

Pro Bono GIS for Conservation



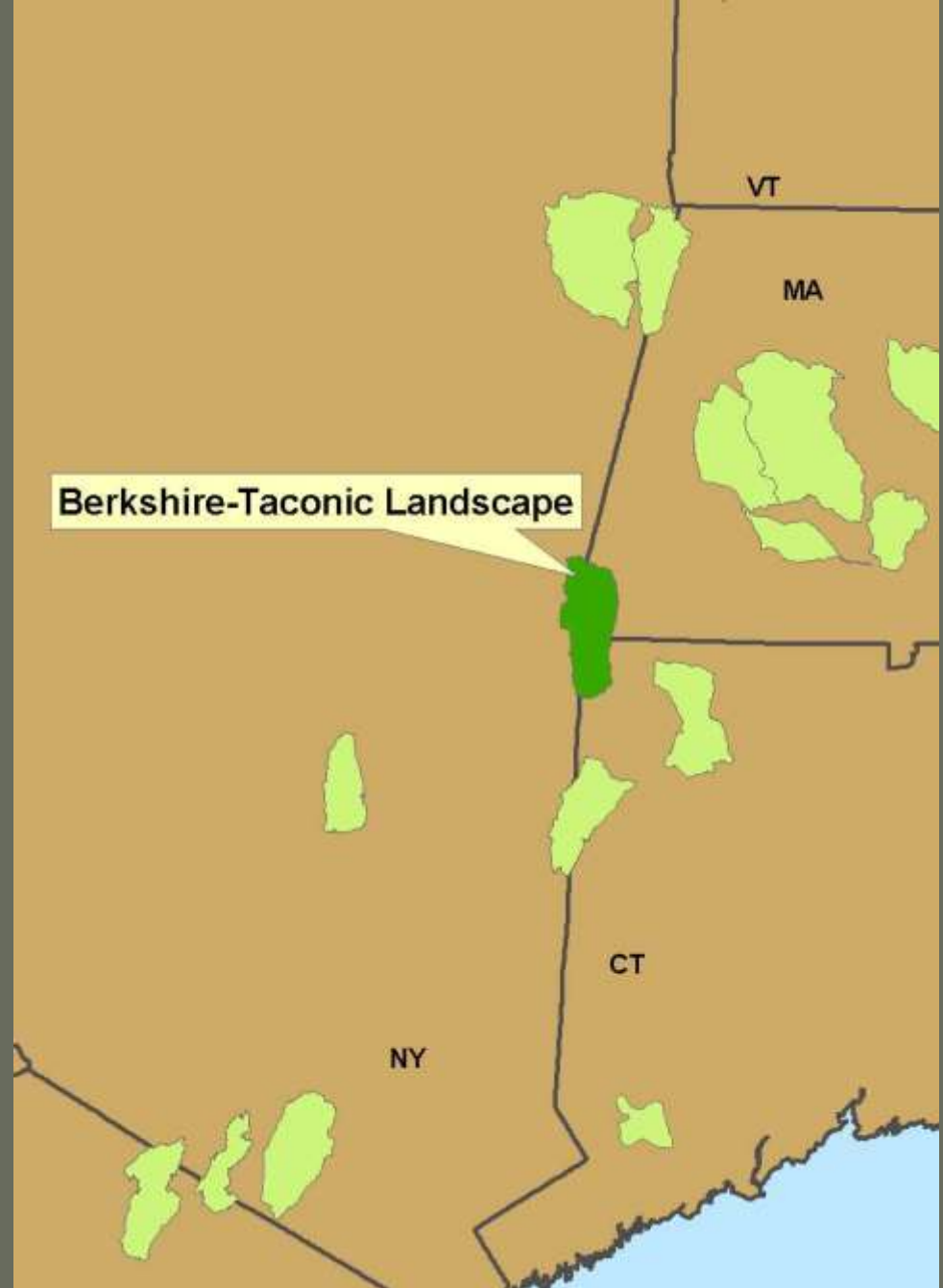
Or Re-defining Retirement

Post-retirement segues:

