

Louisiana

GOES-12 09/13/2004 13:15 UTC (9:15 AM EDT)



Post-Hurricane Ivan Emergency Habitat Restoration Perdido Pass, Alabama

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Rebuilding a Better Gulf Coast for Birds Corpus Christi, Texas March 14-16, 2006



Mobile District

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Agenda

- Regional Sediment Management Approach
- Effects from Hurricane Ivan
- Emergency Restoration Action

Gulf of Mexico

Florida

Bahamas

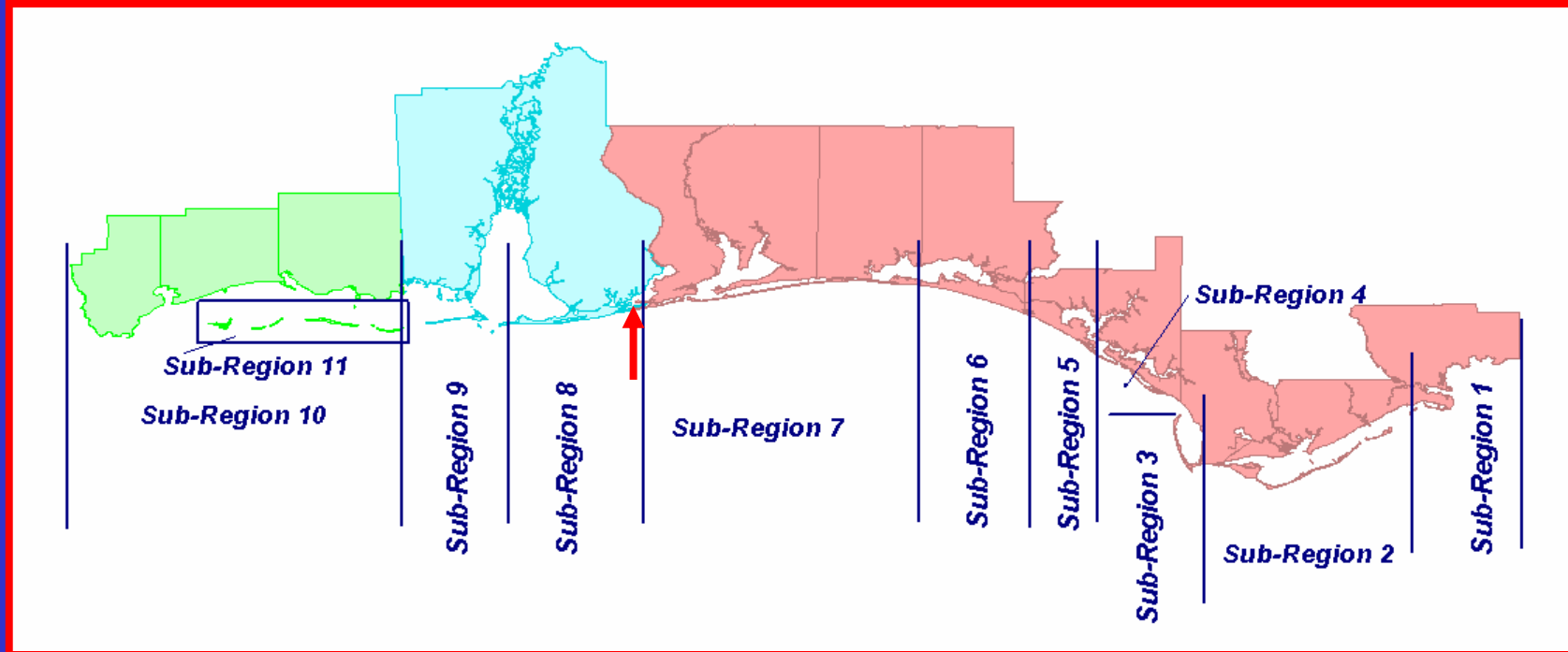
Yucatan Peninsula

Cuba

Jamaica



Northern Gulf of Mexico Regional Sediment Management Program



375-miles of Shoreline
Federal Projects
State Parks
Military Installations

Gulf Islands National Seashore
Panama City Beach
Local Projects



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RSM Philosophy

- Coastal projects play major role in shoreline variability
- Composed of several elements
- Requires holistic management approach
- Manage sediment as a regional resource
- Informed management decisions

