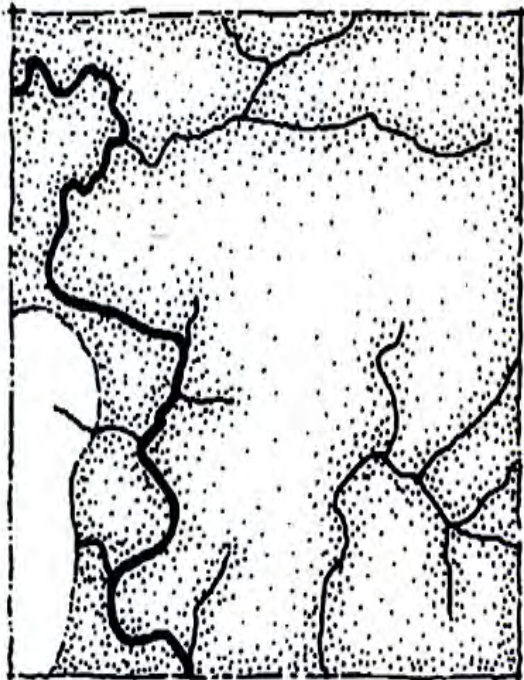




THOMAS SCOTT HOCTOR, PH. D.

University of Florida Department of
Landscape Architecture

A Primary Issue: Disjointed Incrementalism and Ecosystem Fragmentation



1831



1882



1902

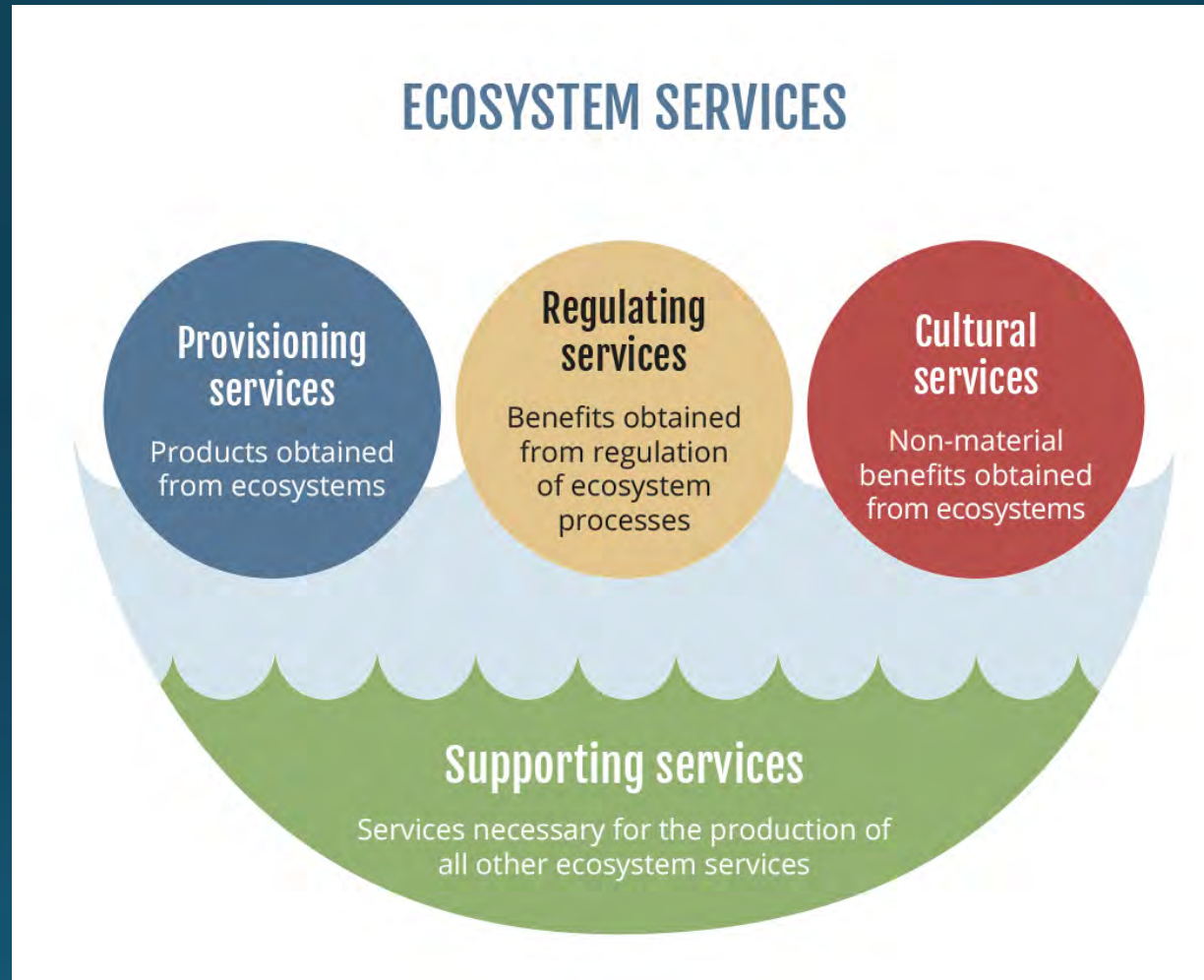


1950

Protecting Green Infrastructure

“The natural support system that maintains native species and natural ecological services, sustains air and water resources and contributes to the health and quality of life for human communities” (Benedict 2000).

Protecting Green Infrastructure



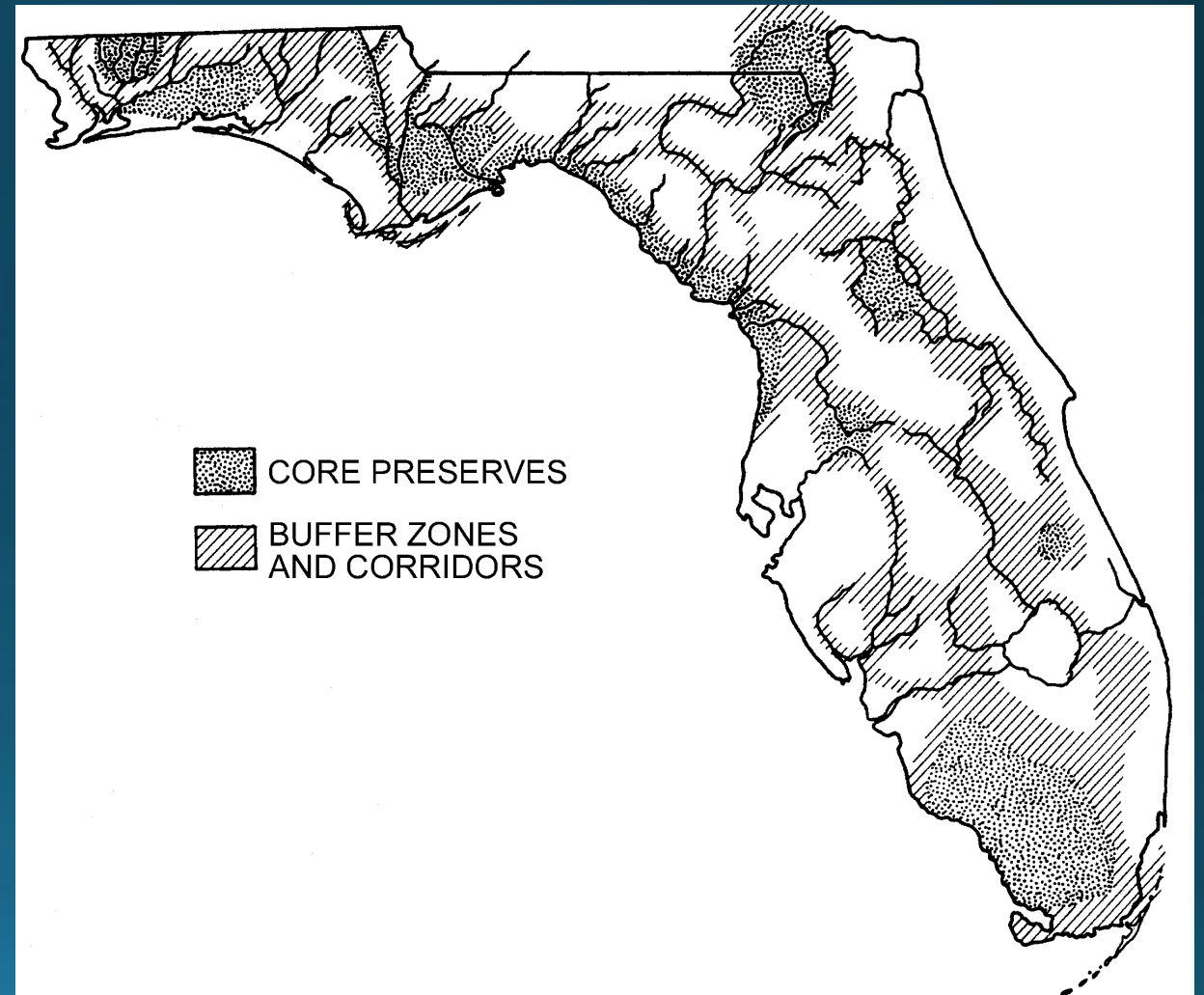
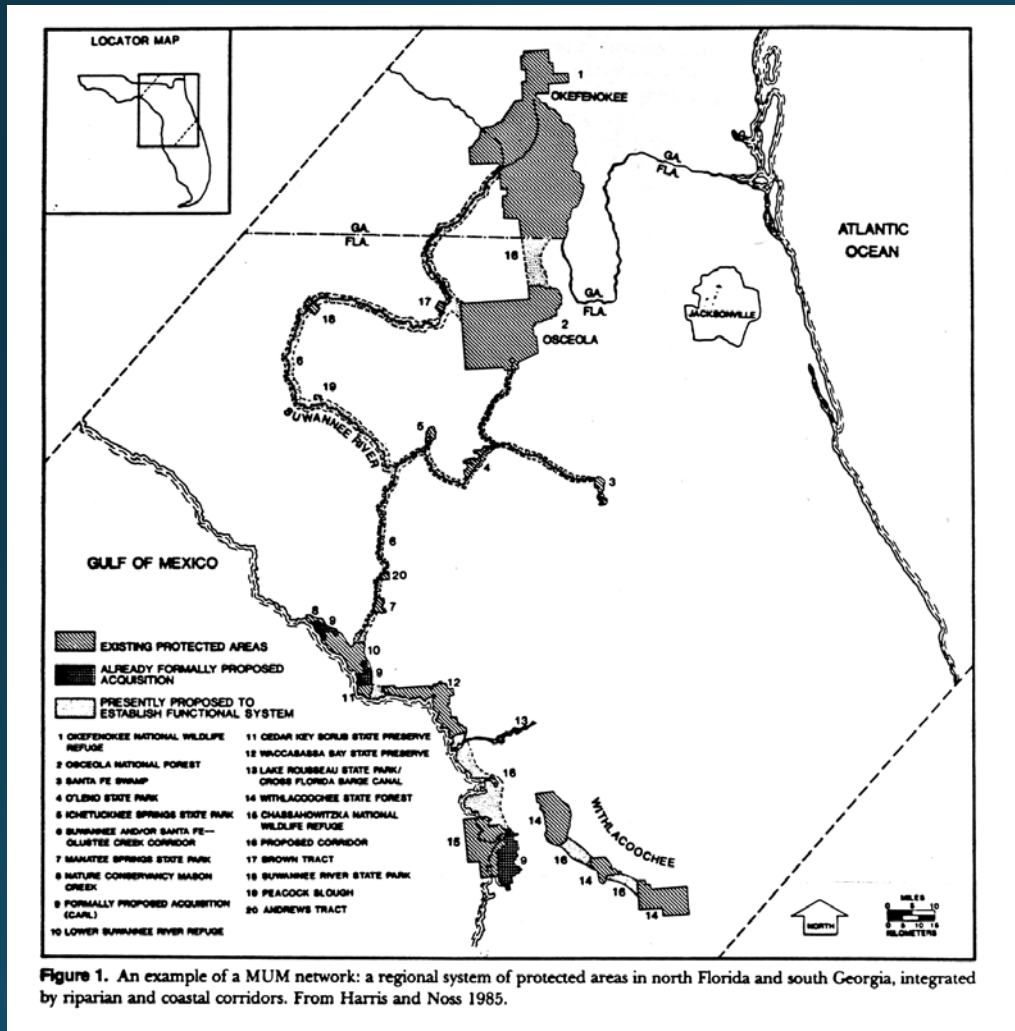
Ecosystem Services

