



## Folly River dredging project and the creation of seabird and shorebird habitat on Bird Key Stono Heritage Preserve

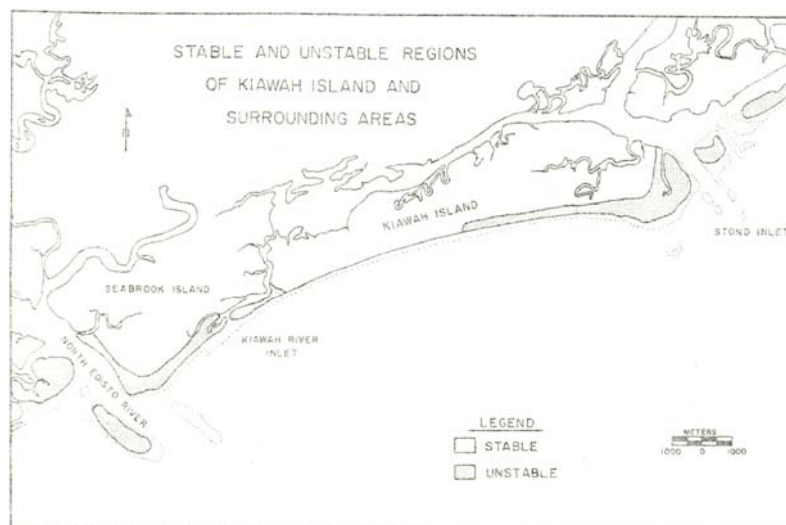
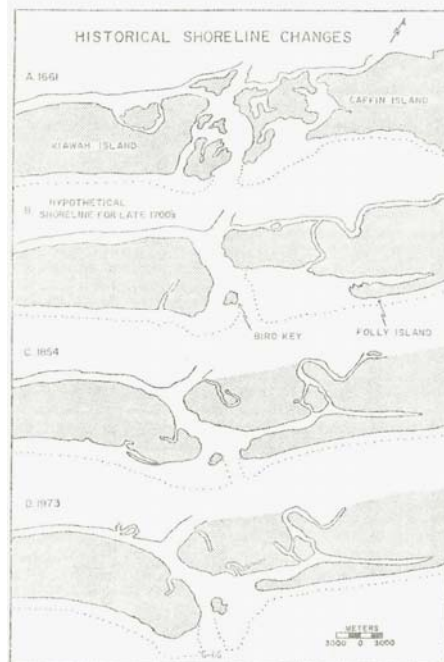
Felicia Sanders<sup>1</sup>, Alan Shirey<sup>2</sup>, Robin Coller-Socha<sup>2</sup>, Tom Murphy<sup>1</sup>, Jimmy Hadden<sup>2</sup>, Jamie Dozier<sup>1</sup>, and Mark Spinks<sup>1</sup>

<sup>1</sup>South Carolina Department of Natural Resources (SCDNR)  
<sup>2</sup>U.S. Army Corps of Engineers (USACE), Charleston District



