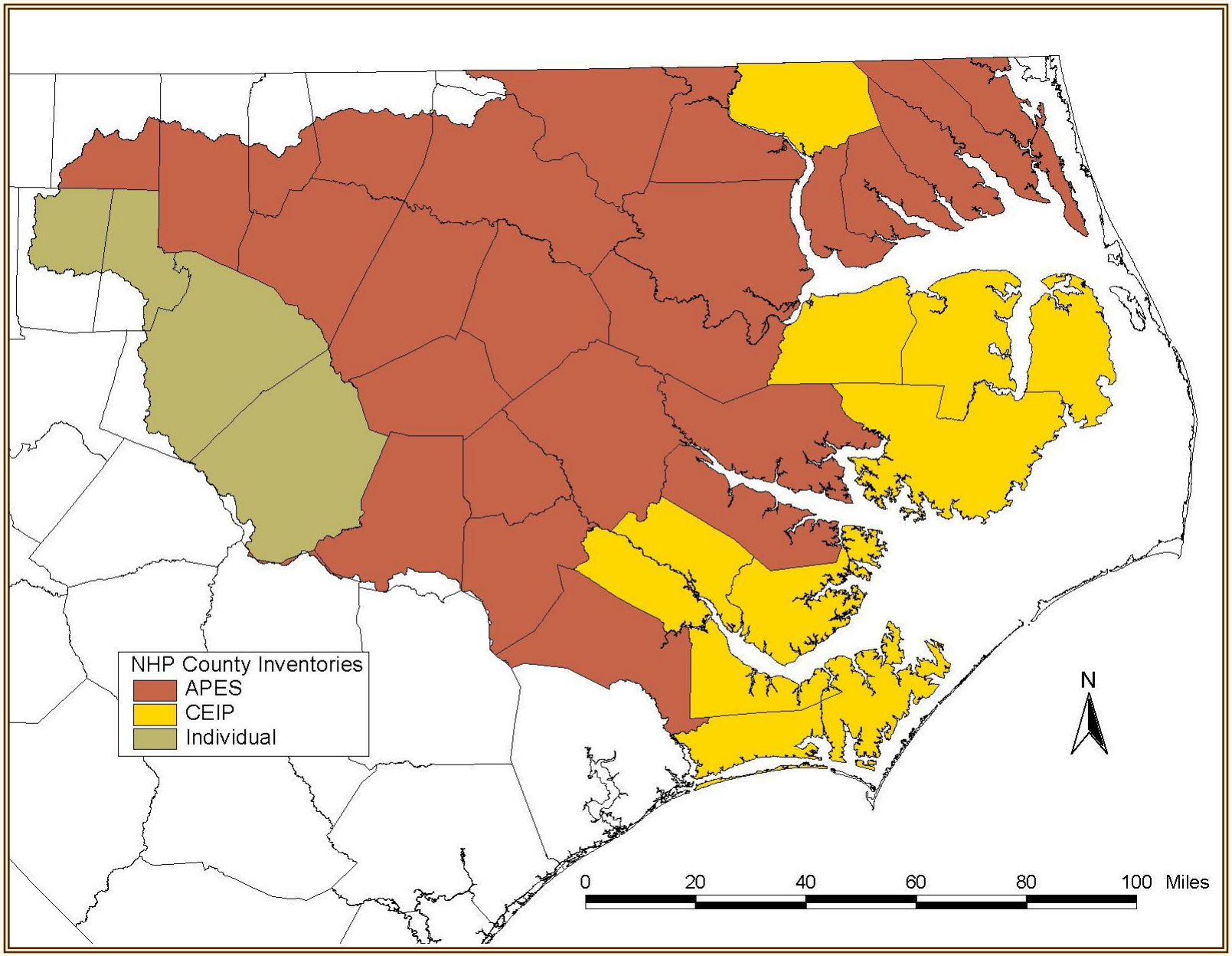
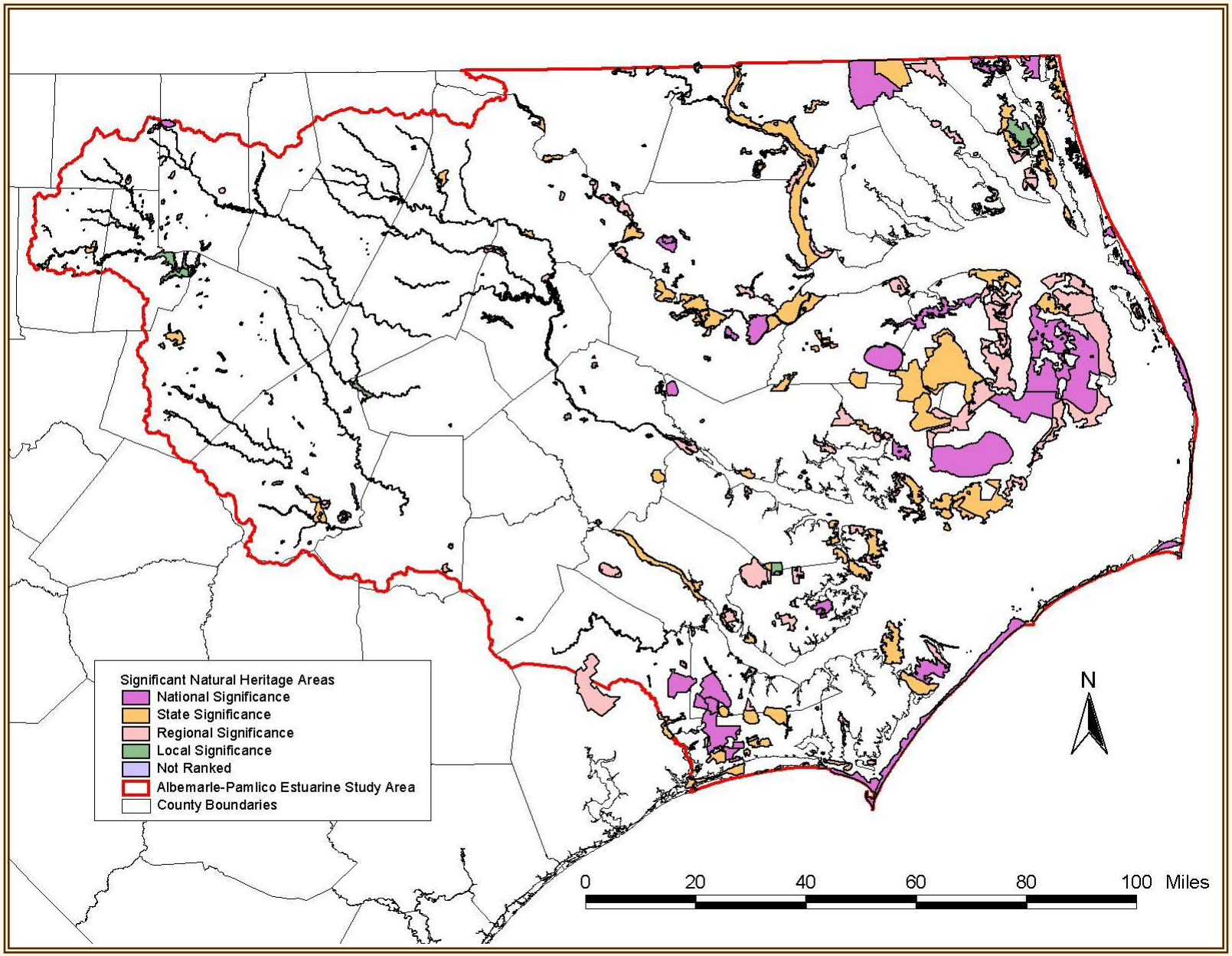
2003 Assessment of Natural Areas of the Albemarle-Pamlico Estuarine Study Area




North Carolina Natural Heritage Program


NHP County Inventories
APES
CEIP
Individual
N
0
20
40
60
80
100 Miles


Significant Natural Heritage Areas
National Significance
State Significance
Regional Significance
Local Significance
Not Ranked
Albemarle-Pamlico Estuarine Study Area
County Boundaries
N
0
20
40
60
80
100 Miles