Biodiversity

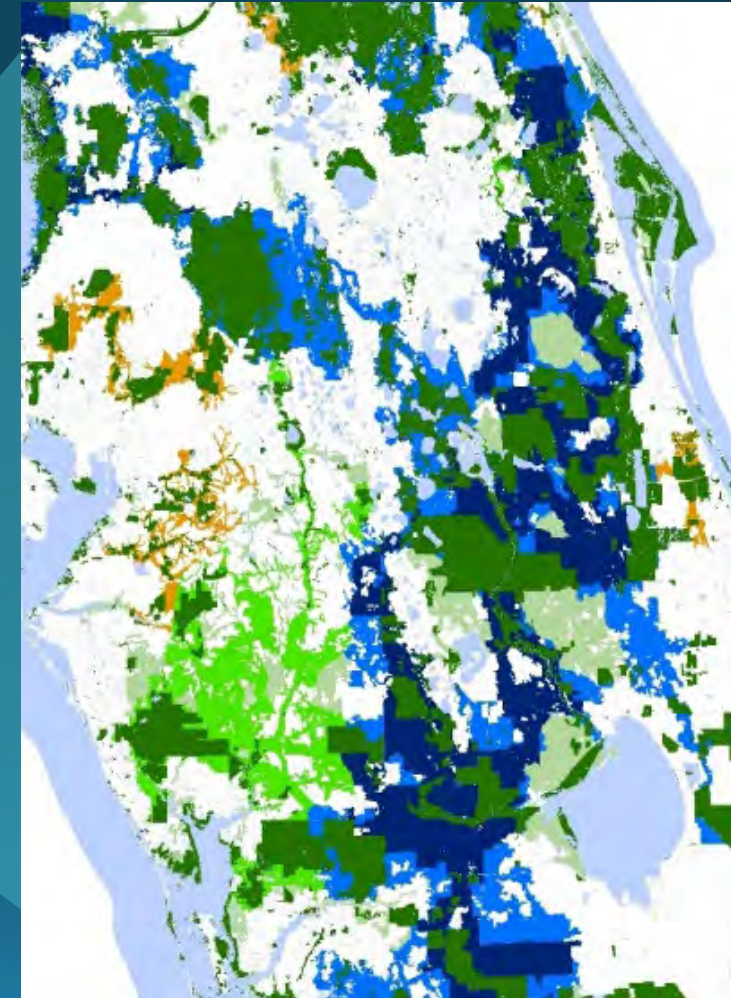
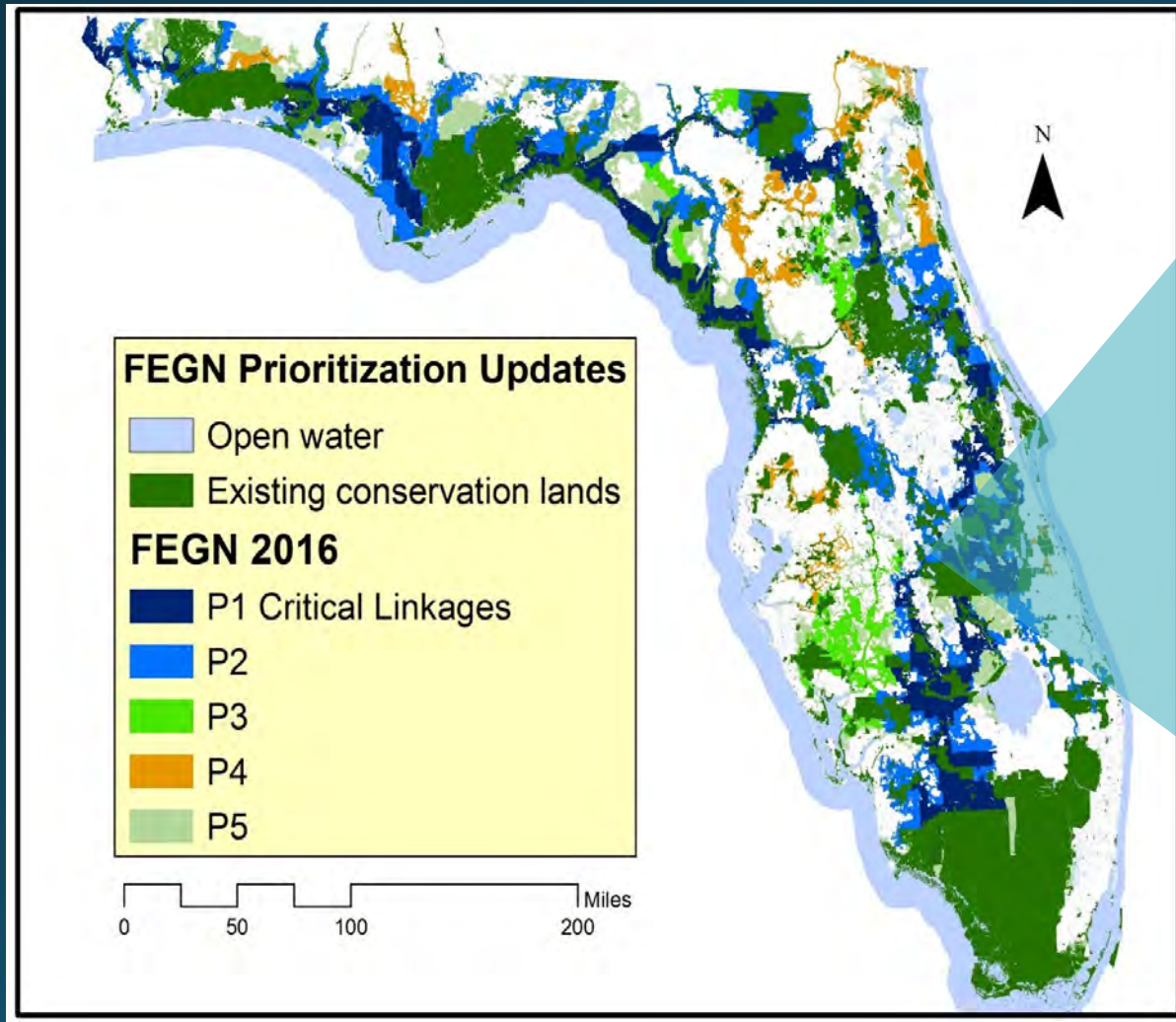
GeoDesign and Green Infrastructure

- Geodesign is a set of techniques and enabling technologies for planning built and natural environments in an integrated process, including project conceptualization, analysis, design specification, stakeholder participation and collaboration, design creation, scenario development, and evaluation (among other stages).
- Identify areas of ecological significance first, then determine how to meet other societal needs that avoid, minimize, and fully mitigate any impacts to our green infrastructure.