Regional Sediment Management

Goal:

Maximize beneficial use of sediments;
Minimize environmental impacts;
Optimize expenditures

Objectives:

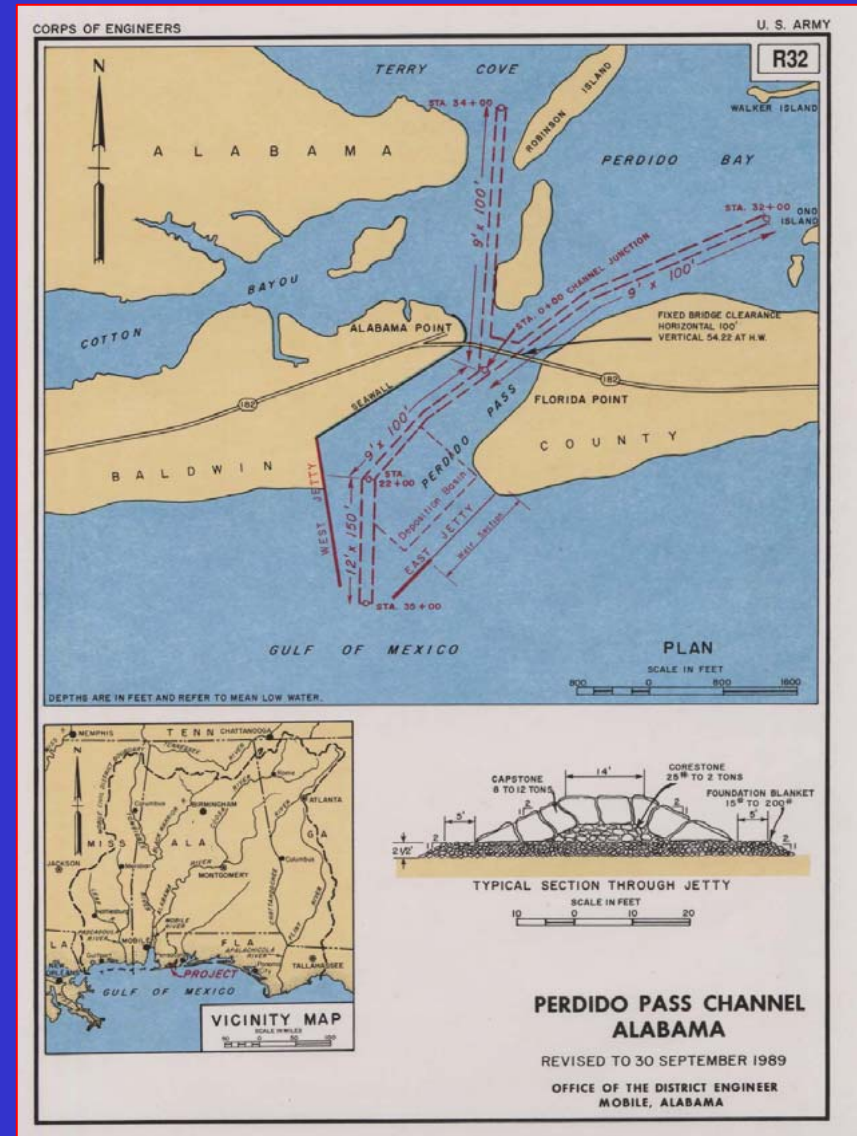
- Implement RSM practices in concert with environment
- Improve economic performance by linking projects
- Develop new engineering techniques to optimize/conservate sediment
- ID/overcome bureaucratic obstacles
- **Establish partnerships**



