Isolated Wetlands and Carolina Bays Task Force

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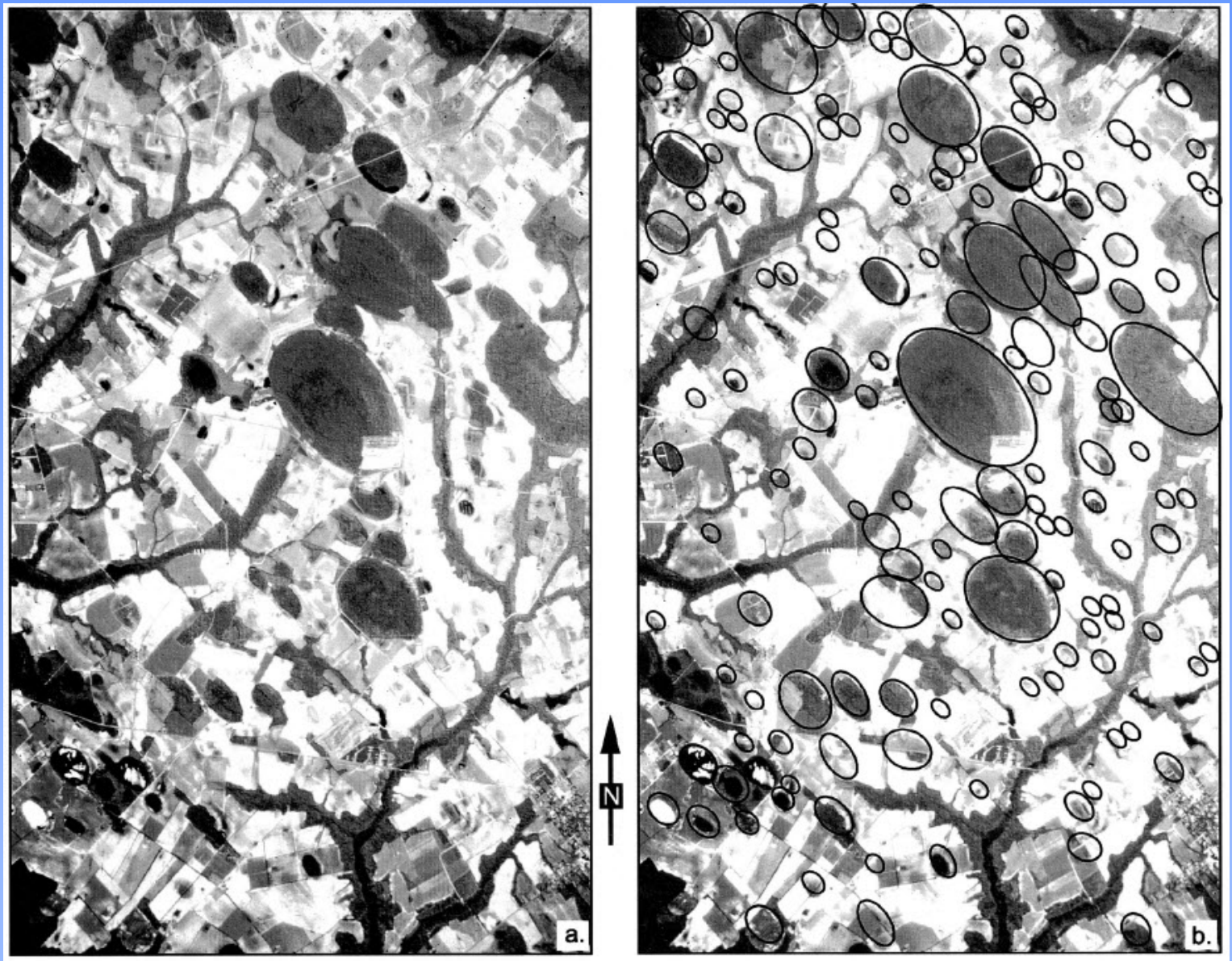
Background

- Not all Carolina Bays are isolated
- Not all isolated wetlands (IW) are Carolina Bays
- General agreement that:
  - Most Carolina Bays are not isolated
    - Some have natural connections
    - Many (maybe most) altered by human activity
  - Most IW are not Carolina Bays
    - None in Piedmont and Blue Ridge
  - Number and total area are unknown
    - Estimates are possible