Ecological Networks: Connectivity vs. Fragmentation



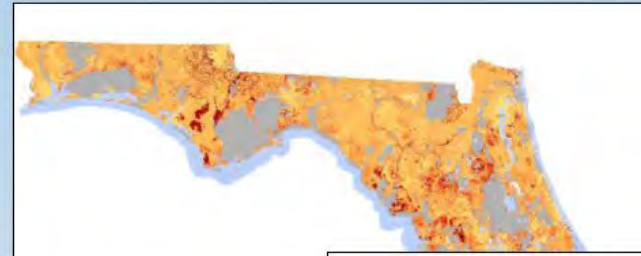
Florida Ecological Greenway Network 2016



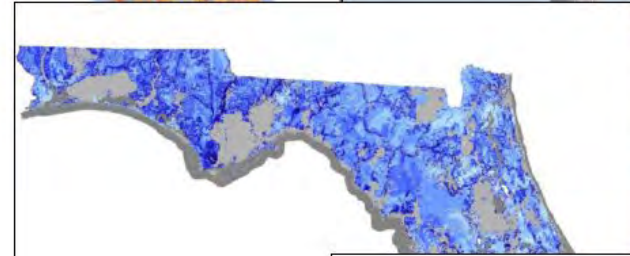
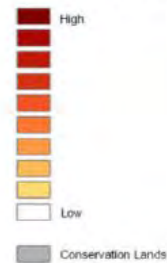


FLORIDA WILDLIFE CORRIDOR EXPEDITION

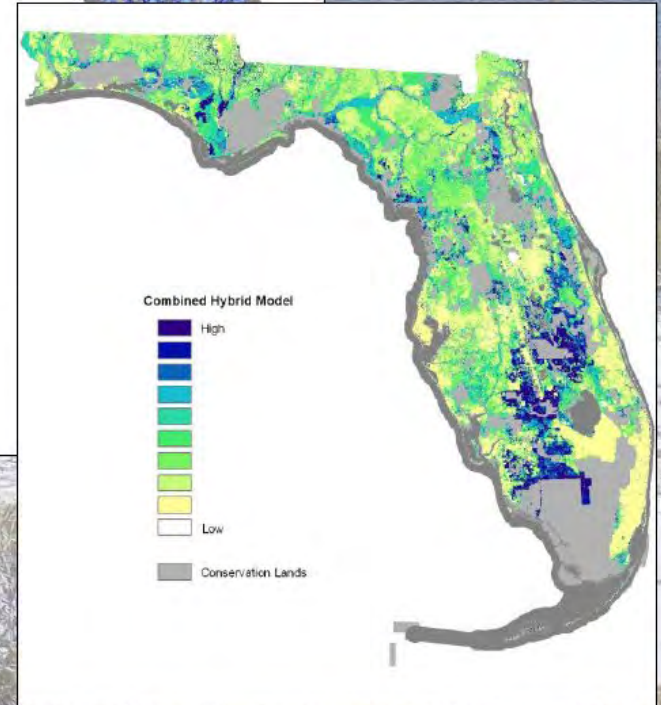
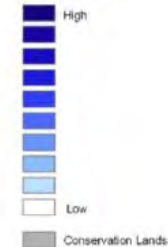
The Century Commission for a Sustainable Florida



Biodiversity Hybrid Model



Water Hybrid Model



Combined Hybrid Model



Jon Oetting
Florida Natural Areas Inventory

Tom Hctor
University of Florida GeoPlan Center

April 2007

Critical Lands & Waters Identification Project

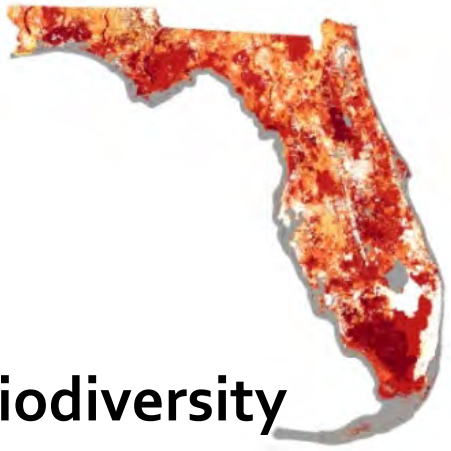


What is CLIP?

- Statewide Natural Resource Spatial Database
- Prioritizes Biodiversity, Landscapes, & Water
- Identifies Florida's "Green Infrastructure": e.g., the critical concept that ecosystem function, biodiversity, and the health of human communities are inextricably linked.



