

# Assessing the Effects of Beach Restoration on Sea Turtles Residing in Adjacent Nearshore Habitats – Indian River County, Florida



James Gray

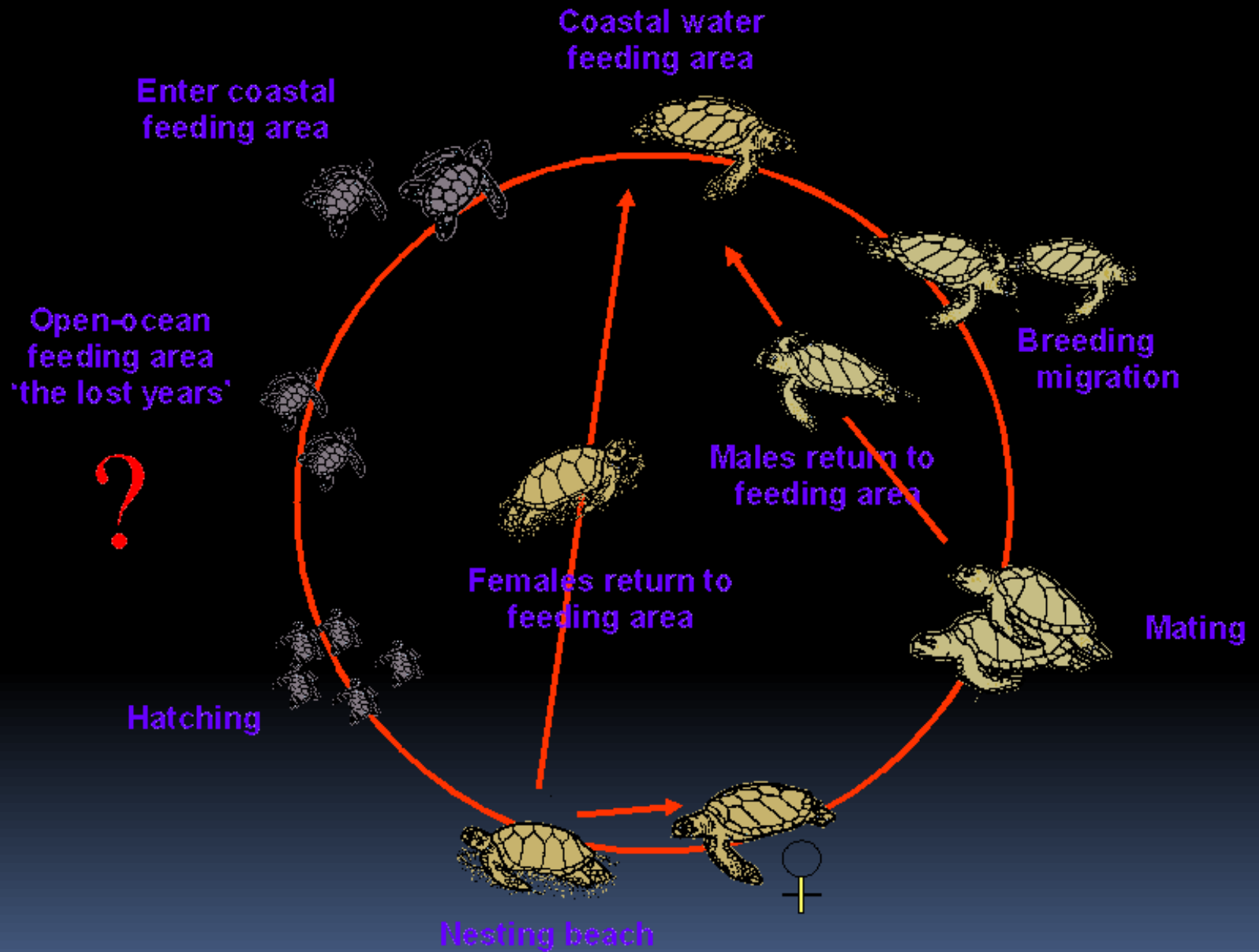


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# DEVELOPMENTAL HABITAT




# Developmental Habitat








# The “Head Count” Method

- Experienced observers on elevated platform
  - Vessel moves slowly along defined, repeatable transects
  - Record species, life stage, water column position and distance off transect
  - Generates index of abundance (observations per km or ha)
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# Applications of Head Count