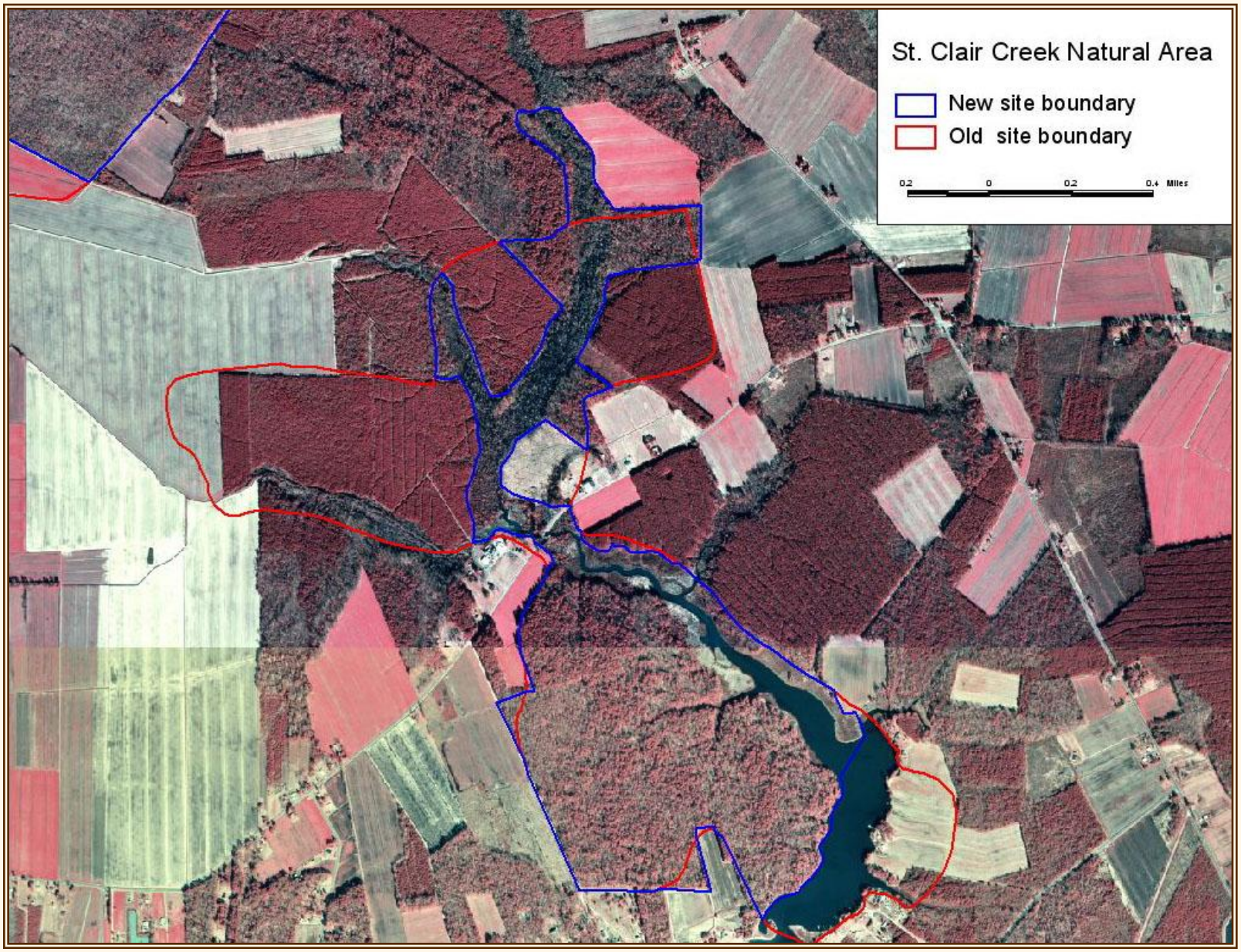
Site Boundary Rectification

Site Boundary Rectification

- Natural area boundaries were checked against 1998 color infrared aerial photographs (DOQQs)

Site Boundary Rectification

- Natural area boundaries were checked against 1998 color infrared aerial photographs (DOQQs)
  - All sites of National, State or Regional Significance in the APES region that had not been visited since 1998 were checked


St. Clair Creek Natural Area
New site boundary
Old site boundary
0.2
0
0.2
0.4 Miles

Site Boundary Rectification

- Results:
  - More than 75% of sites need adjustments to their boundaries

Site Boundary Rectification

- Results:
  - More than 75% of sites need adjustments to their boundaries
    - About 75% of sites on private lands had clearly lost part of their natural area

Site Boundary Rectification

- Results:
  - More than 75% of sites need adjustments to their boundaries
    - About 75% of sites on private lands had clearly lost part of their natural area
    - At least a few had been completely destroyed

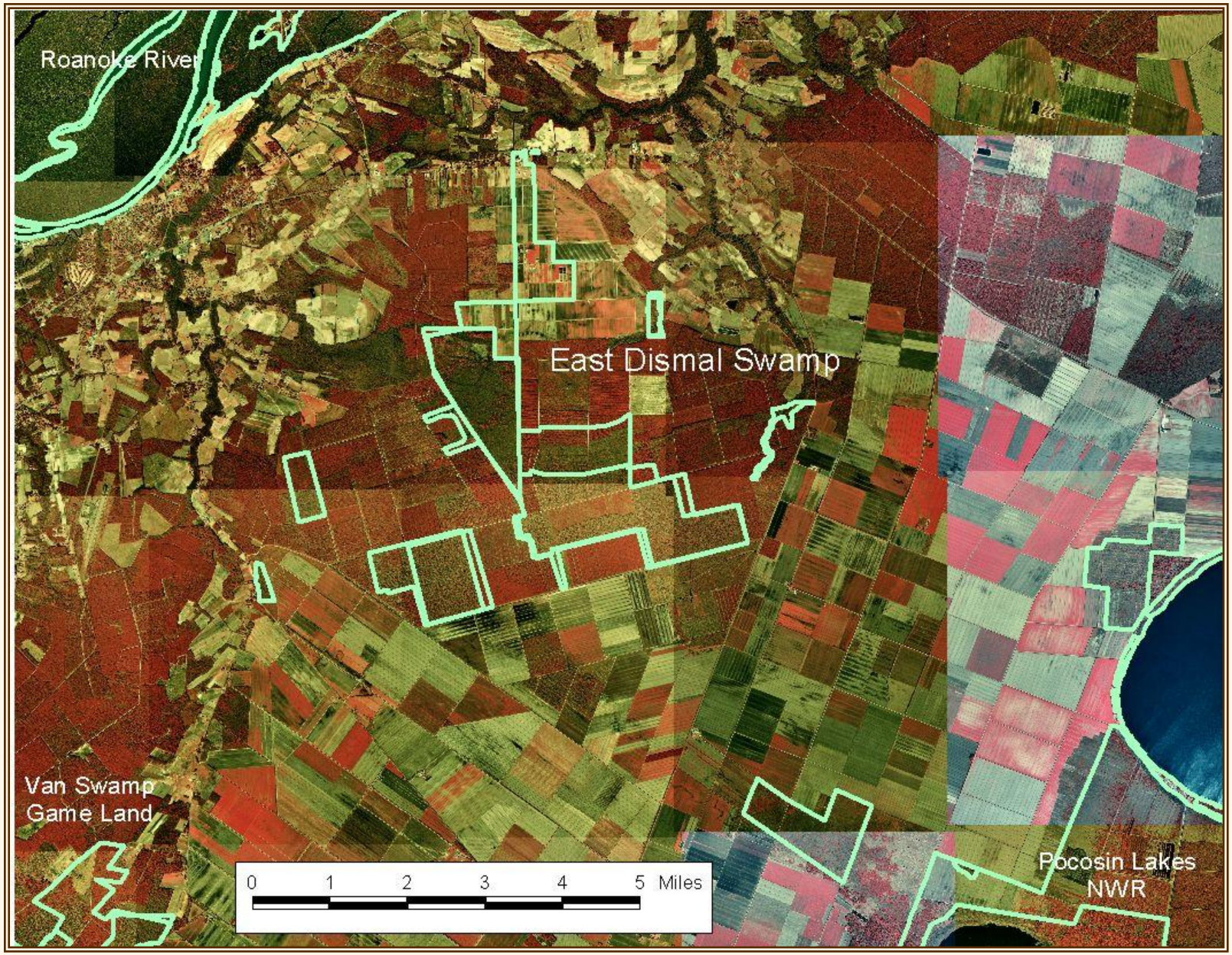

Merry Hill Mesic Flats
0.1
0
0.1 Miles

Site Boundary Rectification

- Results:
  - Certain community types and kinds of sites were most often damaged or destroyed

Site Boundary Rectification

- Results:
  - Certain community types and kinds of sites were most often damaged or destroyed
    - Mesic Mixed Hardwood Forests
    - Dry-Mesic Oak-Hickory Forest
    - Nonriverine Wet Hardwood Forest


Roanoke River
East Dismal Swamp
Van Swamp
Game Land
Pocosin Lakes
NWR
0 1 2 3 4 5 Miles

Ecosystem/Landscape Evaluation

Ecosystem/Landscape Evaluation

- Definition of ecosystems units

Ecosystem/Landscape Evaluation

- Definition of ecosystems units
  - Habitat type

Ecosystem/Landscape Evaluation

- Definition of ecosystems units
  - Habitat type
  - Indicator species


Sandhills

Sandhills

Sandhills

Ecosystem/Landscape Evaluation

- Ecosystems units
  - 38 types were identified within the APES region (only terrestrial and wetland ecosystems were included in the analysis)

Ecosystem/Landscape Evaluation

- Ecosystems units
  - 38 types were identified within the APES region
  - Several more habitats were identified for which a group of indicator species could not be determined

Ecosystem/Landscape Evaluation

- Ecosystems units
  - 38 types were identified within the APES region
  - Several more habitats were identified for which a group of indicator species could not be determined
    - E.g., Granitic Flatrocks, Maritime Wet Grasslands

Tidewater Ecosystems

- Beaches and Sandspits
  - Upper Beach
  - Sand Flats and Spits
- Maritime Upland Habitats
  - Maritime Xeric Grasslands
  - Maritime and Coastal Fringe Xeric Shrublands
  - Maritime Forest
  - Sound Islands
- Tidewater Wetlands
  - Tidal Marshes
  - Tidal Freshwater Marshes