Biodiversity



Landscapes



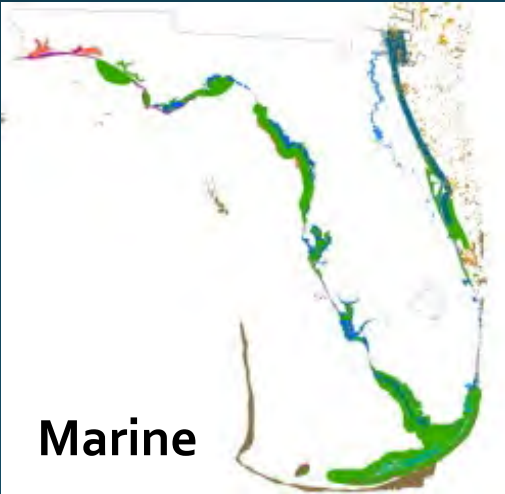
**Surface
Water**



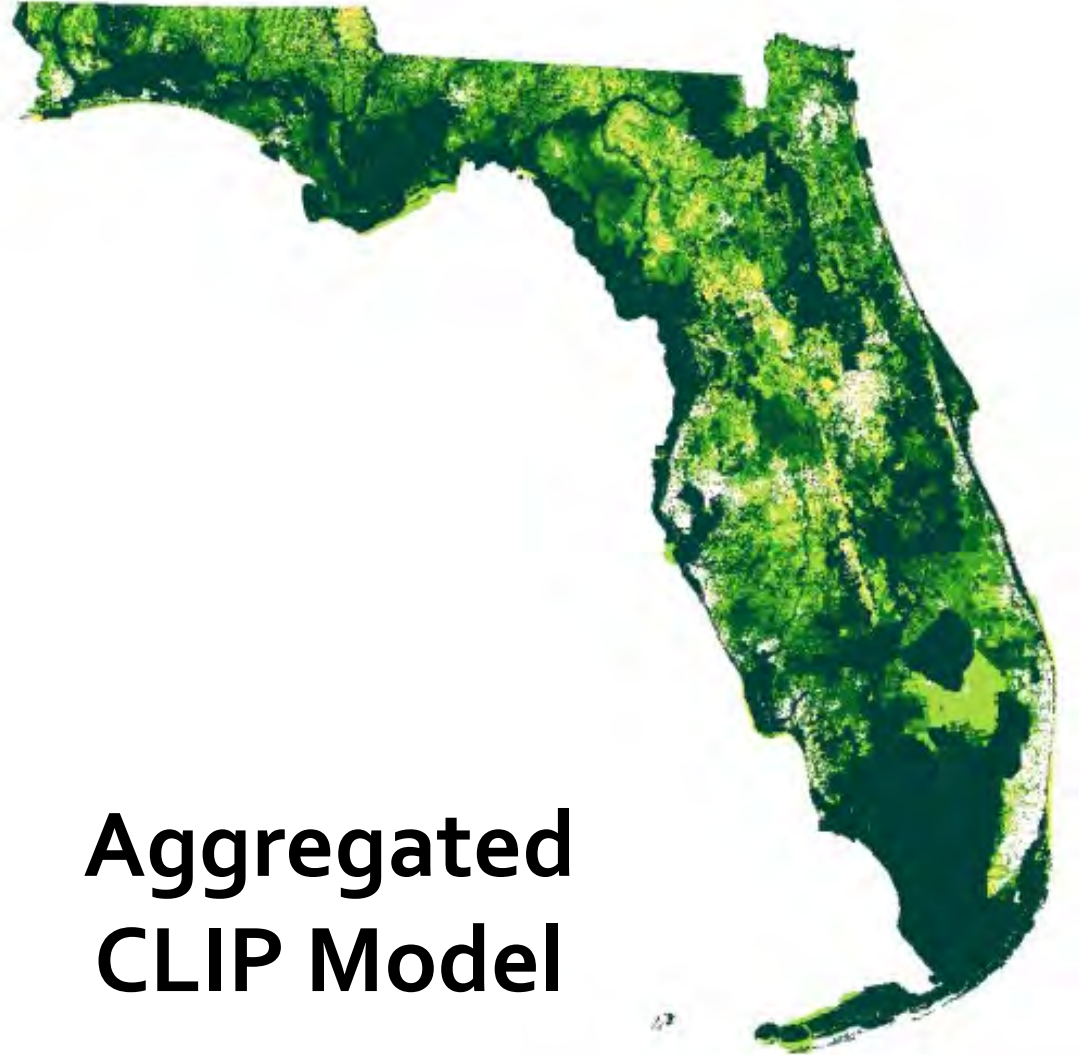
Groundwater

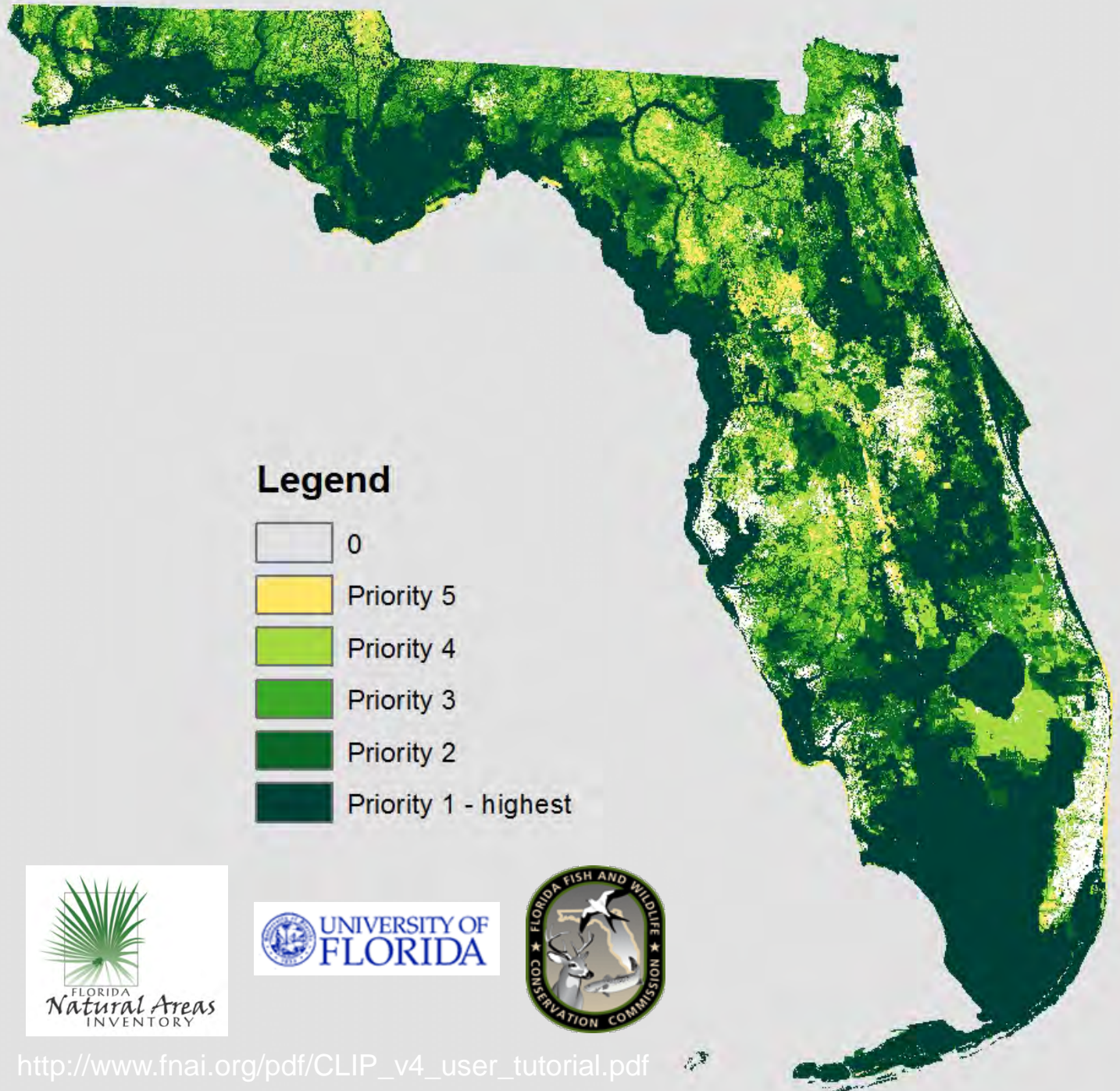


Marine

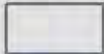







**Aggregated
CLIP Model**

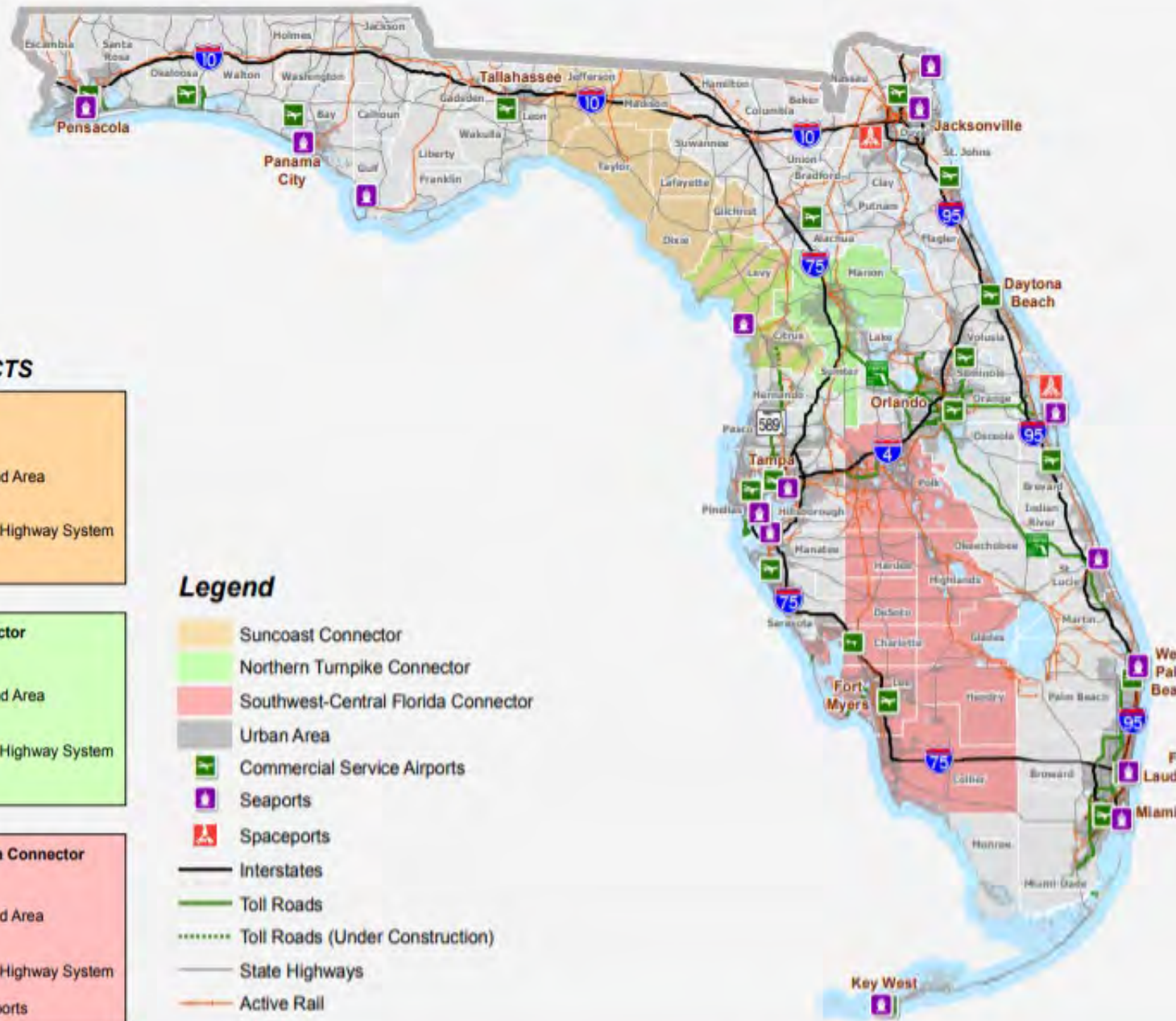




Legend

-  0
-  Priority 5
-  Priority 4
-  Priority 3
-  Priority 2
-  Priority 1 - highest





STUDY AREA FACTS

Suncoast Connector

- 8 Counties
- 21 Cities & Towns
- 5,635 Square Miles of Land Area
- 286,827 Residents
- 48,780 Jobs
- 2,217 Lane Miles of State Highway System
- 147 Miles of Active Rail
- 1 Seaport

Northern Turnpike Connector

- 4 Counties
- 20 Cities & Towns
- 3,831 Square Miles of Land Area
- 677,430 Residents
- 136,305 Jobs
- 2,162 Lane Miles of State Highway System
- 158 Miles of Active Rail
- 1 Seaport

Southwest-Central Florida Connector

- 9 Counties
- 36 Cities & Towns
- 9,511 Square Miles of Land Area
- 2,251,543 Residents
- 590,999 Jobs
- 4,793 Lane Miles of State Highway System
- 600 Miles of Active Rail
- 2 Commercial Service Airports