Context

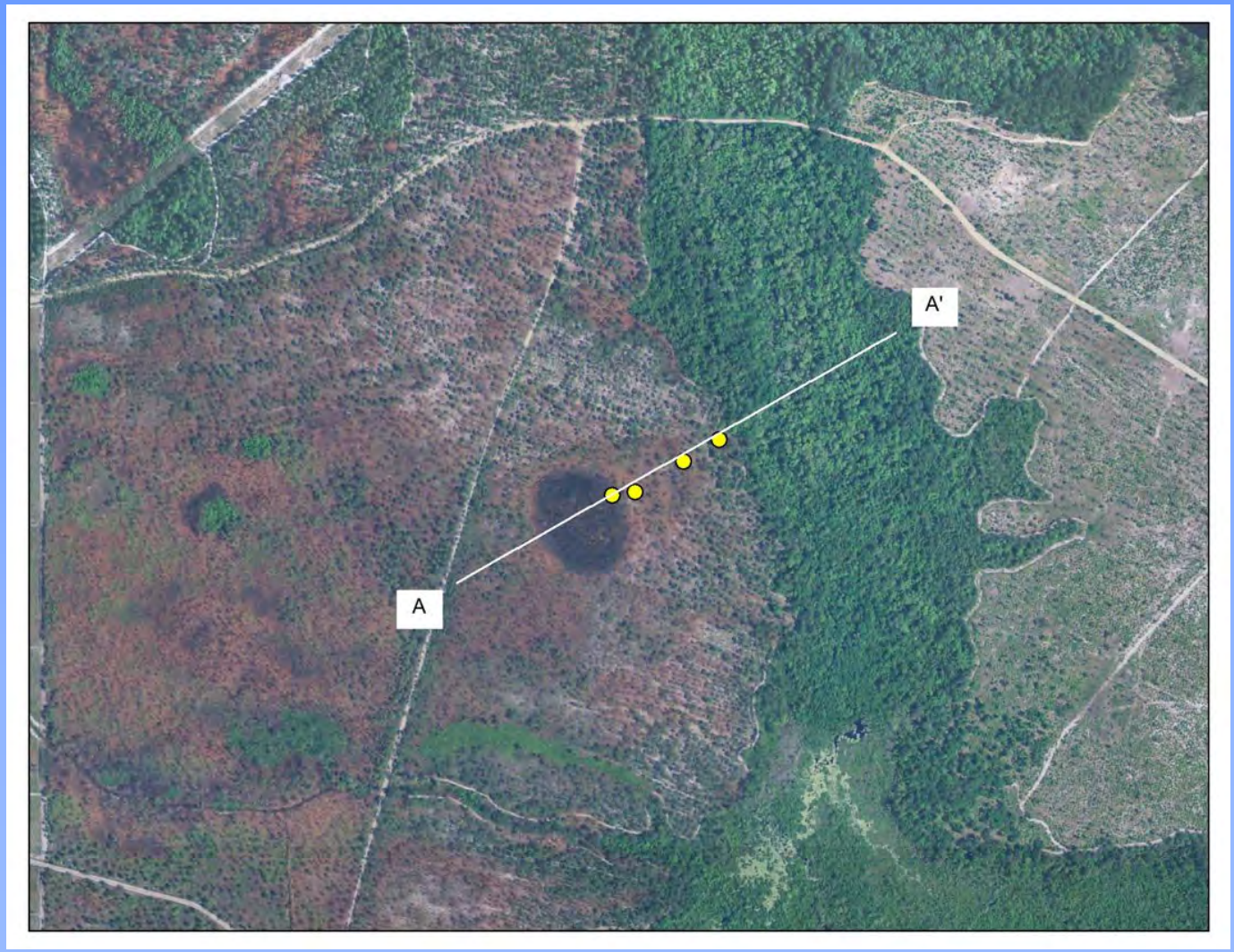
- Two EPA-funded projects
  - Assessing Geographically Isolated Wetlands in North and South Carolina – the Southeast Isolated Wetlands Assessment (SEIWA)
    - 2007 - 2010
  - Hydrologic Connectivity, Water Quality Function, and Biocriteria of Coastal Plain Geographically Isolated Wetlands (IWC)
    - 2010 – 2012
- Locate, estimate prevalence, condition assessment, ecological function
- Special thanks to – SCDNR, TNCNC, BLSF

