- National Wetlands Monitoring and Assessment Work Group (NWMAWG)
 - Peer-to-Peer information sharing for states; Planning the NWCA
 - Almost all States and some Tribes; FWS, NRCS, NOAA, NPS, USGS
- Process for State and Tribal Technical Feedback on NWCA
 - Straw Proposals for State Feedback via Webinar
 - Indicators, USA-RAM, FOM Comments, Reference Site Allocation, etc.
 - Targeted Workshops to Inform Technical Work
 - Indicators, Review of Field Methods
 - National Meetings for Decision-Making
 - Design, Finalize Indicator Types, Finalize Field Methods

National Wetlands Condition Assessment 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. Advance the science of wetlands monitoring and assessment.



NWCA Sampling Frame for Site Selection

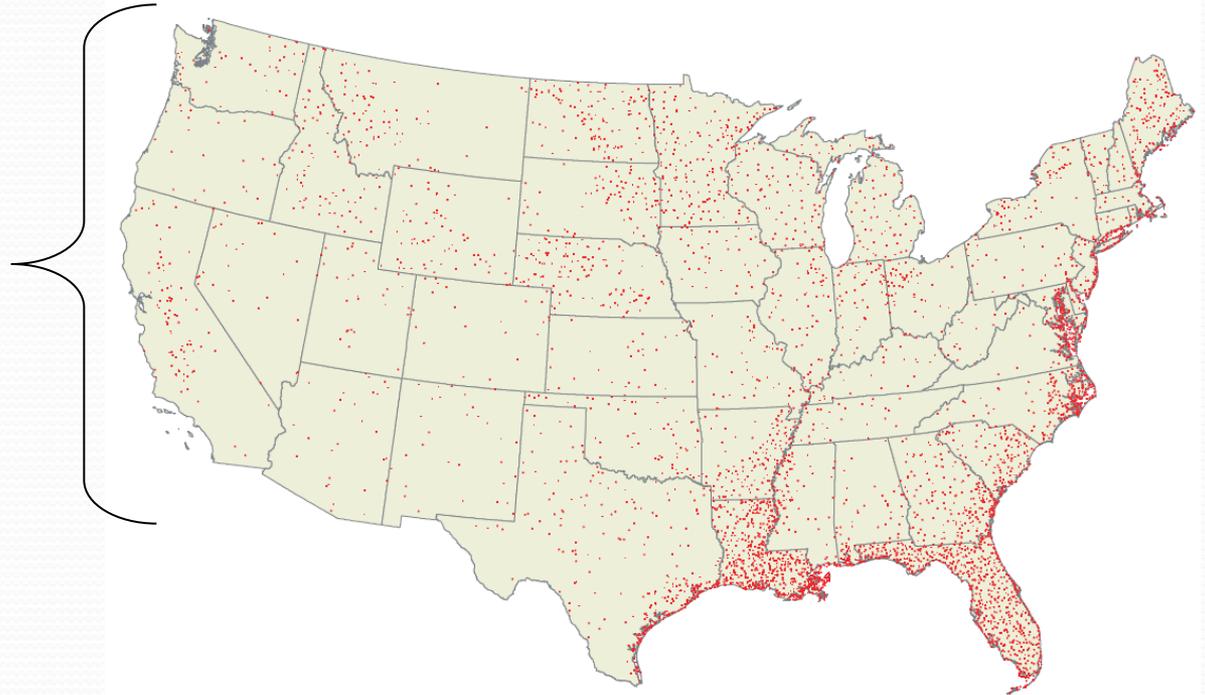
EPA is working in partnership with the U.S. Fish & Wildlife Service

