

Coastal Hazard Mitigation Management

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Louisiana

Texas

Houston - Galveston

Gulf Shoreline
• 367 miles

Corpus Christi

Bay Shoreline
• 3,300 Miles of Bay Shoreline

Mexico



Texas Coastline

- ✓ The population of the Texas coast is expected to grow by one-third over the next 25 years
- ✓ Coastal areas are among the state's top tourist destinations
 - ✓ Generates more than \$8.25 billion annually as of 2004



Texas Coastline

- ✓ Home to three of the top ten ports in the country
- ✓ Houses a chemical industry which ranks first in size and production for the country
- ✓ Nations largest concentration of oil refineries is in the Galveston Bay area



An Opportunity

- ✓ Hurricane Rita has allowed Texas to assess its emergency response to a major hurricane
- ✓ Need to take advantage of this opportunity/mindset to learn from our mistakes to better prepare for coastal storms and hazards



Coastal Hazard Mitigation Needs

- ✓ Emergency preparedness education and outreach
- ✓ CZMA funding for hazard mitigation and disaster preparation
- ✓ Limit NFIP in high risk areas
- ✓ Protect/enhance natural systems
- ✓ Data collection hazard mitigation



Understanding FEMA's Role

- ✓ FEMA is not a first responder
- ✓ Governor asks and then the President approves
- ✓ Response: local government → state government → FEMA (72 hours)
- ✓ Pre-disaster mitigation plans
- ✓ FEMA assistance projects must be insured



Evacuation Rita



Evacuation Rita

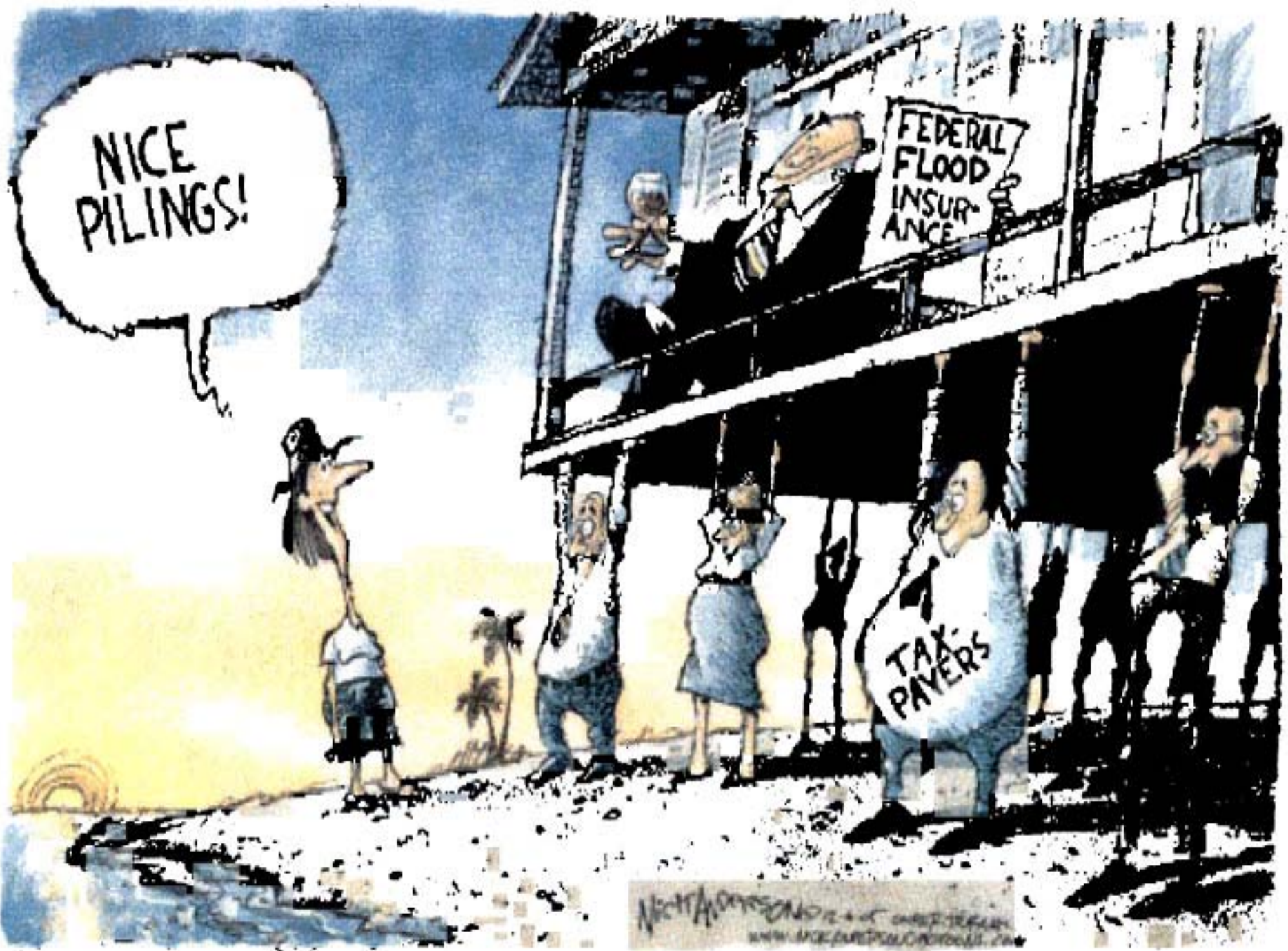
- ✓ Sparked major evacuation of millions of people along the Texas coast
- ✓ The Houston-Galveston area was in a state of gridlock
 - ✓ Contra flow lanes opened too late
 - ✓ Fuel shortages
 - ✓ 98 degree temperatures
- ✓ The Governor of Texas has established an Evacuation Task Force