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Perdido Pass

- Corps is responsible for maintaining navigation channel
 - channel 12 feet deep by 150 feet wide
 - impoundment basin
- Two jetties extending into the Gulf of Mexico spaced 600 feet apart at the seaward end.
 - six (6) feet mean low water (MLW)
 - low weir section to permit passage of littoral drift material



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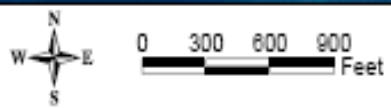
Disposal Areas



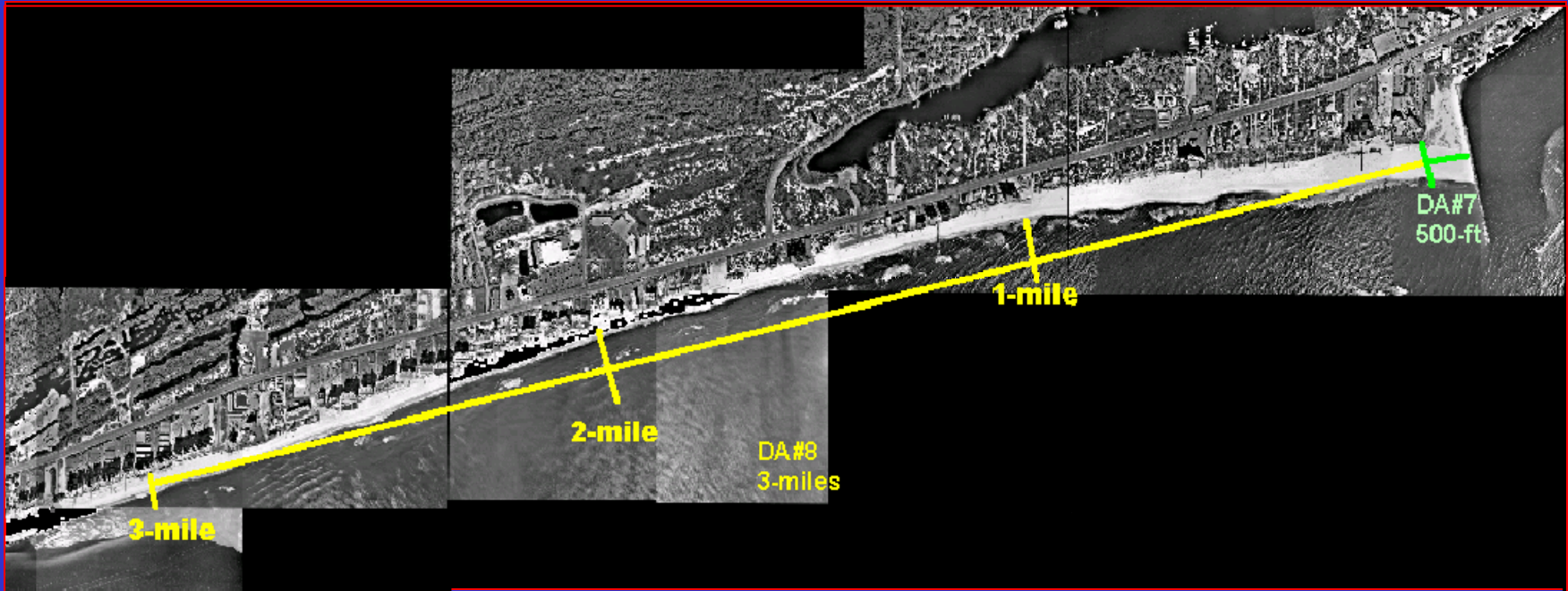
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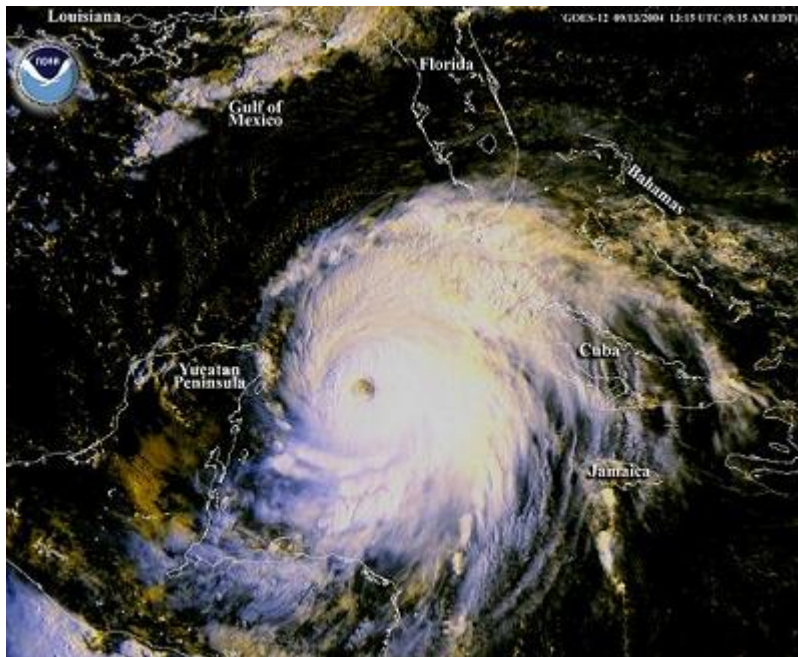
Perdido Pass