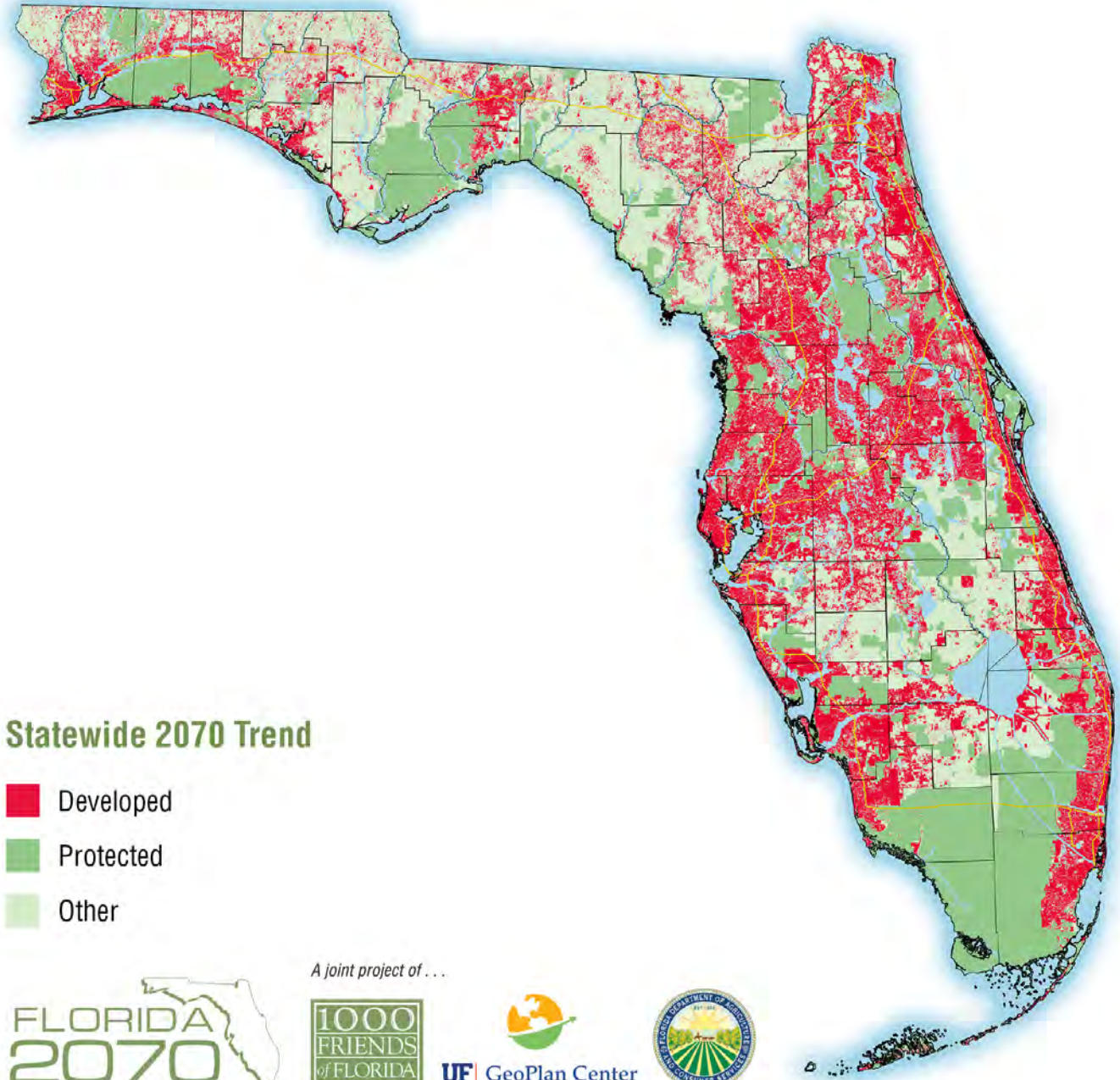
Legend

- Suncoast Connector
- Northern Turnpike Connector
- Southwest-Central Florida Connector
- Urban Area
- Commercial Service Airports
- Seaports
- Spaceports
- Interstates
- Toll Roads
- Toll Roads (Under Construction)
- State Highways
- Active Rail



Florida 2070 Growth Projection

(Paul Zwick and Peggy Carr, University of
Florida and 1000 Friends of Florida)

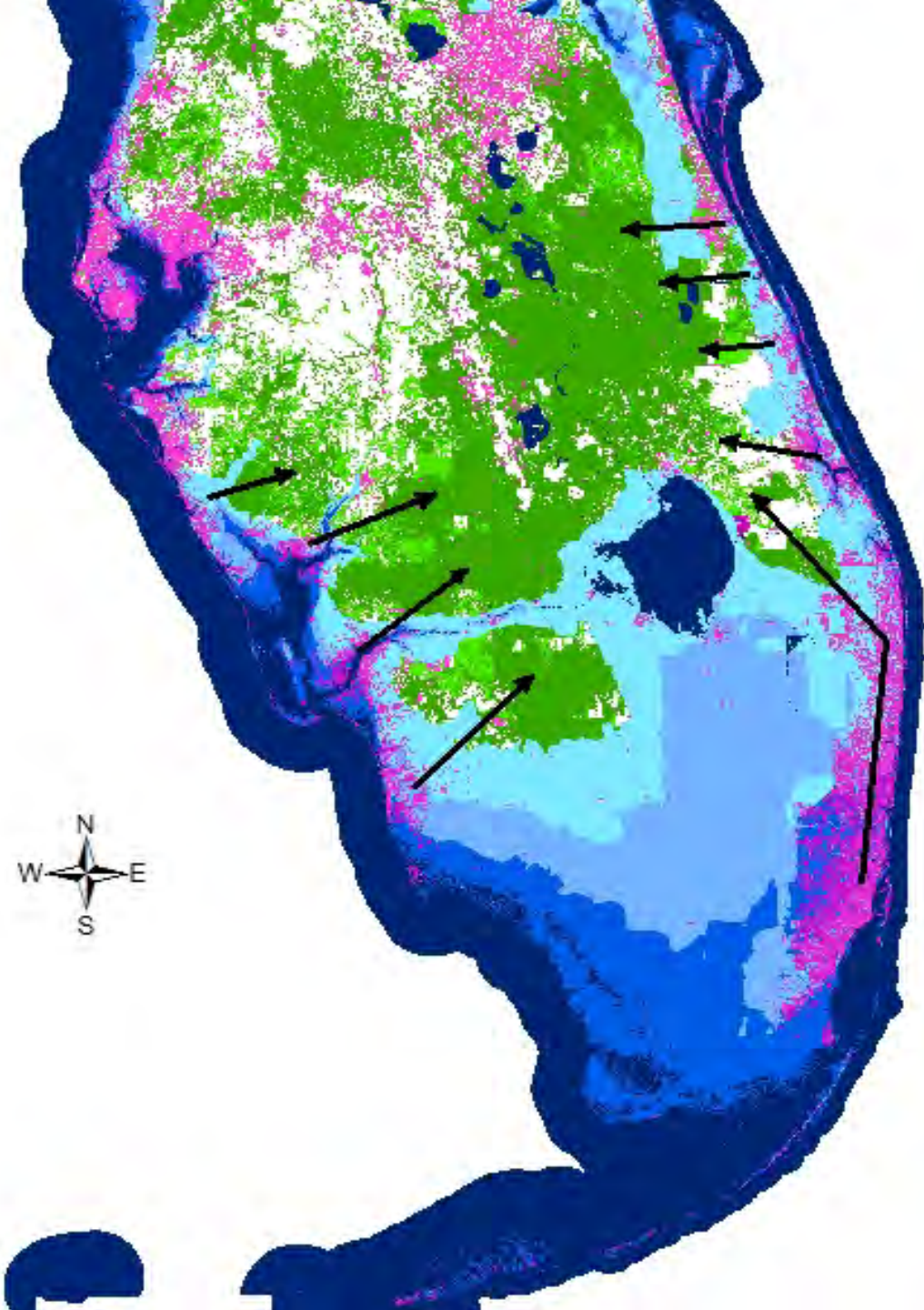
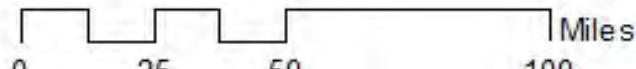
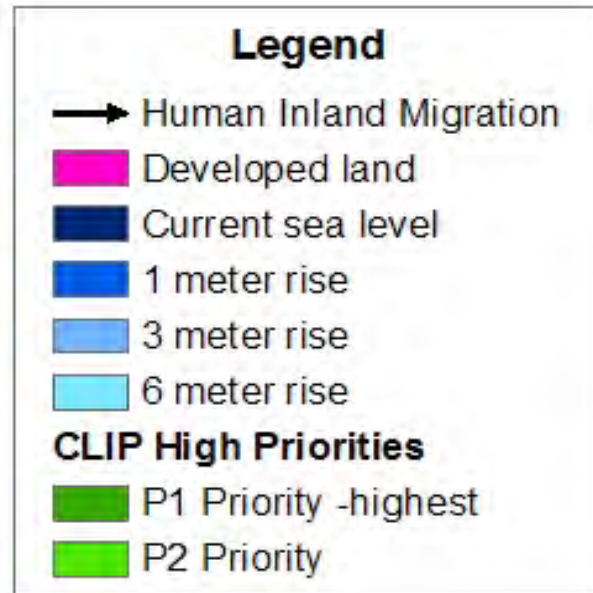


A joint project of . . .

