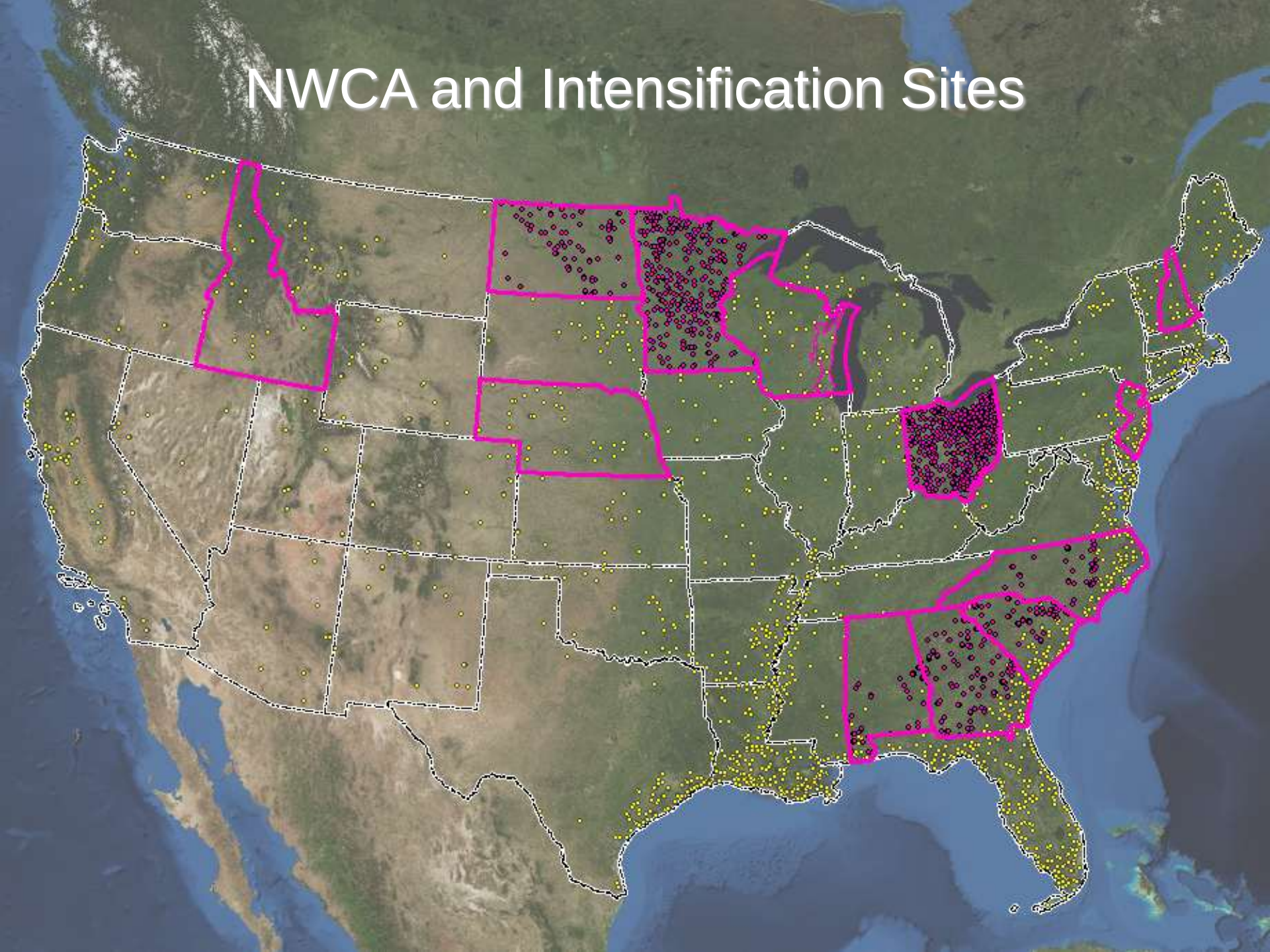
NWCA State and Regional Intensification Studies – New Jersey