- Comparing abundance between areas
  - Evaluating seasonal changes in abundance
  - Determining project effects (with appropriate controls)
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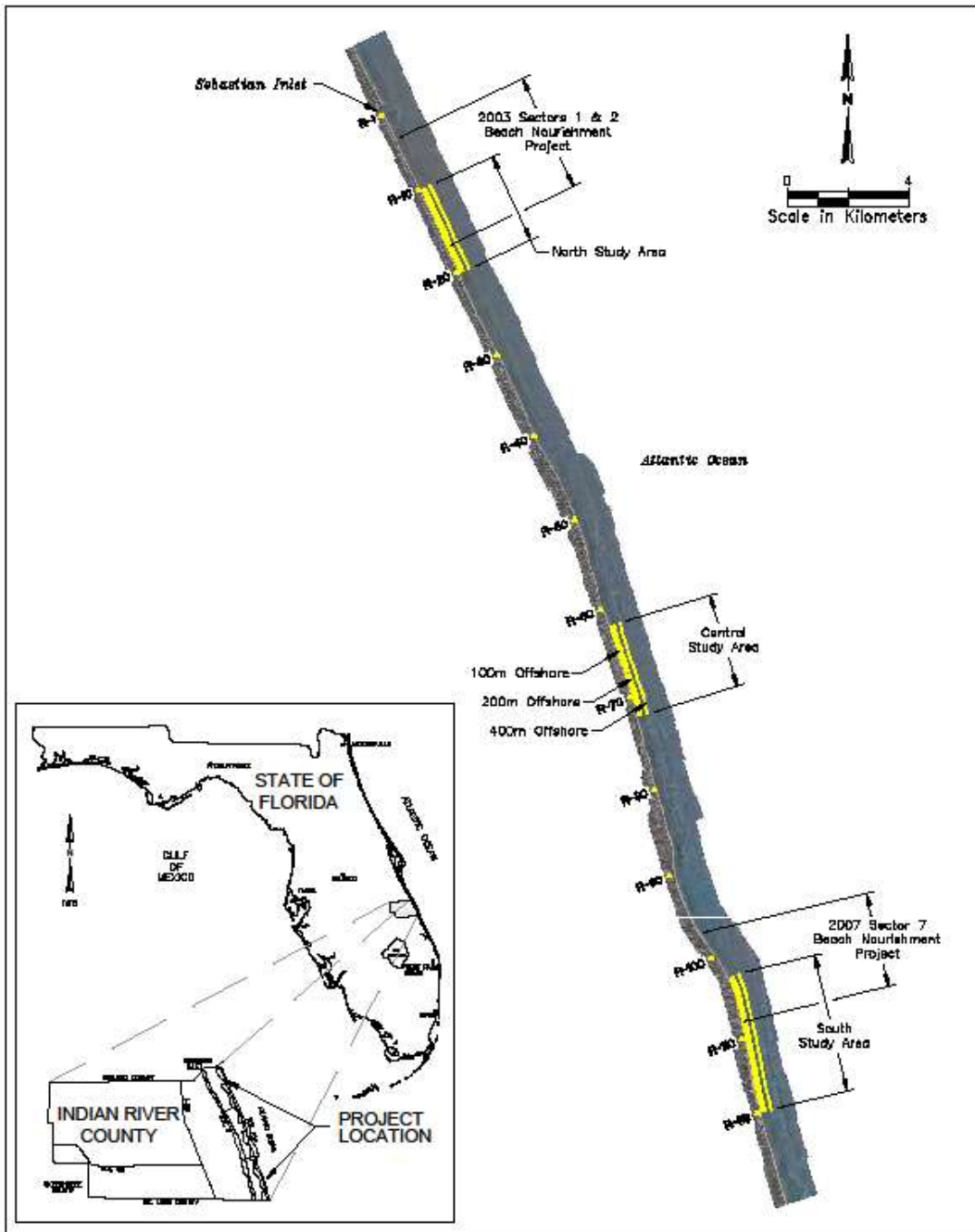
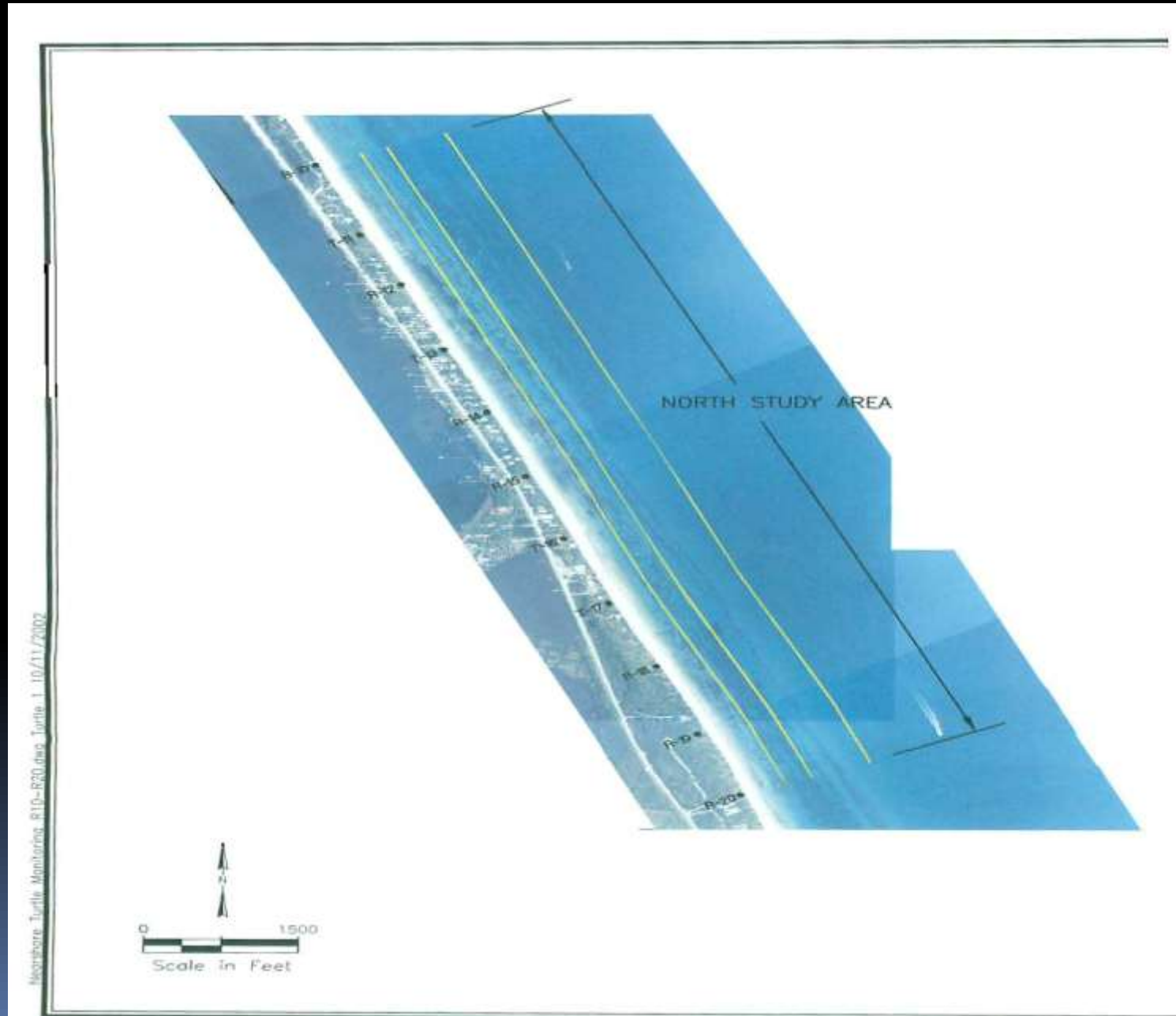
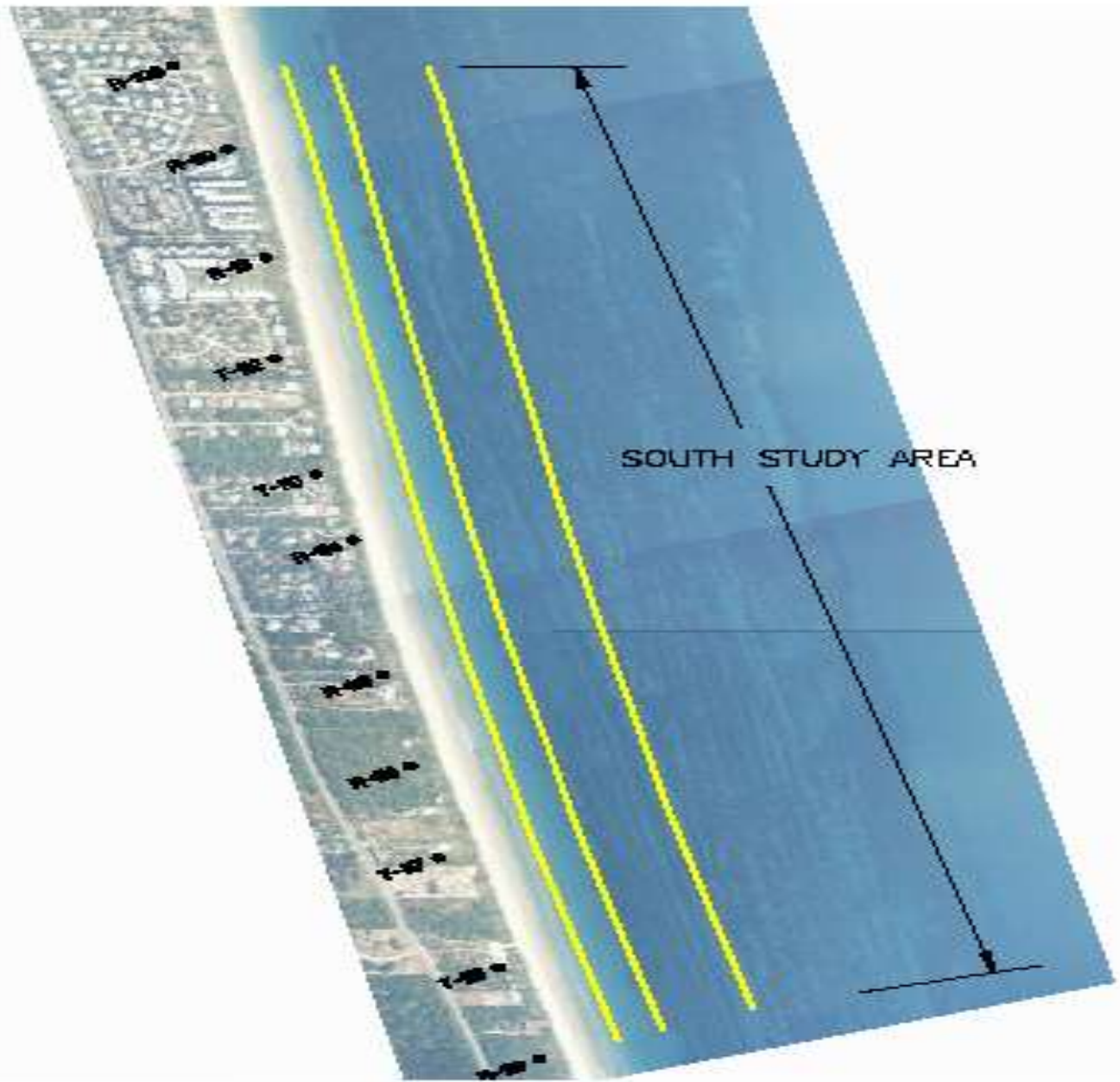


