

# Cape Fear River and Southeast Atlantic Coast Fish and Wildlife Habitat Assessment

Keith Walls





# Introduction and Background

- DCA was contracted by NFWF to perform a comprehensive analysis and develop a spatial model to identify areas critical to fish, wildlife and ecosystem health in the Cape Fear River basin
- CFR analysis is supplemented by a broader analysis of the South Atlantic coast
- Products are to be used by NFWF and its federal partners to inform priority areas for possible resiliency projects
- This is the second part of three key components of a broader program of work in CFR
- Part 1 is a complementary coastal resiliency analysis produced by NEMAC
- Part 3 is the development of a list and map of “shovel-ready” resiliency projects within the CFR basin
- Results of Part 1 and 2 are to be combined to produce a final model



# Team Members

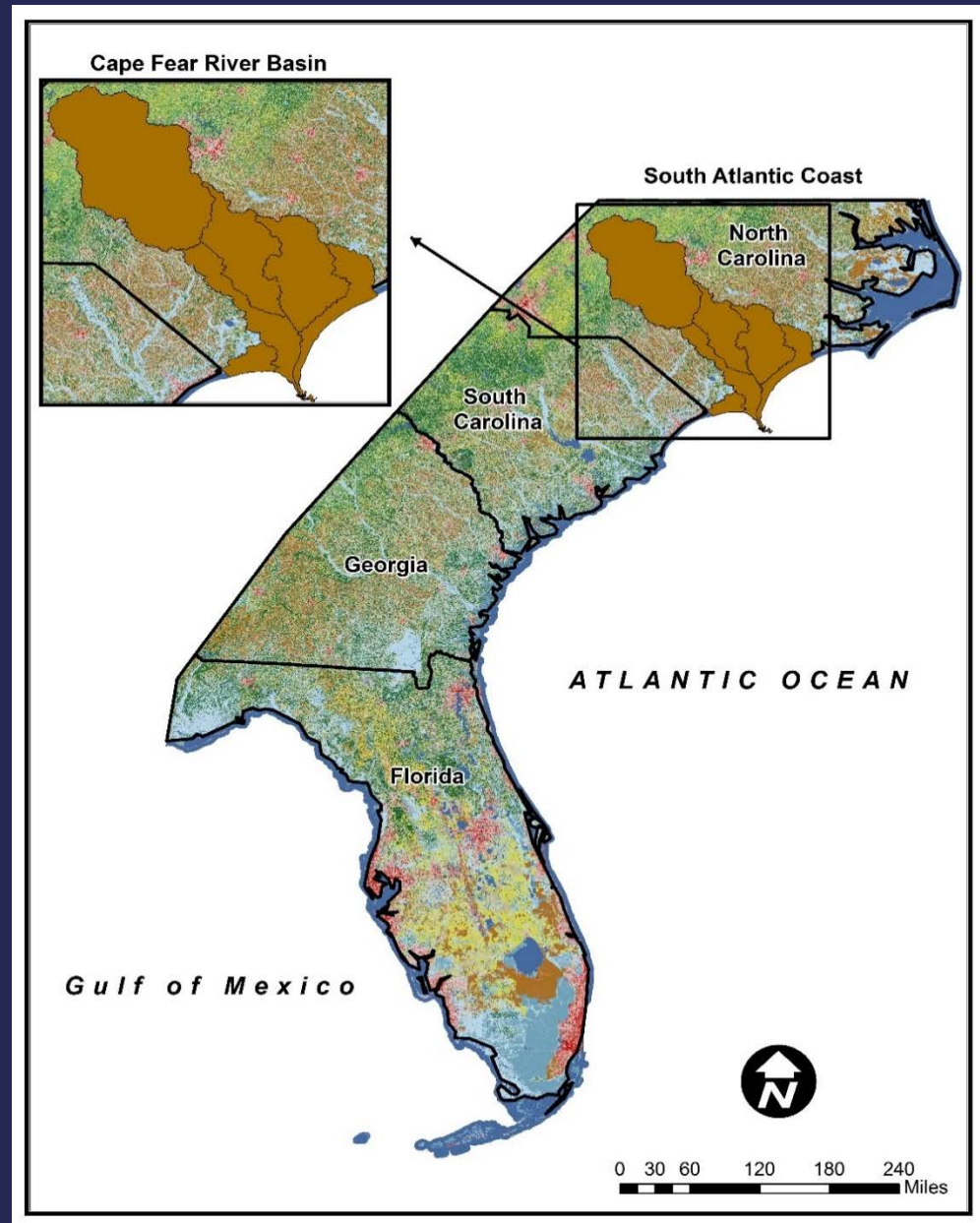
- North Carolina Natural Heritage Program
- NatureServe
- South Atlantic Landscape Conservation Cooperative
- University of North Carolina Wilmington





# Study Area

- Cape Fear River basin and two additional coastal HUCs were the primary focus of the assessment
- CFR was selected because it represents the largest watershed wholly contained within NC, supporting more than a third of the state's population.
- CFR is one of the most diverse regions along the eastern seaboard
- Southeast Atlantic Coast evaluation included coastal NC, SC, GA and FL