Carolina Bay landscapes

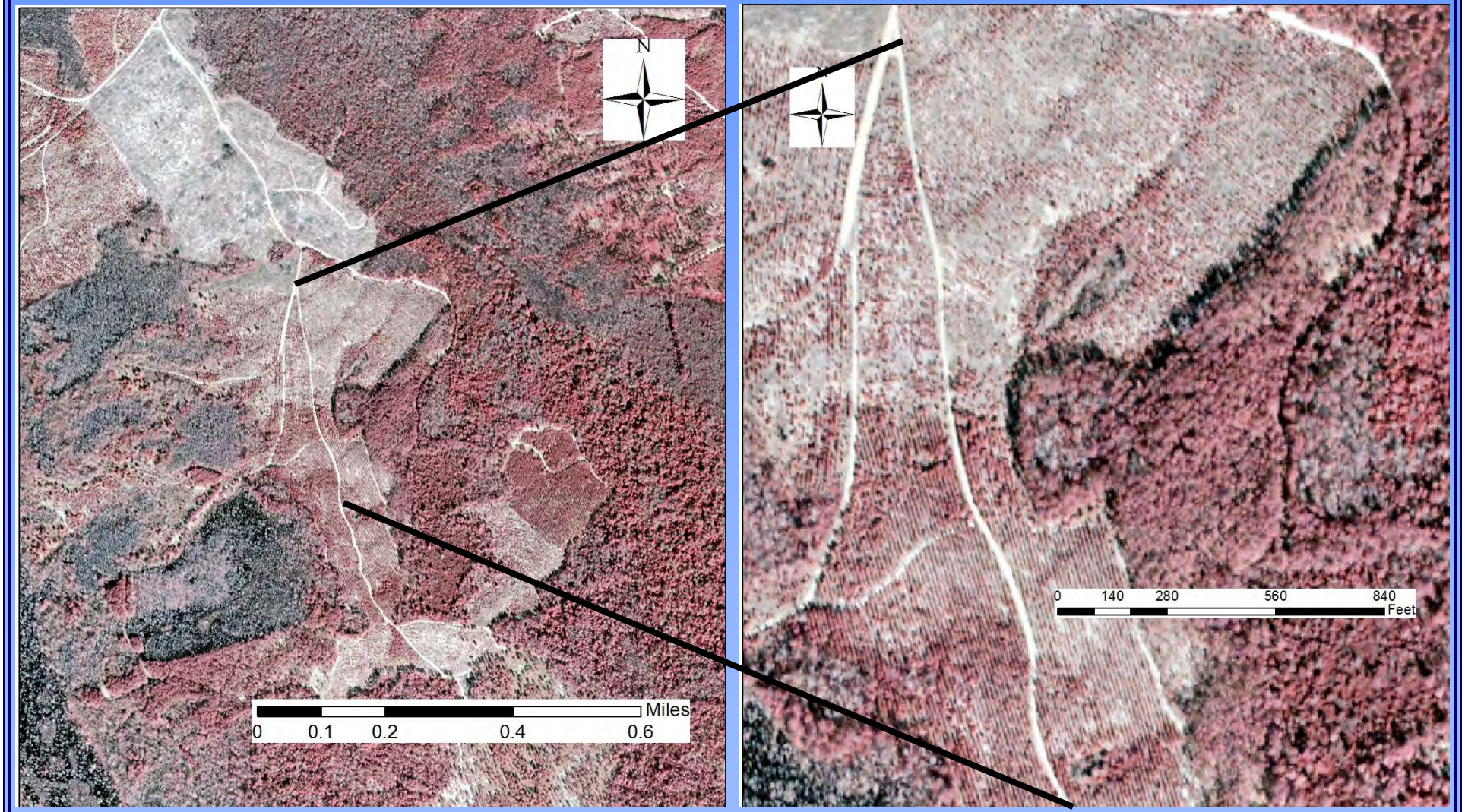


From Sharitz (2003)