Perdido Pass - Alabama

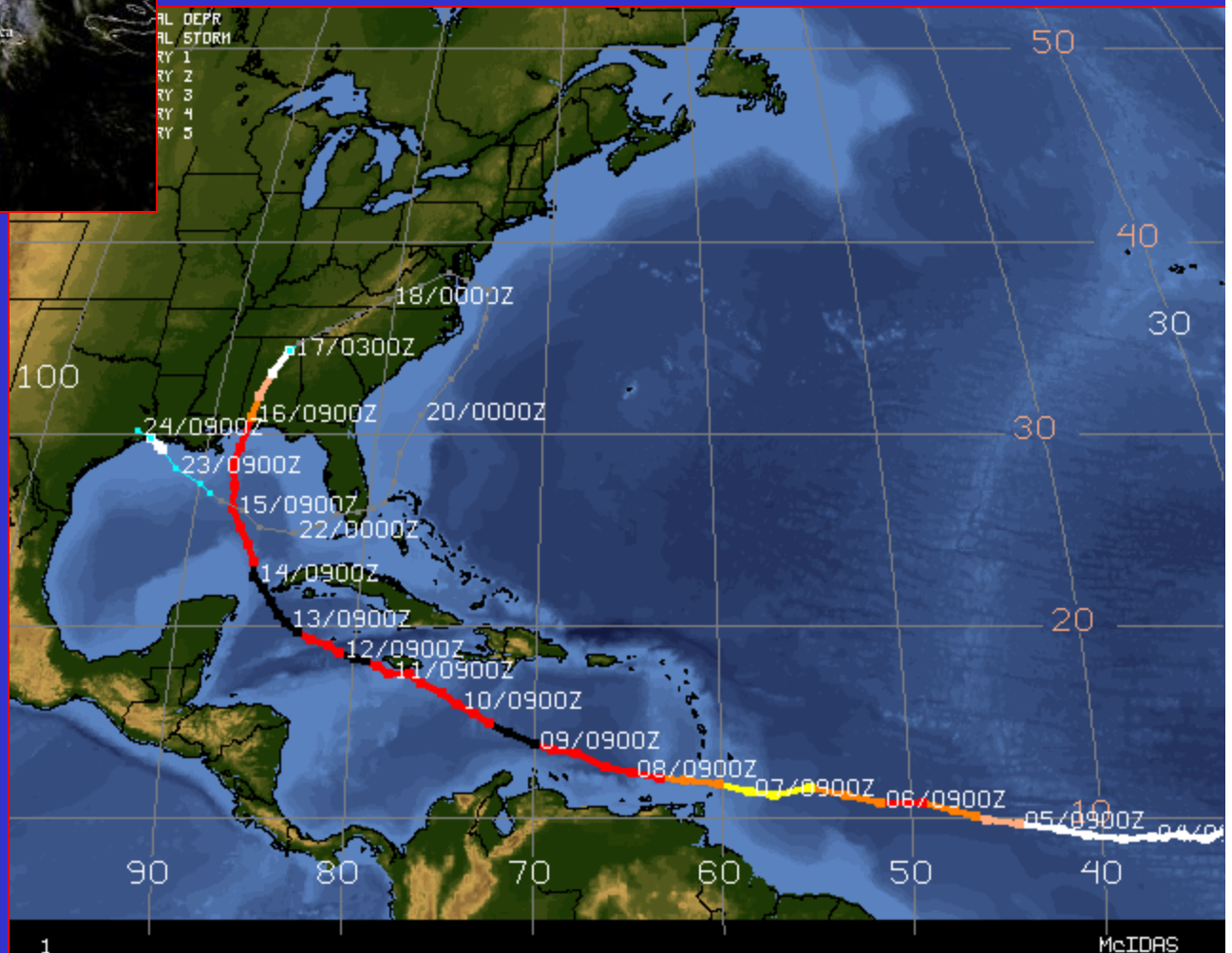


- Benefits
 - Effective use of modeling tools
 - More effective sand by-passing
 - Flexibility in disposal placement
 - Partnership with local government
 - Environmental



Hurricane Ivan September 2004

AL DEPR
AL STORM
RY 1
RY 2
RY 3
RY 4
RY 5



- Strong Cat. 3
- 130 mph winds
- 14-foot surge +
- Large waves
- Extensive Erosion



Pre-Ivan

- Gulf State Park, Florida Point Unit, east side of Perdido Pass
- Natural beach system
- Wide beaches
- Developed dune fields - 15-foot crest elevations above mean sea level.
- Abundantly vegetated with sea oats and other native plants
- Habitat for several Federally protected species
 - Perdido Key beach mouse
 - Piping plovers
 - Least terns
 - Nesting sea turtles



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- Hundreds of thousands of cubic yards of sand lost from beaches and dunes
 - Eroded into Pass
 - Overwashed into back-bay
 - Transported seaward
- 5 to 10 feet of elevation lost
- Much of the critical habitat destroyed
- Leveled dune fields
- Extensive shoreline recession



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Post Storm











Emergency Action



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- Emergency funding to restore navigation channel and sand impoundment basin
- Not enough disposal capacity
 - Permitting and environmental compliance issues
- Existing beach restoration project
- Minimal restoration to channel