Floodplain Ecosystems

- Swamps
  - Cypress-Gum Swamps
- Lowland Hardwood Forests
  - Brownwater Levee Hardwoods
  - General Levee Hardwoods
  - Rich Bottomlands and Basic-Mesic Hardwoods
  - General Wet Hardwoods
  - General Forested Floodplains
- General Marshes and Other Emergent Ecosystems
  - Shallow-water Emergent Marshes
  - Reedy Marshes
  - Mucky Meadows and Glades

Interbasin Wetlands and Peatlands

- Isolated Wetlands
  - Coastal Plain Ephemeral Pools
  - Piedmont Ephemeral Pools
  - Hardwood Seeps
- Peatland Forests
  - Pond Pine Woodlands and Bay Forests
  - Atlantic White Cedar Forest
- Wet Acidic Shrublands and Canebrakes
  - Coastal Plain Lowland Acidic Shrublands
  - Forest Canebrakes

Longleaf Ecosystems

- Longleaf Pine Woodlands
  - Savannas and Wet Herbaceous Swales
  - Lowland Longleaf Woodlands
  - Loammy Longleaf Woodlands
  - Dry-Xeric Longleaf Woodlands
  - General Upland Longleaf
  - General Longleaf Woodlands

Upland Ecosystems

- Upland Hardwoods
  - Mesic Mixed Hardwoods
  - Basic Hardwoods
  - Dry Hardwoods and Mixed Woodlands
- Cliffs, Outcrops, and Barrens
  - North-facing Bluffs and Cliffs
  - Mafic Barrens and Glades/Piedmont Prairies

General Ecosystems

- Mature Hardwoods
- Semi-natural Grasslands
- Sparsely-Settled Mixed Habitats

Ecosystem Mapping

Ecosystem Mapping

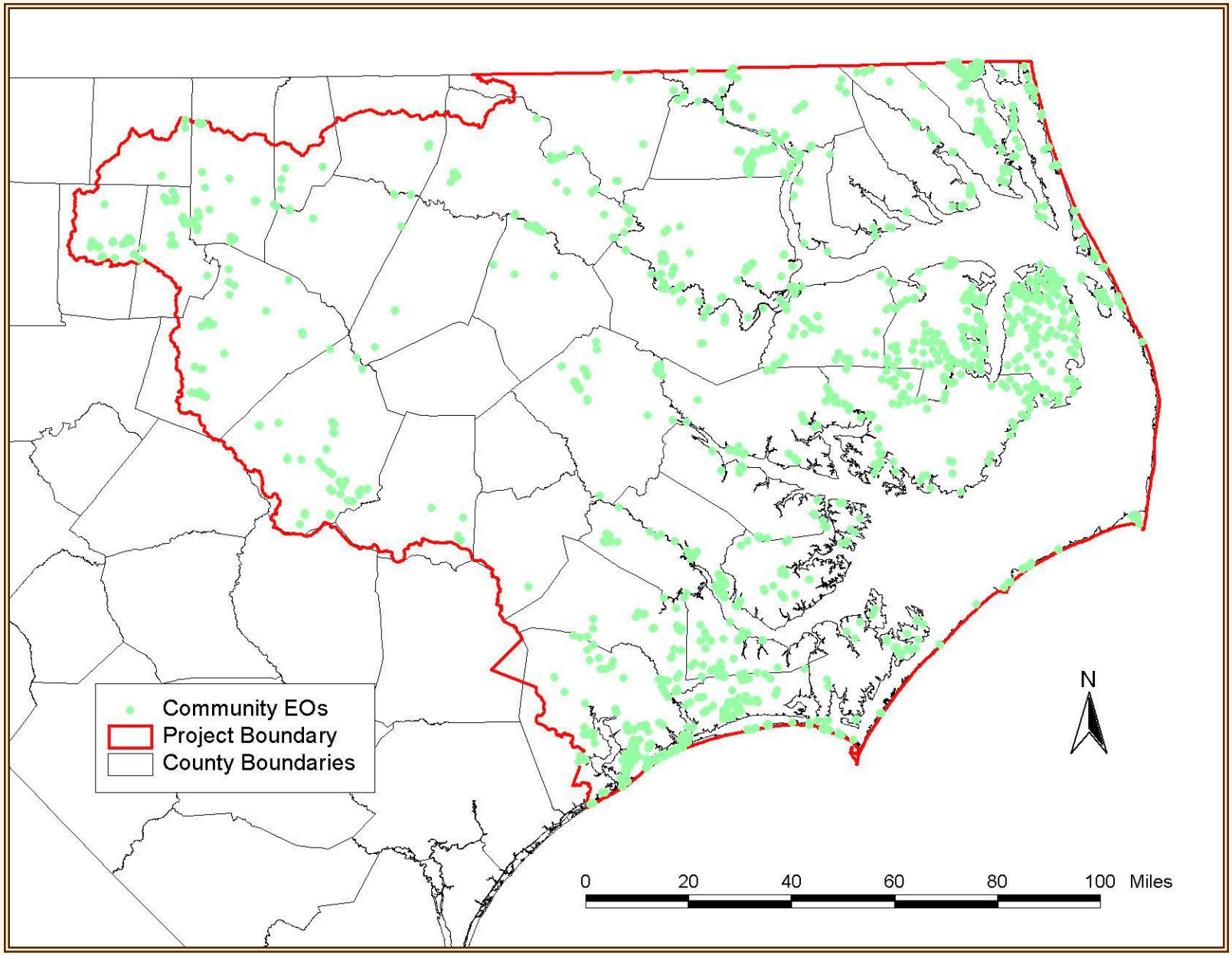
- Habitats

Ecosystem Mapping

- Habitats
  - Ground survey data

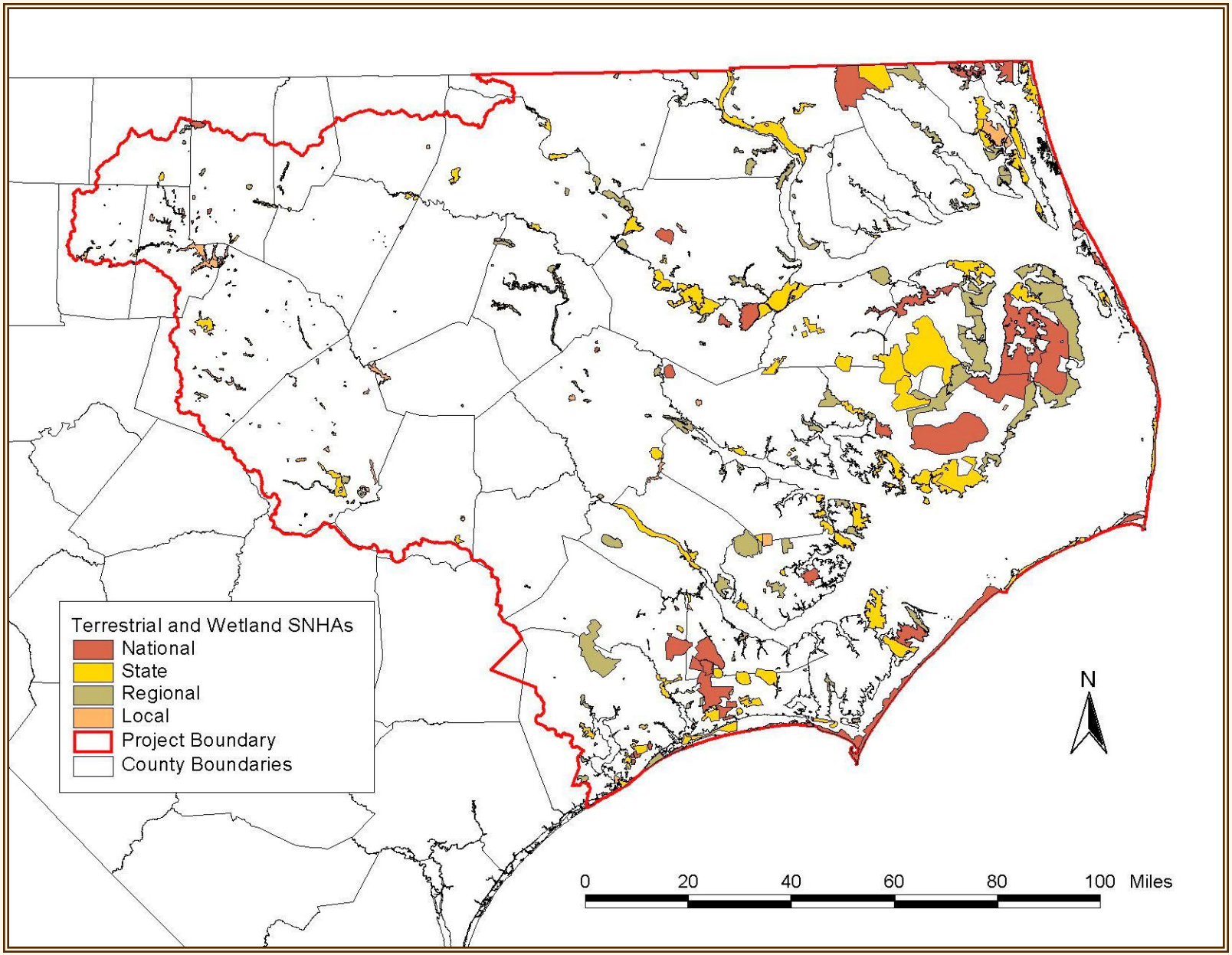
Ecosystem Mapping

- Habitats
  - Ground survey data
    - NHP Community Element Occurrence Records (EOs)