Status and Trends Enhancements

New Pacific Coast Plots

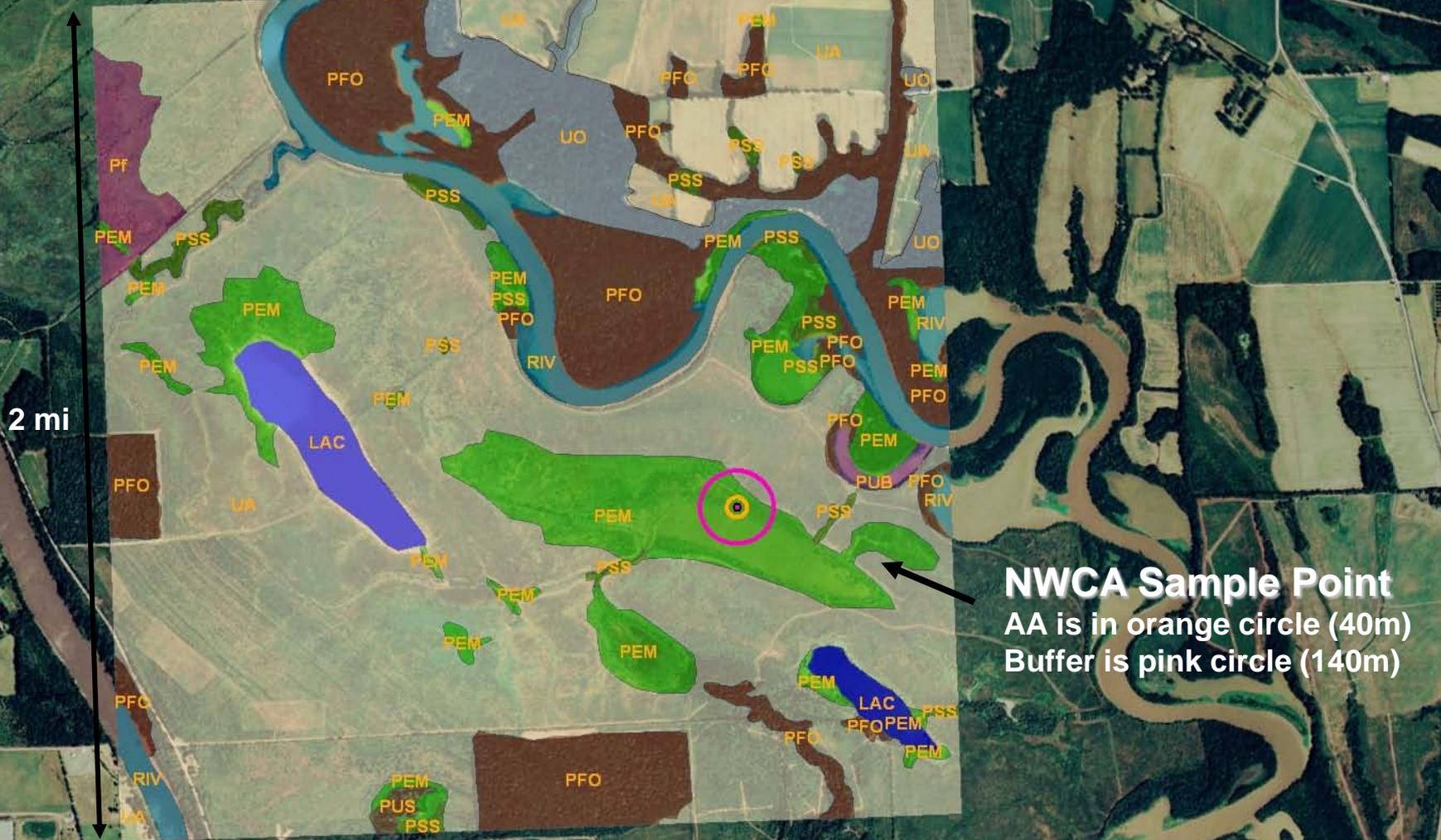


Status and Trends 2005 Plot Locations



* Each red dot is a 4 square mile plot that includes mapped wetlands, deepwater, and uplands.

Fish and Wildlife Service Status and Trends Plot (with coded wetland attributes)



2 mi

NWCA Sample Point
AA is in orange circle (40m)
Buffer is pink circle (140m)

Target Population

All wetlands of the conterminous U.S. including tidal and non-tidal wetted areas that have rooted vegetation and/or open water ≤ 1 meter in depth.

