Colonial waterbirds and dredge material placement

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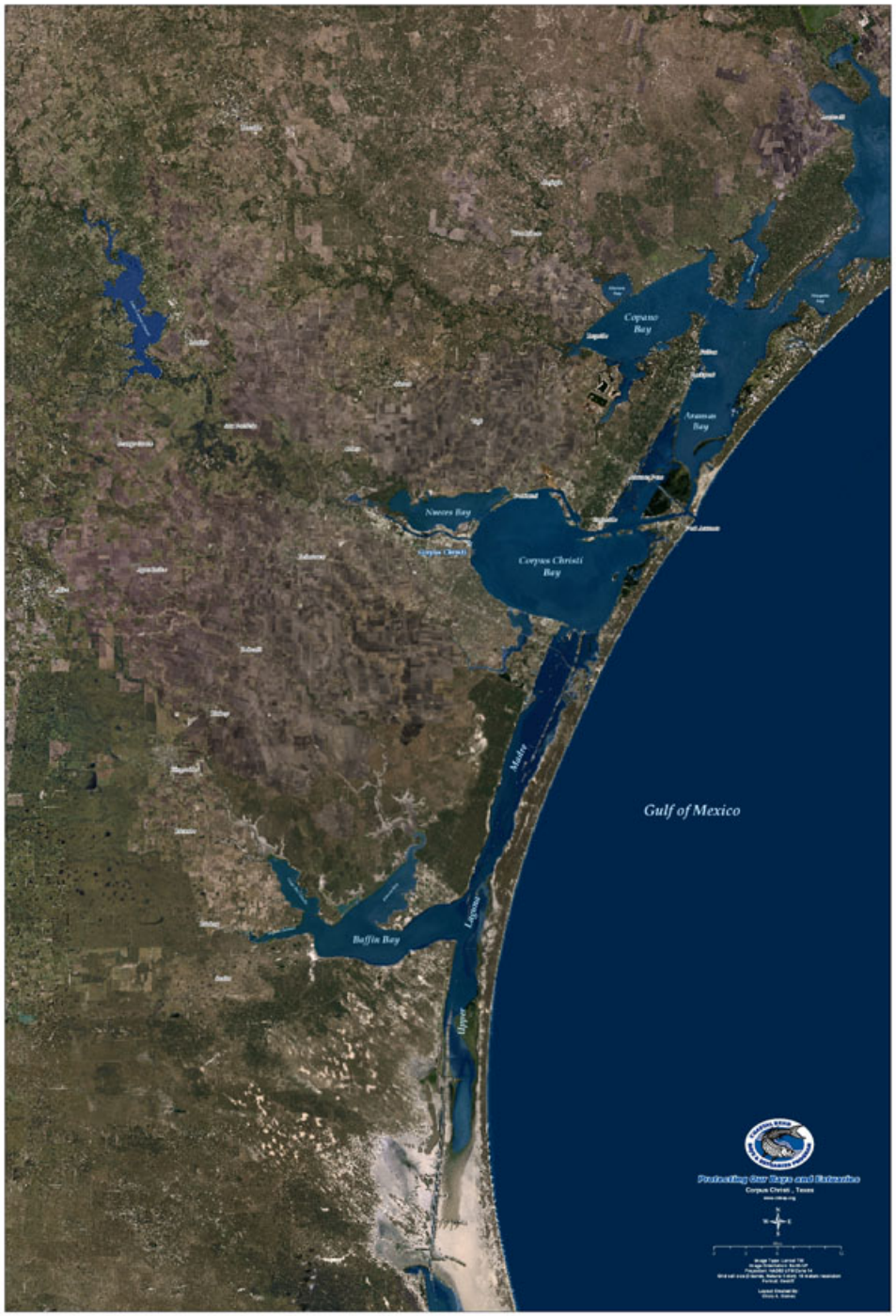
Dredge placement

- Mainland sites
- Large confined island spoil sites
- Smaller (<10 acre) spoil islands



Colonial waterbird rookery islands in Texas

Historical perspective

Pre-dredging

Natural islands supported almost all of the coastal waterbird colonies (North Deer, Second Chain of Islands, Green Island)