Community EOs
Project Boundary
County Boundaries
N
0
20
40
60
80
100
Miles

Ecosystem Mapping

- Habitats
  - Ground survey data
    - Community Element Occurrence Records
    - Significant Natural Heritage Areas (SNHAs)

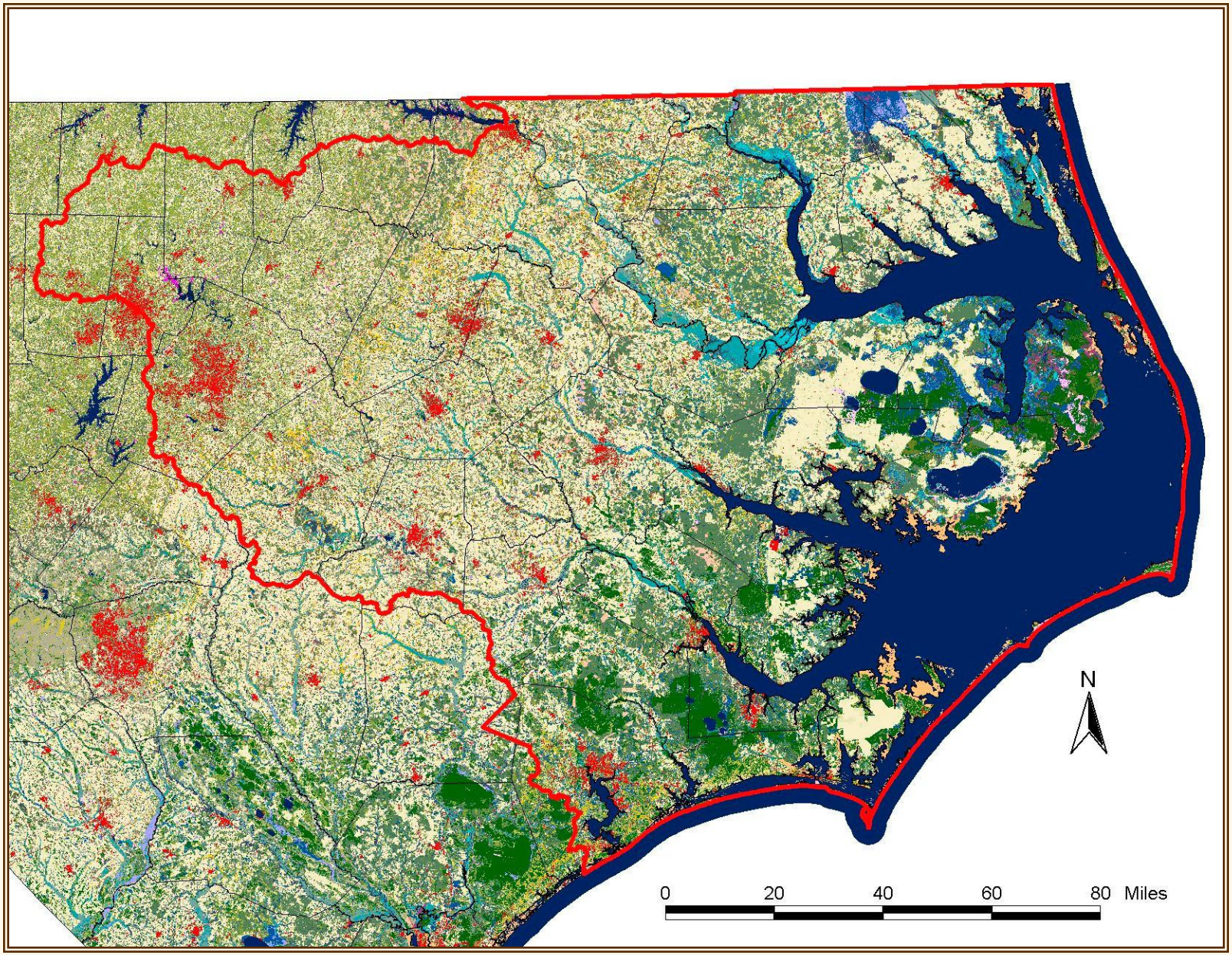

Terrestrial and Wetland SNHAs
National
State
Regional
Local
Project Boundary
County Boundaries
N
0
20
40
60
80
100
Miles

Ecosystem Mapping

- Habitats
  - Ground survey data
  - Remote sensing data

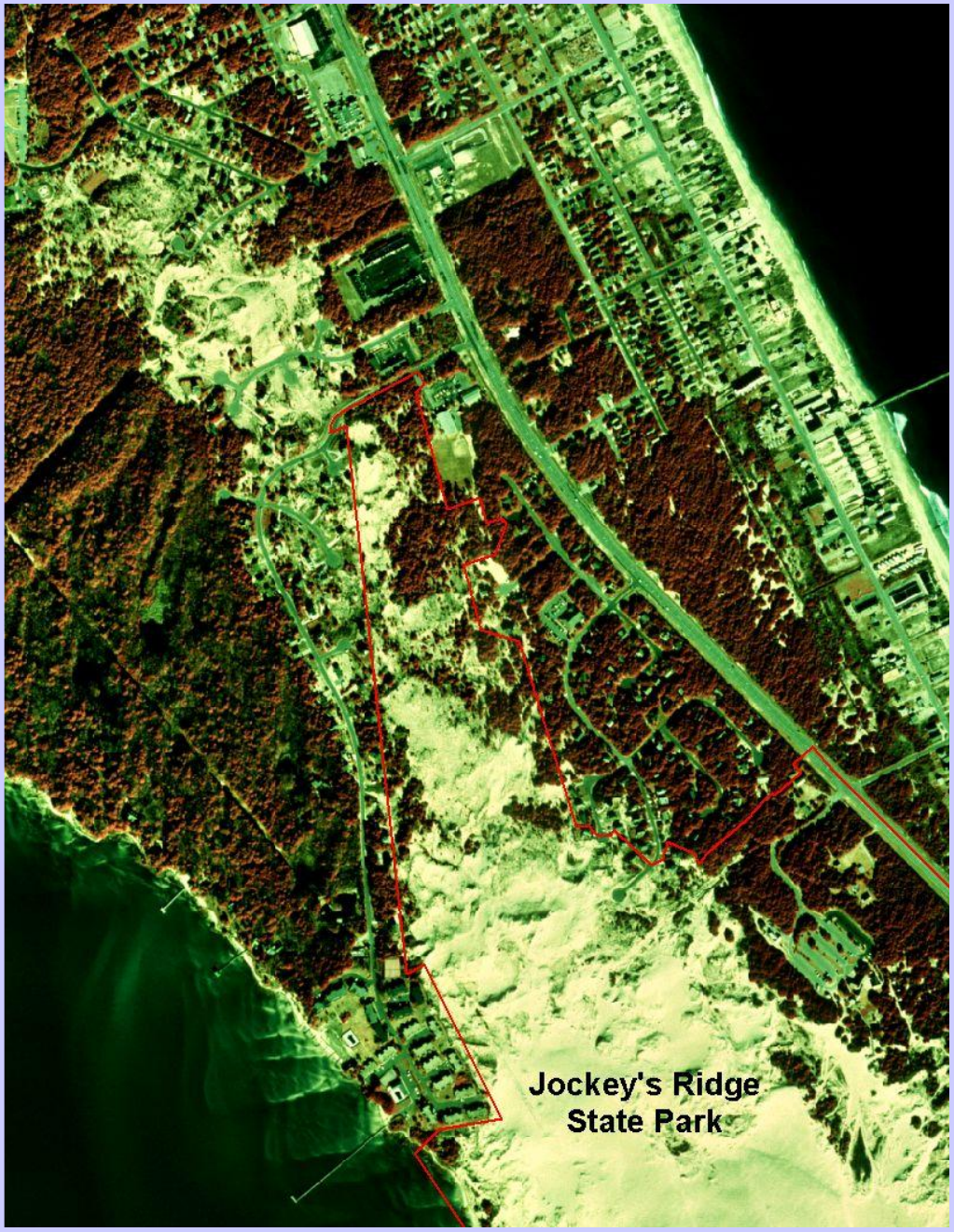
Ecosystem Mapping

- Habitats
  - Ground survey data
  - Remote sensing data
    - GAP Cover Map


N
0
20
40
60
80 Miles

Ecosystem Mapping

- Habitats
  - Ground survey data
  - Remote sensing data
    - GAP Cover Map
    - DOQQs