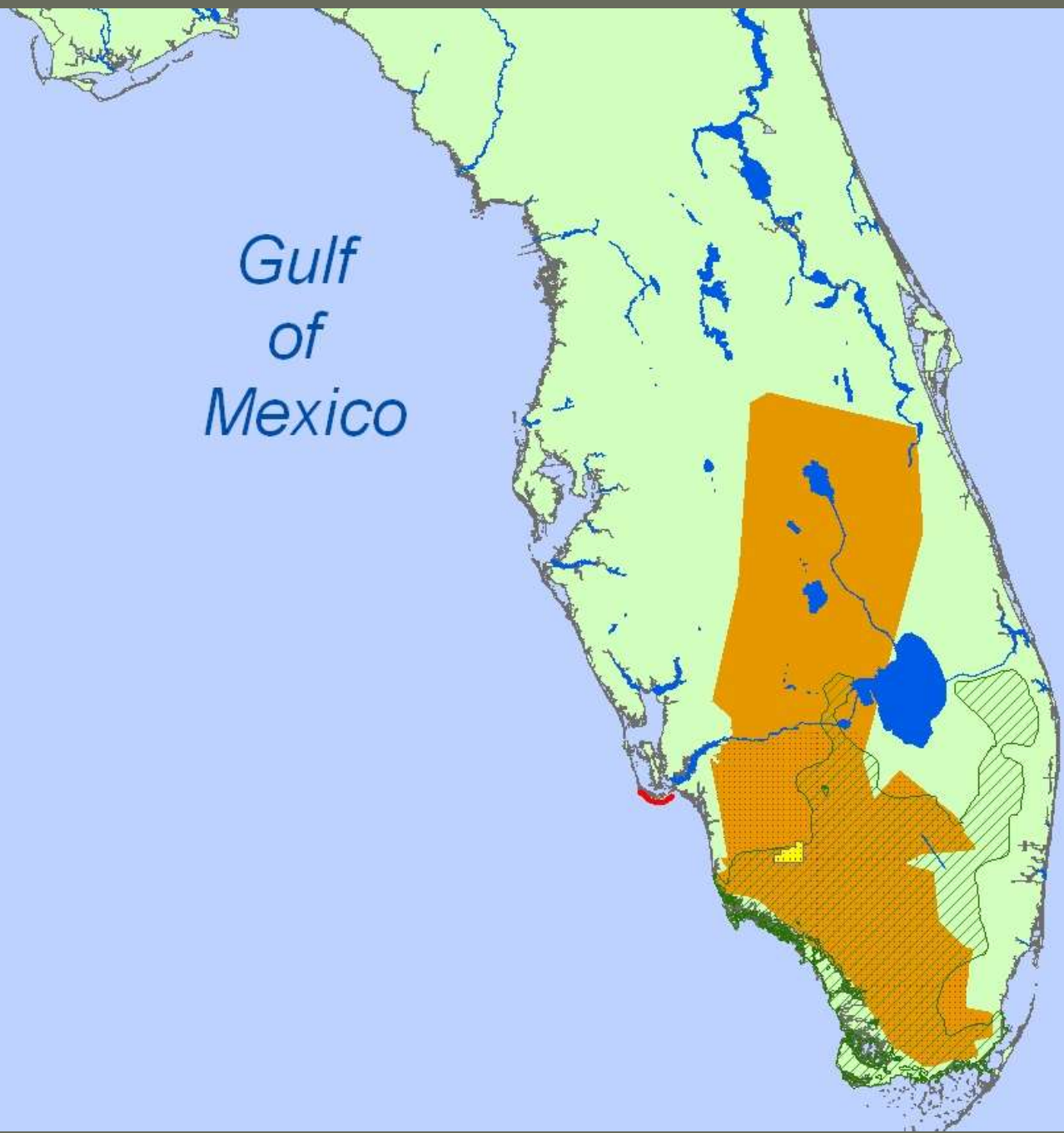
- Timber rattlesnakes/alligators
- Forest interior birds/Snowy plovers
- Freshwater turtles/Gopher tortoises
- Invasive species everywhere and increasing dramatically
- Florida panthers: in a conservation class of their own

TNC's Berkshire-Taconic Landscape Program

- 36,000-acre forest core in good condition
- One of the largest remaining intact forest blocks in lower N.E.
- Contains rare natural communities and patch occurrences of rare species