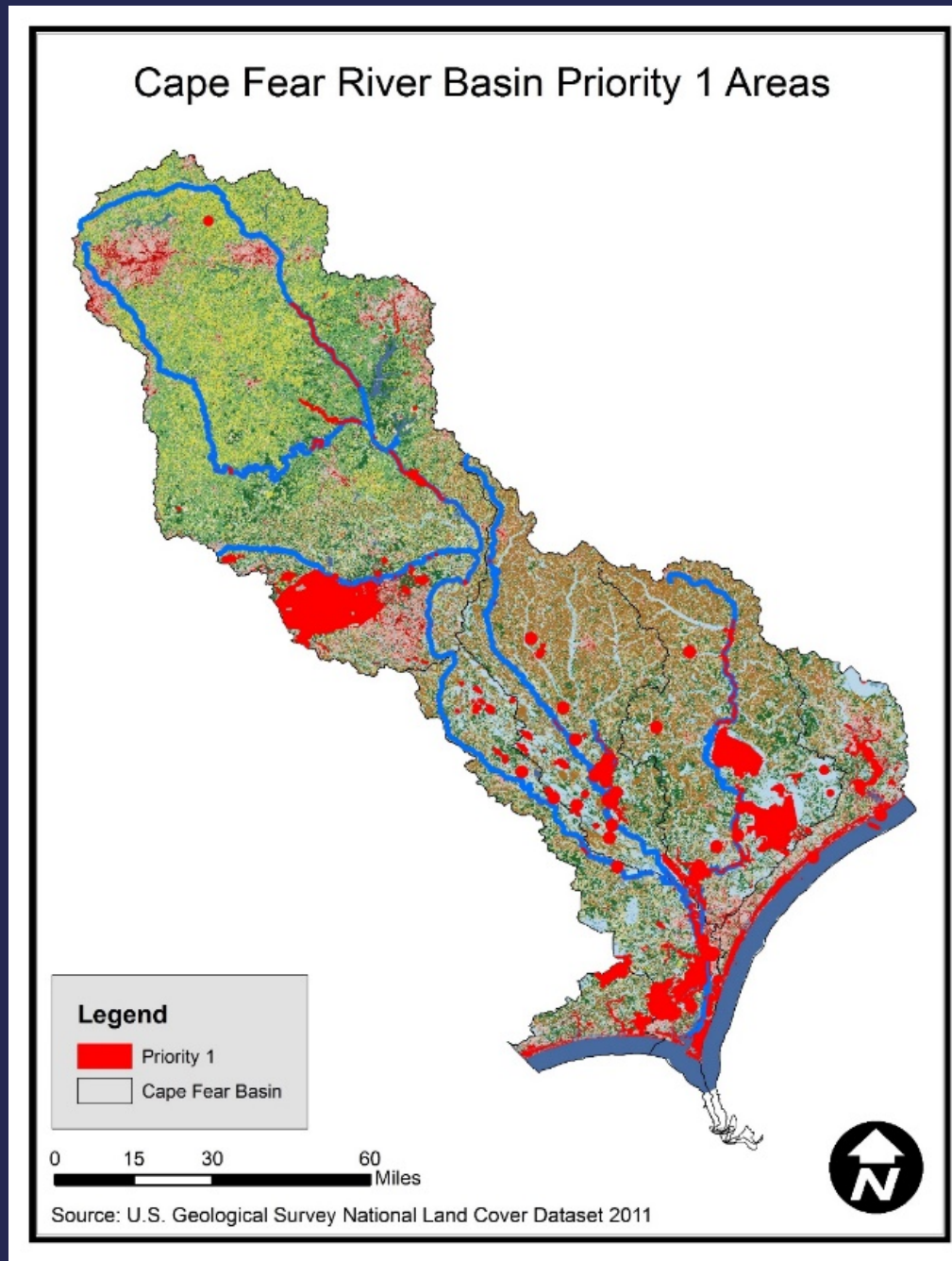
# General Methodology

- Subset of spatial data was identified, acquired and clipped to study area
- Four primary layers from the subset were queried to extract features representing G1, G2, G3, and Fed T and E species occurrences; as well as, areas with significant biodiversity where these elements occurred
- Supplemented by special local data sets representing important terrestrial animal assemblages and aquatic species that were not captured by the four primary layers.
- Geoprocessing tools were used to aggregate extracted features into larger composites
- Results of these processes were exported and added to the map document as Tiered groupings (Priority 1, Priority 2, and Priority 3)



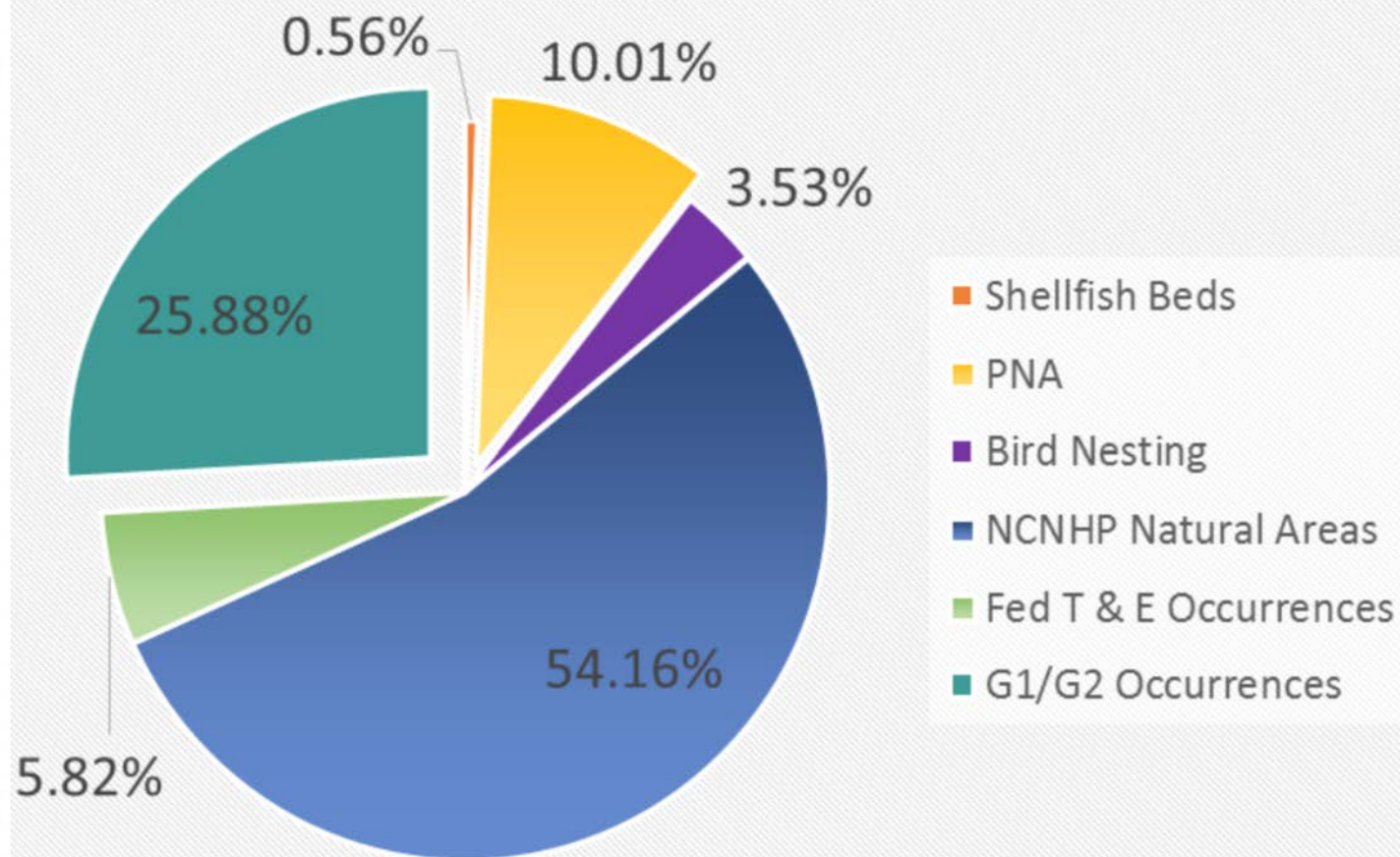
# Priority 1 Criteria

- Natural areas supporting rare and imperiled species with “exceptional”, “very high”, or “high” biodiversity significance
- Current, G1/G2 element occurrences filtered to include vertebrates and freshwater invertebrates only
- Current, Federal T and E element occurrences filtered to include vertebrates and freshwater invertebrates only
- Bird sanctuary islands
- Submerged aquatic vegetation
- Primary fish nursery areas
- Natural shellfish beds