Jockey's Ridge
State Park

Ecosystem Mapping

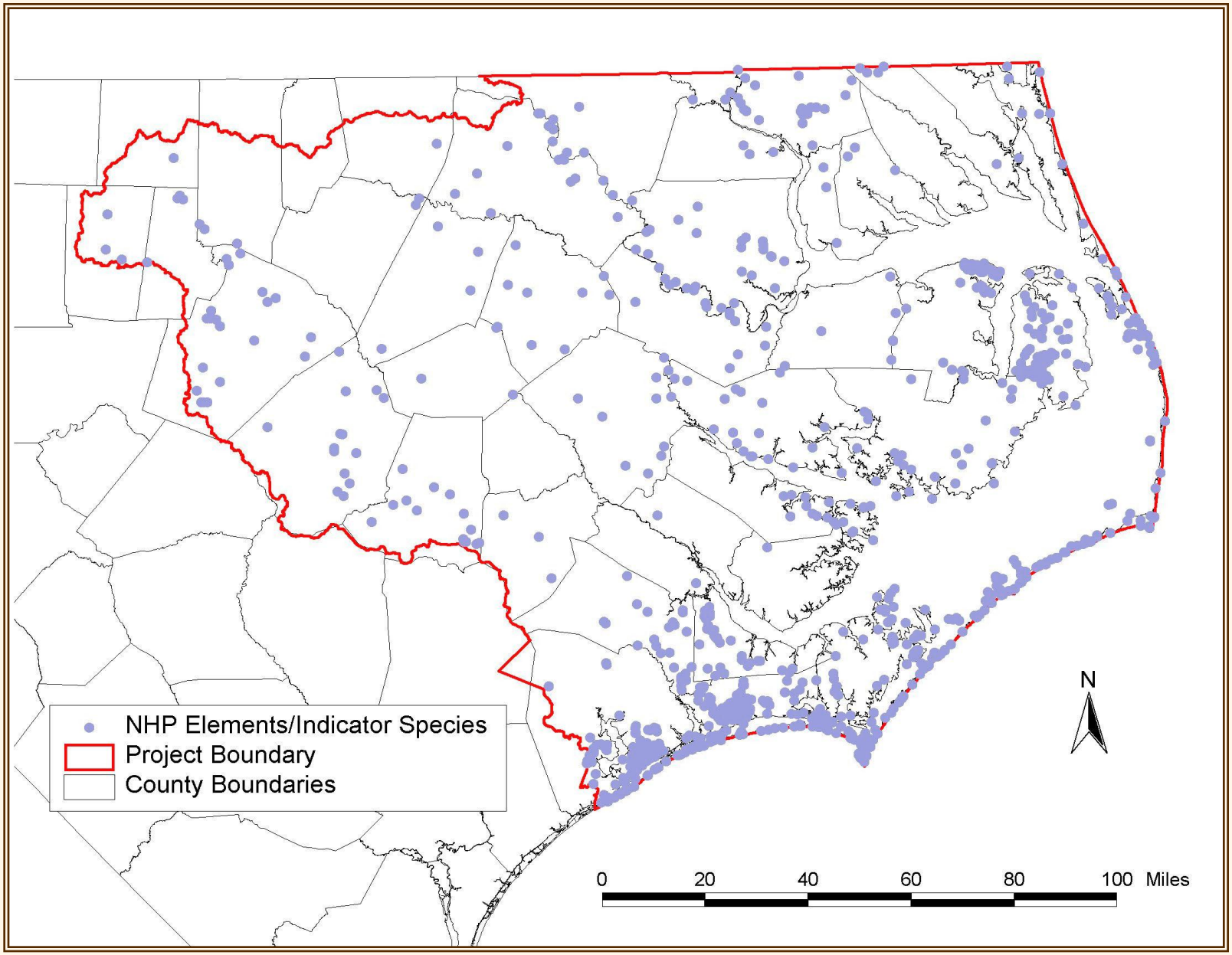
- Habitats
- Indicator species

Ecosystem Mapping

- Habitats
- Indicator species
  - Based on ground surveys only

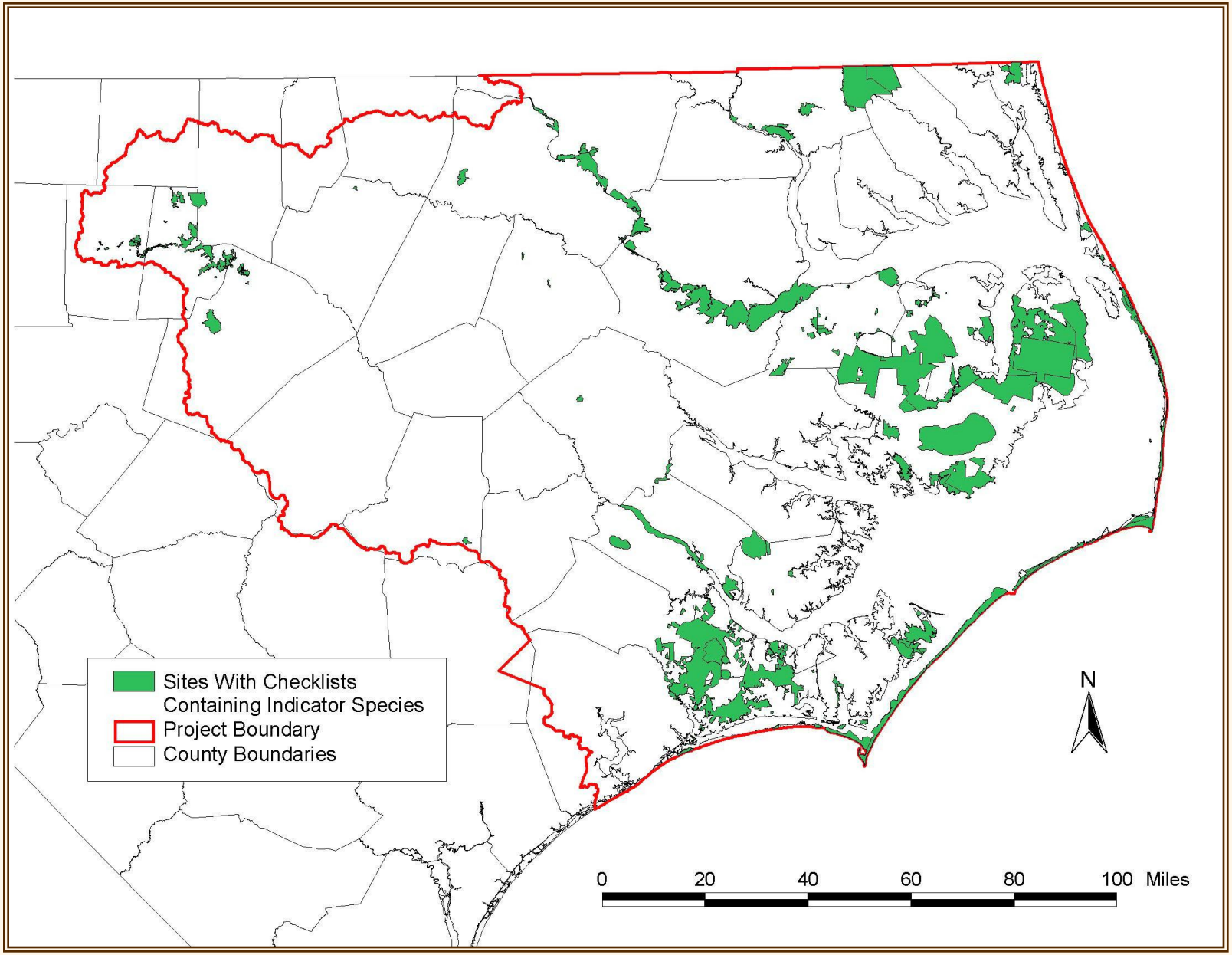
Ecosystem Mapping

- Habitats
- Indicator species
  - Based on ground surveys only
    - Point records


NHP Elements/Indicator Species
Project Boundary
County Boundaries
N
0
20
40
60
80
100
Miles

Ecosystem Mapping

- Habitats
- Indicator species
  - Based on ground surveys only
    - Point records
    - Site checklists


Sites With Checklists
Containing Indicator Species
Project Boundary
County Boundaries
N
0
20
40
60
80
100
Miles