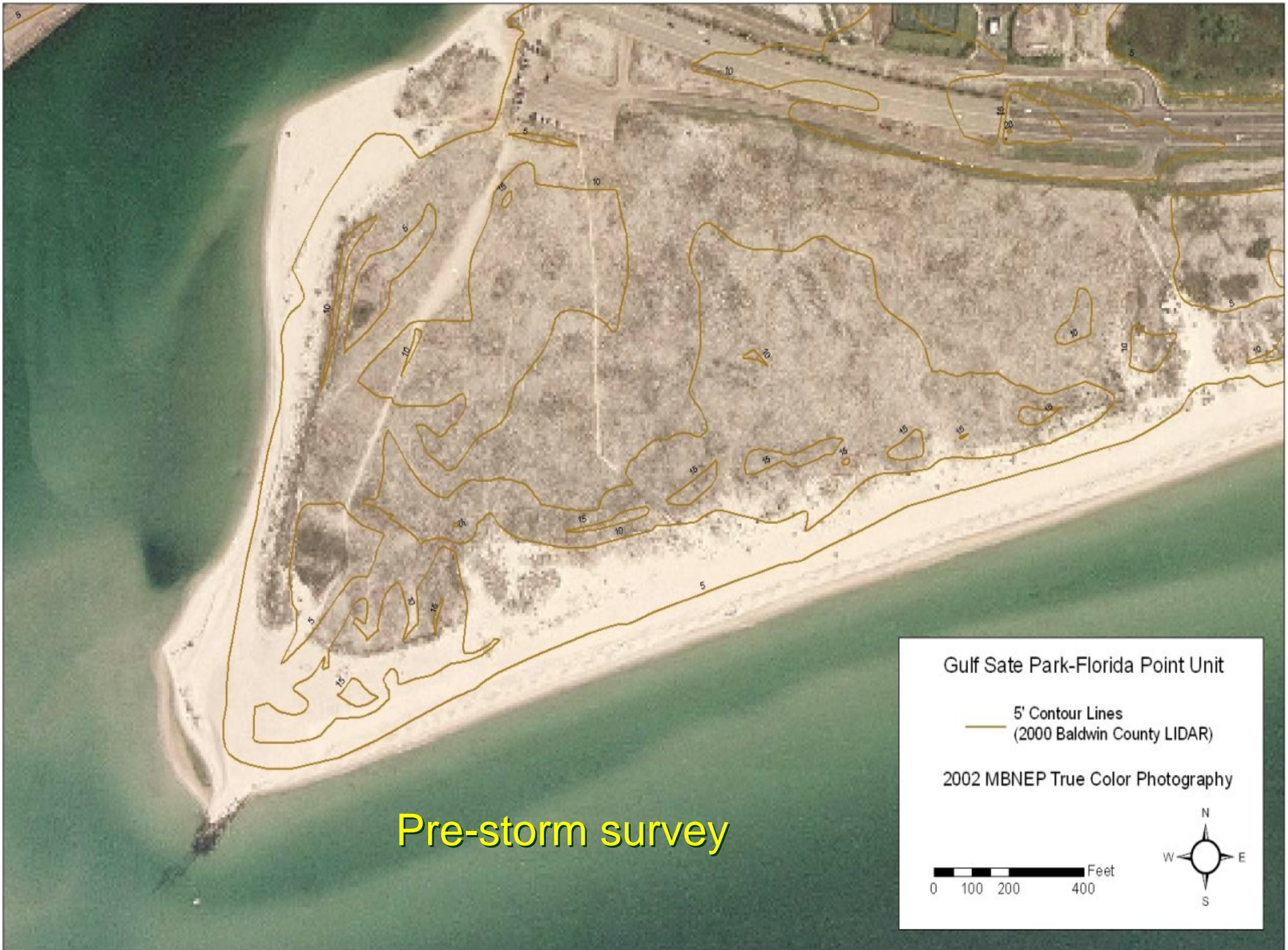
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Cooperative, multi-agency effort to quickly develop and implement a restoration plan !

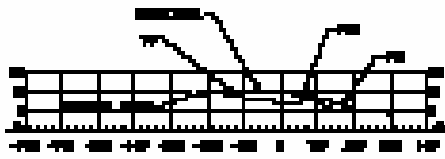
- U.S. Fish and Wildlife Service
 - Critical habitats
 - Coordination for threatened and endangered species
 - Restoration and creation of lost habitats
- Alabama Dept. of Conservation and Natural Resources
 - Use of state lands
- Alabama Dept. of Environmental Management
 - Water Quality Certification / Coastal Zone Consistency
- Gulf State Parks
 - Environmental coordination
- City of Orange Beach
 - Easements and right of ways
- USACE
 - Planning
 - Engineering
 - Operations