NWMAWG Meeting

Dec 7, 2010

NWCA and Intensification Sites



STATE PANELISTS

- Tom Bernthal, WI DNR
- Mike Bourdaghs, MN Pollution Control Agency
- Brian Gara, Ohio EPA
- Ted LaGrange, NE Game & Parks Commission
- Rick Savage, NC DENR
- Kathleen Strakosch Walz, NJ DEP

PANEL TOPICS

- OBJECTIVES, DESIGN & INDICATORS
- SURVEY LOGISTICS
- USE OF DATA & REPORTING
- STUDY CHALLENGES

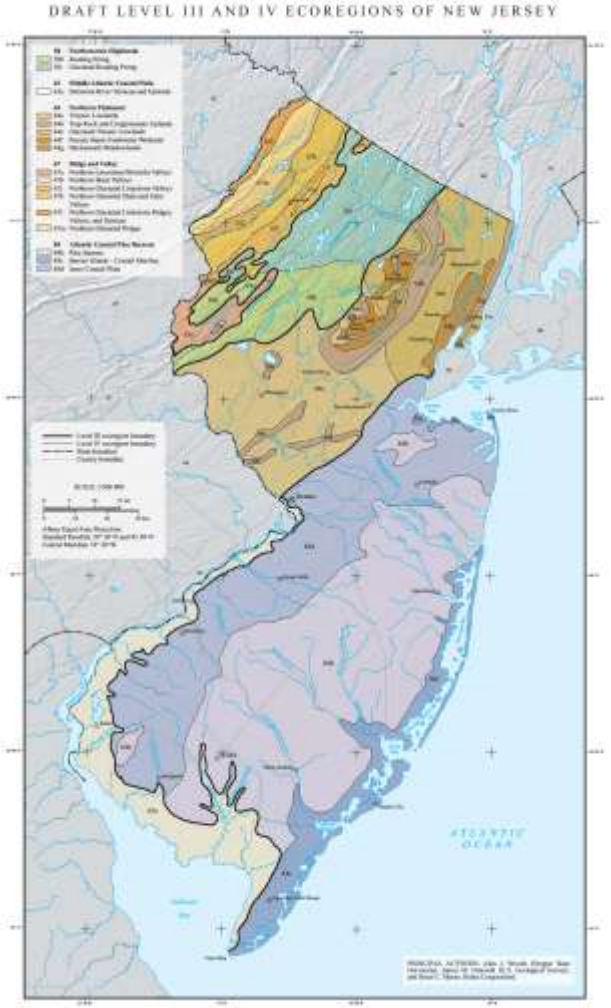
OBJECTIVES, DESIGN & INDICATORS

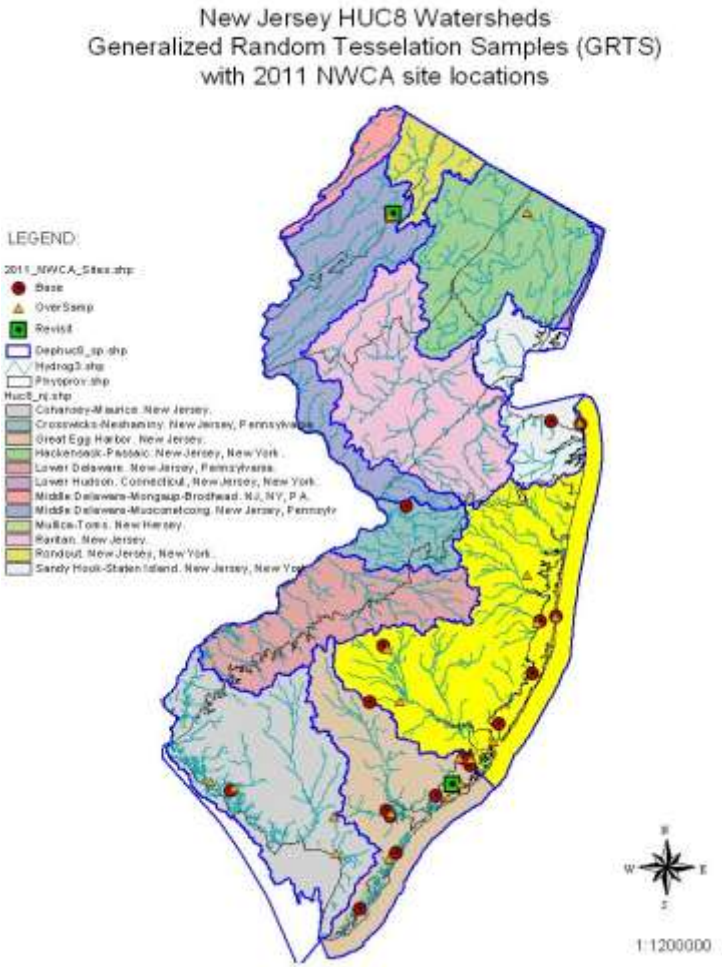
- GOALS & OBJECTIVES OF STUDY
- DESIGN
  - Target Population
  - Geographic Scope
  - Sample Frame
  - Number of Sites
- INDICATORS