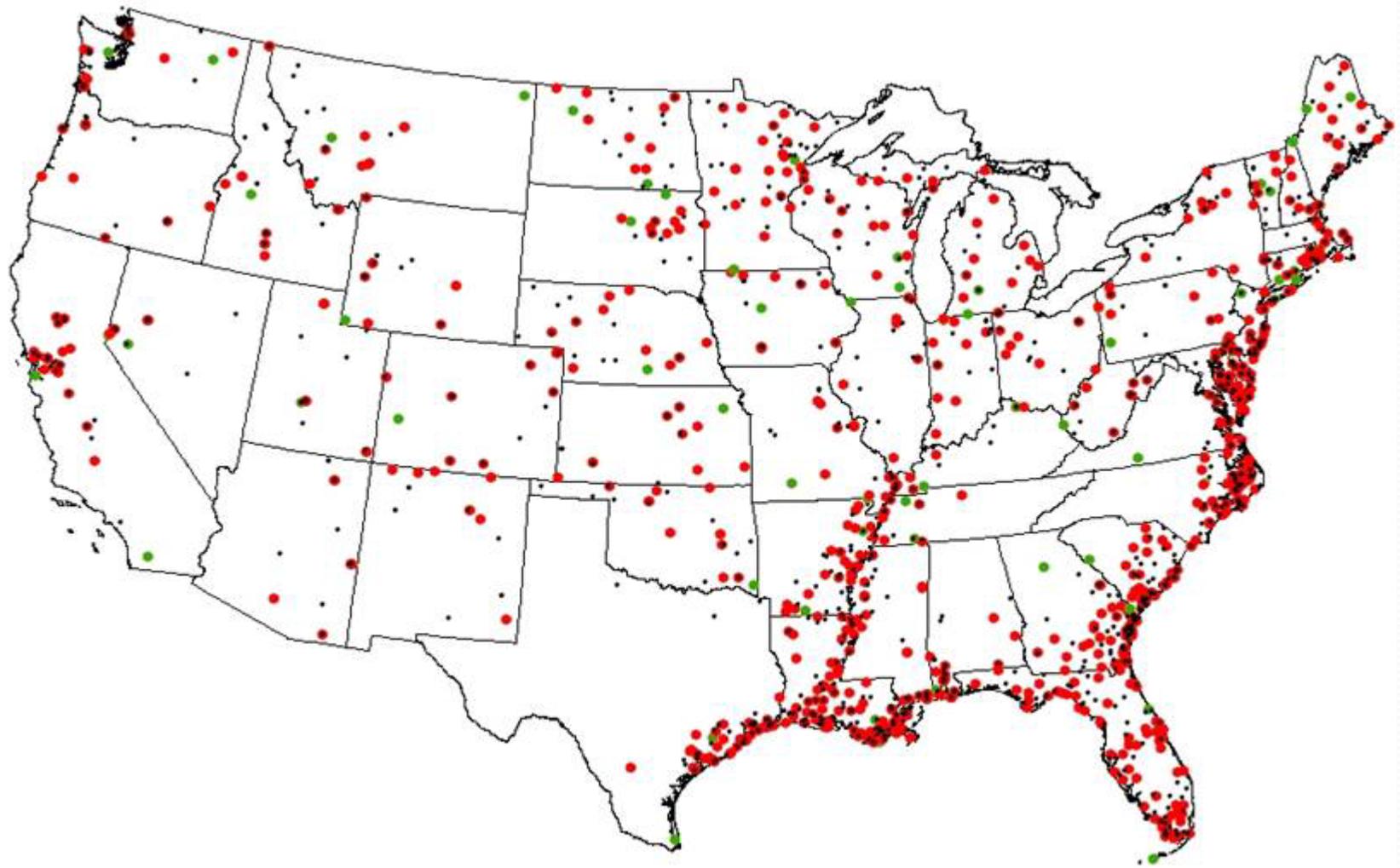
FWS Status and Trend Category	Common Examples	
Estuarine Intertidal Emergents	• Saltwater marsh	• Brackish marsh
Estuarine Intertidal Forested/Shrub	<ul style="list-style-type: none"> • Mangrove forest • Swamp tupelo 	
Palustrine Forested	<ul style="list-style-type: none"> • Bottomland hardwoods • Cypress swamps 	• Vernal pools
Palustrine Shrub	<ul style="list-style-type: none"> • Bogs • Pocosins 	<ul style="list-style-type: none"> • Bayberry fens • Natural cranberry bogs
Palustrine Emergents	<ul style="list-style-type: none"> • Lacustrine/Riverine fringe • Freshwater marsh 	<ul style="list-style-type: none"> • Fens • Wet Meadows
Palustrine Unconsolidated Bottom / Aquatic Bed (<i>some subcategories</i>)	<ul style="list-style-type: none"> • Depressional wetlands • Prairie potholes / kettles • Other natural ponds 	<ul style="list-style-type: none"> • Urban/residential ponds • Other created ponds with natural characteristics
Palustrine Farmed (<i>not currently in crop production</i>)	• Agricultural fields that currently have characteristics of natural wetlands	

Special Categories

Aquatic Resources that are technically in the sample frame, but have little to no characteristics of natural wetlands.