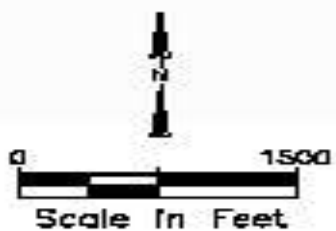
Figure 1. Project and Transect Locations

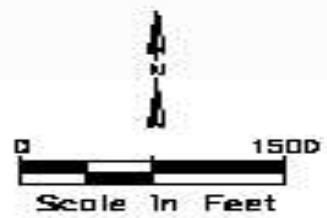
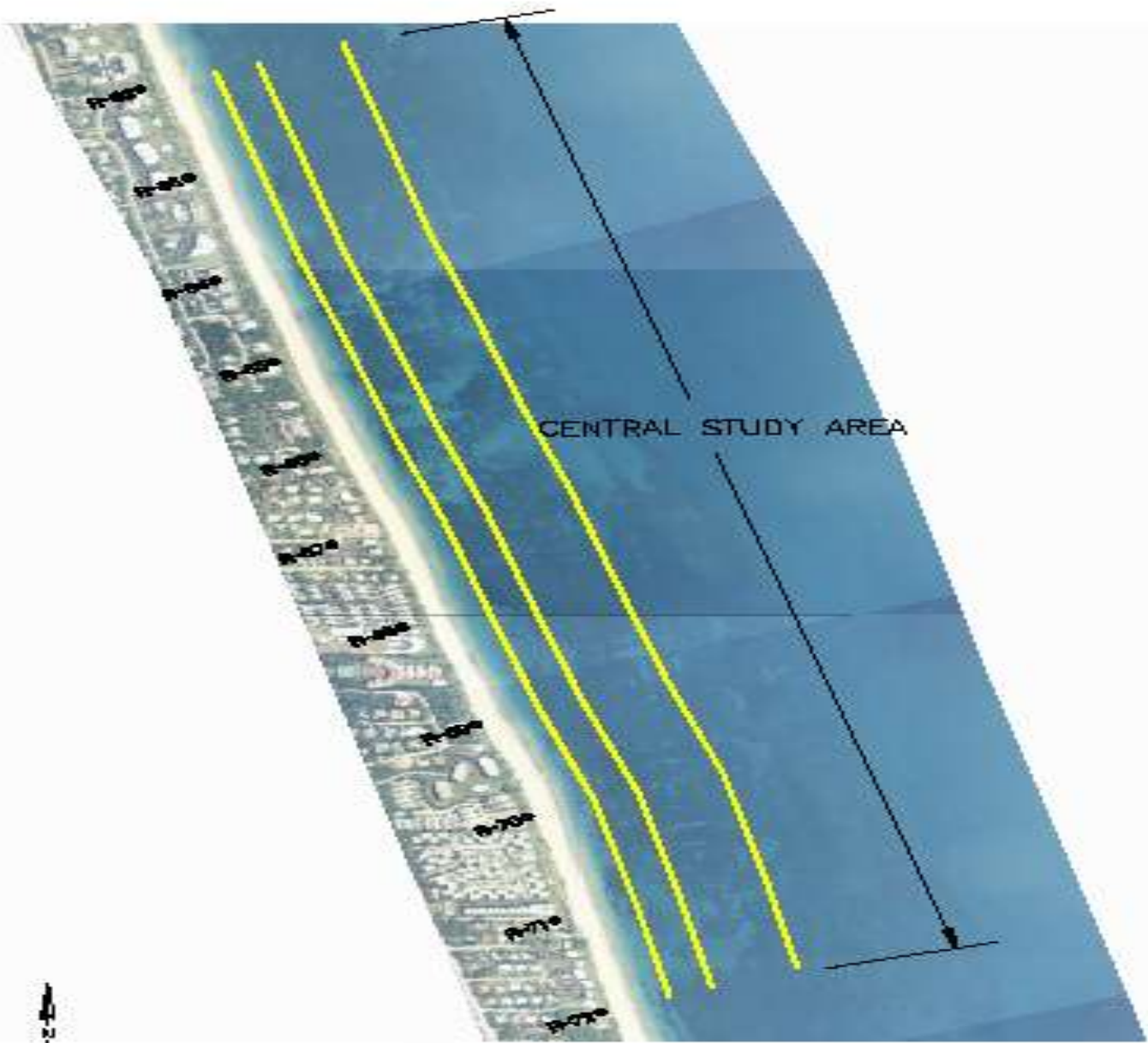
# Transect Locations Over Hardbottom in Project Area