*Gulf
of
Mexico*



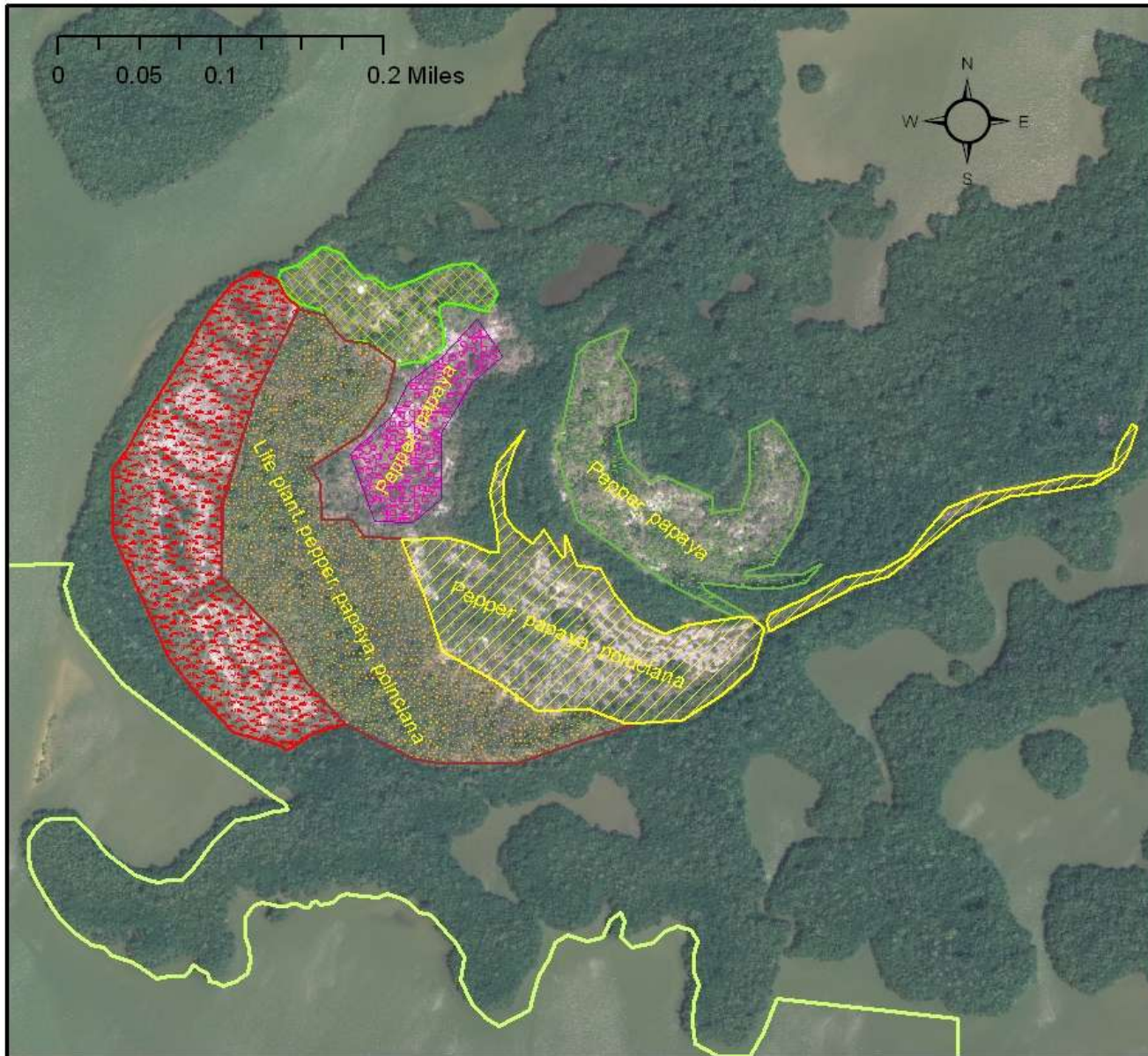








Dismal Key Exotics' Removal Oct 07 TTI NWR

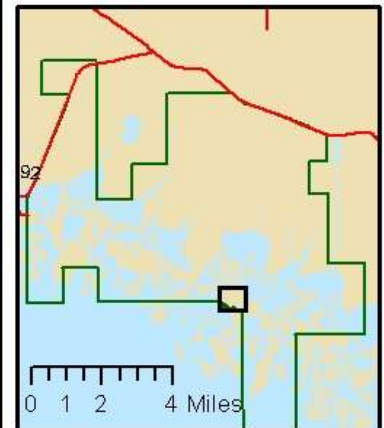


Legend

Areas of Exotics' Removal and Treatment on Dismal Key Oct. 2007

- Day 1
- Day 2
- Day 3
- Day 4
- Day 5
- Days 1,3,5
- TTINWR boundary

Data sources:
Treatment areas digitized from hardcopy maps and field survey conducted on Dec 5, 2007