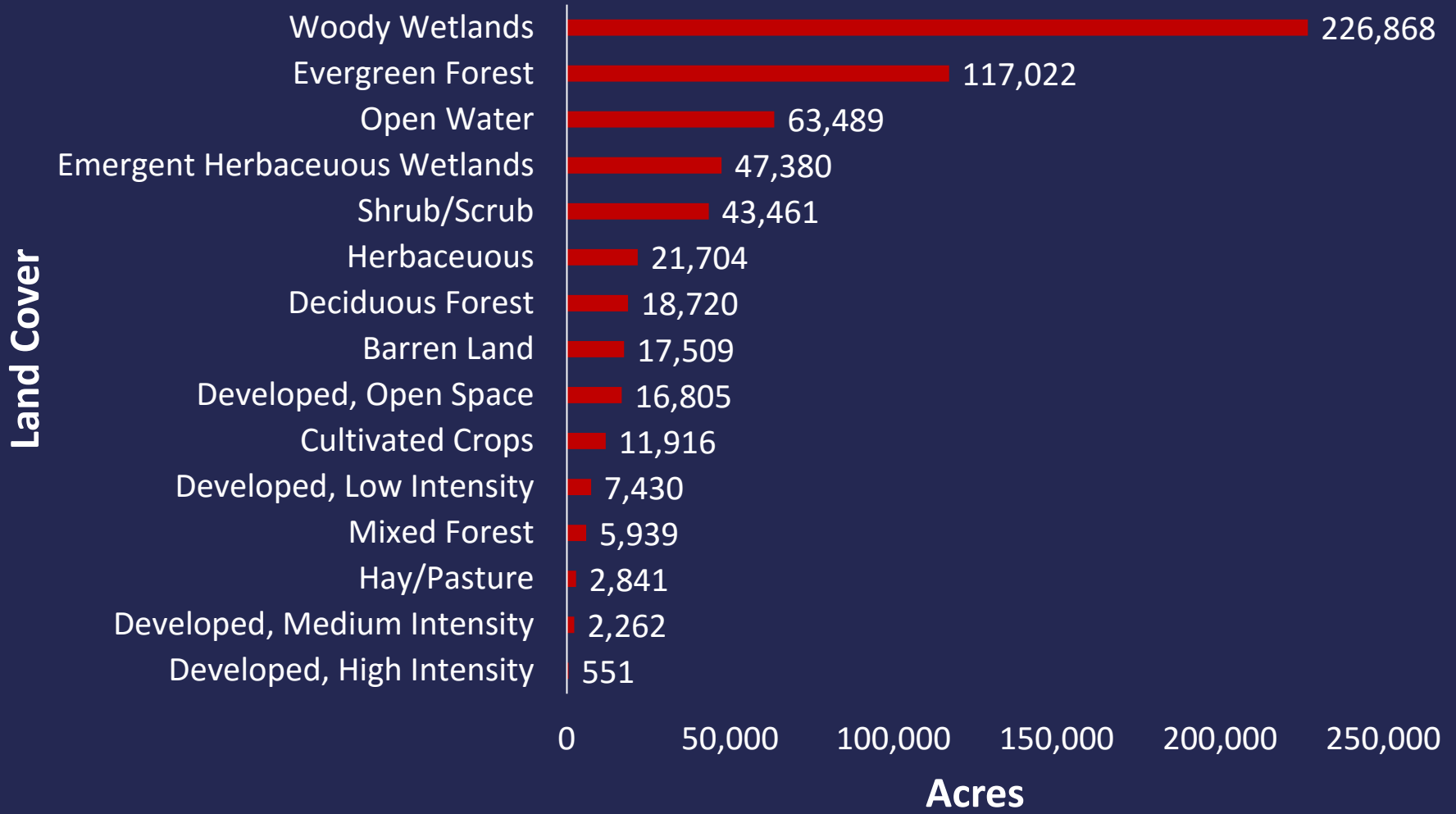


## Priority 1 Areas





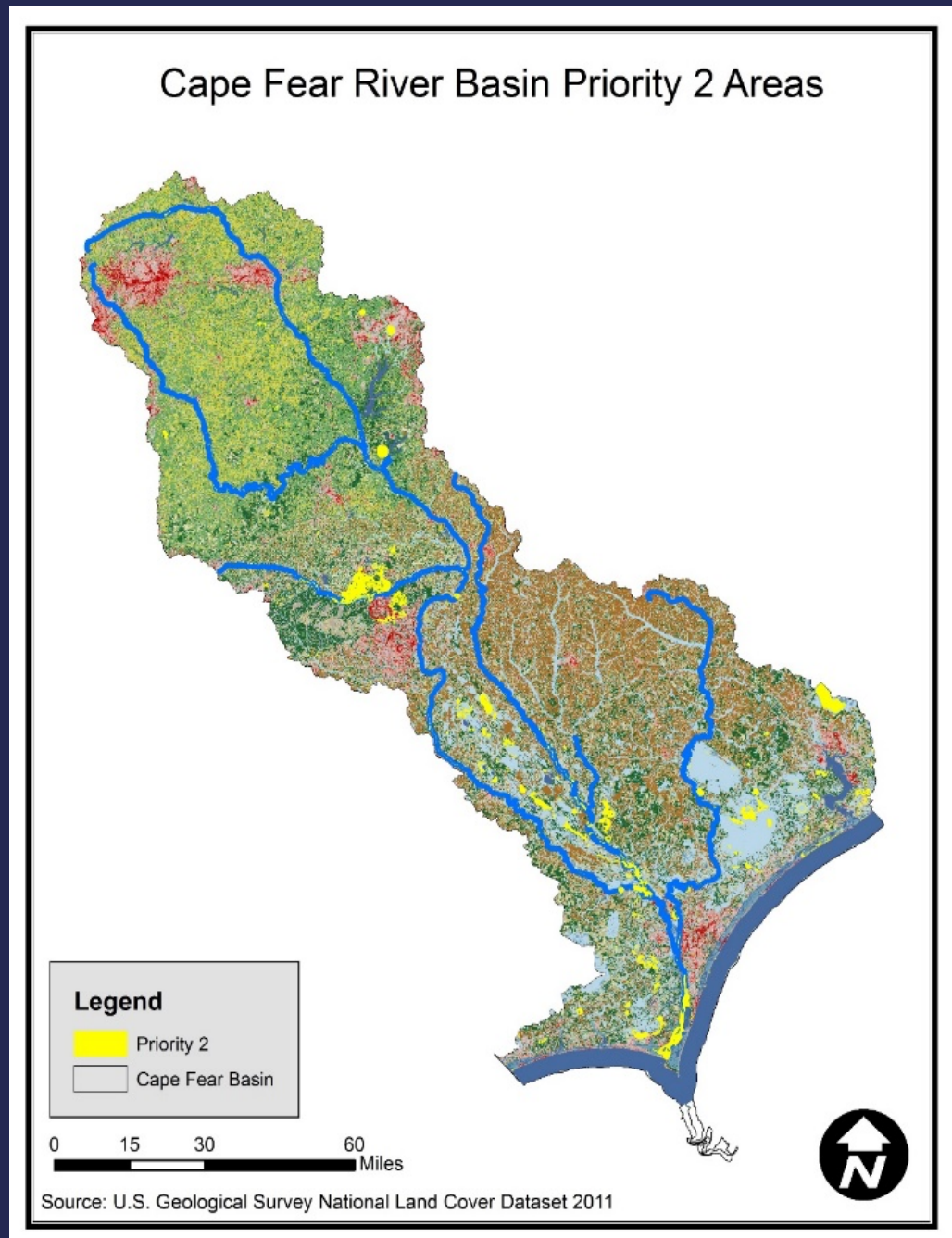
## Priority 1 Land Cover Analysis





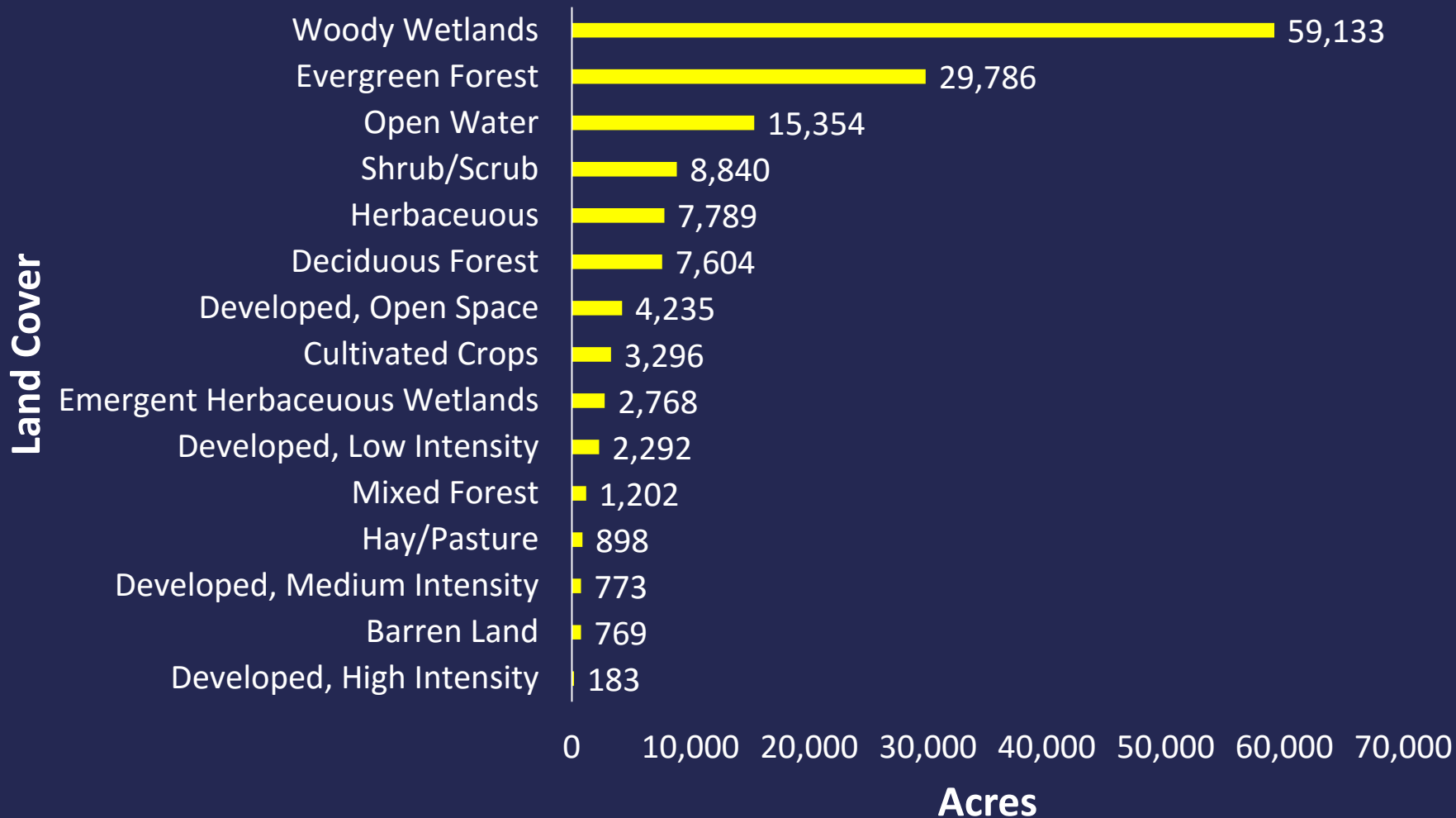
# Priority 2 Criteria

- Natural areas supporting G1/G2 and/or Federal T and E species with a “Top Rating” of “Moderate” for biodiversity significance
- Natural areas supporting G3 species with a “Top Rating” of “Exceptional,” “Very High” or “High” for biodiversity significance
- G3 element occurrences filtered to include vertebrates and freshwater invertebrates only