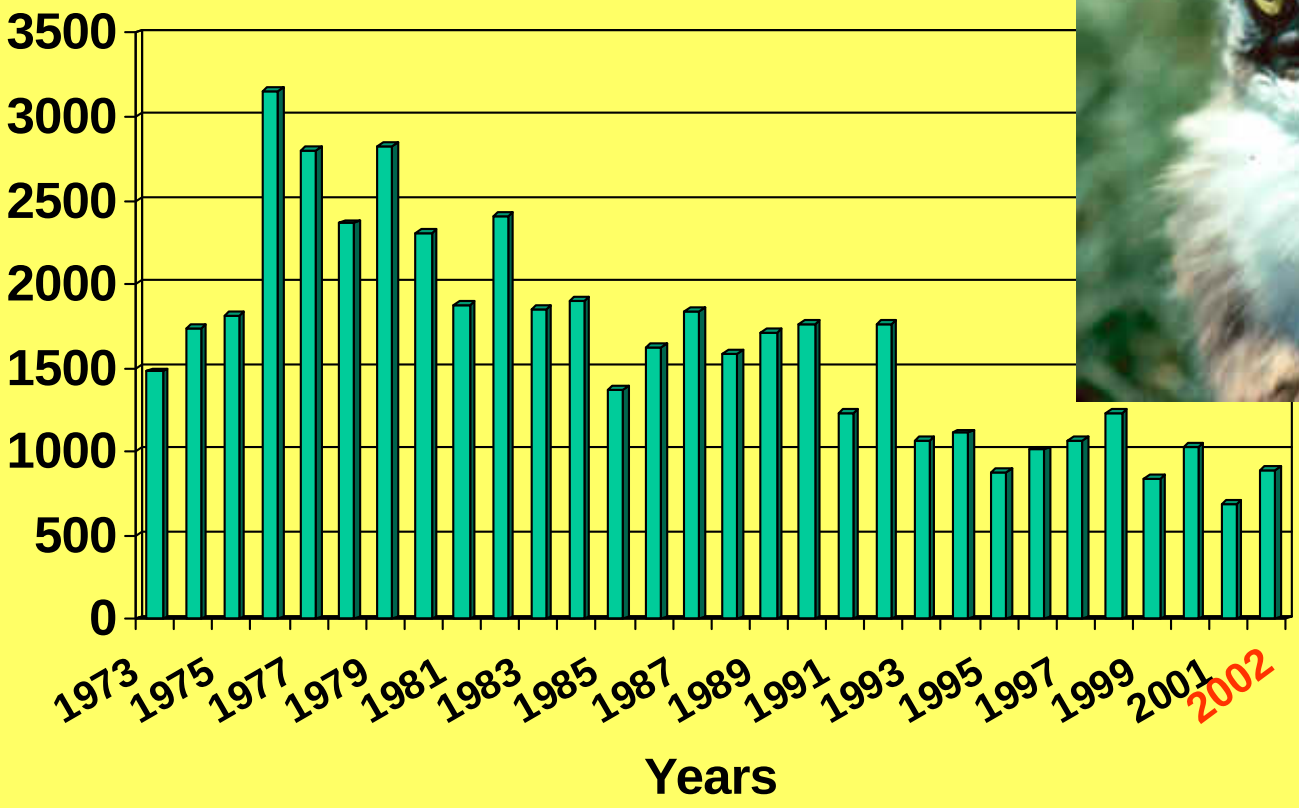
Mix of native brush and bare areas

Post-dredging

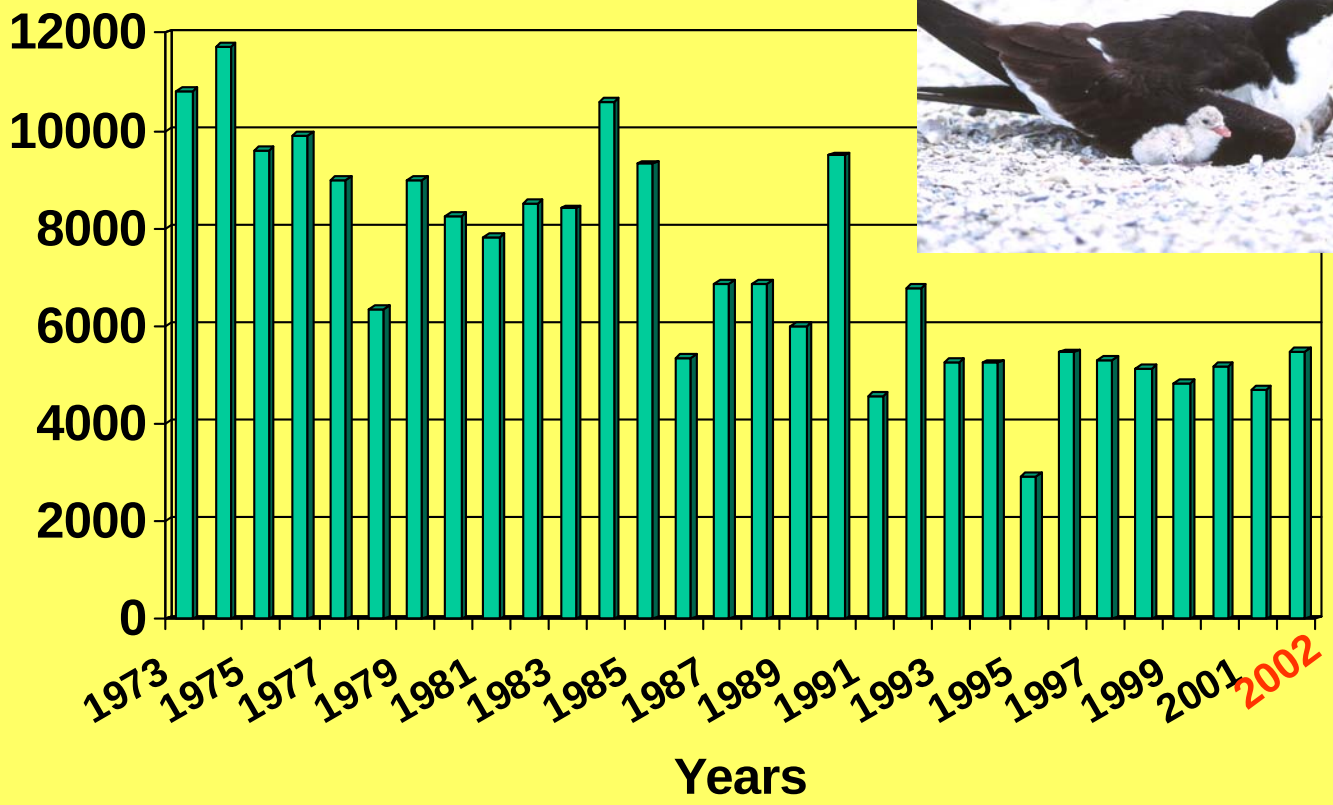
Some natural islands remain, though some were designated as placement areas

Numerically, most islands at present are dredge material islands

Great Blue Heron Nesting Pairs, Texas Coastal Colonies



Black Skimmers Nesting Pairs, Texas Coastal Colonies



Challenges for colonial nesting waterbirds

Loss of habitat

Predators

Human disturbance

Vegetative structure

Erosion

Pre

- Natural processes of island building and erosion
- Established vegetation helped ameliorate erosive forces
- Bare-ground areas on leeward corners of islands

Post

- Increased water depth along channels = greater wave height
- Pressure waves generated by barges, tankers have major erosive force and washover of low spots
- Unstabilized shores results in rapid loss of material

Predators

Pre

- Isolation from mainland or barrier island predator source
- Less human garbage present for opportunistic predators
- Occasional predator incursion taken care of naturally by drought, hurricanes, etc.

Post

- (near) connectivity with predator source
- Human presence = increased opportunistic predator population
- Chains of islands create “predator highways”
- Greater area resulting from clustered islands = sustainability for predator populations

Disturbance

Pre

- 19th century human depredation for fashionable plume trade
- Egg harvesting