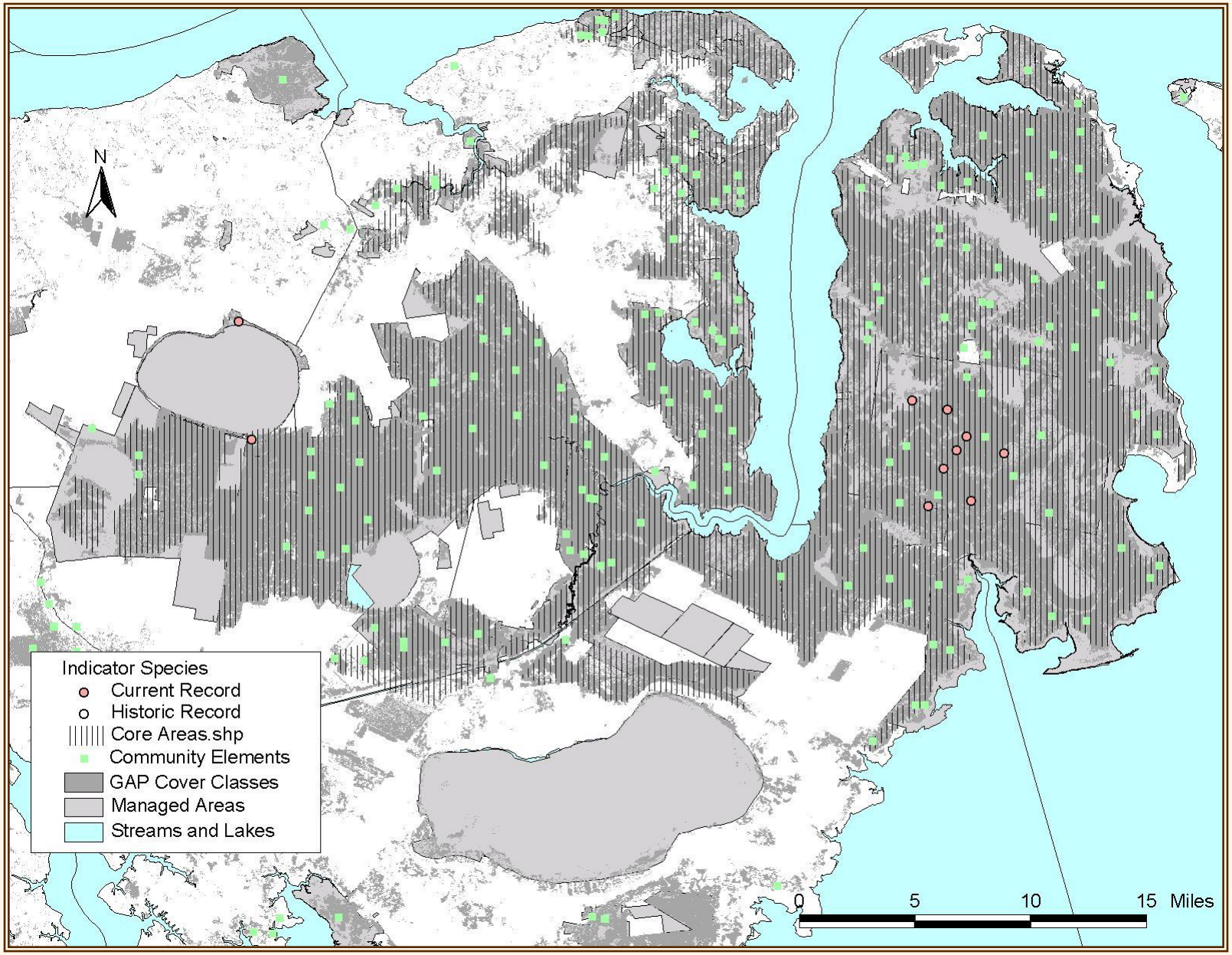
Identification of Core Areas

Identification of Core Areas

- Areas with concentration of indicator species

Identification of Core Areas

- Areas with concentration of indicator species
  - Must have at least 50% of the total number of species for a particular group


N
Indicator Species
Current Record
Historic Record
Core Areas.shp
Community Elements
GAP Cover Classes
Managed Areas
Streams and Lakes
0
5
10
15 Miles

Identification of Connectors

Identification of Connectors

- Consist of either continuous corridors or stepping stones of habitat

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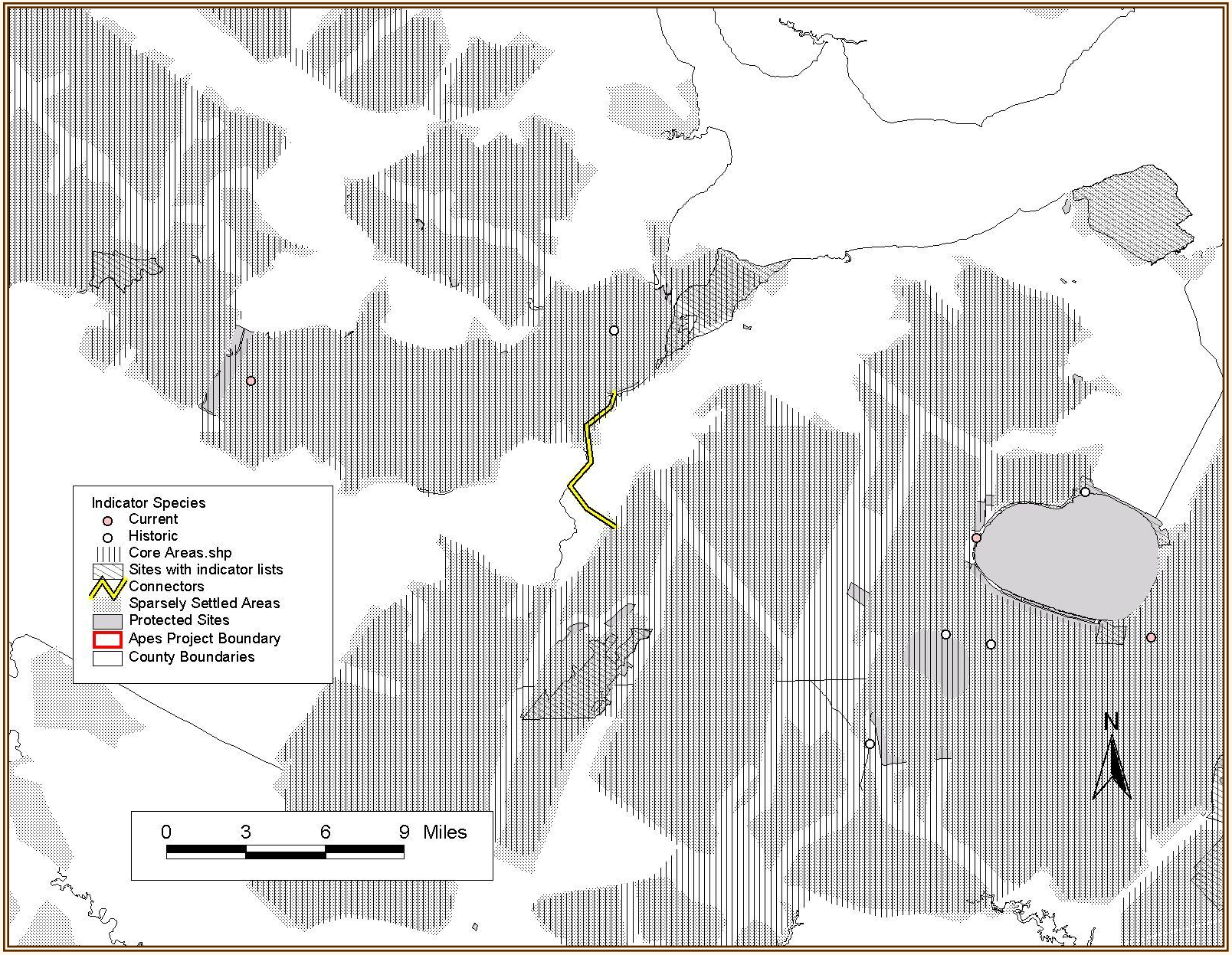
  - Habitat must be generally similar to the main type for a given ecosystem unit

Identification of Connectors

- Consist of either continuous corridors or stepping stones of habitat
  - Habitat must be generally similar to the main type for a given ecosystem unit
  - Must connect identified core areas


Indicator Species
Current
Historic
Core Areas.shp
Sites with indicator lists
Connectors
Sparsely Settled Areas
Protected Sites
Apes Project Boundary
County Boundaries
0
3
6
9 Miles
N