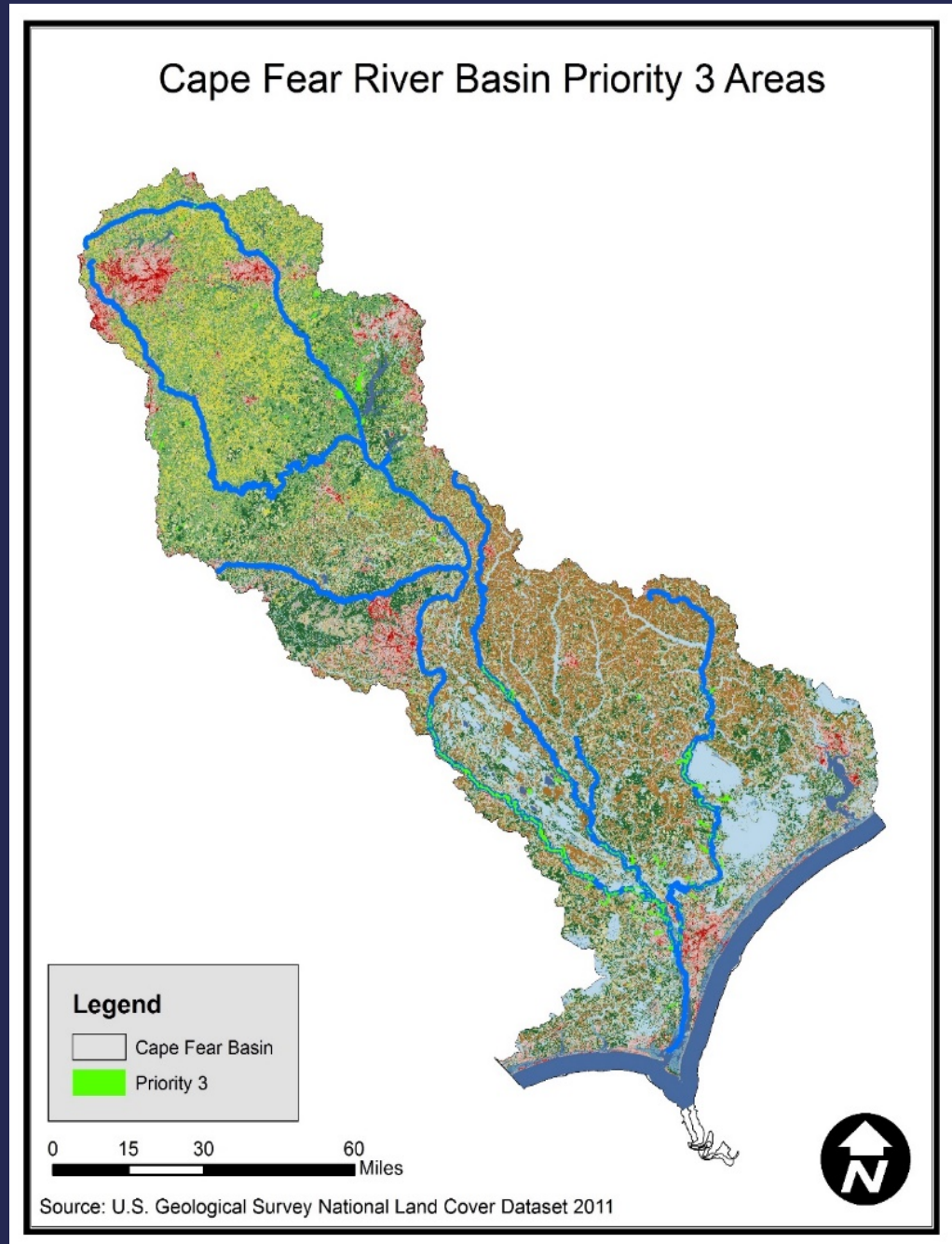
## Priority 2 Land Cover Analysis





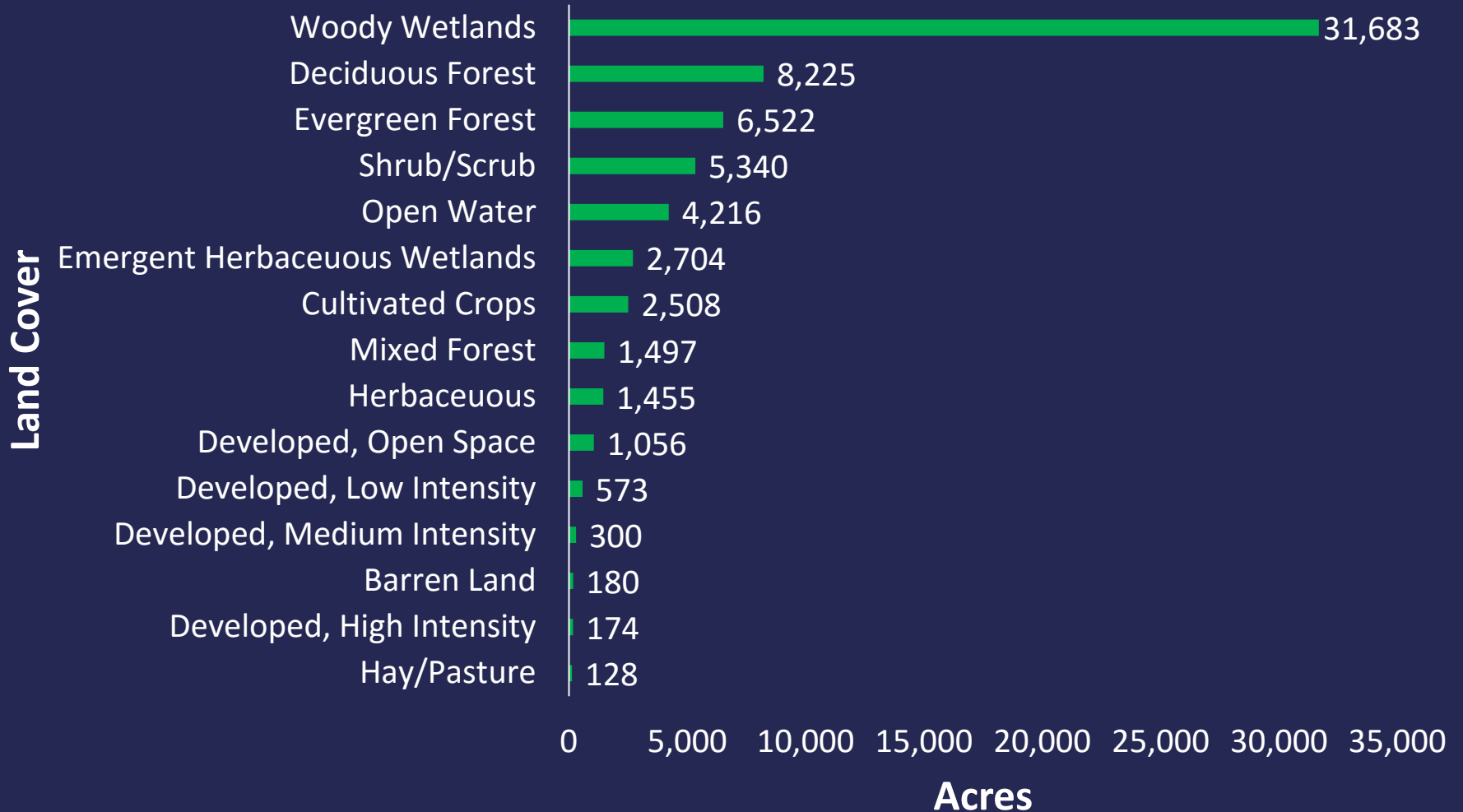
# Priority 3 Criteria

- Natural areas supporting G1/G2 and/or Federal T and E species with a “Top Rating” of “General” for biodiversity significance
- Natural areas supporting G3 species with a “Top Rating” of “Moderate” or “General” for biodiversity significance
- Candidate/Petition species
- Anadromous fish spawning areas (Model)