FWS Status and Trend Category	Common Examples
Palustrine Unconsolidated Bottom / Aquatic Bed (<i>some subcategories</i>)	<ul style="list-style-type: none">• Industrial ponds (cooling, waste, water retention)• Mining reclamation ponds• Agricultural ponds (livestock, waste, water retention)• Aquaculture ponds (fish farms, commercial cranberry)• Other created ponds without natural wetland features
Palustrine Farmed	<ul style="list-style-type: none">• Agricultural fields that are currently, or were very recently, planted with commercial crops

2011 NWCA Site Map

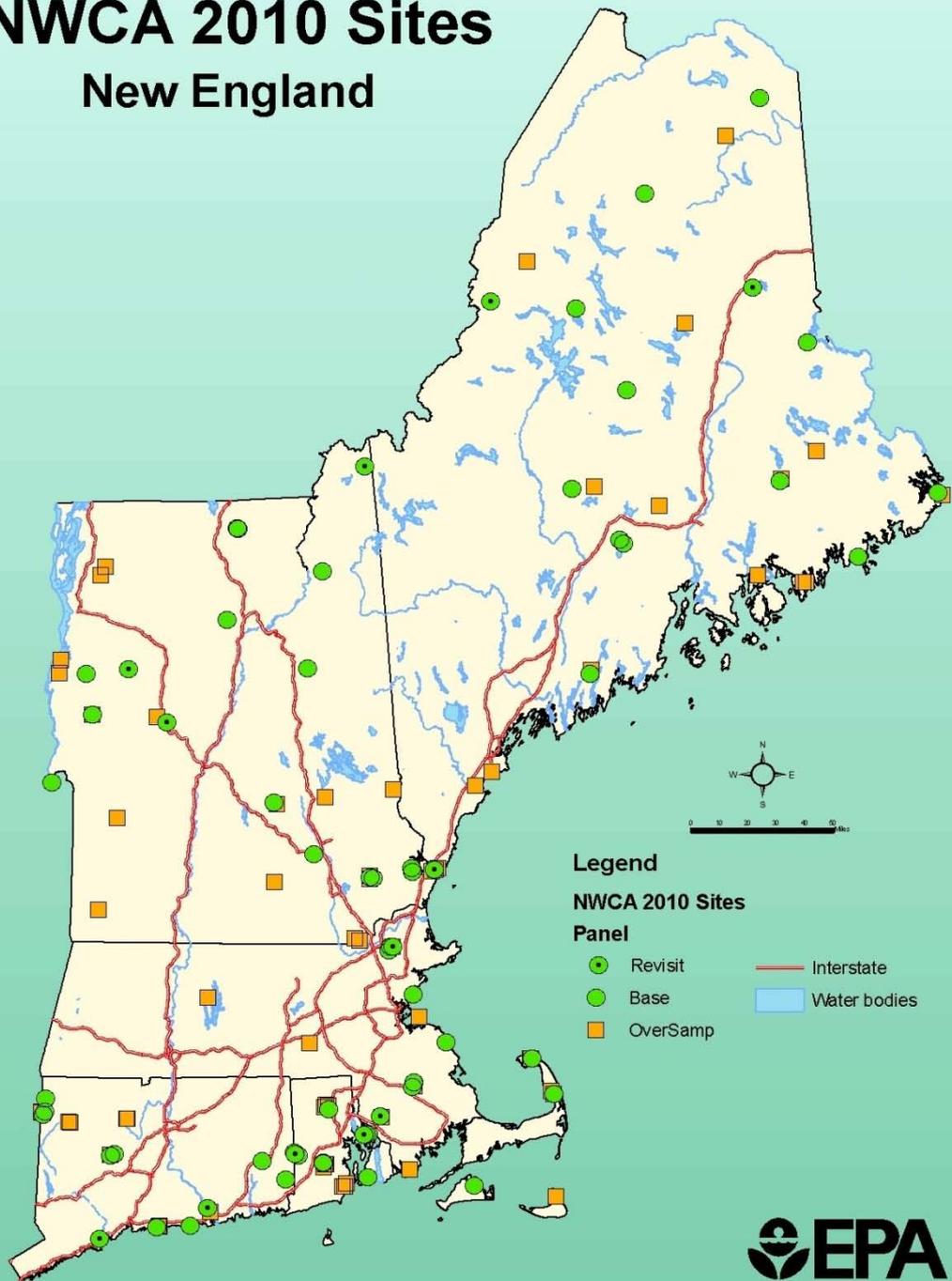


National Scale: Number of Sites by Wetland Type

FWS Status and Trend Category	Common Examples	Number of Sites
Estuarine Intertidal Emergent	■ Saltwater Marsh	127
Estuarine Intertidal Forested/Shrub Scrub	■ Mangrove Forest ■ Swamp Tupelo	127
Palustrine Forested	■ Bottomland Hardwoods ■ Cypress Swamps	133
Palustrine Shrub/Scrub	■ Bogs ■ Pocosins	130
Palustrine Emergent	■ Fringe Wetlands ■ Freshwater Marsh ■ Wet Meadows	127
Palustrine Unconsolidated Bottom / Aquatic Bed (<i>some subcategories</i>)	■ Prairie Potholes/Kettles ■ Natural Ponds ■ Created Ponds	130
Palustrine Farmed (<i>not currently in crop production</i>)	■ Agricultural Fields with natural wetland characteristics	126