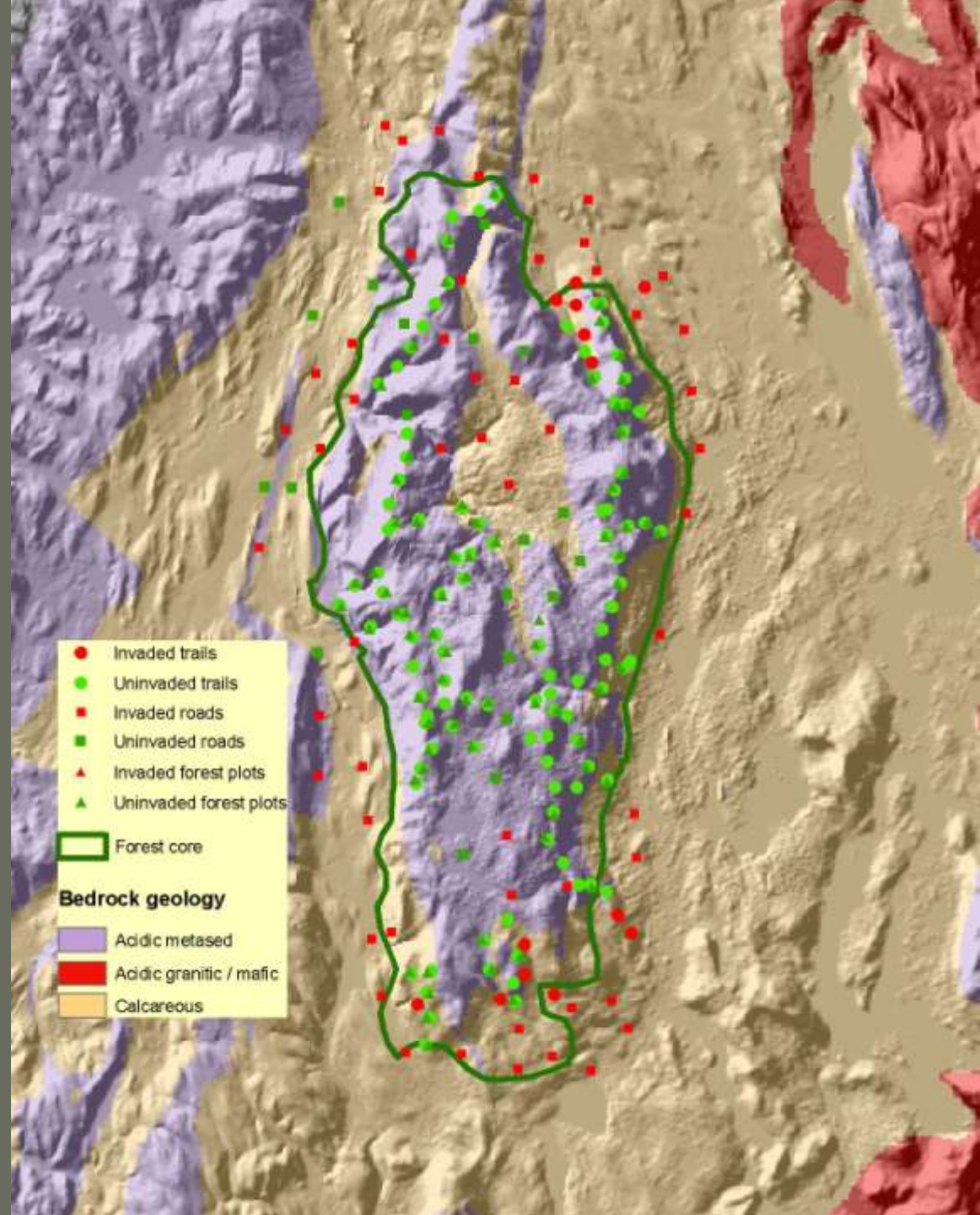
ELUs

gently
sloping, calcareous
lands (56% infested)
compared with
gently sloping acidic
sed/metased lands
(22.9% infested)

$P < .025$

gently
sloping, calcareous
lands (56% infested)
compared with
summits
(0% infested)

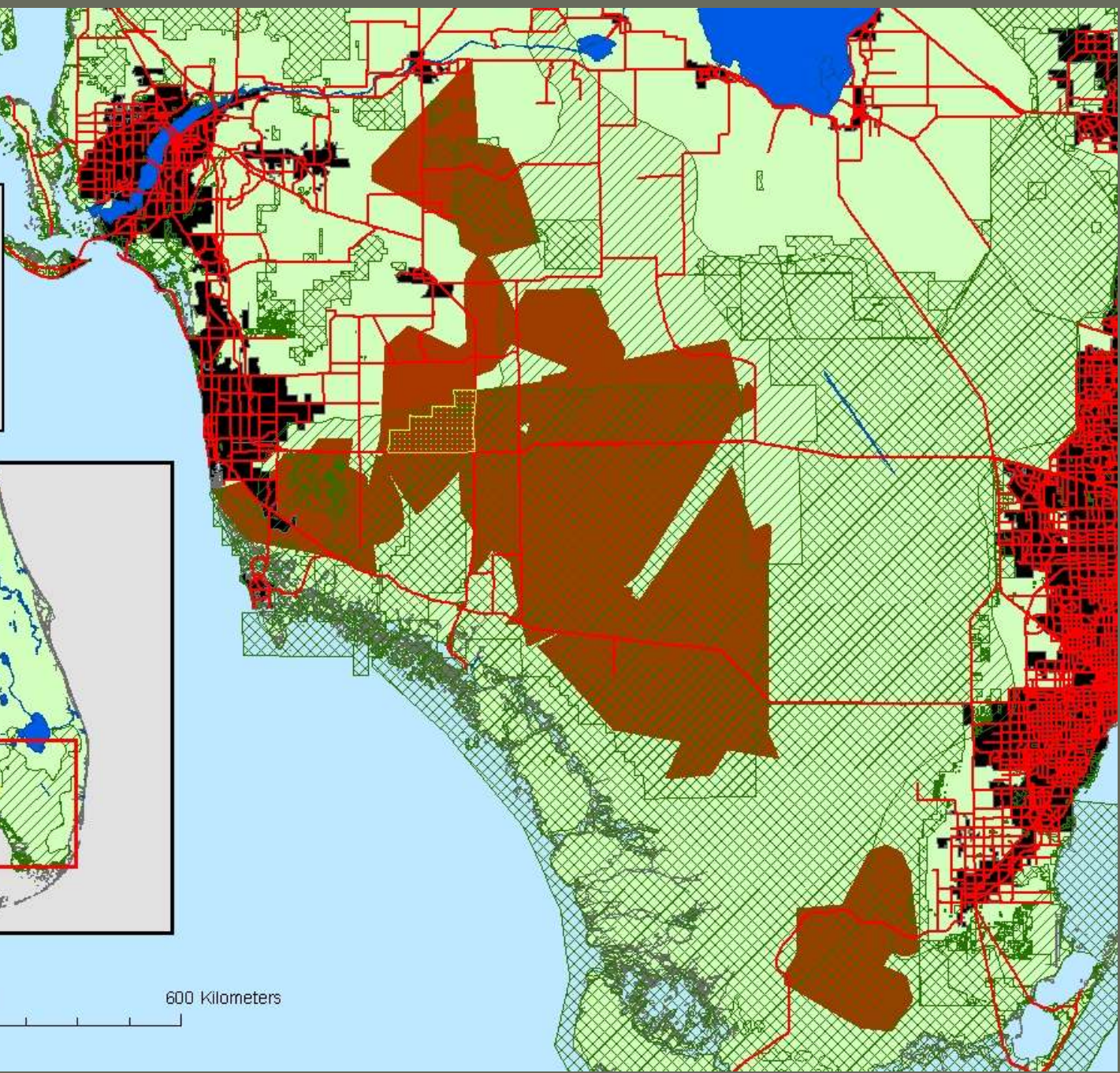
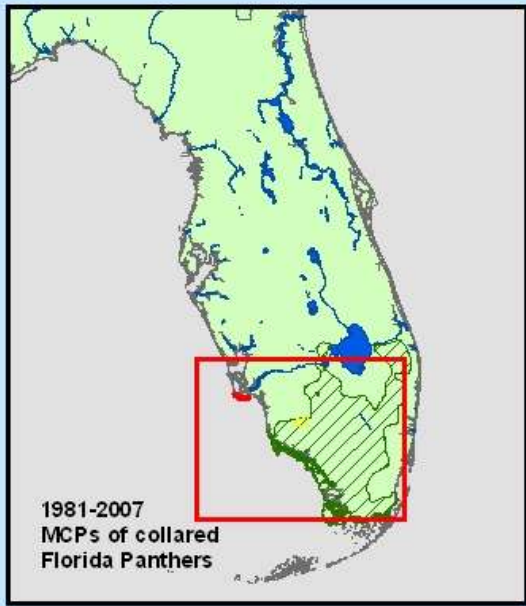
$P < .001$