Federal Framework

- ✓ Existing framework places excessive burden on the taxpayer
 - ✓ Federal Emergency Management Agency
 - ✓ Billions are being spent on relief for Katrina and Rita victims
 - ✓ National Flood Insurance Program
 - ✓ Modernization of flood maps





NICE
PILINGS!

FEDERAL
FLOOD
INSUR-
ANCE

TAX-
PAYERS

Neithart
www.neithart.com

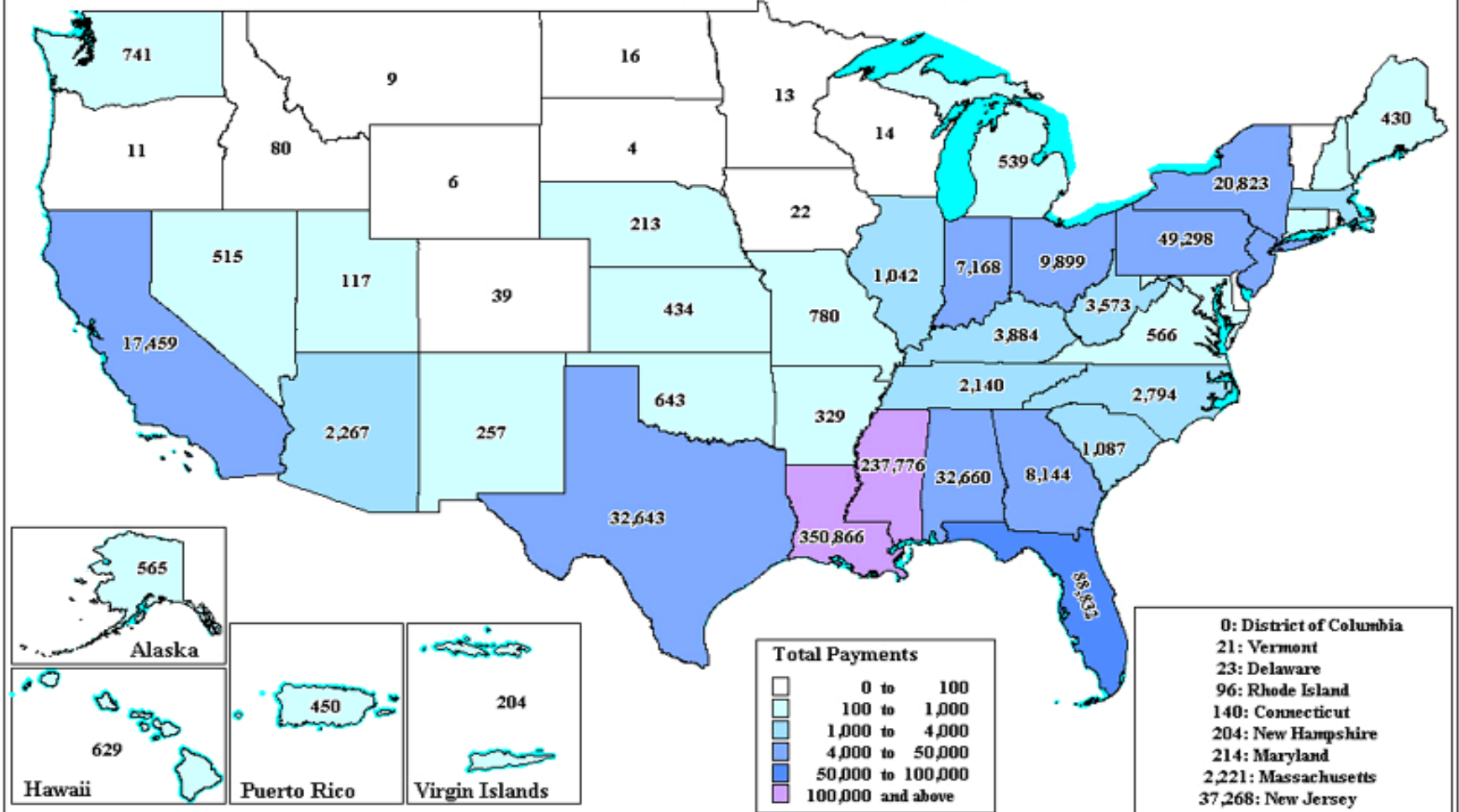
\$920,441,345.35 Total Claim Payments

National Flood Insurance Program

Total Claim Payments

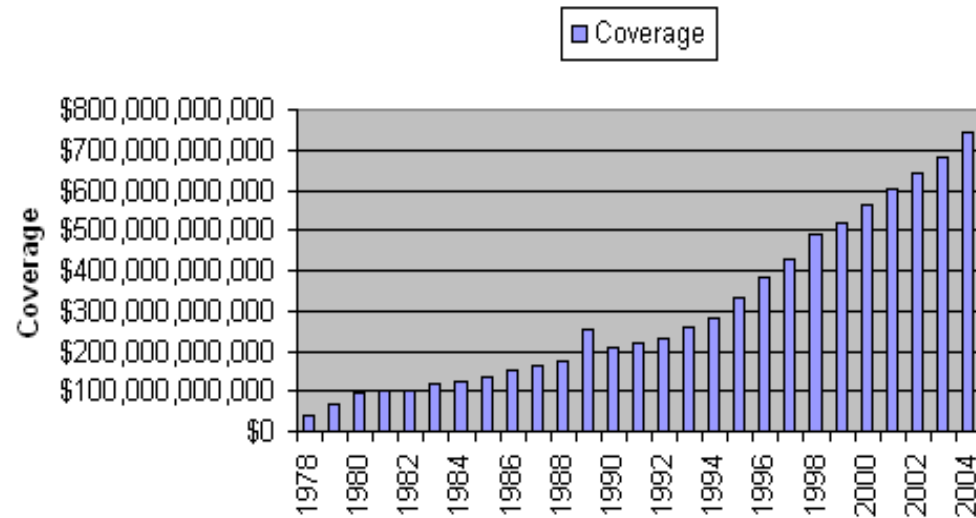
(THOUSANDS OF DOLLARS)