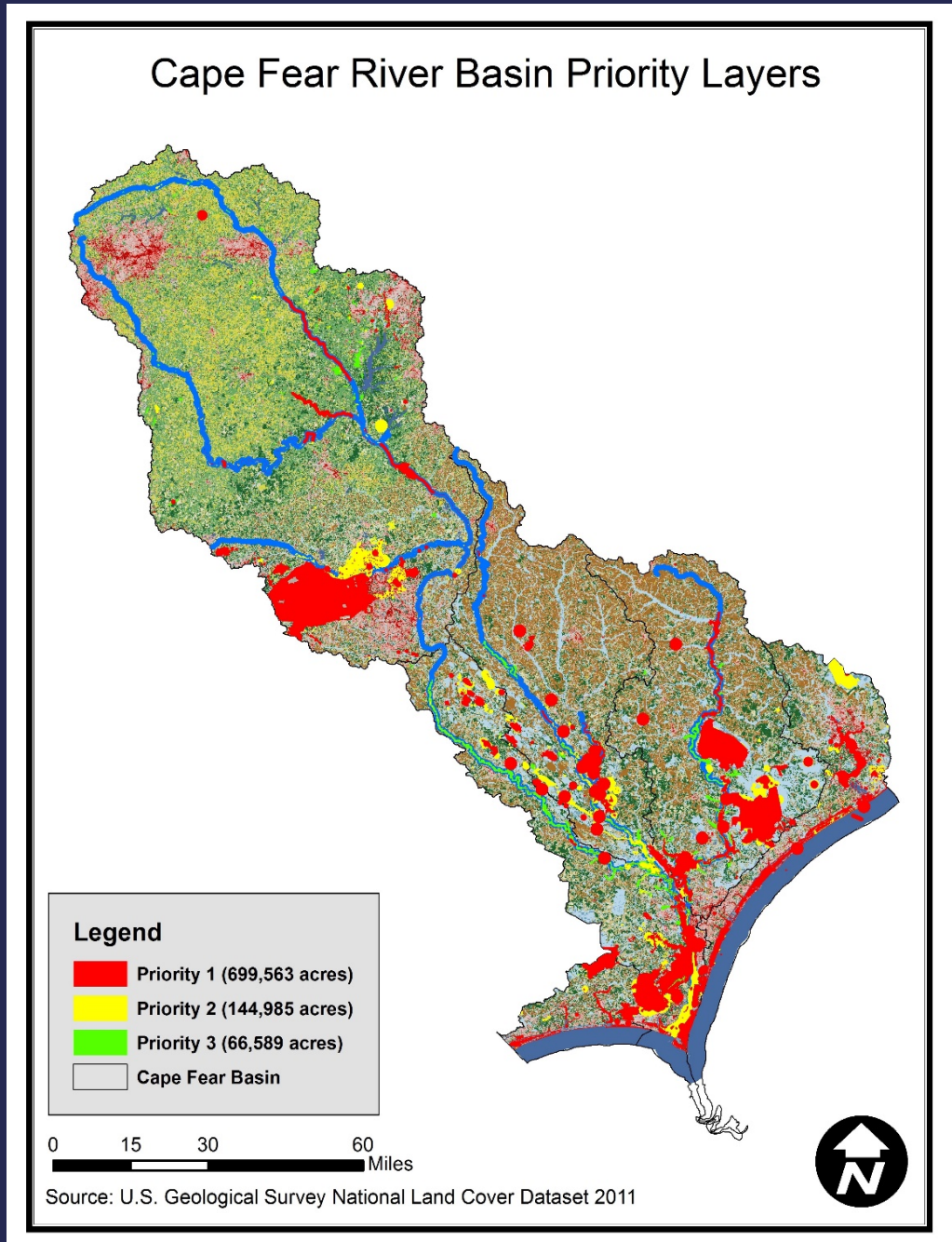
## Priority 3 Areas Land Cover Analysis





# Composite

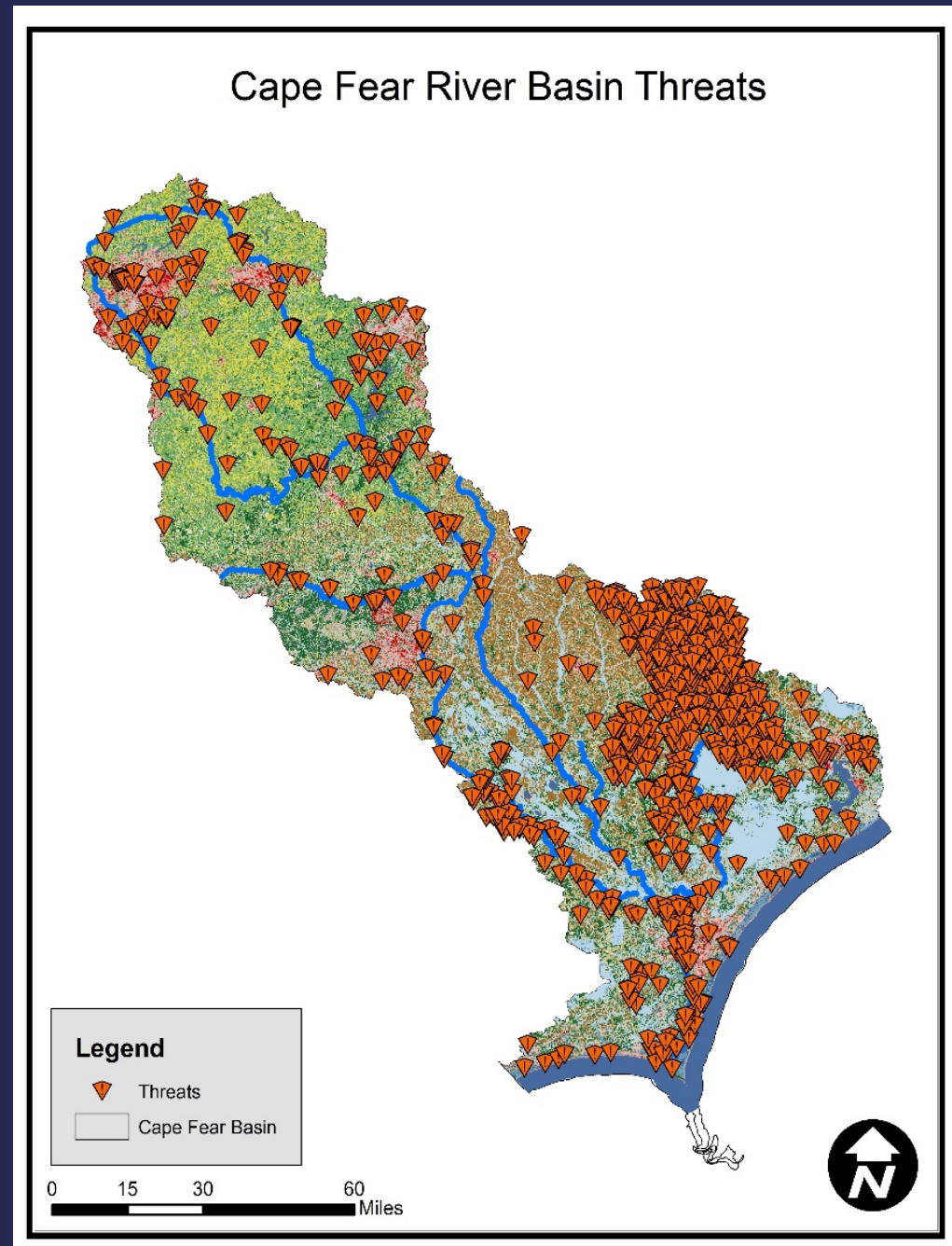
- 911,137 Acres
- 77% Priority 1
- 16% Priority 2
- 7% Priority 3
- 34% Woody Wetlands
- 9% Open Water