Welcome to New Jersey!

New Jersey's Ecoregions & Watersheds

- **5 Physiographic Provinces**
  - Valley & Ridge
  - Highlands
  - Piedmont
  - Coastal Plain
    - Inner CP
    - Outer CP
- 5 Omernik Ecoregions a Level III (17 at Level IV)
- **12 HUC8 Watersheds**
- Elevation: 0 to 1803 ft
- 8,729 square miles (5,582,080 acres)
- **996,987 acres wetland (18% of state)**
- 810,540 acres waters (15% of state)
- **NWCA 20(22) sites**
  - **13 Estuarine sites**
  - **7 Palustrine sites**





Rare Wetland Research & Monitoring (Tier 3) in NJ 1997-2009

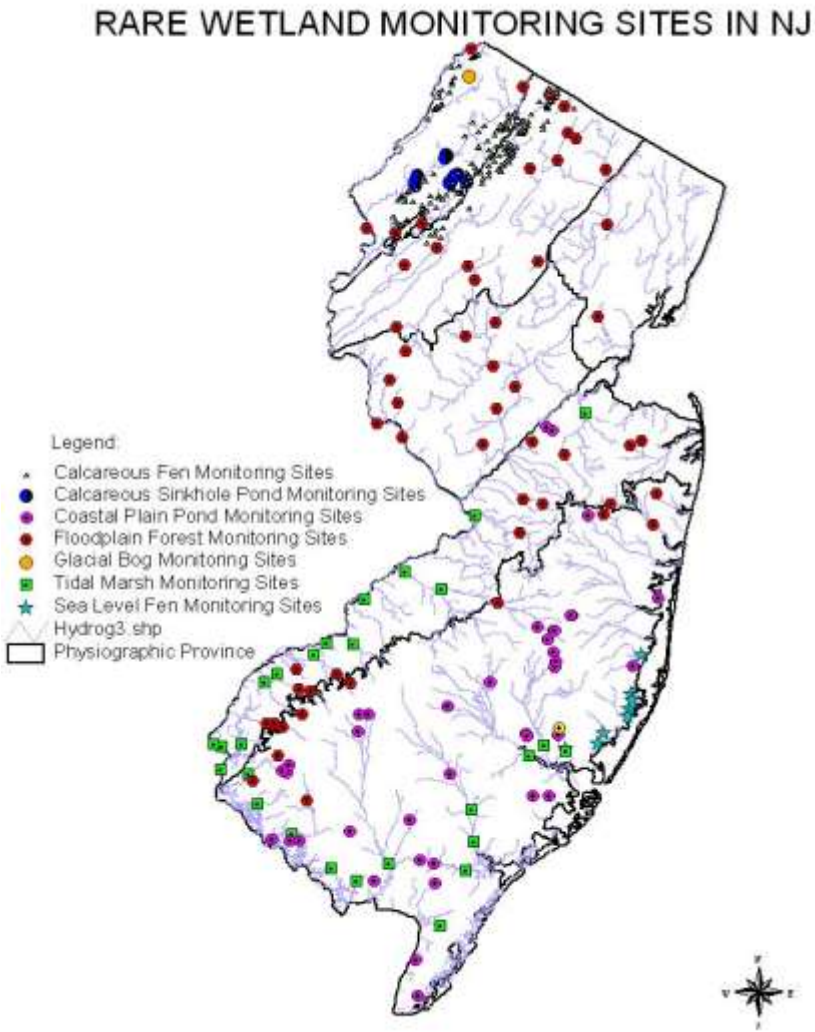
Calcareous Sinkhole Ponds of the Kittatinny Valley