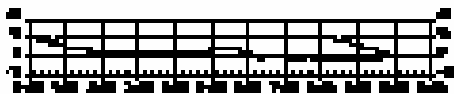
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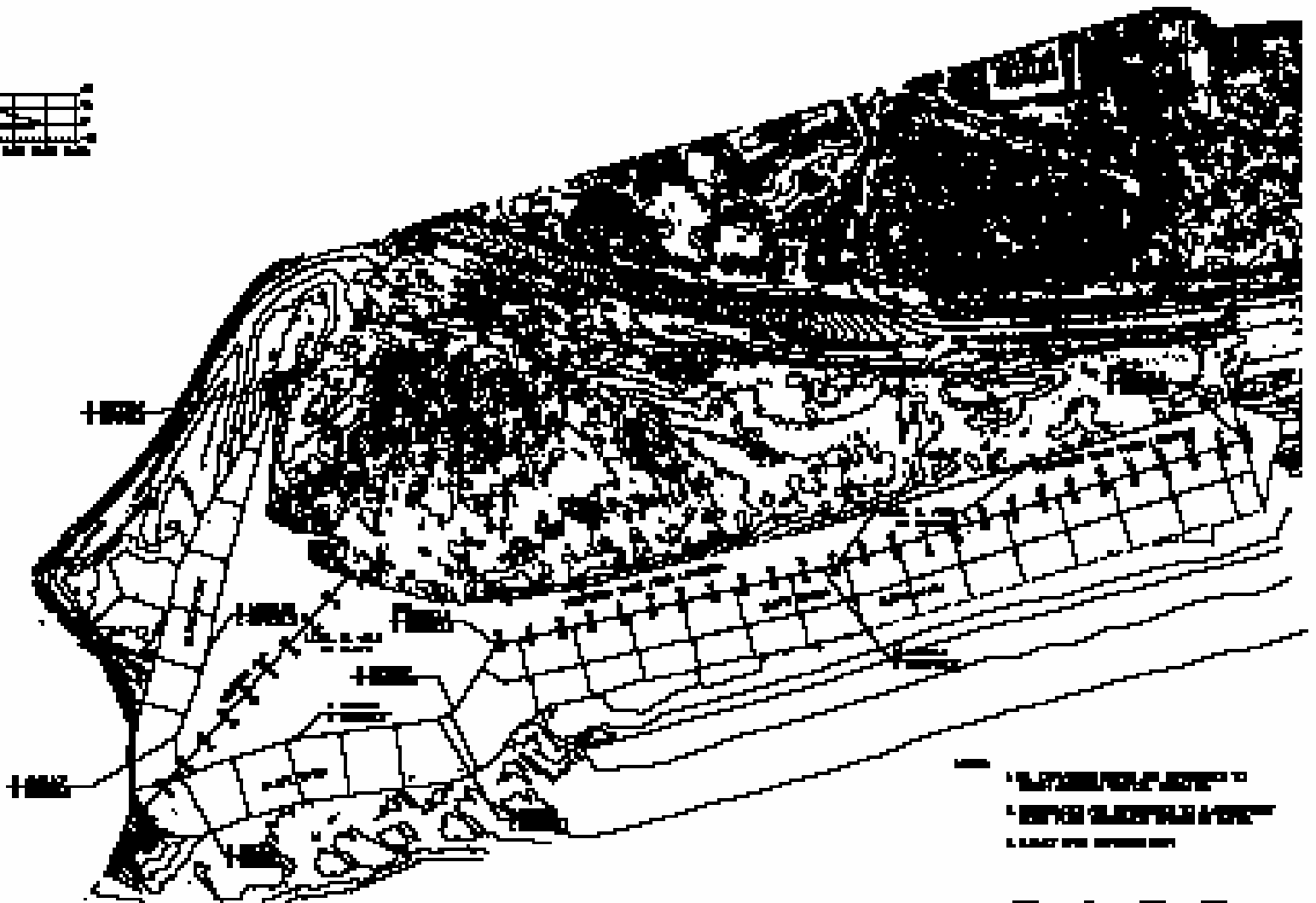
Pre-storm survey