- Natural islands under Audubon wardening kept disturbance minimal

Post

- More people/ boats/ fishing pressure in same area
- Difficult to effectively warden hundreds of islands

Vegetation

Pre

- Native shrubs to which local breeding species were well-adapted
- Shrubs on natural islands of an ecotype tolerant to harsh conditions of wind and salt spray, salinity in soil, etc.

Post

- Problems with exotic vegetation
- Dredge spoil takes long time to leach salts and develop a loam layer to support shrubs
- Overall lack of suitable vegetation for shrub/ tree nesters

What's the best option for the birds?

- Mainland disposal sites?
  - may be of interest to few nesting pairs of least terns for one year
- Large confined islands?
  - same as above
- Smaller manageable islands?
  - **definitely** the **best** option

Creating the “perfect island”

Challenge	Solution
• **Erosion**	• Shoreline protection
• **Predators**	• Isolation, management
• **Disturbance**	• Signage, wardening, education
• **Vegetation**	• Invasive control, shrub planting, bare ground maintenance


DANGER

Recent “creation” successes

- New Island in Nueces Bay

Recent “creation” successes

- Evia Island in Galveston Bay

Management example

- **Pelican Island, Corpus Christi Bay**

  - wildlife management through lease with Audubon Texas (administered by CBBEP and Port of CC Authority locally)

  - dredge material placement (timing and location) coordinated with nesting season