SEPTEMBER 30, 2004 THRU SEPTEMBER 30, 2005

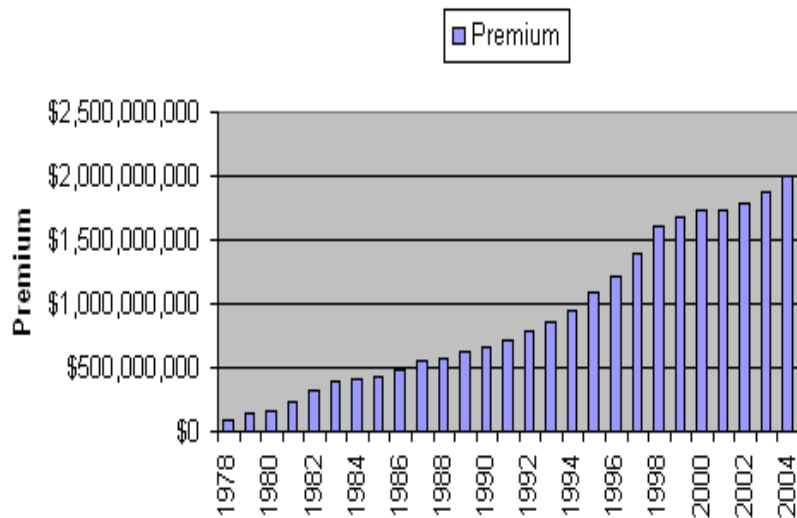


Flood Insurance

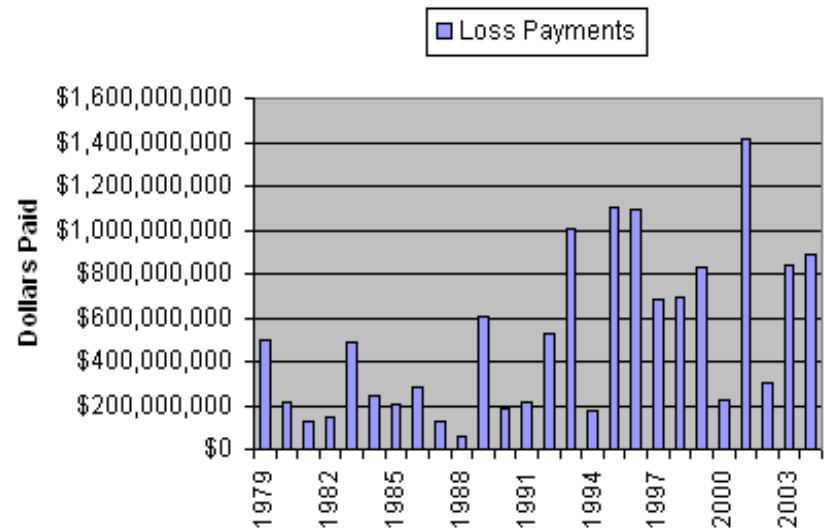
Total Coverage by Fiscal Year



Total Premium by Fiscal Year



Loss Dollars Paid (Fiscal/Historical)



Managing Development

- ✓ Limit National Flood Insurance Program coverage in high risk coastal areas
 - ✓ Impose stricter construction standards for coastal flood zones
- ✓ Zoning may be used to limit development in higher risk areas
- ✓ West Galveston Island development



FEMA Flood Zones



STORM SURGE AND HURRICANE CATEGORIES

Galveston in 1900 = ~20 ft.

Mean Tide Level

Category 5 (>155 mph) =>18 ft.

Category 4 (131-155 mph)=13-18 ft.

Category 3 (111-130 mph)=9-12 ft.

Category 2 (96-110 mph)=6-8 ft.

Category 1 (74-95 mph)=4-5 ft.