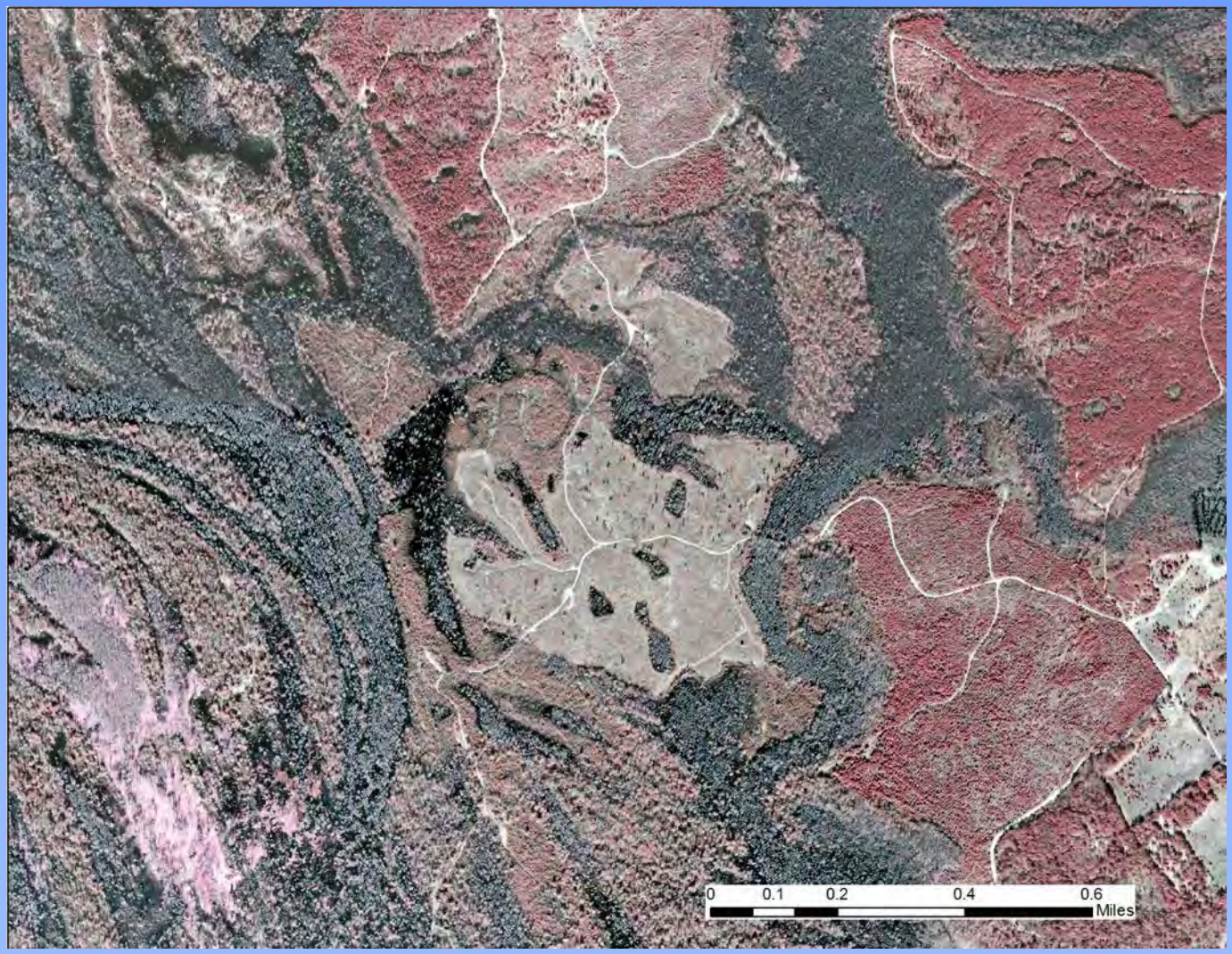
Carolina Bay landscapes



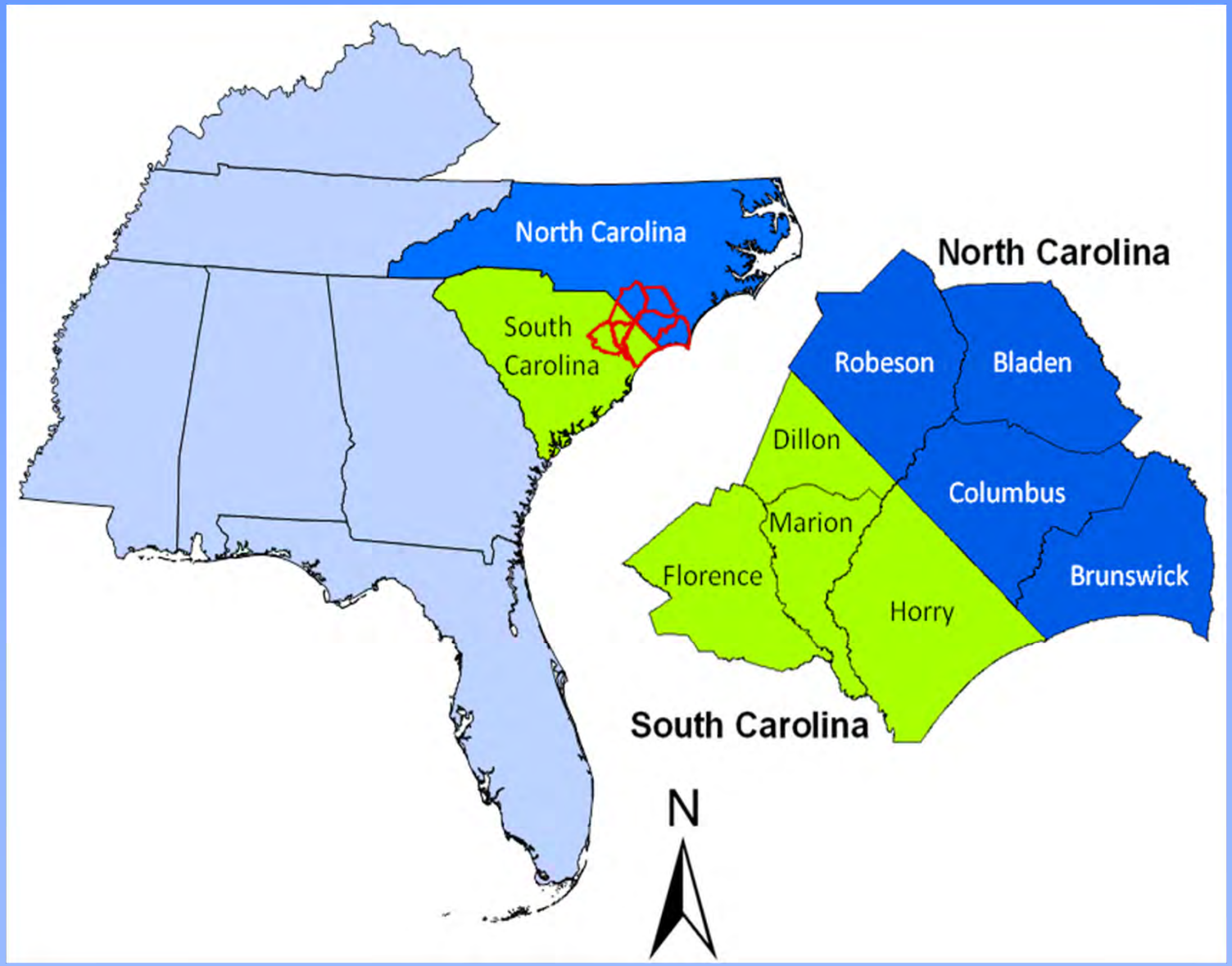
Wetland landscapes



Wetland landscapes



Study area


North Carolina
South Carolina
North Carolina
Robeson
Bladen
Dillon
Columbus
Marion
Florence
Horry
Brunswick
South Carolina
N

Activities

- Use advance mapping techniques and data sources
- Locate potential IW
- Ground truth the results
  - Statistically derived subset
- Use field results to extrapolate to study area
- Collected other data about the IW

Results

- Of all wetland area
  - Approximately 2% are IW
- Size of IW
  - Average is 0.68 acres
  - Median is 0.41 acres
  - Largest was 21 acres
- Condition assessments
  - North Carolina Wetland Assessment Method (NCWAM)
  - 67% rated high quality