TYPICAL SECTION AT STA 10+00



SECTION A-A

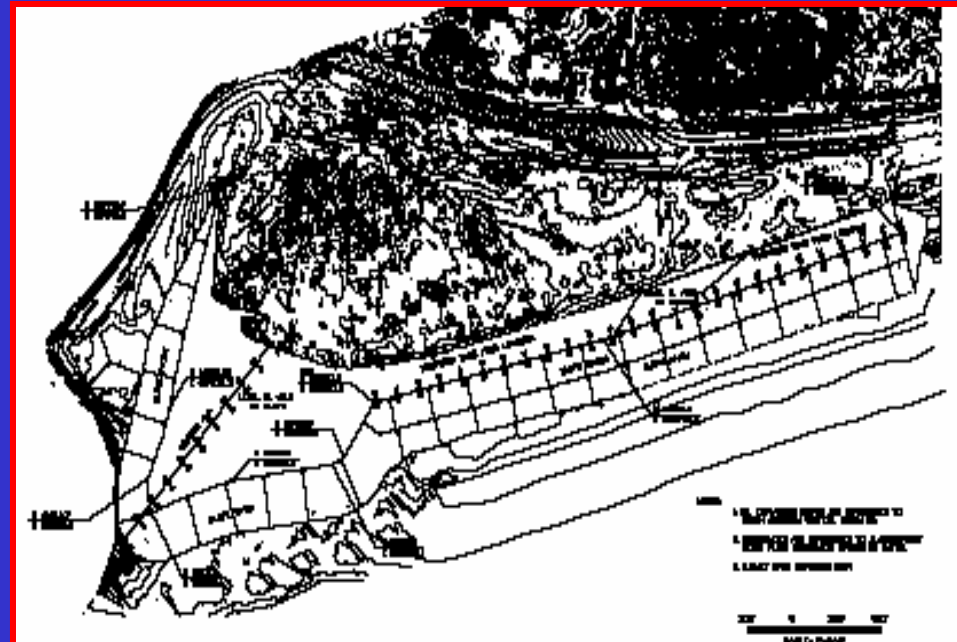


- 1. EXISTING ROAD CENTERLINE
- 2. PROPOSED ROAD CENTERLINE
- 3. EXISTING SIDEWALK



Restoration Measures

- Restore base elevation on the east side of the Pass
 - Tie in to the remaining dune line at about the +10-foot elevation
 - Extend berm seaward sloping gradually to the water
 - Establish original position of shoreline
 - Gradual slope to prevent the formation of escarpments and maintain a beach that allows access for nesting sea turtles.
- Construction of dunes to mimic natural dune fields
 - Promote dune growth and formation
 - Dune stabilization measures
 - planting natural dune vegetation
 - placement of dune fencing
- Extend berm and dunes east within limits of State Park
 - Dependent upon volume of available material



- Pipeline dredge used to move material
- Dozer used to spread and shape
- Dredging began early February
- Dredging complete late March
- 560 thousand cubic yards restored





Pre-Ivan



Post-Ivan



Post-Ivan
Placement



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OCT 19 2005



- May 2004
- 90 least tern nests
- 16 black skimmer nests
- 1 documented sea turtle nest
- Natural vegetation returning
- Protection measures taken

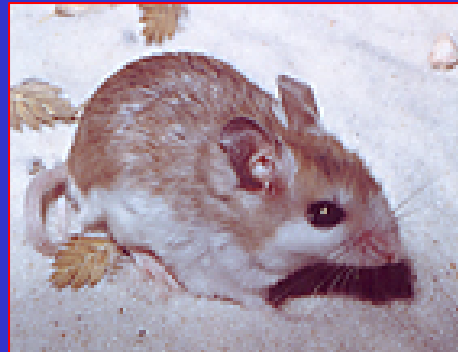


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Perdido Pass

Florida Point Restoration Conclusions

- Benefits
 - Navigation
 - Recreation
 - Leveraging of funds
 - Beneficial Use
 - Environmental
 - Beach mouse critical habitat
 - Bird nesting
 - Sea turtles
 - Dunes
 - Partnerships
 - Quick Action



Special thanks to Kelly Reetz, Gulf State Park for supplying many of the photos



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