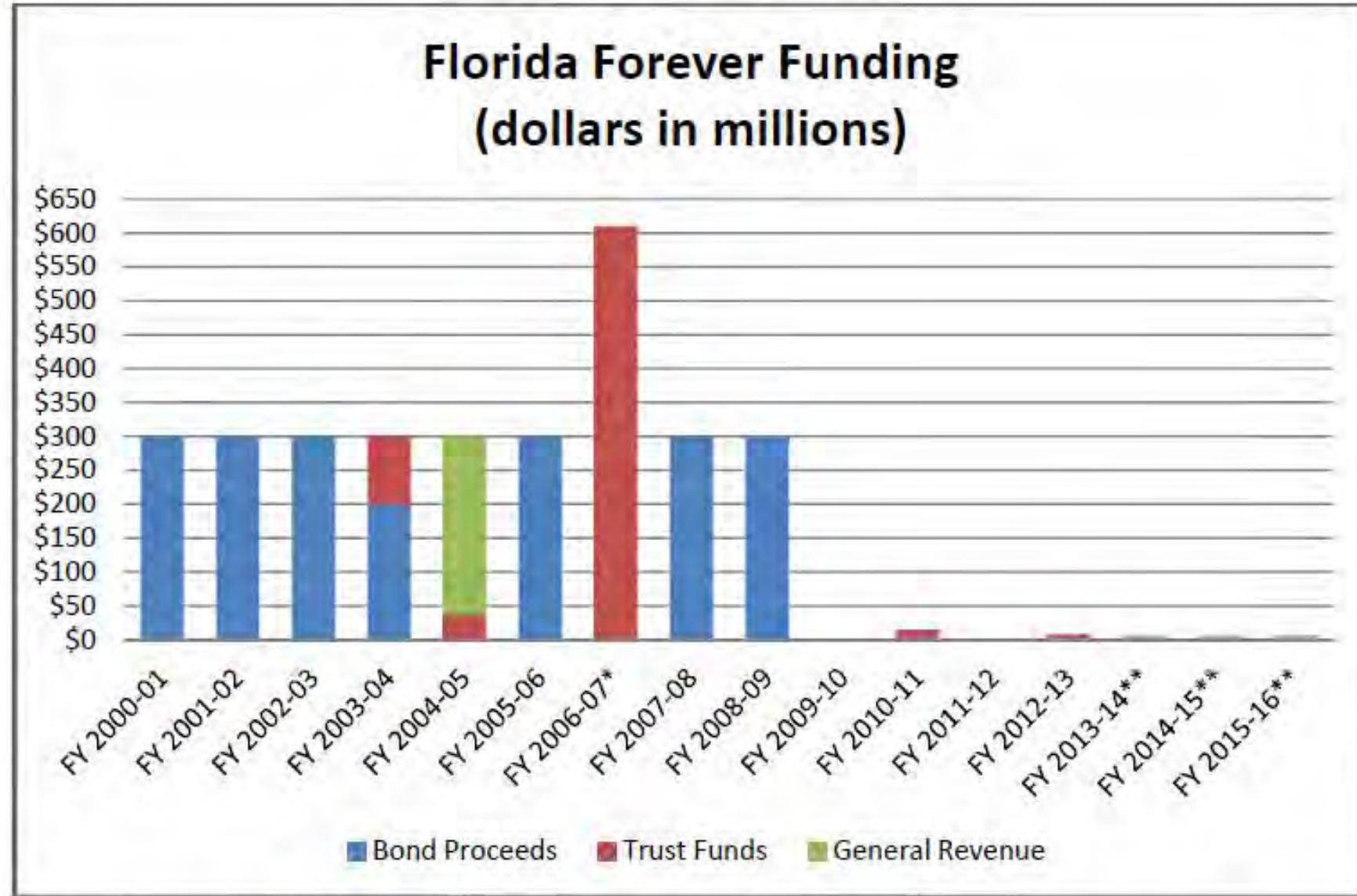


November 2016

Potential Human Population Shifts due to Sea Level Rise



Florida Forever Defunding



* Includes \$310 million for the cash purchase of Babcock Ranch

** Projected funding sources

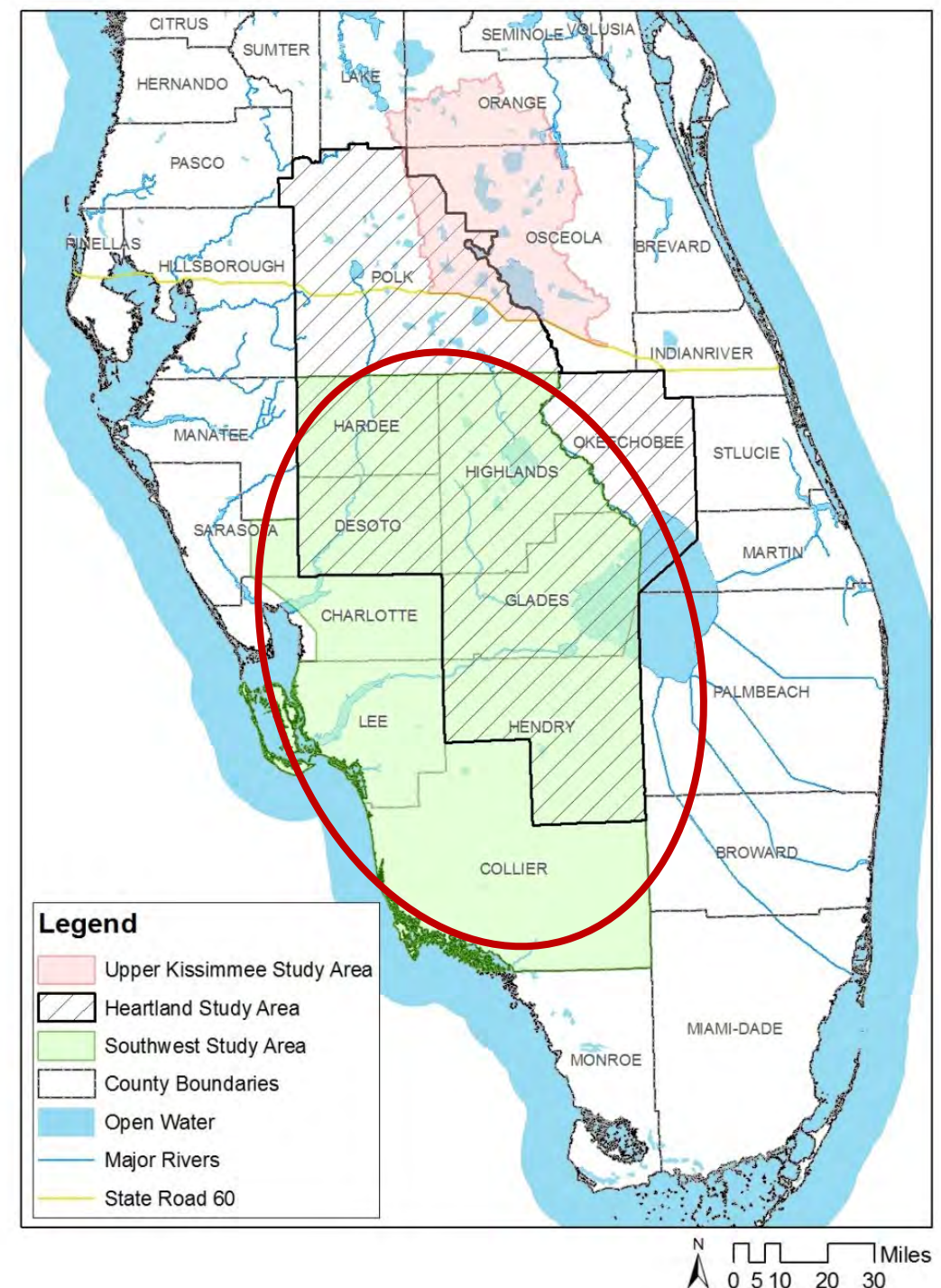
Florida Amendment 1 (2014)

- Funds the Land Acquisition Trust Fund to acquire, restore, improve, and manage conservation lands including wetlands and forests; fish and wildlife habitat; lands protecting water resources and drinking water sources, including the Everglades, and the water quality of rivers, lakes, and streams; beaches and shores; outdoor recreational lands; working farms and ranches; and historic or geologic sites, by dedicating 33 percent of net revenues from the existing excise tax on documents for 20 years.
- Passed with 75% of Florida voters voting yes. Governor Scott got less than 50% of the vote for comparison.
- Over \$750 million available each year since passed.
- Legislature committed ZERO DOLLARS to land conservation acquisition in budget year 2017-2018; \$100 million in 2018-2018; \$33 million in 2019-2020.
- FDOT budget, for comparison, is approximately \$10 billion a year.

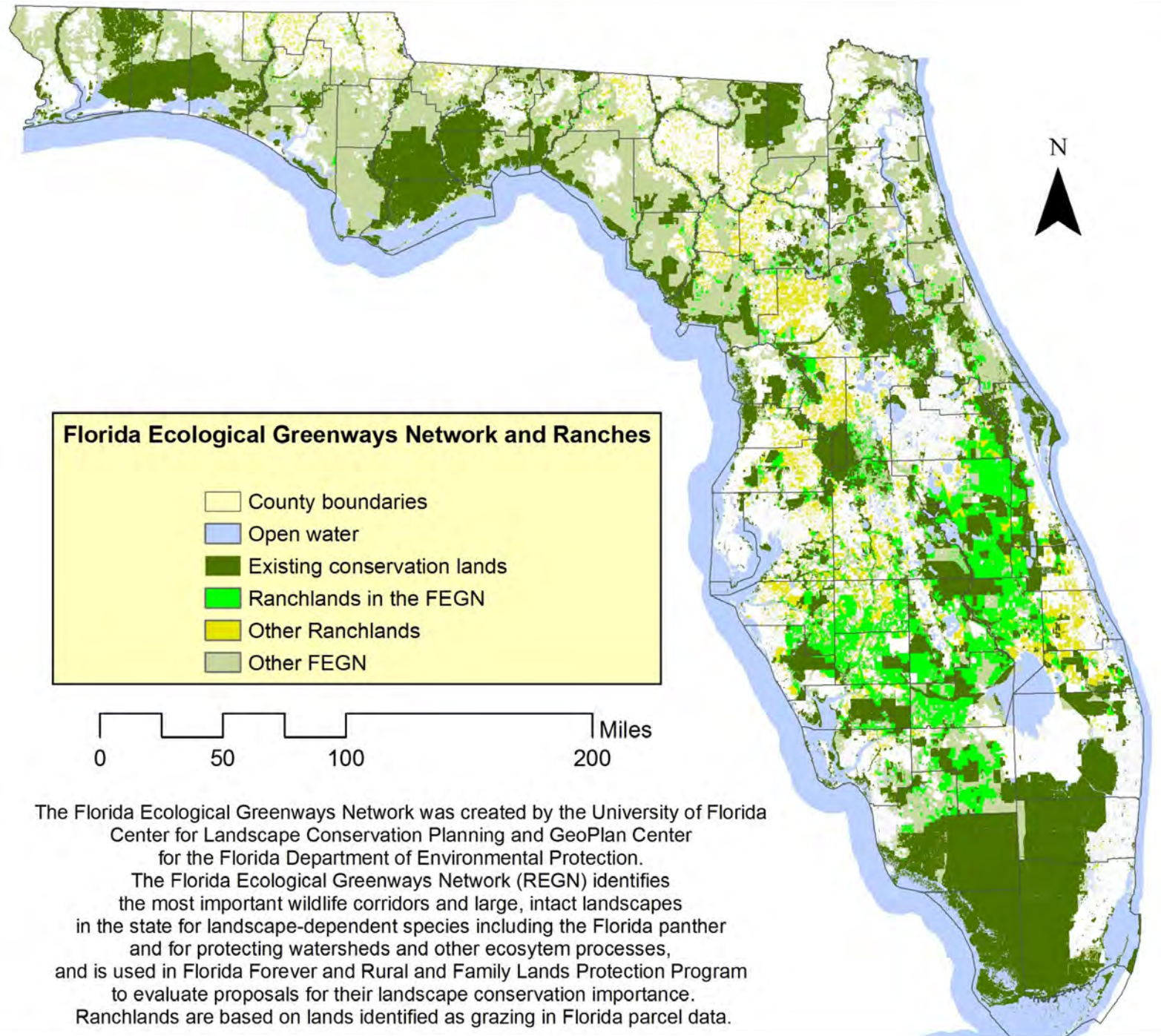
Blueprint Regional Pilot Study Area

Southwest Region

- Generate broad agreement about a set of wildlife corridors/ecological connectivity priorities
- Identify private landowner conservation incentives that would help facilitate the protection of those corridors.