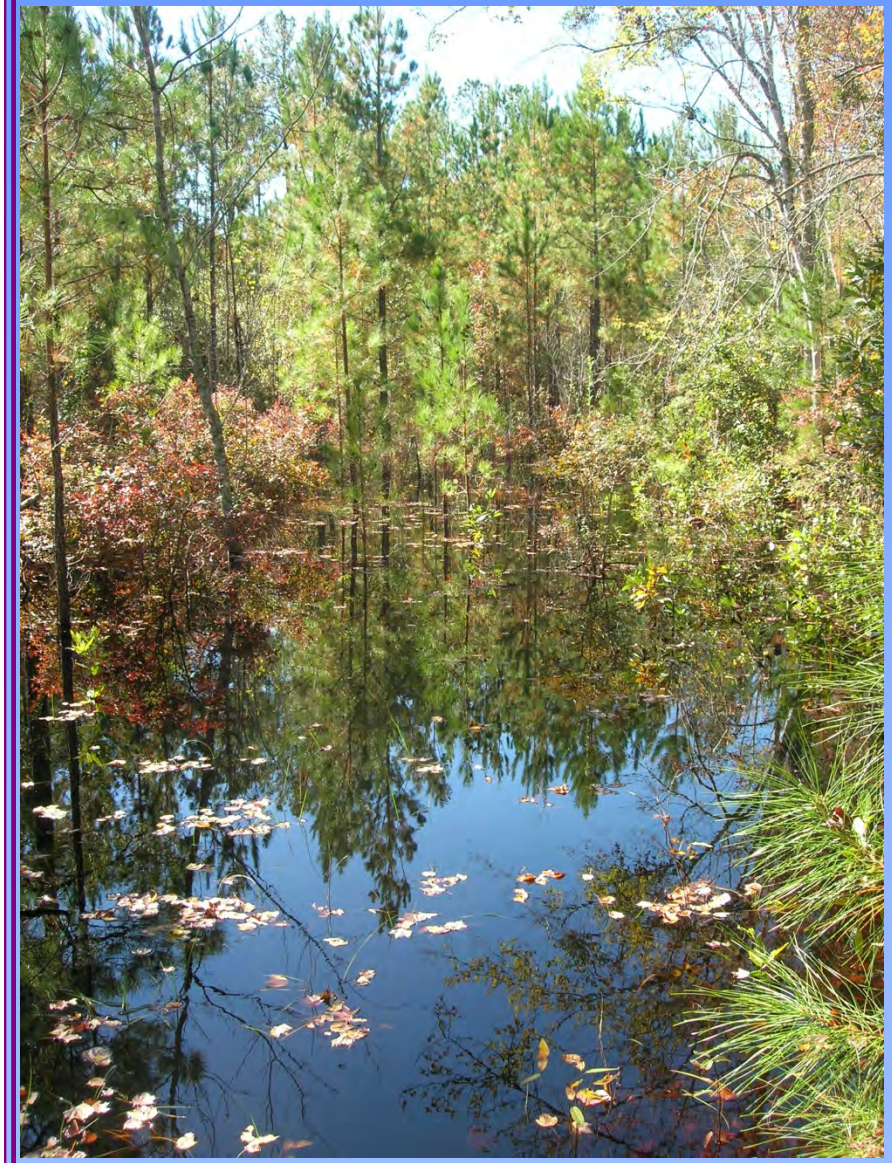
Results

- Condition – continued
  - Dependence on landscape condition
  - Cumulative impacts
- Extrapolation beyond the study area
  - Qualitative not quantitative
  - Coastal plain versus rest of the state
  - Additional study could clarify this issue
- Functions and values – *free* services
  - Stormwater storage
  - Nutrient immobilization
  - Habitat – both plant and animal

Examples

Horry County

Marion County



Marion County

Horry County

Policy considerations

- Coastal plain most vulnerable to loss of IW
  - Not just coastal zone
  - Where most of them are
  - Greatest demand for new development
- Landscapes versus tracts
  - The policy conundrum
  - Clusters of IW versus “isolated” IW
  - Proximity to stream
  - Cumulative impacts
- There are many opportunities for mitigation
  - Preservation, restoration
- Benefit from more work on inventory


Questions