Pine Barren Riverside Savannas

Non-tidal Floodplain Forest Communities

Coastal Plain Intermittent Pond Communities

Sea-level Fen, Tidal Freshwater and Brackish Marsh Communities



NEW JERSEY

- Goals/Objectives

1. Establish statewide network of wetland condition assessment monitoring sites at Level 2 and 3 intensification applying NatureServe's Ecological Integrity Assessment and EPA NWCA protocols.
2. Map and classify the springs of New Jersey and establish long-term monitoring at characteristic springs statewide.
3. Augment the existing Floristic Quality Assessment Index with bryophytes and rare plants and use to evaluate and track vegetation at mitigation sites.
4. Outreach to federal, state, local, private and watershed management and conservation groups.

NEW JERSEY DESIGN

- RAM Level 2 Wetland Condition Assessment Intensification Study Statewide Probabilistic Survey
  - 360+ palustrine & estuarine wetland sites using LULC2007 data stratified by HUC8 and 6(+1) Cowardin wetland types, no Pf
    - » E2FO/SS, E2EM, PFO, PSS, PEM, PAB/PUB, (+ *PEM0)*
    - » HGM, NVC Ecological Macrogroups
    - » FQA
- ISA Level 3 Wetland Condition Assessment Intensification Study
  - 60 wetland monitoring sites using Ecological Integrity Assessment (EIA) in conjunction with EPA NWCA sampling methods/protocols
    - » Freshwater Algae Study
    - » Sediment Carbon Sequestration Study
    - » Riparian Overbank Flow Study
    - » FQA
  - 6 wetland sites with long-term monitoring established to inform water allocation permitting decisions
  - 10 spring and headwater wetland sites with groundwater flow and geochemical monitoring

EIA vs NWCA Level 3: Intensive Site Assessments

METRIC TYPE	EIA	NWCA (FOM 5-10-2010)
VEGETATION	20m x 50m plot in 10-100m^2 modules	5 100m^2 plots
	8 nested plots	5-1m^2 + 5-10m^2 Nested plots
	11 veg strata classes	8 veg strata classes
	unvegetated surface	unvegetated surface
SOILS	2 soil pits (1m)	4 soil pits (4-60cm+1-125cm)
	Soil drainage	Soil drainage
	Soil texture	Soil texture
	Matrix Soil Hue/Chroma	Matrix Soil Hue/Chroma
	Mottle Hue/Chroma	Redoximorphic Features
	Soil Organic Carbon	Soil Chemistry (C,N,P)
	Soil Bulk Density	Soil Bulk Density
WATER QUALITY	N/A	Surface Water Chemistry (DO, pH, Temp, Conductivity)
HYDROLOGY	Cowardin hydrologic regime	Cowardin hydrologic regime
	Evidence of flooding	Evidence of flooding
	Water source	Water source
	Standing water depth	Standing water depth
	Groundwater depth	Groundwater depth
	N/A	Surface water flow rate
OTHER BIOTIC FACTORS	Algae (separate samples epiphytic, benthic, surface water)	Algae (composite samples epiphytic, benthic), surface water & Chl-A

SURVEY LOGISTICS

- FUNDING
- PERSONNEL
- PARTNERS
- TIME-FRAME

USE OF DATA & REPORTING

- HOW WILL YOU USE DATA?
  - Assess status and trends (quality, quantity)
  - Integrate into other watershed assessments
  - Inform program management
- HOW WILL YOU REPORT DATA?
  - Scientific / public reports
  - Online

CHALLENGES

- STUDY CHALLENGES
- UNRESOLVED ISSUES
- HELP!