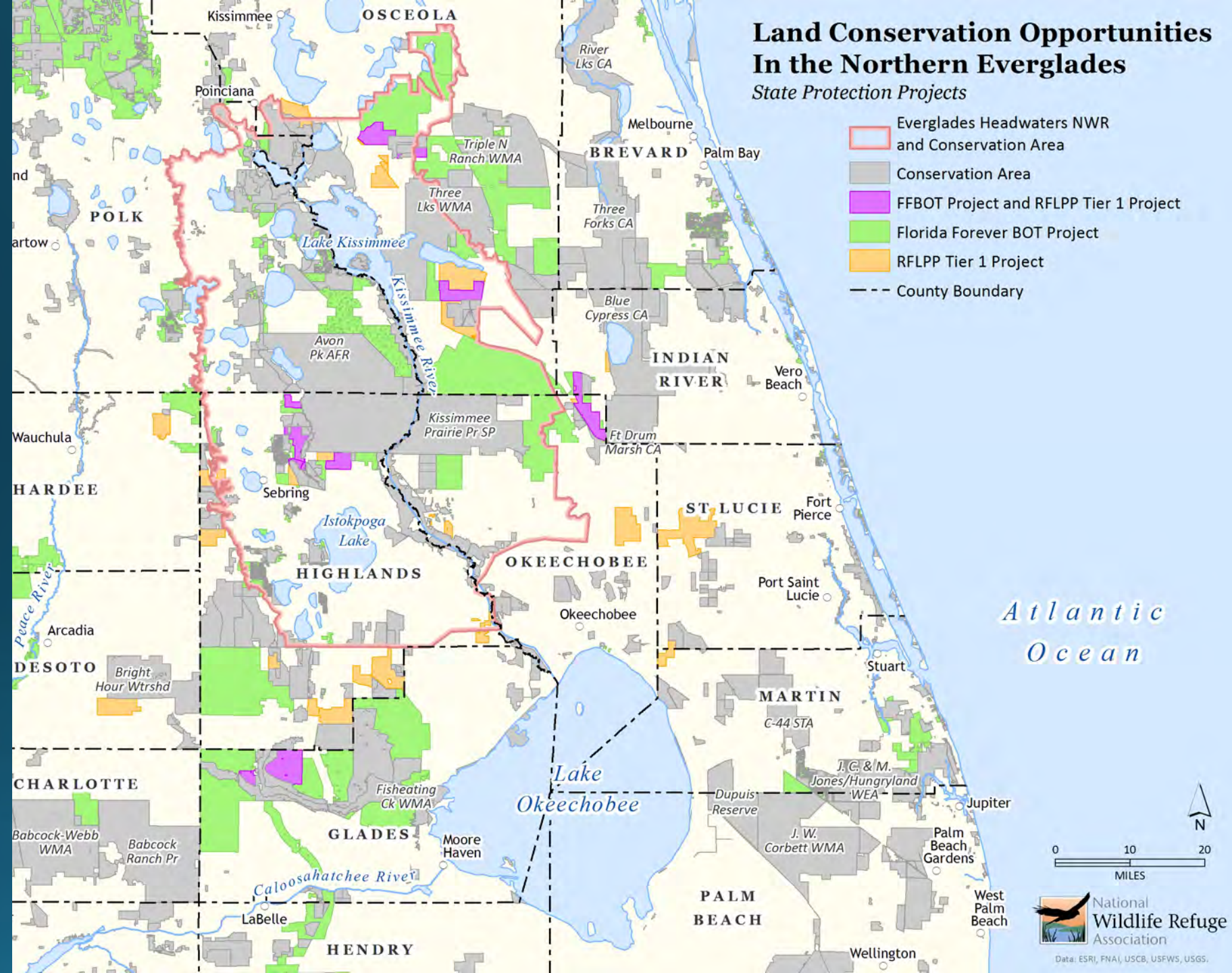
Florida Ecological Greenways Network and Ranches



Land Protection Incentive Programs

- State: Florida Forever Program; Conservation Easements and fee simple
- State: Rural and Family Lands Protection Program (agricultural easements)
- Federal: LWCF for National Wildlife Refuges
- Federal: Agricultural Land Easements (ALE); Matching dollars for agricultural lands
- Federal: NRCS Wetland Reserve Easement, Easements for restorable wetlands
- Federal: REPI (match for easements around military bases)
- State/federal: Forest Legacy Program; Conservation Easements on forest lands.
- WMDs: Dispersed Water Storage; Payment for water storage, retention
- Federal: USFWS Conservation Banks; Banking for federally listed species (scrub-jay, sand skink, blue tailed mole skink, panther, etc).
- Wetland Mitigation Banks: Wetland banking through WMD's or DEP and USACOE.
- PES for panthers (RCPP)

Land Conservation Opportunities in the Northern Everglades



What are Sentinel Landscapes?

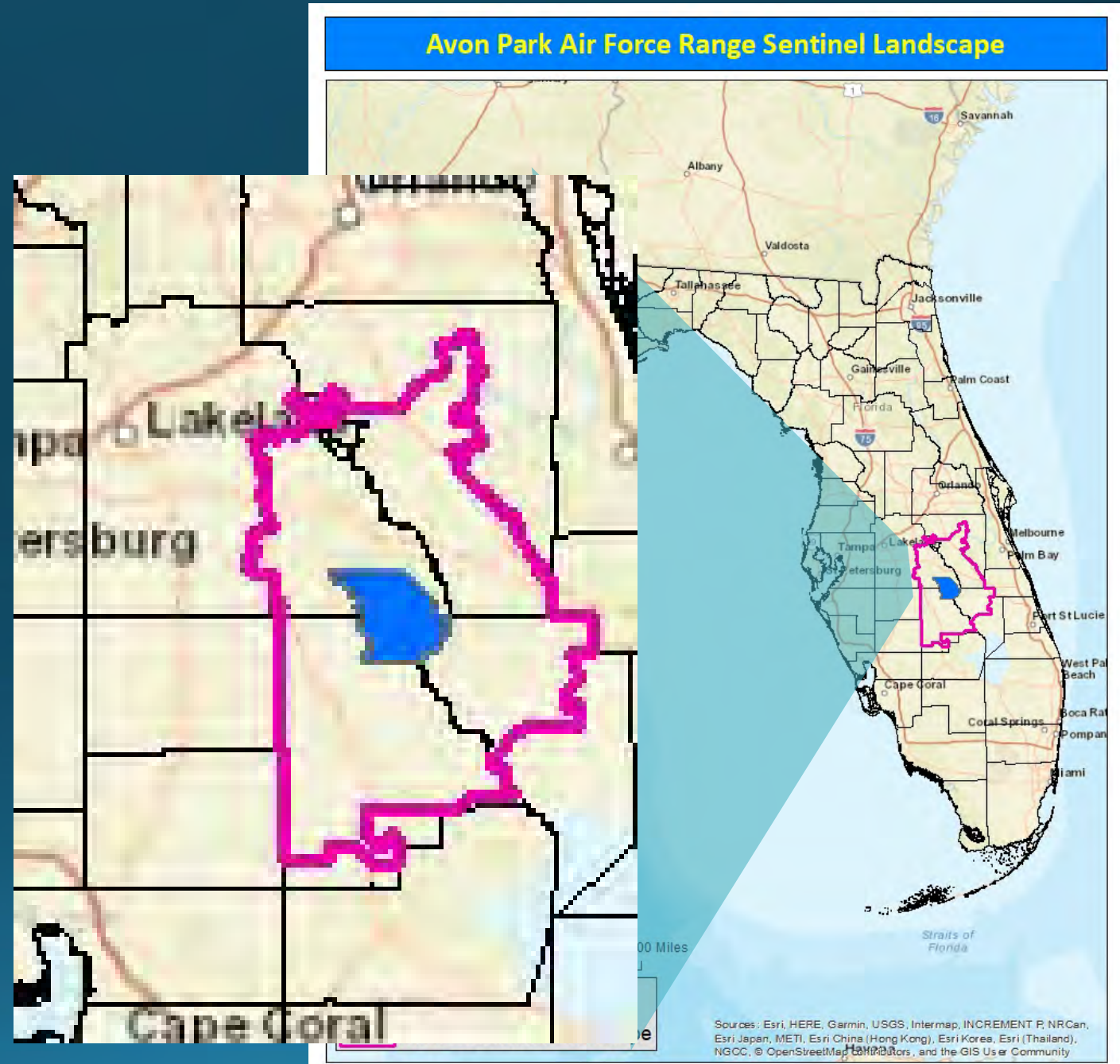
Working or natural lands around military bases important to the nation's defense mission—places where land conservation will:

- Strengthen the economies of farms, ranches, and forests.
- Conserve habitat, cultural and natural resources.
- Protect vital military testing and training activities.