NWCA 2010 Sites

New England

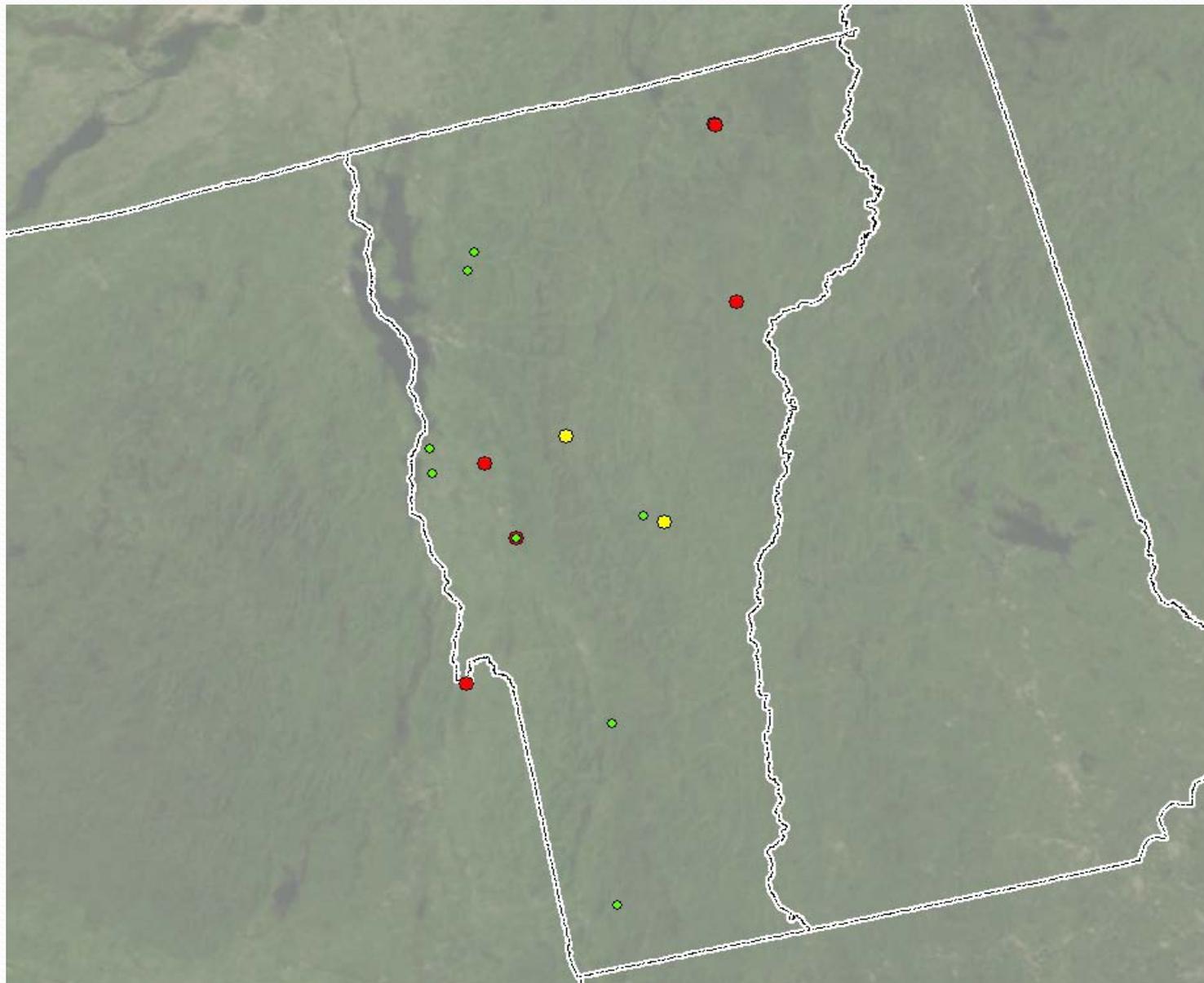


Regional Scale: Number of Sites by State & Target Population

STATE	NUMBER OF SITES
CT	11
MA	12
ME	14
NH	11
RI	10
VT	8

TARGET POPULATION	TOTAL
E2EM	13
E2ESS	4
PEM	9
PFO	15
PSS	14
PUBPAB	11

VT NWCA Base, Revisit & Oversample Sites



Biological Indicators for the NWCA

Indicator Type	Details
Vegetation	<ul style="list-style-type: none">■ Wetland vegetation is an expression of the underlying wetland structure, and responds to many physical, chemical a/o biological disturbances■ Collect species presence and abundance in 5 10x10m plots distributed across the Assessment Area
Algae	<ul style="list-style-type: none">■ Algae respond more rapidly than plants (e.g. excess nutrients)■ Algae can indicate recent wetland inundation giving clues to hydrology■ Standardized collection across all wetland types.