SOUTH STUDY AREA

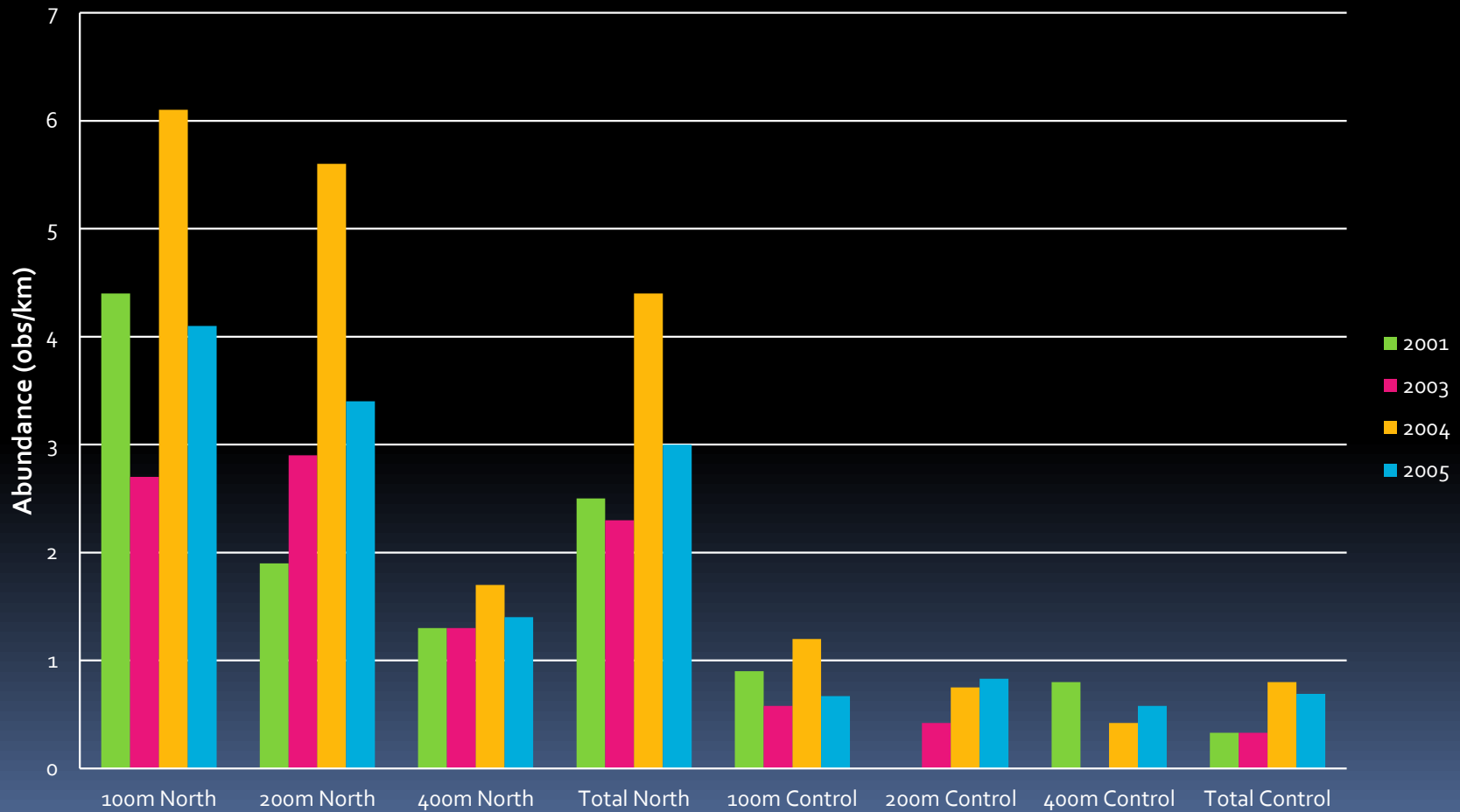




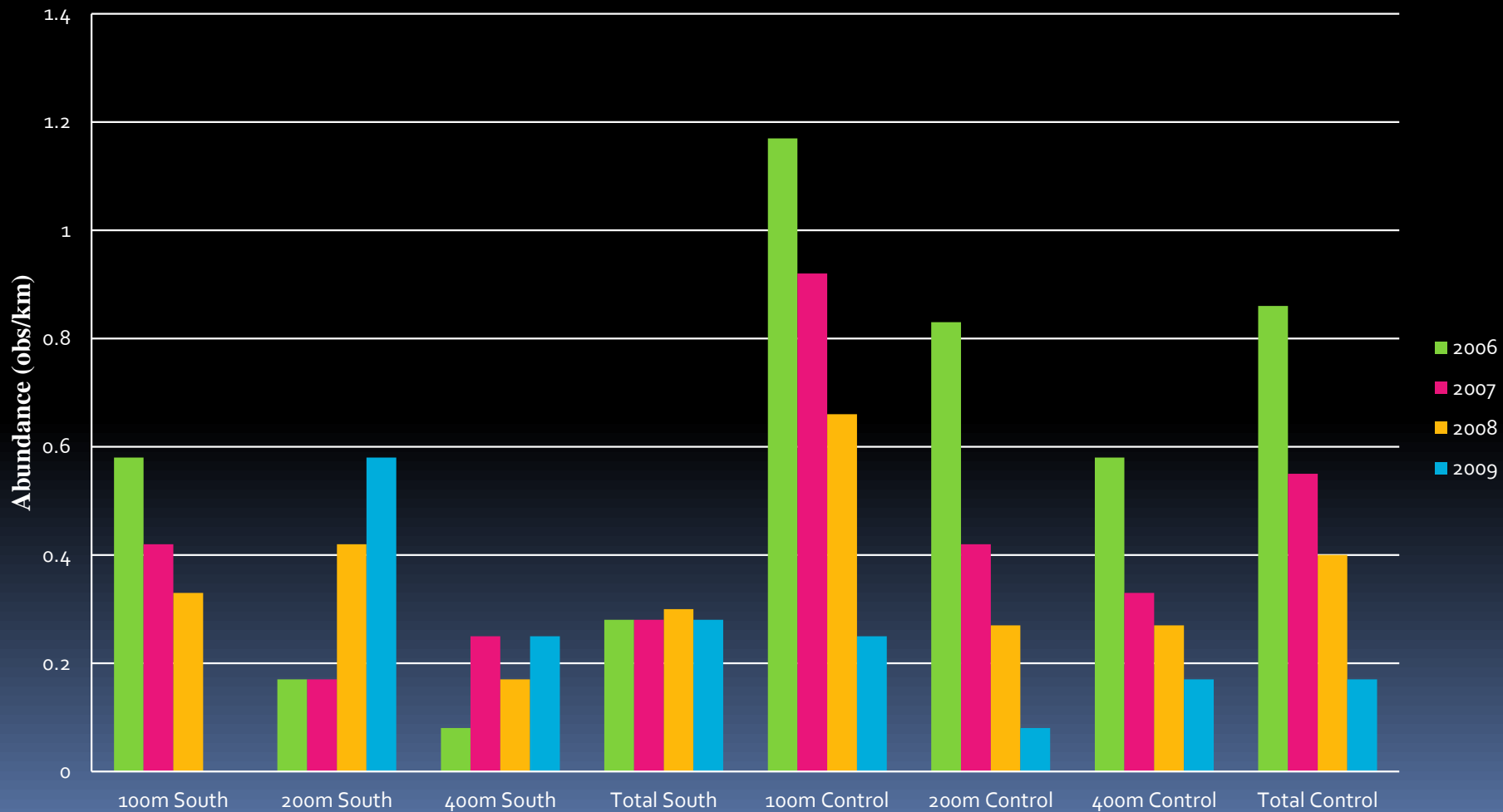
# GREEN TURTLES



# Green Turtle Abundance Trend – North