N

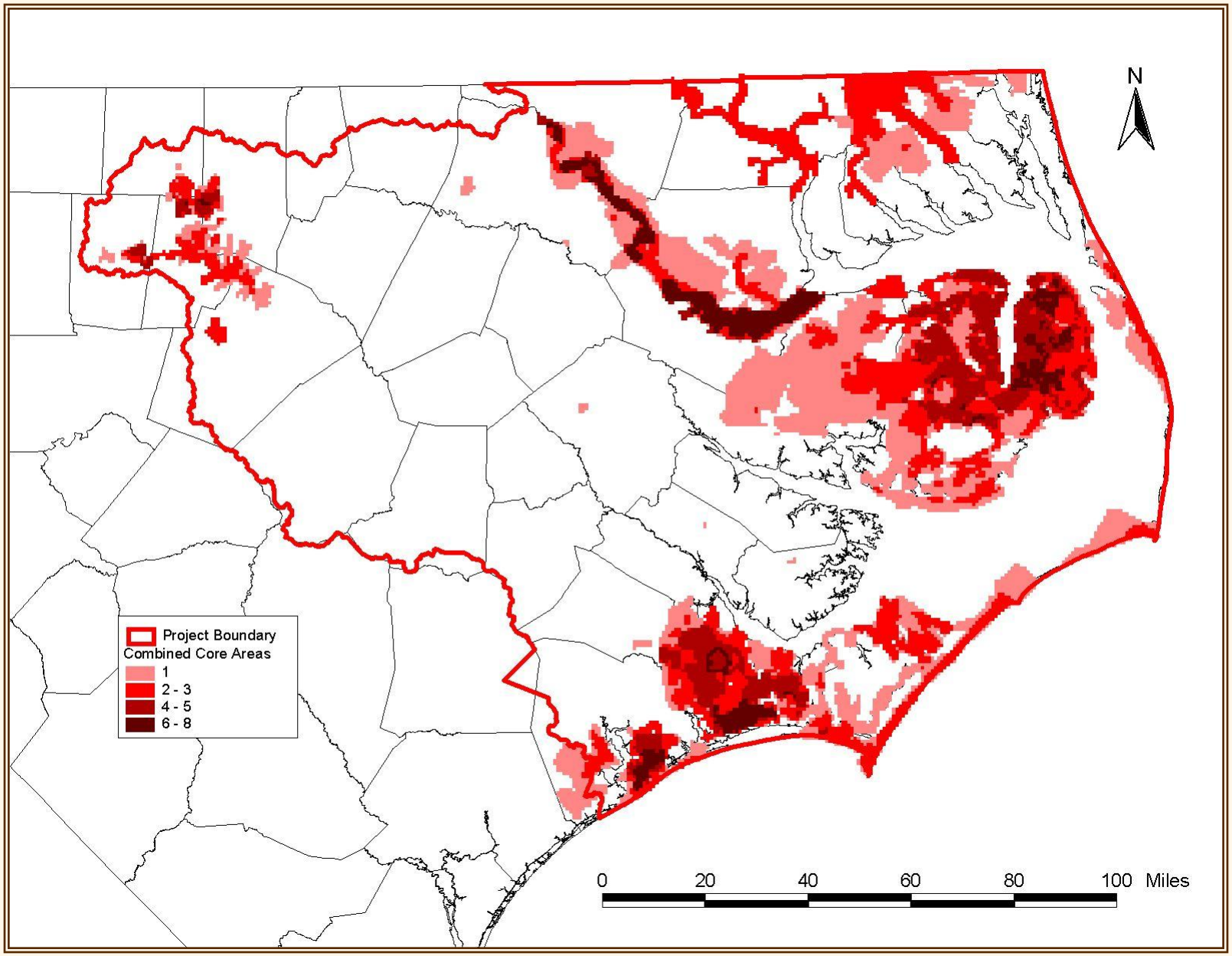
Results

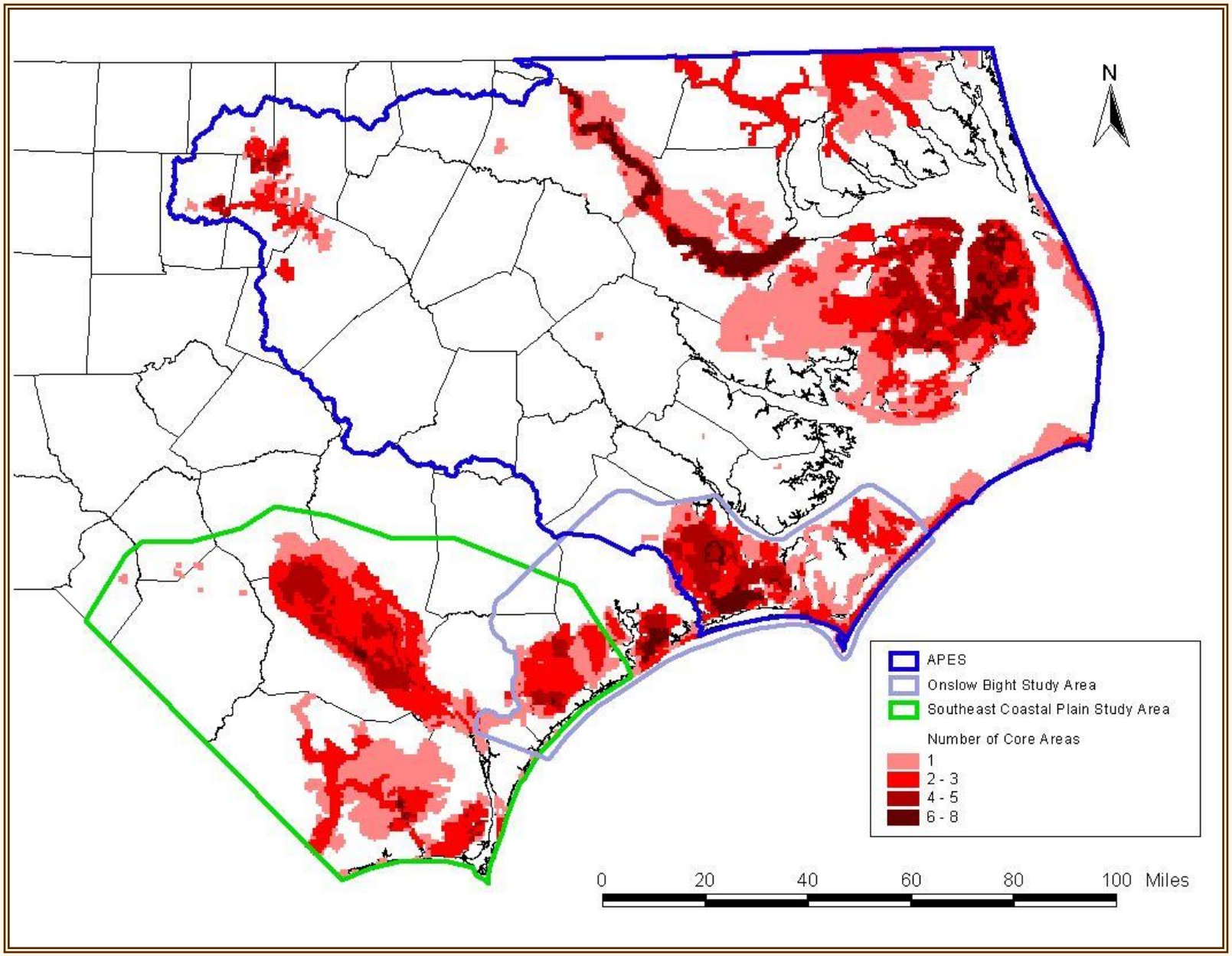
Results

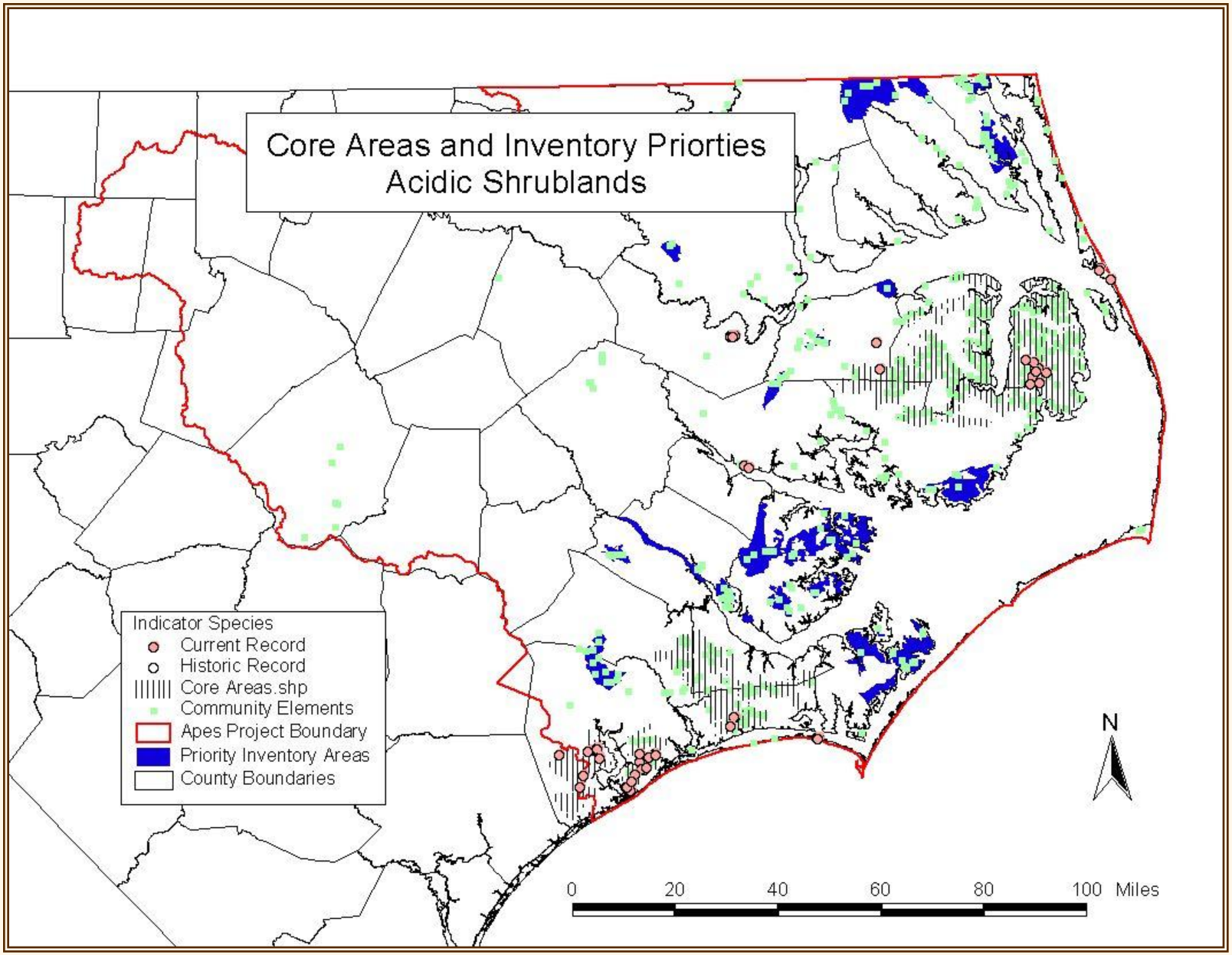
- 76 core areas were identified overall

Results

- 76 core areas were identified overall
  - Representing only 26 of the 38 ecosystem units