Sentinel Landscapes

- 106,000 acre Range
- 1.67 million acre Landscape
- 4 counties
- 3 cities within the MIPA
- Overlays Everglades Headwaters NWRCA
- Includes >50% of the Northern Everglades watershed
- Includes 65% of the imperiled Lake Wales Ridge



The Florida Strategic Plan for Sustaining Military Readiness through Conservation Partnerships



Overall goal:

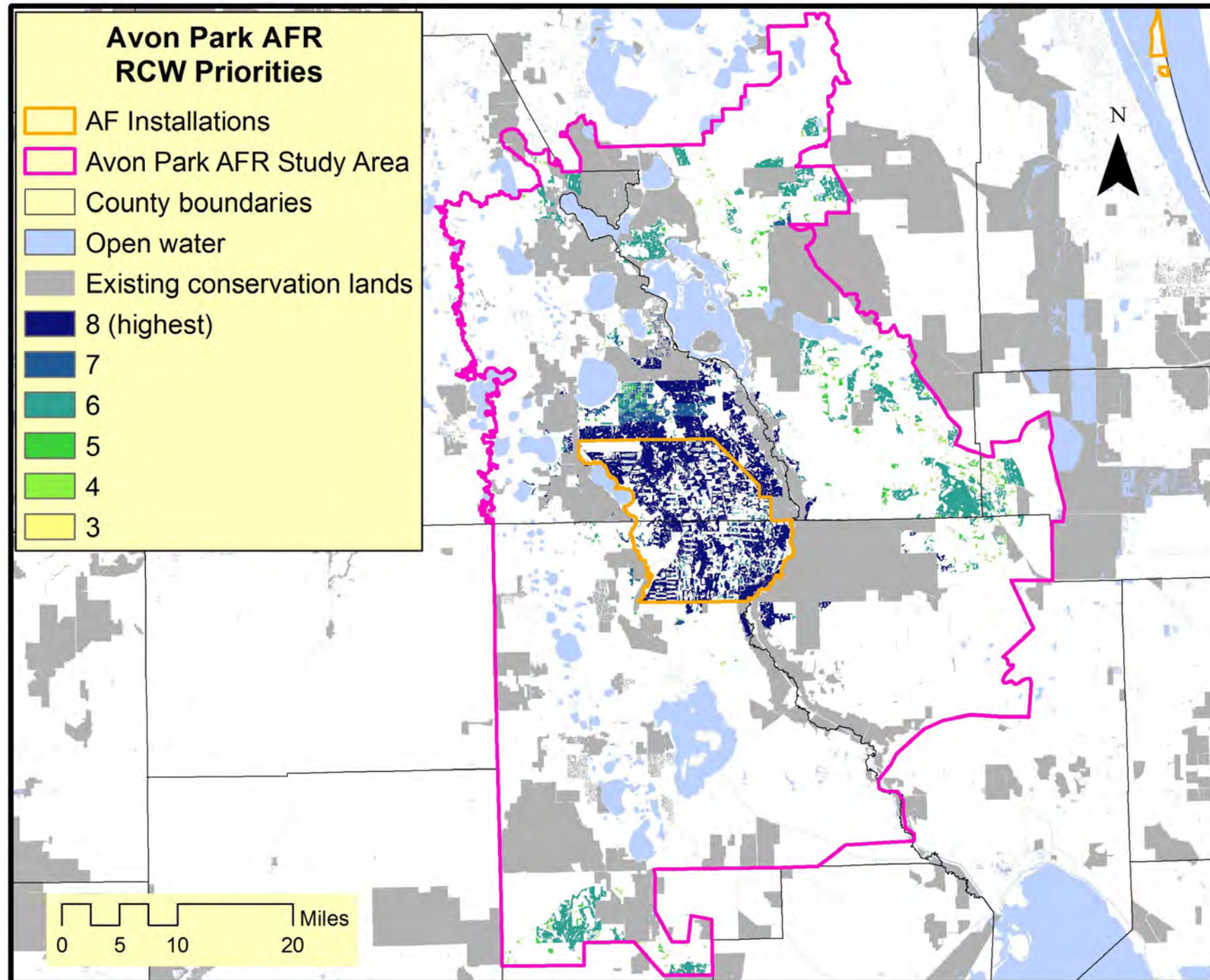
To establish a regional approach to natural resources management that minimizes multiple encroachment threats and alleviates on-installation constraints to provide a landscape to support military mission.



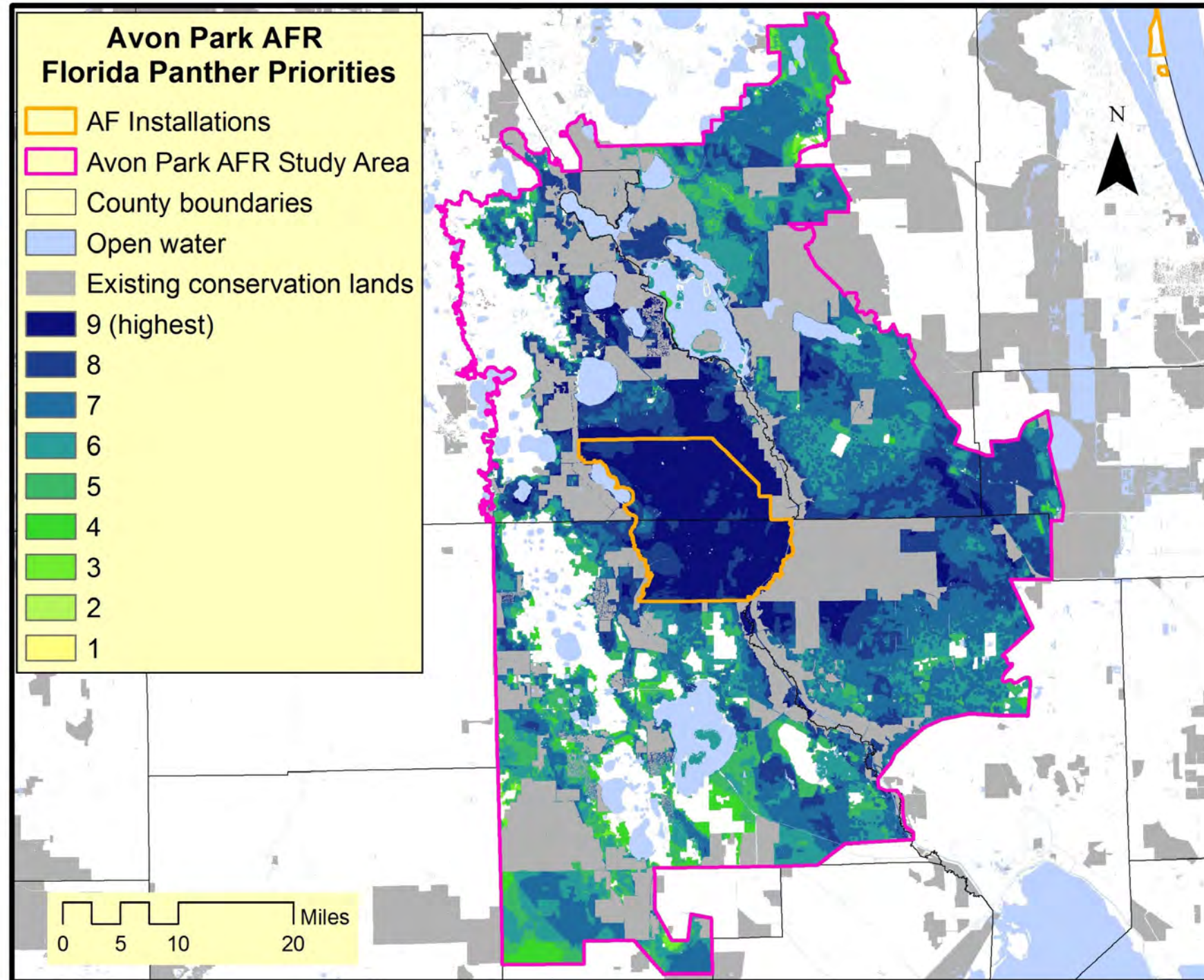
Phase II Work

- Conduct additional habitat prioritization for all feasible high priority focal species
- Compare conservation priorities to mission-related priorities to determine overlap.
- Conduct assessment of potential impacts to conservation priorities near Air Force installations resulting from future land use changes and sea level rise.
- Conduct assessment of specific protection implementation opportunities adjacent, near, or otherwise of significant benefit to Air Force installations included in this study.

Avon Park Focal Species Habitat Priorities: RCW



Avon Park Focal Species Habitat Priorities: Florida Panther



Research/Planning Needs

- Future visioning that combines human population growth, climate change, and ecological priorities
- Sociological research on what are people likely to do as SLR increases
- Education and outreach about the value of natural and rural lands for sustaining vital economies and healthy communities
- Education and outreach regarding the need for sound ecological design in large scale planning
- Valuation of ecosystem services like water storage and storm protection; and strategies to promote payment for ecosystem services
- Identification of regional strategies for land use planning that break down county and other local government barriers, such as implementing regional TDRs
- Green infrastructure based growth and redevelopment, densification, transit; **Identify areas of ecological significance first, then determine how to meet other societal needs that avoid, minimize, and fully mitigate any impacts to our green infrastructure.**
- More land protection funding!