Project Area and Control Area 2001-2005



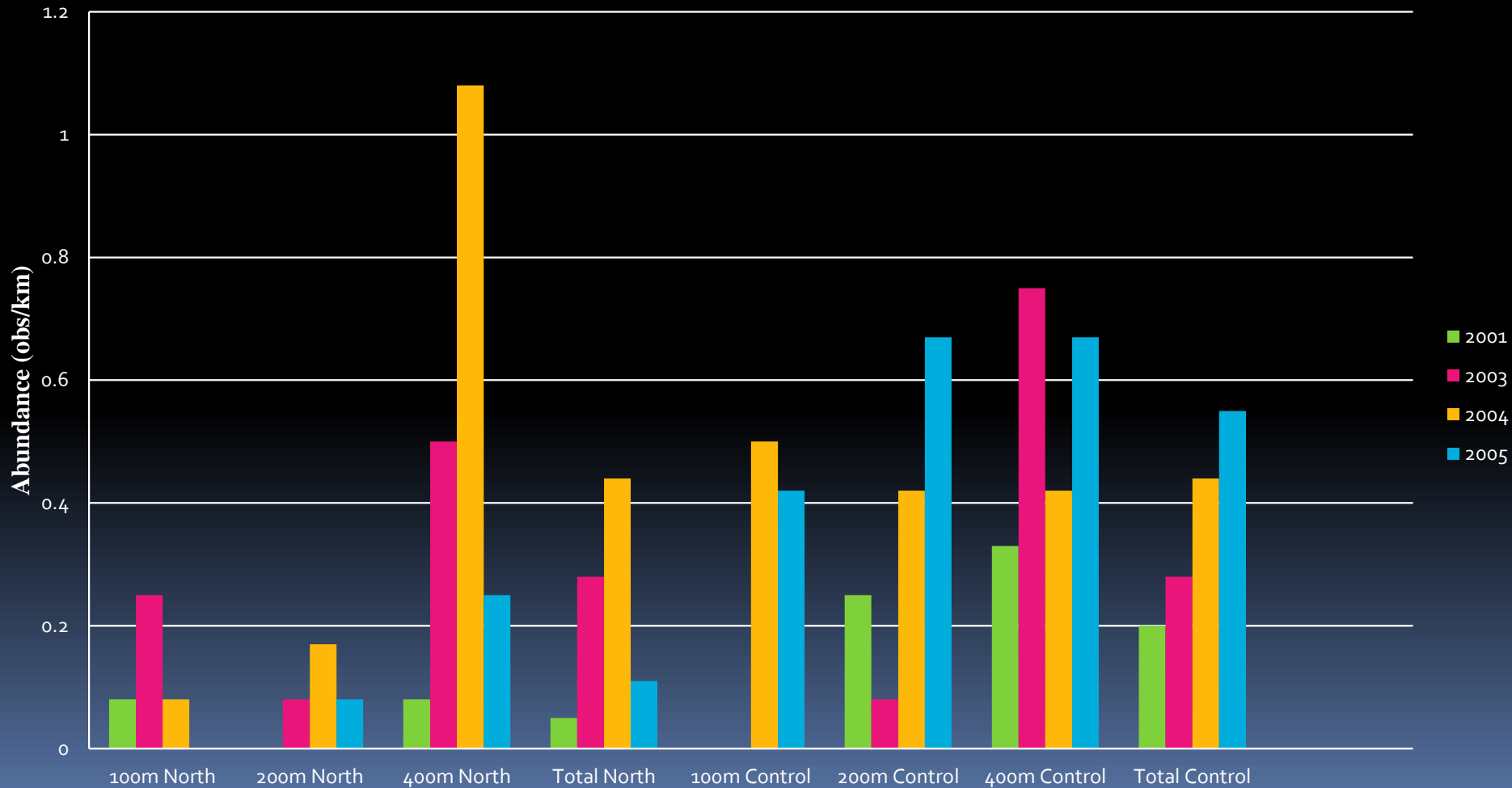
# Green Turtle Abundance Trend South Project Area and Control Area - 2006-2009