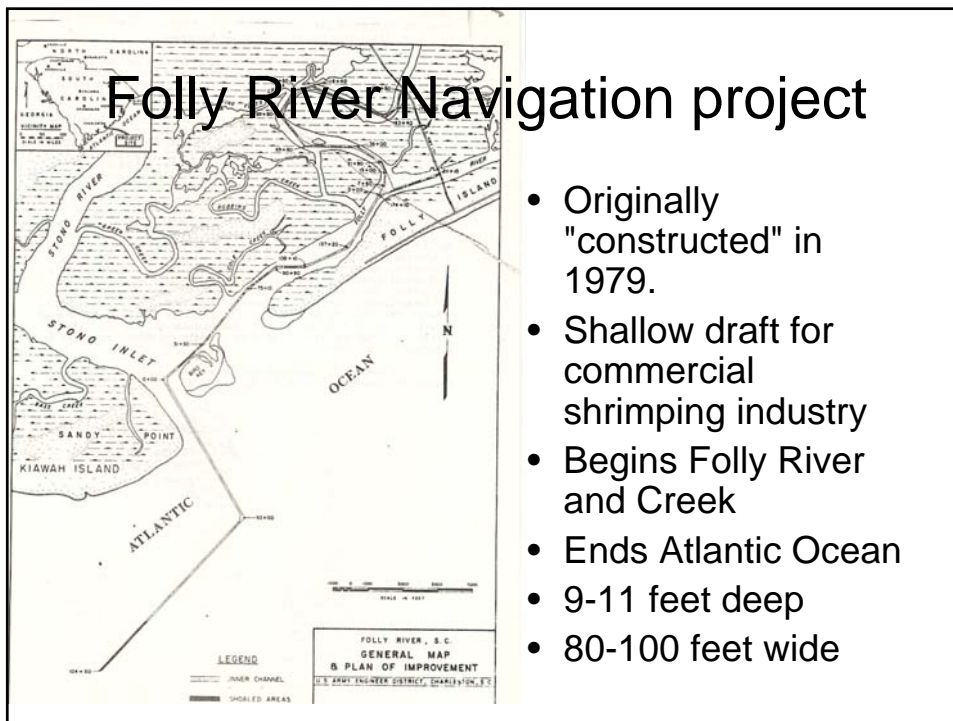
# Bird Key

- Historically present
- 20-30 acres

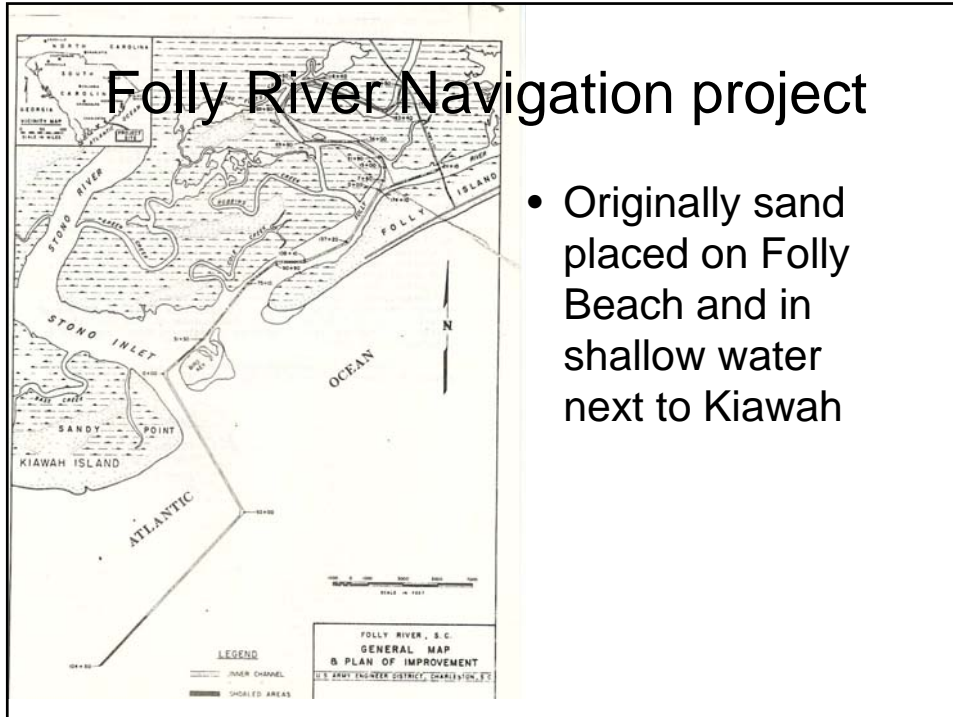


## Bird Key

- 1 of 4/5 seabird nesting islands in SC
- 1979 Deveaux Bank washed
- 1980's Brown Pelicans, Black Skimmers, Terns, Gulls nested
- Late 1980's – 1994, largest BRPE rookery
- 41% of seabird nesting in SC
- Numerous wintering PIPL
- Nesting shorebirds
- 1983 SCDNR Heritage Preserve
- 2004 Audubon IBA