Legend

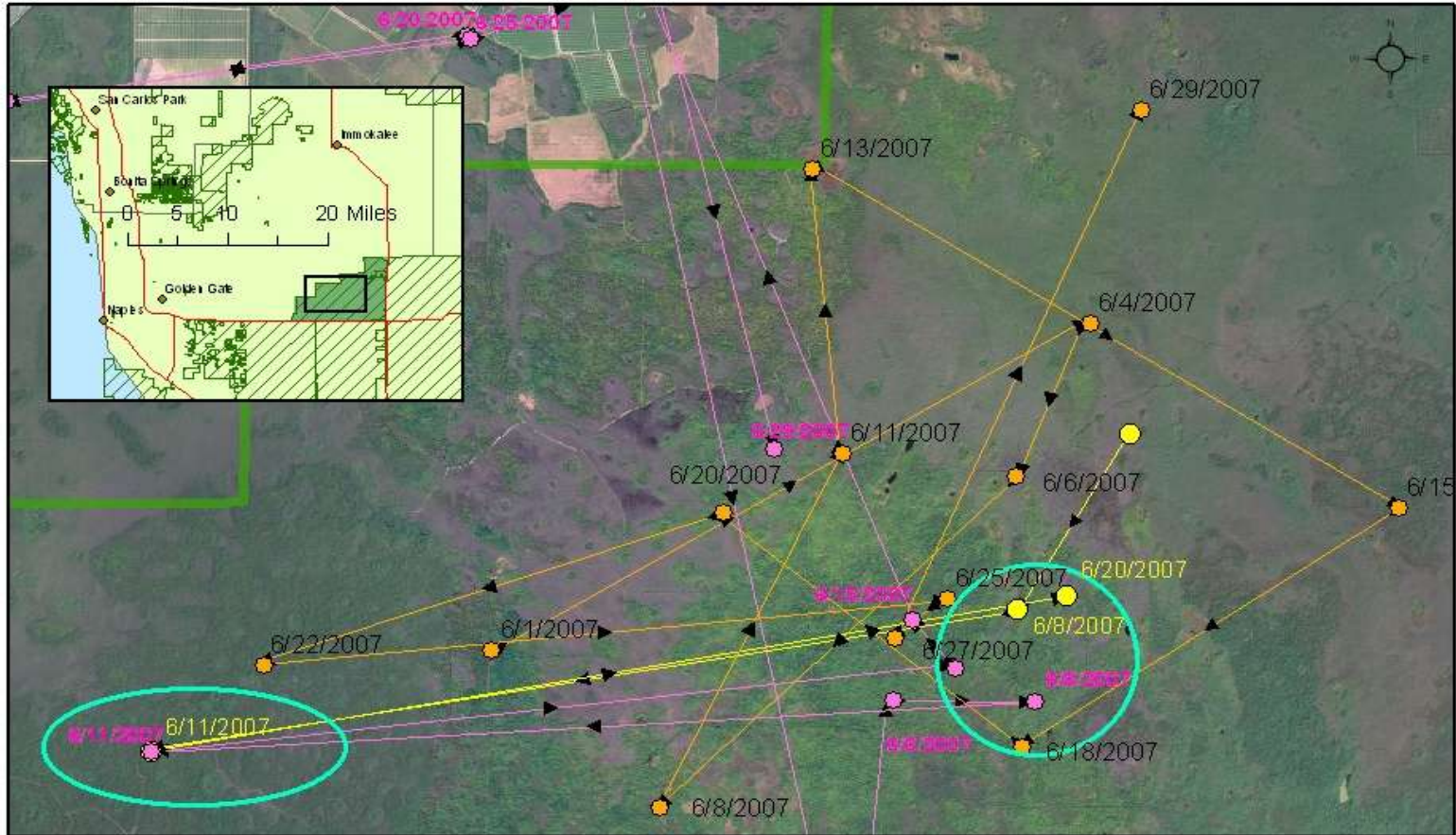
- Major roads
- Open space
- Urban
- FPNWR
- 2007 data (37)