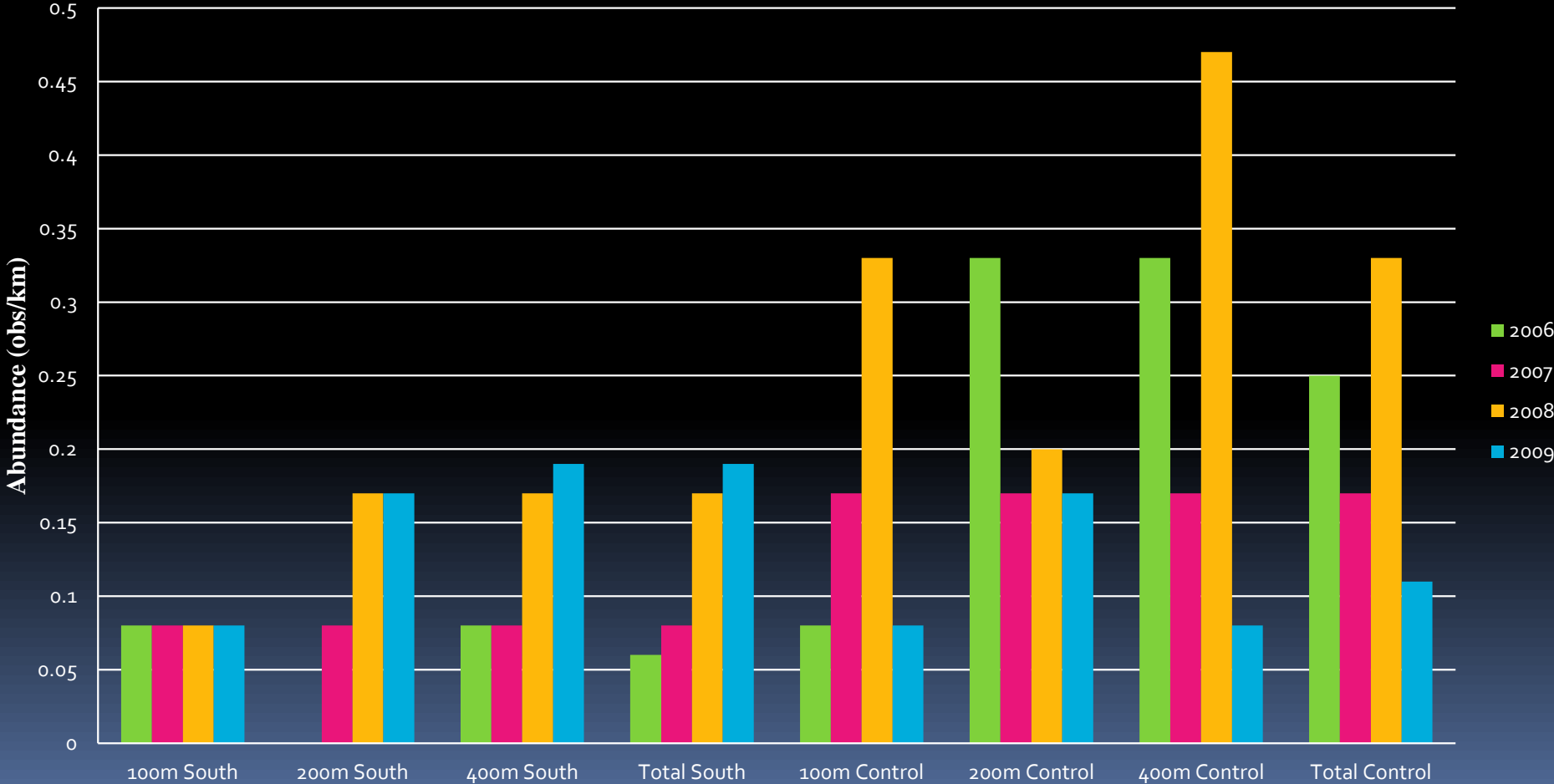
# LOGGERHEADS



# Loggerhead Turtle Abundance Trend North Project Area and Control Area – 2001-2005



# Loggerhead Turtle Abundance Trend South Project area and Control Area – 2006-2009



CONCLUSIONS.....

And the Case for Caution.....




[www.inwater.org](http://www.inwater.org)