## Folly River Navigation project



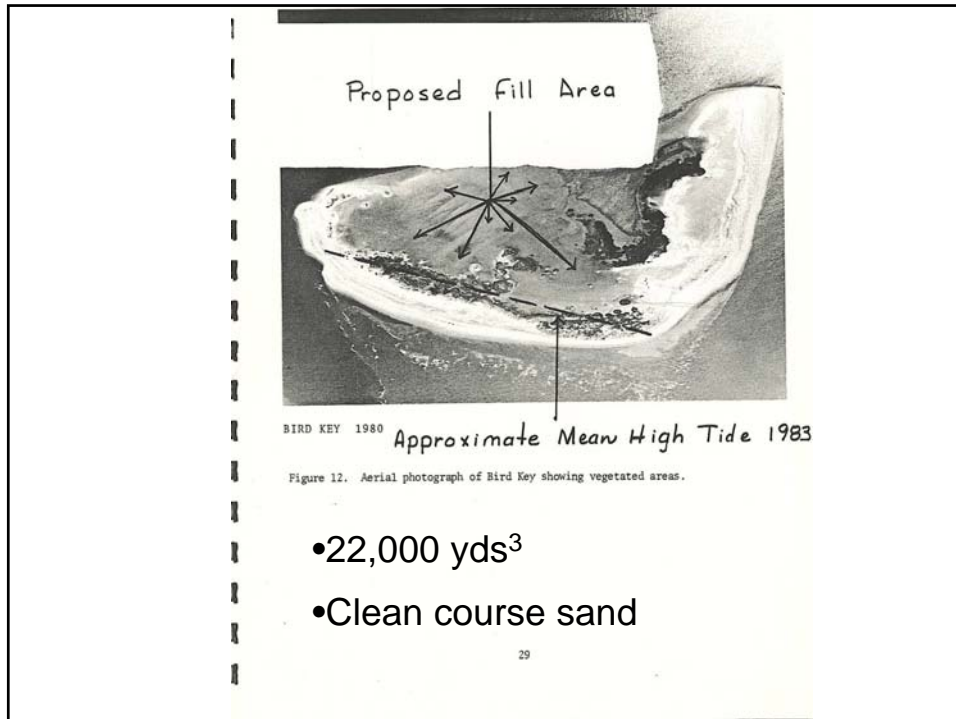
## Enlarge Bird Key?

- 
- 1982 - 3251 Brown Pelican nests
  - 1983  $\frac{3}{4}$  nesting area eroded
  - Proposed by SCDNR and USACE - place sand on Bird Key
  - December 1983 – public meeting to include the alternative disposal site

## 1983 decision

- District engineer – will not jeopardize listed species
- Formal consultation with USFWS, Biological Opinion - no harm
- NC dredge spoil successfully enhance pelican nesting habitat (Wilmington)
- SCDNR Heritage Trust Advisory Board members voted
- 1984 - USACE spoil on landward side of nesting area instead of proposed Folly beach

1983



## Channel maintenance

- 1984-present, USACE place sand from Folly River navigational channel
- Shared with adjacent Folly Island
- 1-3 years interval
- 14K-50K yds<sup>3</sup>
- Preferably non-nesting season (15 Oct – 1 Apr)
- Most stable site on island
- Material redistributed each year
- Maintain physical integrity



# Erosion

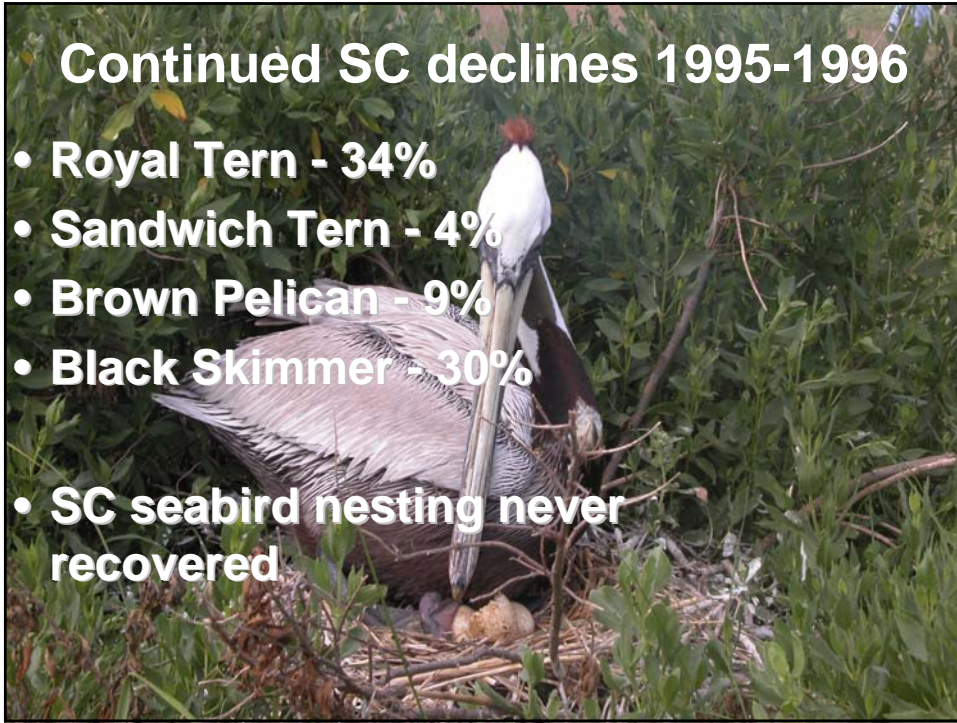
- Winter 1993-1994 high rate of erosion
- May 1994 ½ nesting habitat gone
- January 1995 entire island intertidal
- Suitable alternative rookery ?
- SC nesting declined from 1993-1995
  - Royal Tern - 52%
  - Sandwich Tern - 37%
  - Gull-billed Tern - 40%
  - Brown Pelican - 24%