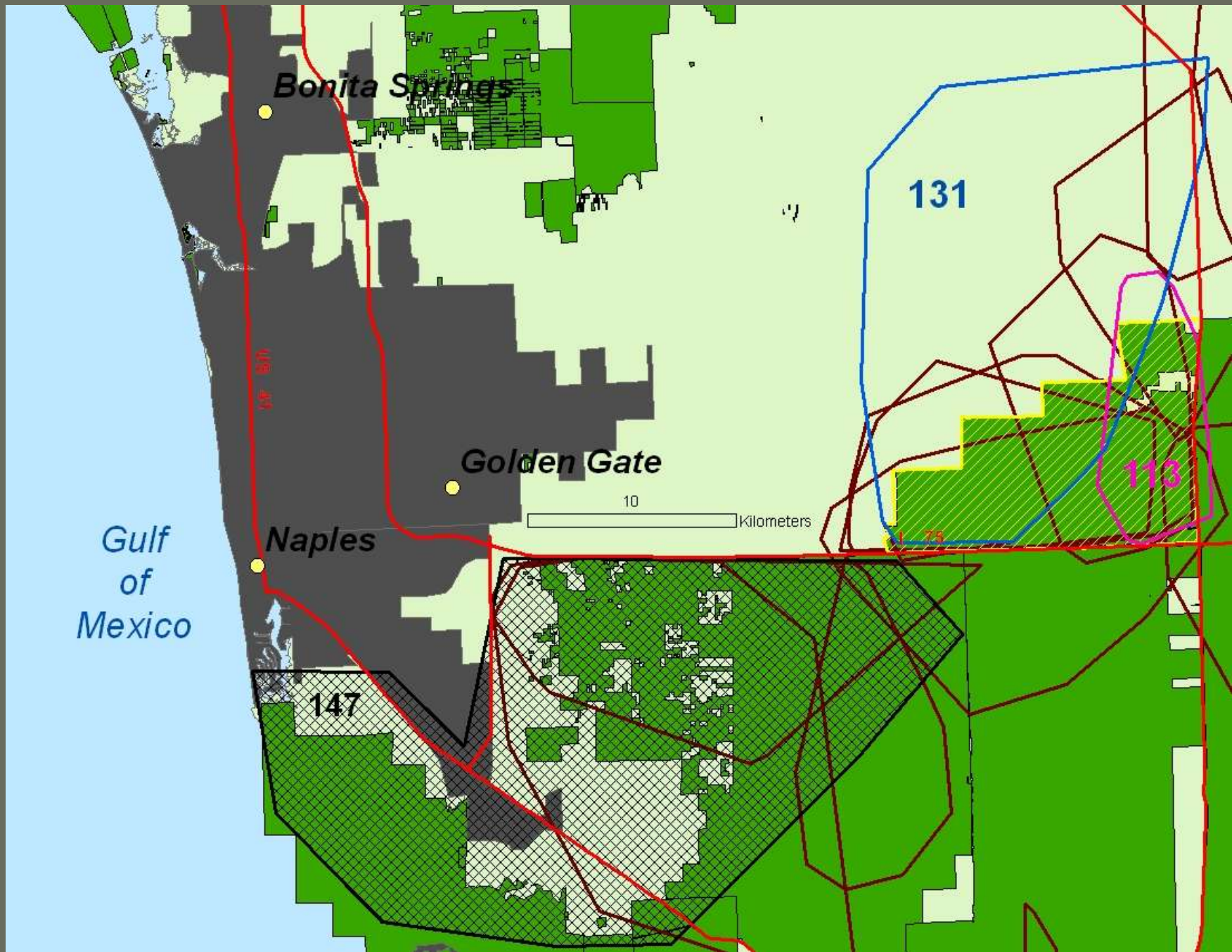
Panthers 107, 131, and 140 in Florida Panther NWR June 2007



Data sources:
Florida Panther NWR 2006-2007

FPNWR boundary











The Future for Florida Panthers

- As an endangered species, the panther must be considered in any major conservation/restoration program, including CERP: the Comprehensive Everglades Restoration Plan
- This past June a new \$150 million conservation plan was announced to establish corridors on private lands, primarily agricultural, to connect areas of protected panther habitat.
- More panther-friendly road-crossings are planned for areas of high mortality.
- The Florida Fish and Wildlife Conservation Commission and the Florida Panther National Wildlife Refuge engage in extensive public education programs to create public support in the heavily populated urban and residential areas abutting panther habitat.
- Numerous “friends” groups, including schools, contribute to conservation of the species with donations and political support