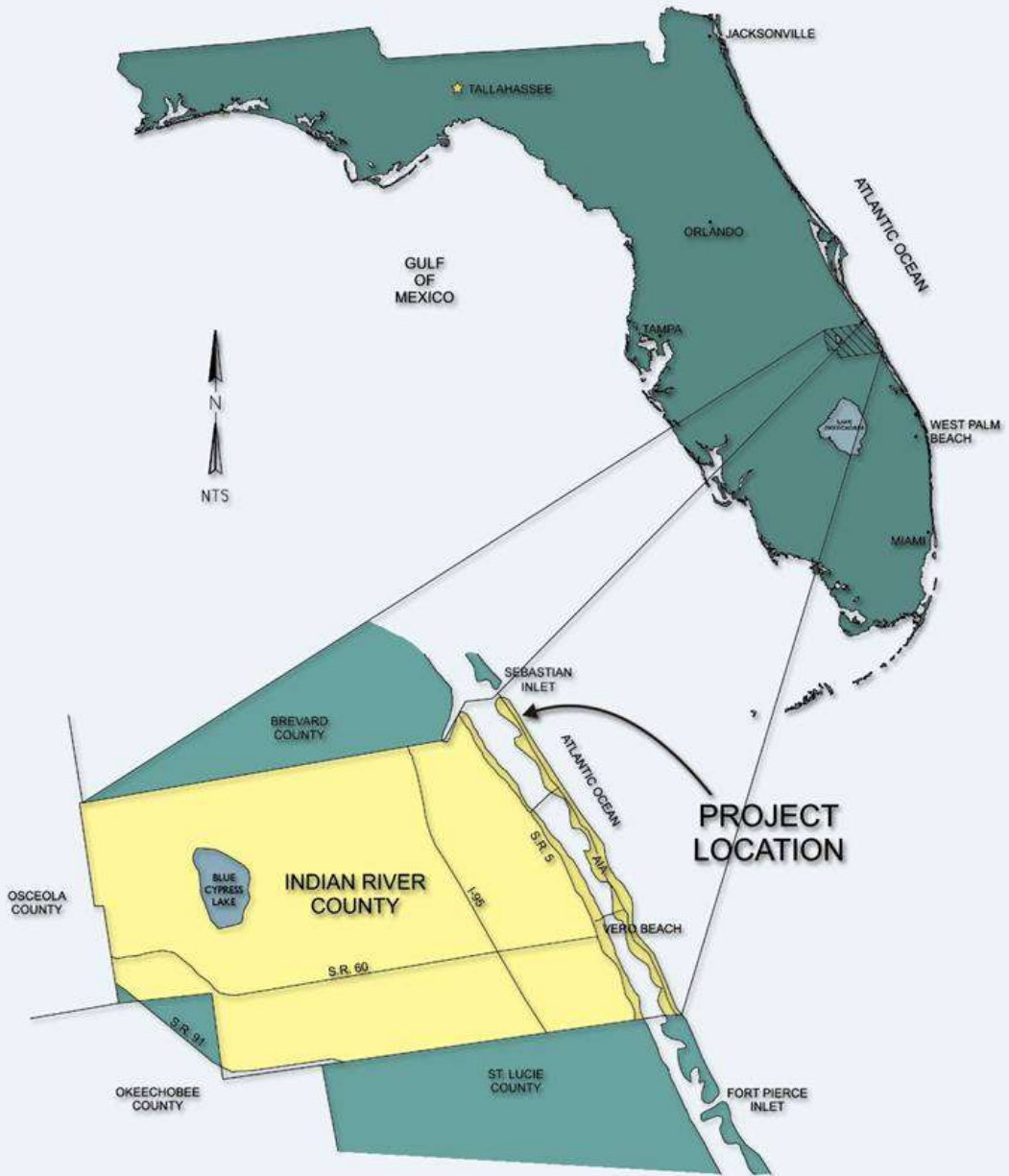
# Central East Coast Nearshore Sites

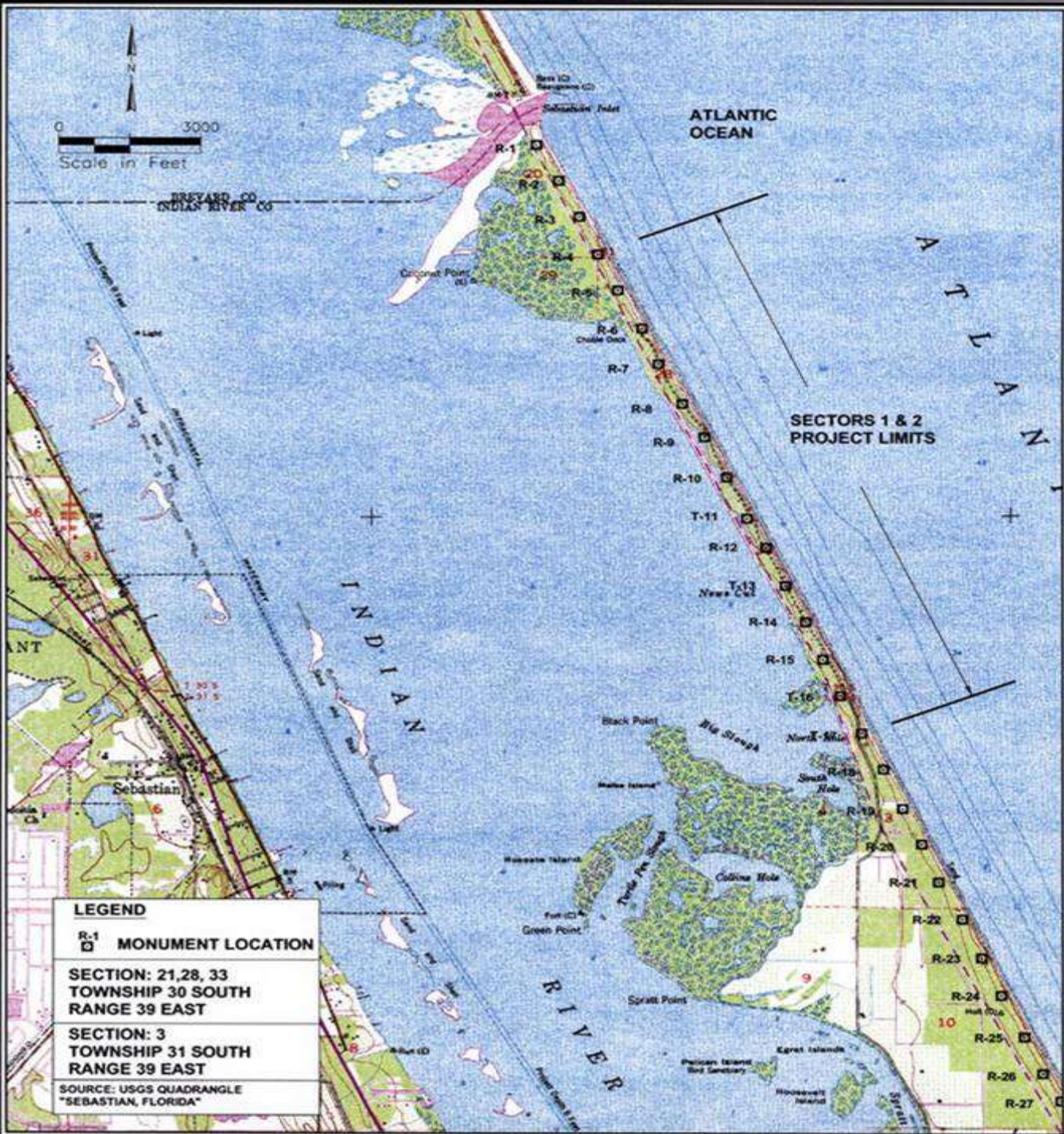
<b>Indian River County – Sectors 1&amp;2</b>	<b>3.2</b>
St. Lucie County – Walton Rocks	1.7
Martin County – Bathtub Beach	0.75
<b>Indian River County – Indian River Shores</b>	<b>0.61</b>
St. Lucie County – Middle Cove	0.40
St. Lucie County – Fort Pierce South Beach	0.39
<b>Indian River County – Sector 7</b>	<b>0.30</b>
St. Lucie County – Pepper Park	0.24
Martin County – St. Lucie Inlet State Park	0.20



# Head Count vs. Underwater

- Covers larger areas quickly
  - Relatively insensitive to underwater visibility
  - Does not require divers in water
  - Being used at a number of index sites across Florida
- 





**LEGEND**

R-1  
 □ MONUMENT LOCATION

SECTION: 21, 28, 33  
 TOWNSHIP 30 SOUTH  
 RANGE 39 EAST

SECTION: 3  
 TOWNSHIP 31 SOUTH  
 RANGE 39 EAST

SOURCE: USGS QUADRANGLE  
 "SEBASTIAN, FLORIDA"







MARINE RESEARCH

5000 LBS