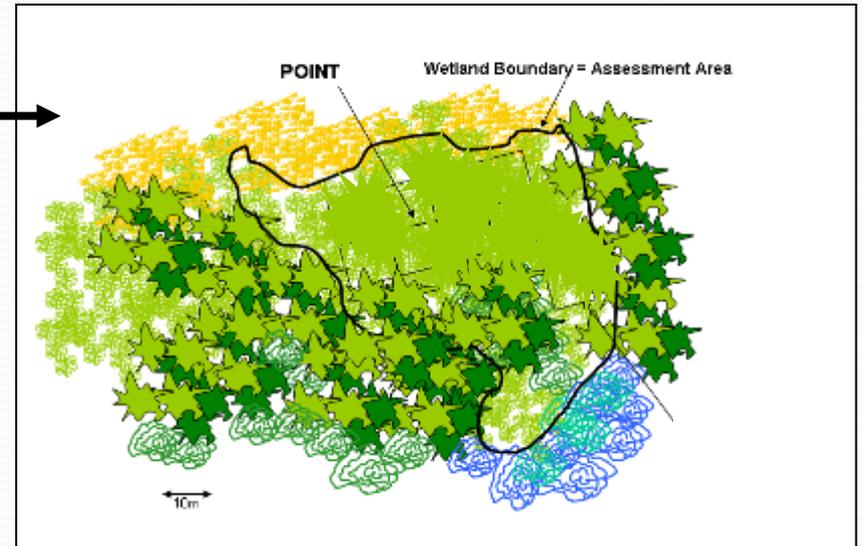
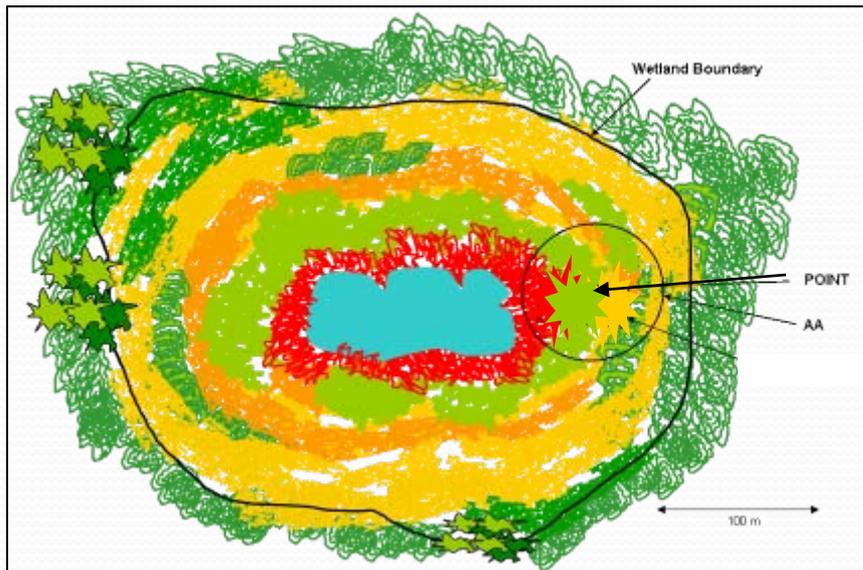
Abiotic Indicators for the NWCA

Indicator Type	Details
Hydrology & Water Chemistry	<ul style="list-style-type: none">■ Hydrologic dynamics influence biological community composition and indicate disturbance.■ Difficult to assess hydrology in one site visit; water for chemistry sampling not always present.■ Hydrologic surrogates and water chemistry when possible.
Buffer/Stressors	<ul style="list-style-type: none">■ Buffer disturbance will impact wetland biological communities.■ Aerial photos and site verification.
Soil Chemistry and Bulk Density	<ul style="list-style-type: none">■ Soil characteristics are indicative of wetland hydrology; chemistry provides evidence of stressor.■ Basic Soil Profile and Soil Chemistry analyses