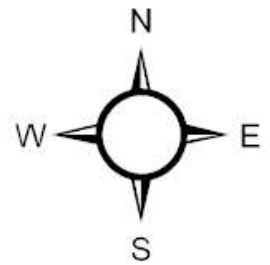
Snowy Plover with chicks

Photo by Hugh McLaughlin



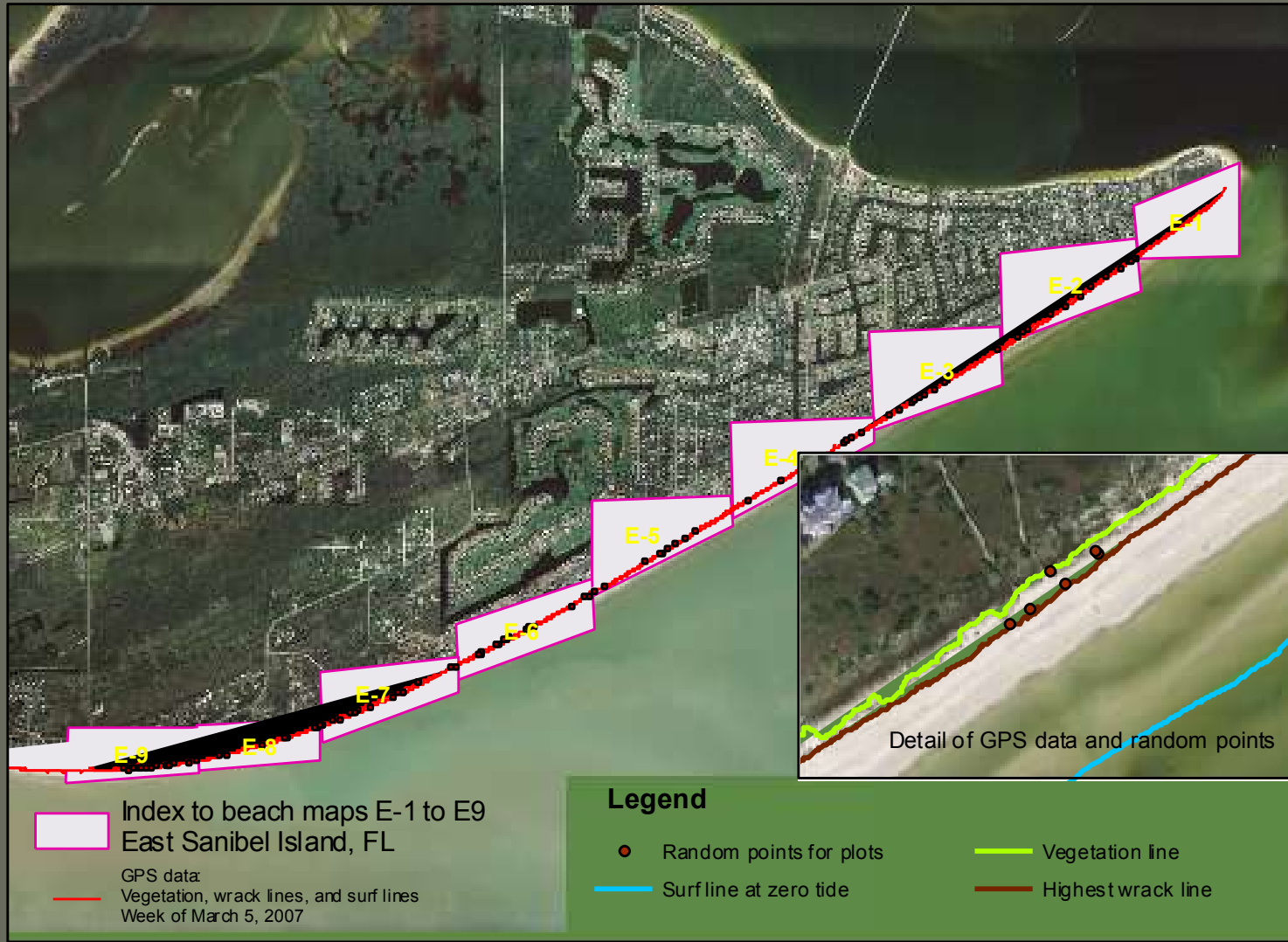


0 1 2 4 Kilometers





Index to Snowy Plover Project Maps for East Sanibel, FL Sanibel Captiva Conservation Foundation