# Threats Overlay

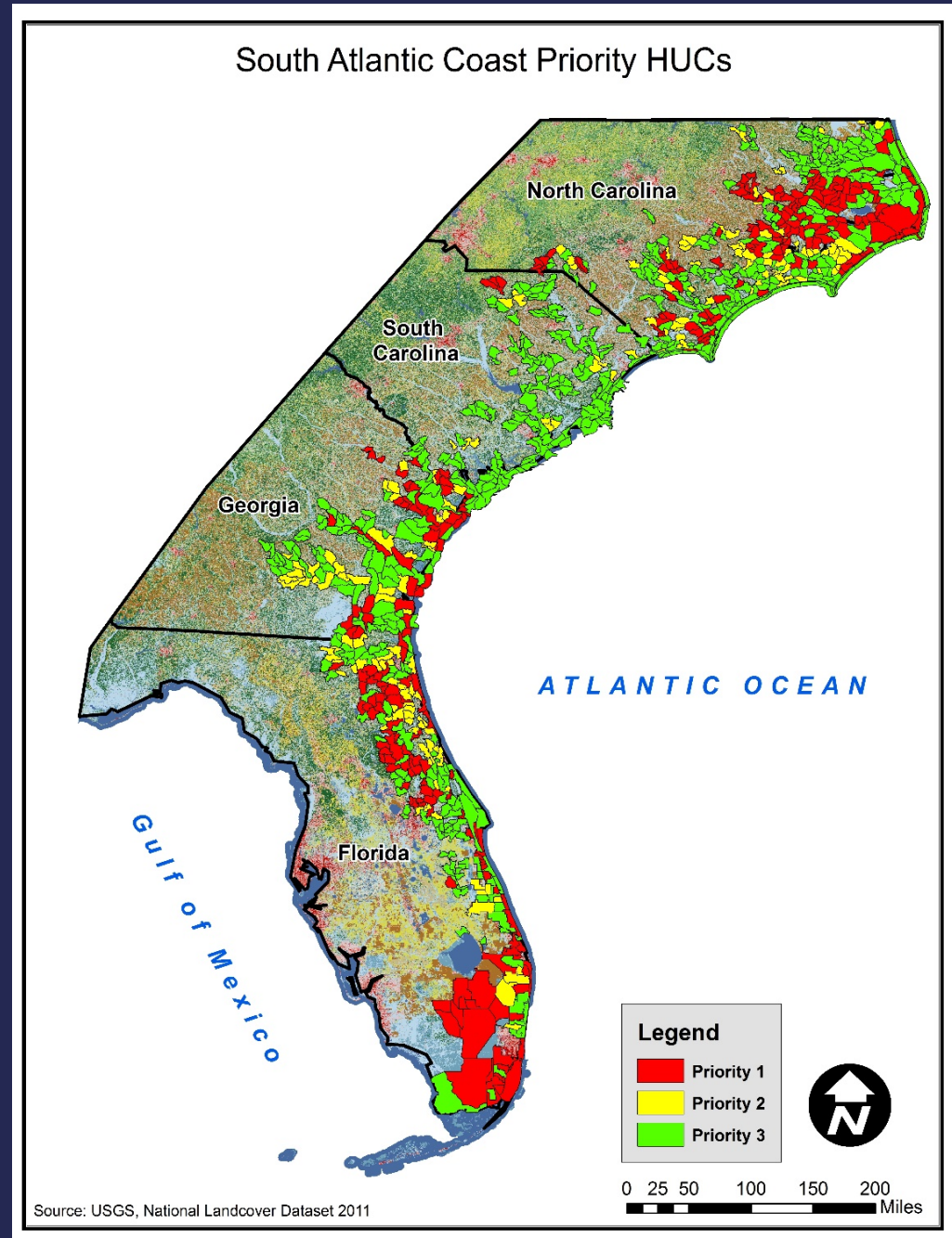
- NPDES sites
- Coal ash ponds
- CAFOs
- Public boat ramps
- 1,253 swine Concentrated Animal Farming Operations (CAFOs)
- 61 swine CAFOs are located within ¼ mile of a Priority 1 area