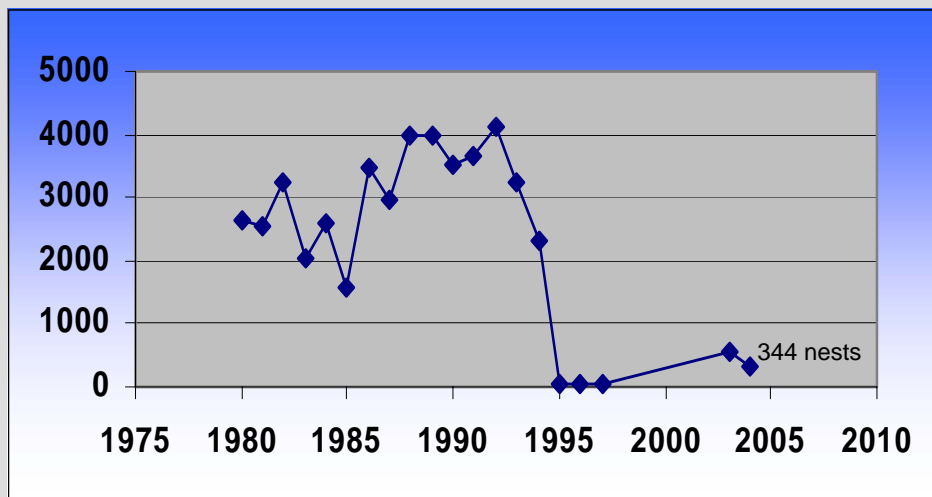


## Continued SC declines 1995-1996

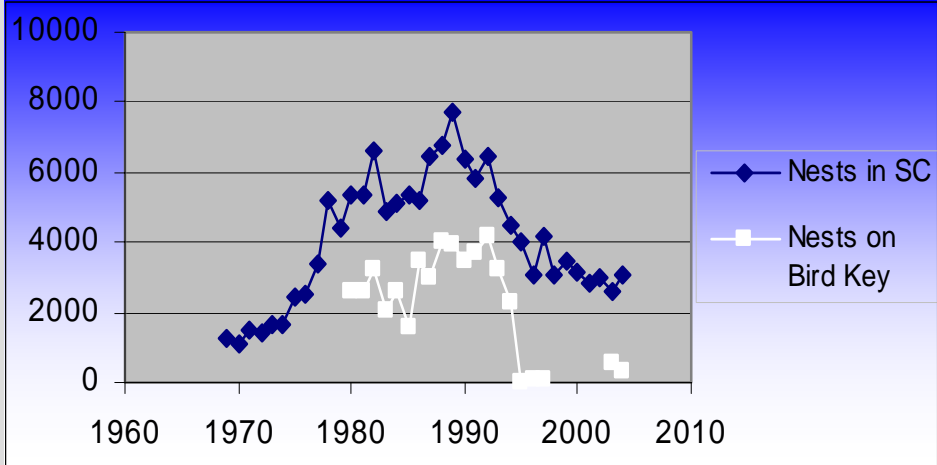
- Royal Tern - 34%
- Sandwich Tern - 4%
- Brown Pelican - 9%
- Black Skimmer - 30%
- SC seabird nesting never recovered



## Brown Pelican nests on Bird Key



# Brown Pelican



# Spoil



## Habitat

- 4-5 ha vegetated dune - Pelican and Gull
- 1-2 ha shrub habitat – Wading birds
- 4-5 ha barren sand - Tern and Gull
  - <25% ground cover
  - <20 cm vegetation ht

2002

7/2/2002



## Dredge quantities

- 1984 22,100 yds<sup>3</sup>
- 1985 13,400 yds<sup>3</sup>
- 1987 16,200 yds<sup>3</sup>
- 1988 19,400 yds<sup>3</sup>
- 1990 21,400 yds<sup>3</sup>
- 1991 14,400 yds<sup>3</sup>
- 1992 29,400 yds<sup>3</sup>
- 2000 20,000 yds<sup>3</sup>
- 2003 50,000 yds<sup>3</sup>

# People versus Pelicans