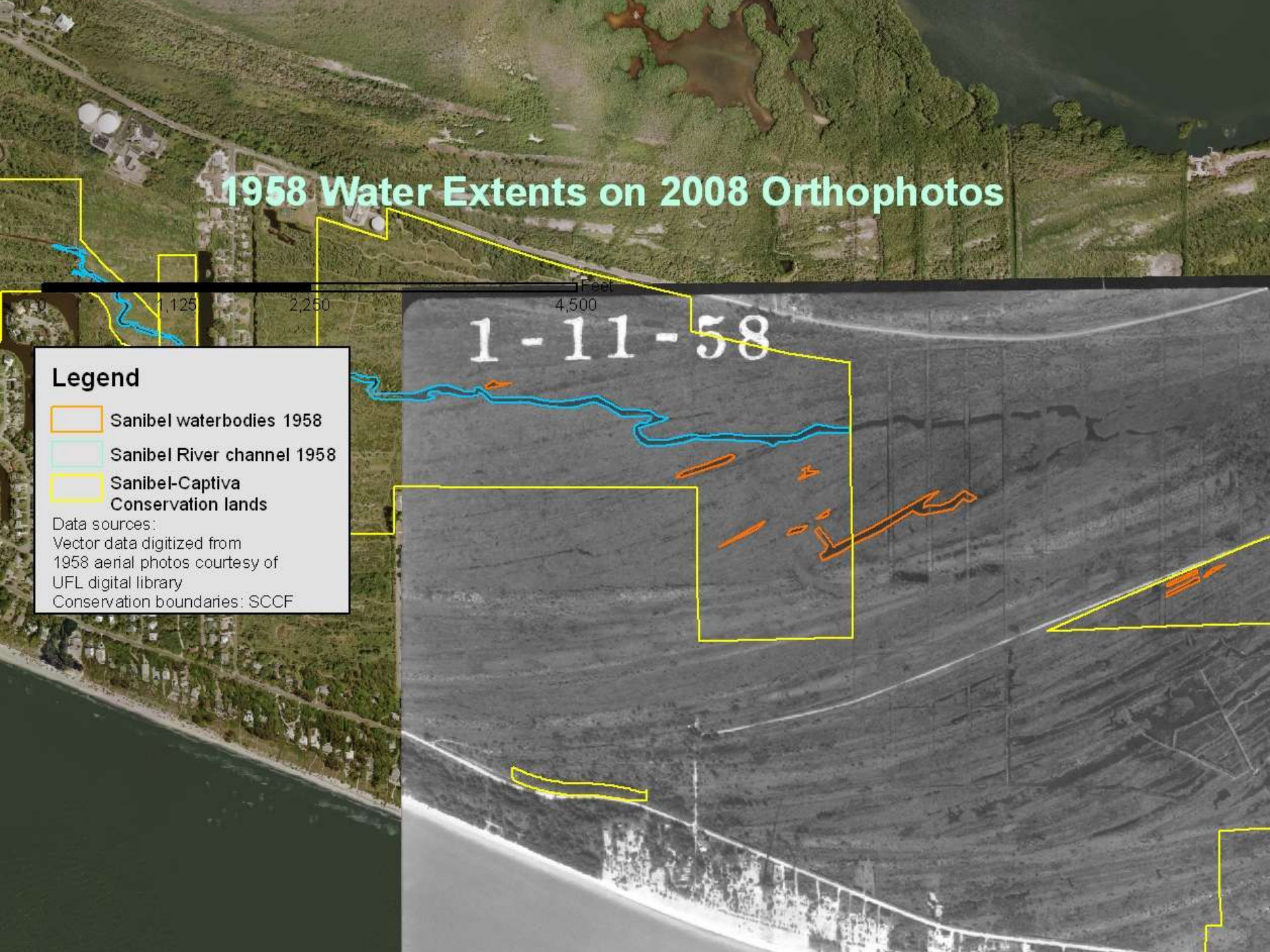
Data sources:
GPS MK Sadighi 2007
Orthophoto Lee County 2005
Map made 3/07/07







1958 Water Extents on 2008 Orthophotos



1958 Water Extents on 2008 Orthophotos



Legend

- Sanibel waterbodies 1958
- Sanibel River channel 1958
- Sanibel-Captiva Conservation lands

Data sources:
Vector data digitized from
1958 aerial photos courtesy of
IFL digital library
Conservation boundaries: SCCF







Gopher Tortoise Burrows in the Sanctuary Golf Course 2009



● Gopher Tortoise burrows

▨ Conservation lands around Sanctuary Golf Course

Data sources:
GPS data Trimble Geo XT (K. Sadighi)
Orthophotos Lee County
Mapping: ESRI grant

0 440 880 1,760 Feet

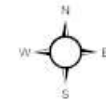
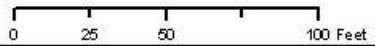


Gopher Tortoise Burrows in the Sanctuary Golf Course Area D 2009



- Active burrows 2009
- Inactive burrows 2009
- New-found burrows 2009

Data sources:
GPS data Trimble Geo XT (K. Sadighi)
Orthophotos Lee County
Mapping: ESRI grant



Summer of 2009

- Mapping restoration projects for both Berkshire Natural Resource Council and The Nature Conservancy in Western Massachusetts
- GPSing locations of several endangered species and mapping their habitat

Thanks to:

- ESRI for a Pro Bono Conservation GIS grant
- Brad Smith, Sanibel-Captiva Conservation Foundation
- The Florida Fish and Wildlife Conservation Commission telemetry team: Mark Lotz, Darrell Land, Dave Onorato, and Marc Criffield
- Hugh McLaughlin, Mark Lotz, and Larry Richardson: photography
- Florida Panther NWR, DingDarling NWR, The Nature Conservancy, Berkshire Natural Resource Council