N
Project Boundary
Combined Core Areas
1
2 - 3
4 - 5
6 - 8
0
20
40
60
80
100
Miles


N
APES
Onslow Bight Study Area
Southeast Coastal Plain Study Area
Number of Core Areas
1
2 - 3
4 - 5
6 - 8
0
20
40
60
80
100
Miles

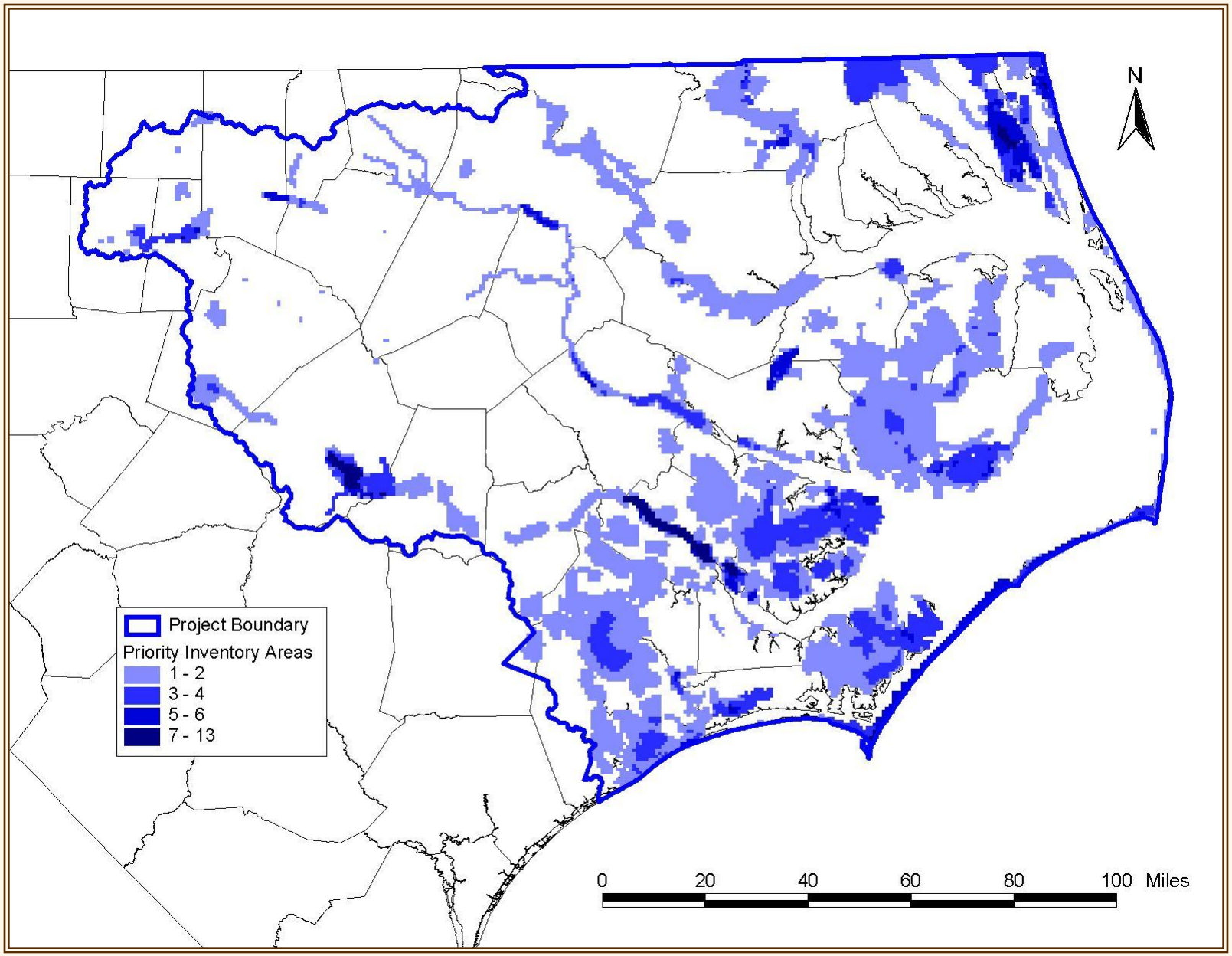

Core Areas and Inventory Priorties
Acidic Shrublands
Indicator Species
Current Record
Historic Record
Core Areas.shp
Community Elements
Apes Project Boundary
Priority Inventory Areas
County Boundaries
N
0
20
40
60
80
100 Miles

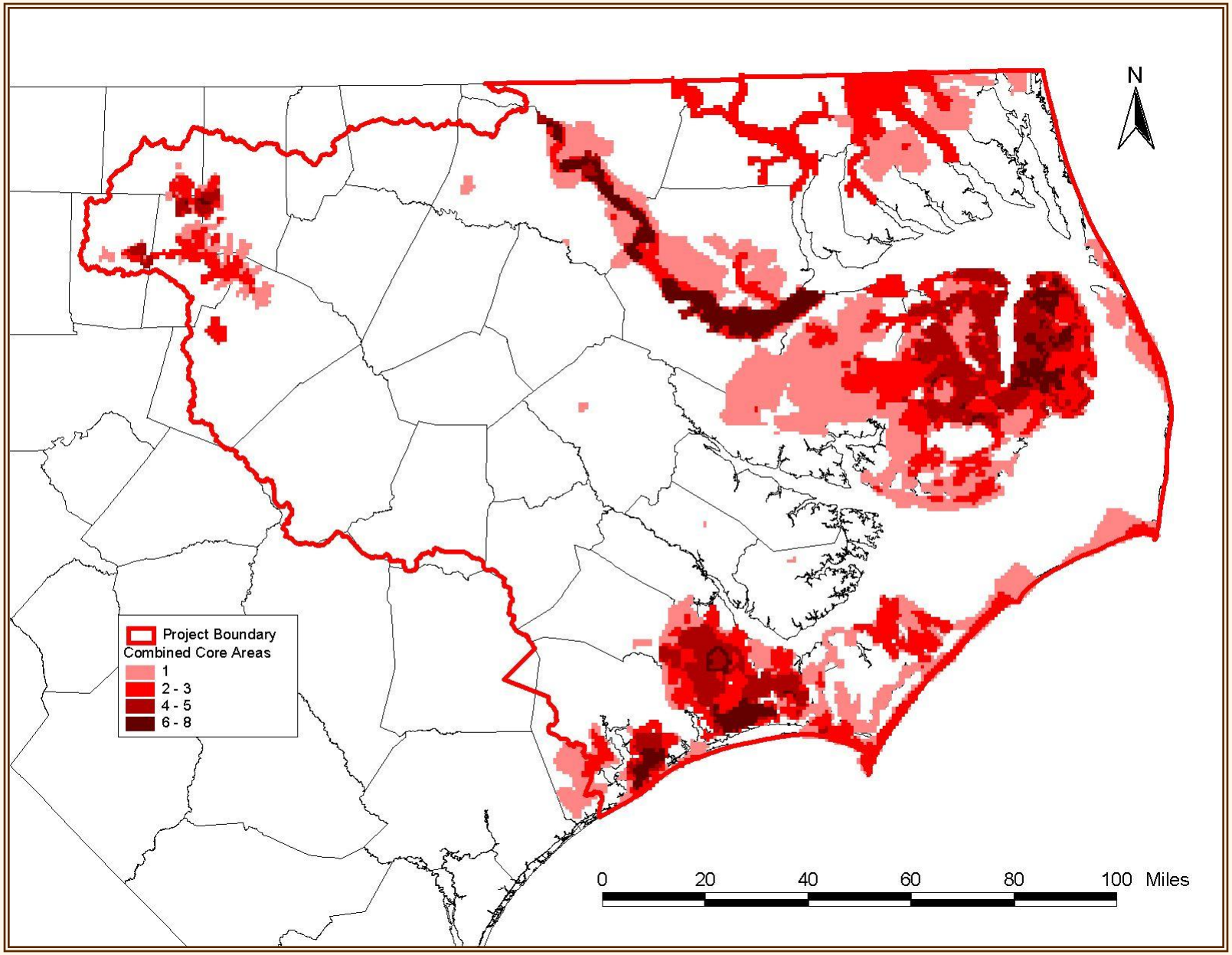
Results

- 221 priority inventory areas were identified

Results

- 221 priority inventory areas were identified
  - Including at least one such area for each ecosystem unit


N
Project Boundary
Priority Inventory Areas
1 - 2
3 - 4
5 - 6
7 - 13
0
20
40
60
80
100
Miles


N
Project Boundary
Combined Core Areas
1
2 - 3
4 - 5
6 - 8
0
20
40
60
80
100
Miles