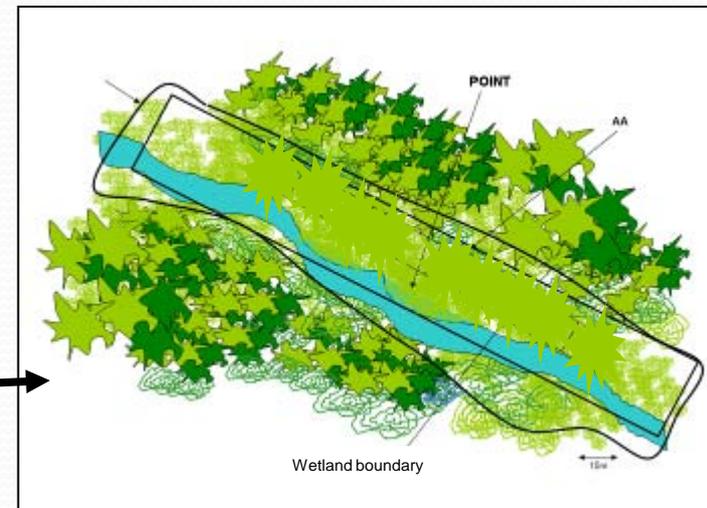
NWCA Assessment Area

Small Wetland

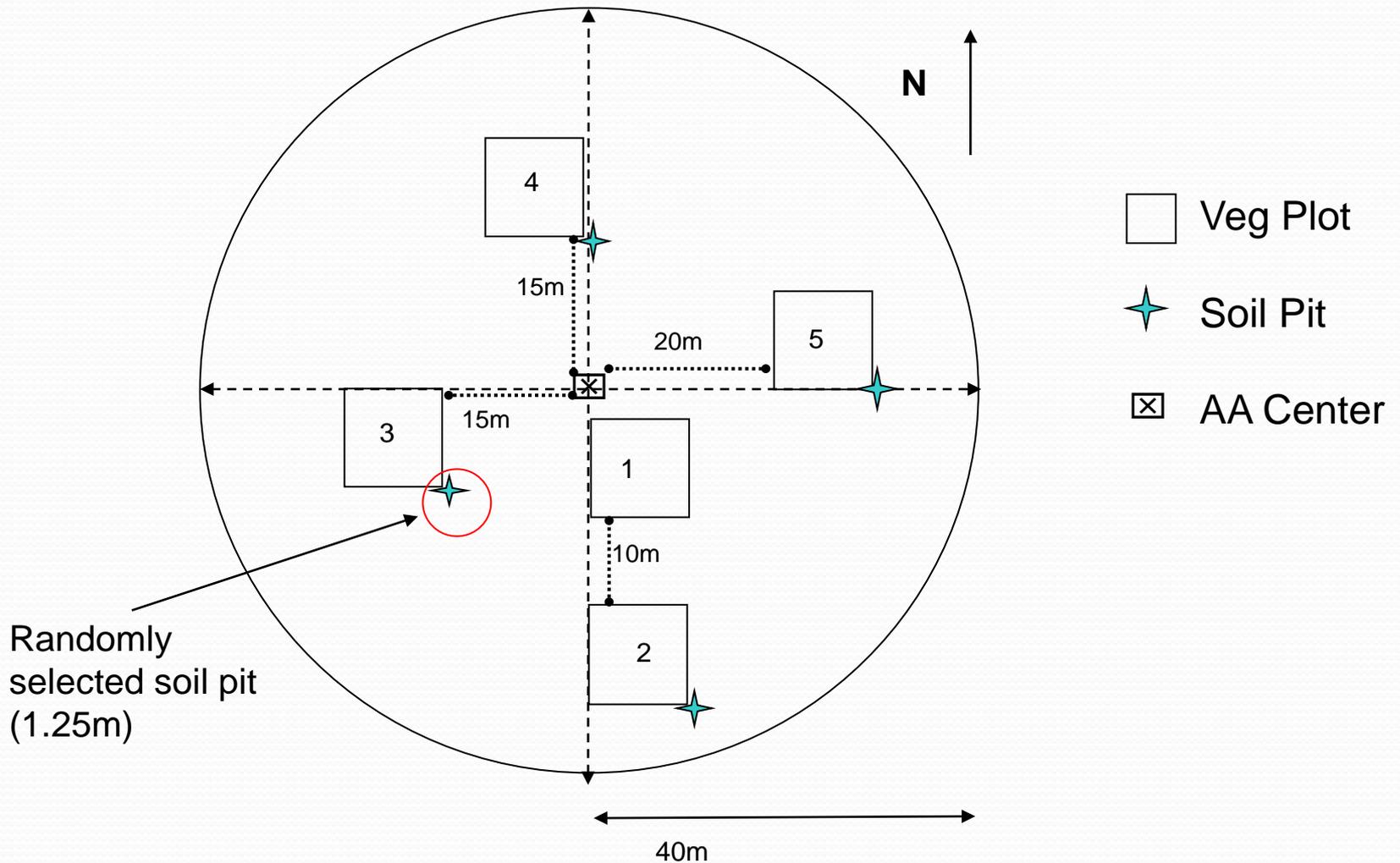
Standard



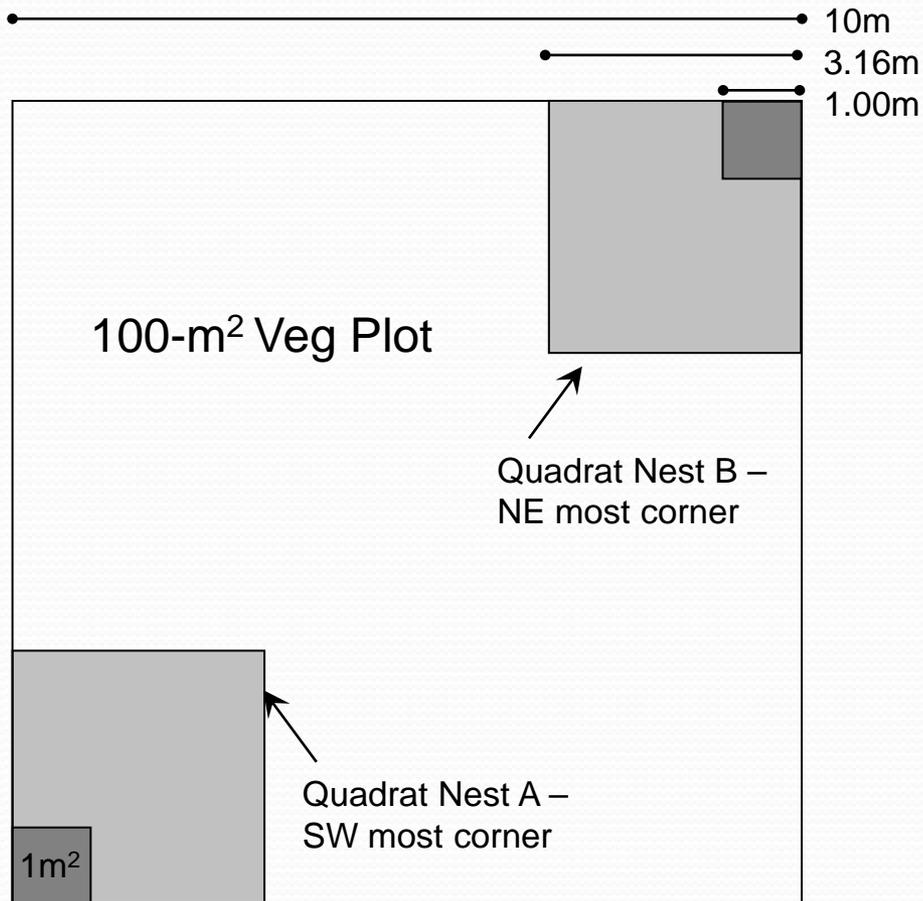
Riverine Wetlands



Standard Vegetation and AA Layout



Vegetation Plot



Vegetation Data

- Species Occurrence
- Percent Cover

NWCA Field Crews

- States, Tribes, or Contractors
 - Federal Partners where possible
 - ★ Interns ★
- Four Person Crew: One Day for Sampling
 - Vegetation Team – All Vegetation Sampling
 - Botanist/Ecologist – Education and Training in Botany
 - Botanist Assistant – No specific expertise
 - AA/Buffer Team – All Other Indicators
 - No specific expertise required
 - Wetland delineation experience recommended
 - Soils experience recommended but not required



Photo courtesy of Janet Nestlerode

Using the NWCA Results

- Establish the **national baseline** of wetland condition.
- Coordinate with the U.S. FWS Wetland (acreage) Status and Trends program.
- Enhance State and Tribal wetland monitoring programs
- Identify wetland types and geographies that are especially degraded
- Identify the stressors most commonly associated with degraded wetland conditions.