# Regional Criteria

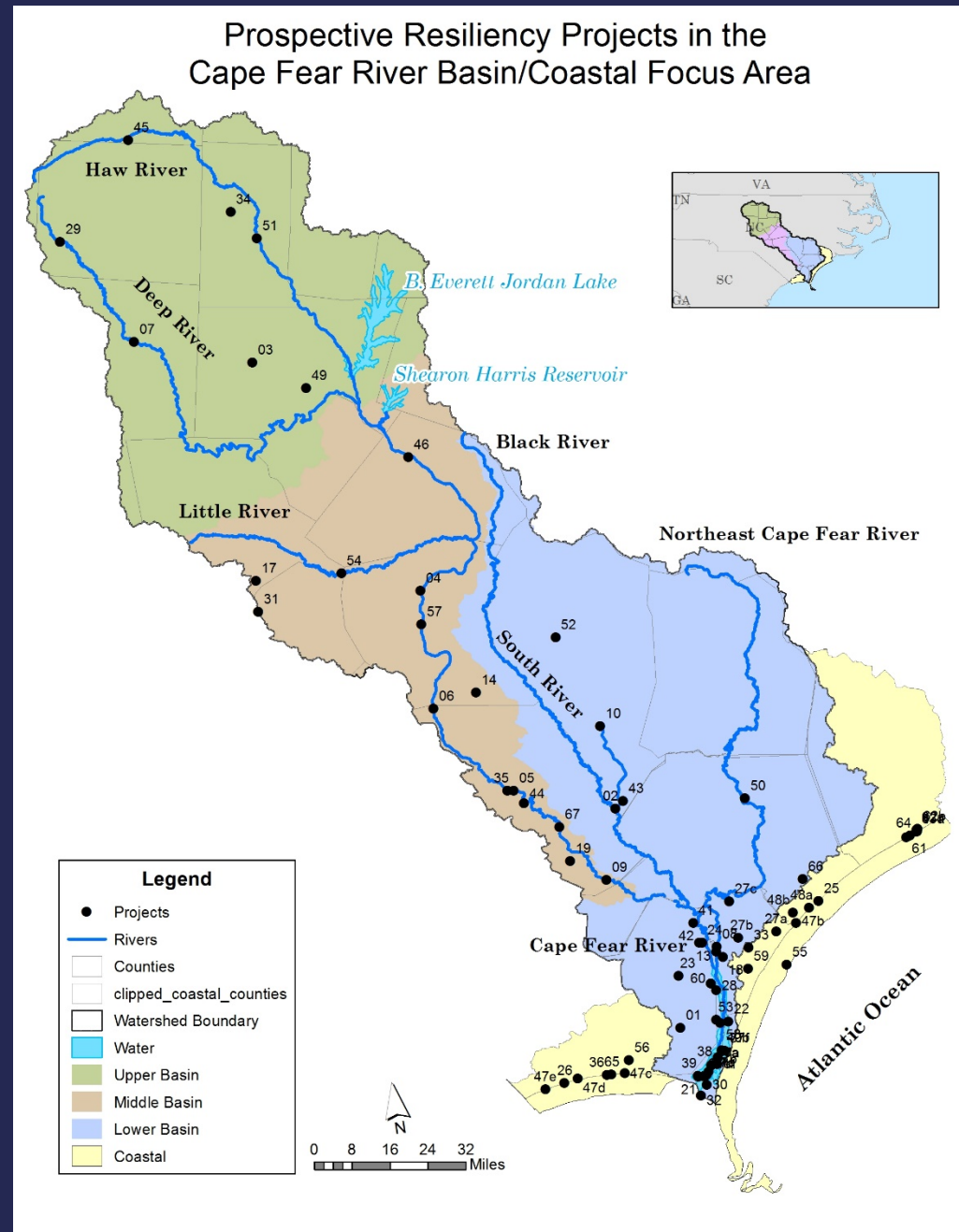
- **Priority 1:** HUC 12 polygons with “Highest” G1/G2 species density
- **Priority 2:** HUC 12 polygons with “High” G1/G2 species density
- **Priority 3:** HUC 12 polygons with “Medium” G1/G2 species density
- **Related Tables:** Lists of all G1-G2) and U.S. federal ESA status species by HUC-12 watershed
- Lists of all G1-G2 and U.S. federal ESA status freshwater fish, mussel, and crayfish species by HUC-12





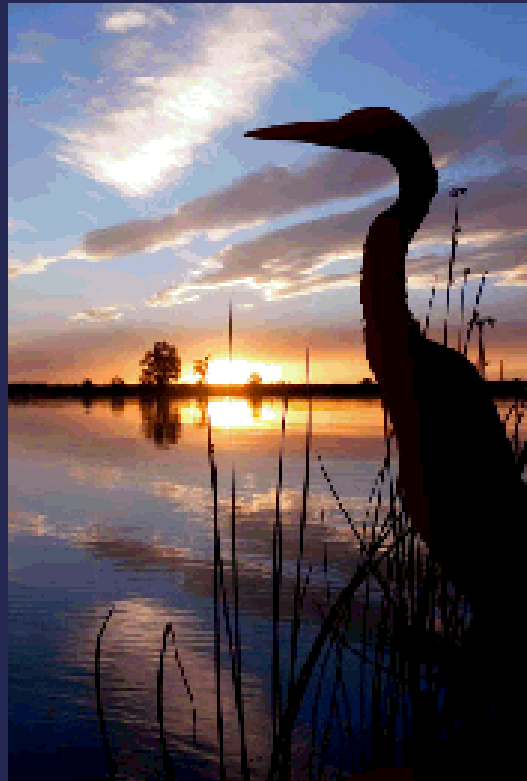
# Resiliency Projects

- Approximately 67 projects were identified and evaluated
- Projects include a variety of ecological and community benefits
- 32 habitat restoration, 12 habitat conservation, 13 barrier removal and 5 resiliency planning
- NFWF selected 3 projects, fact sheets were developed, and they are to be showcased on the NFWF website





# Questions?



Contact Info:  
Keith Walls  
[kwalls@dialcordy.com](mailto:kwalls@dialcordy.com)  
(301)-536-0698