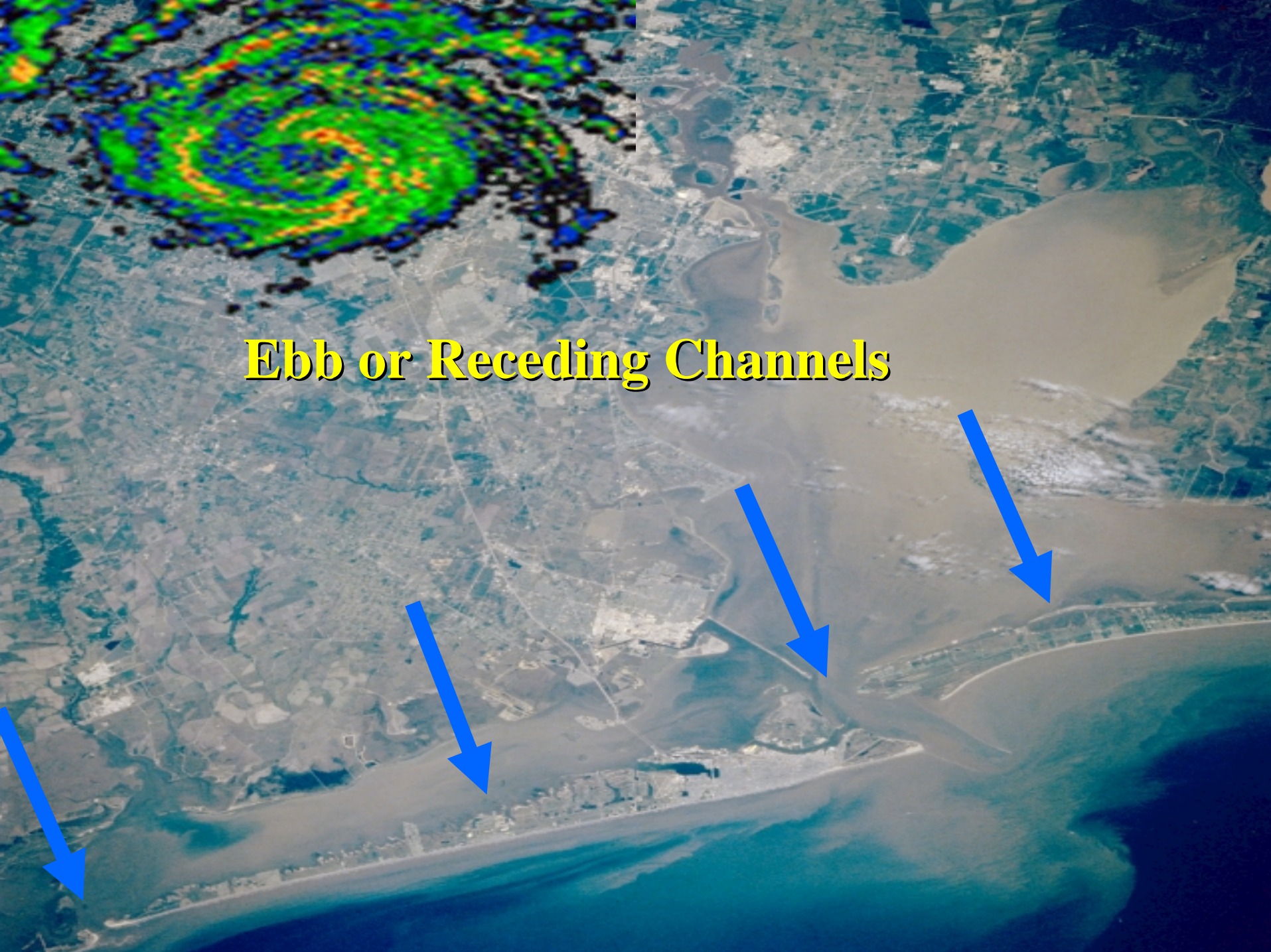
Houses on the Beach



Natural Systems

- ✓ Natural systems are being threatened by encroaching development and other anthropogenic and natural factors
 - ✓ 6,000 acres of tidal and non-tidal wetlands are lost per year in Texas
 - ✓ Harris County lost 13% of its freshwater wetlands from 1992 – 2002, half occurring from 2000 – 2002



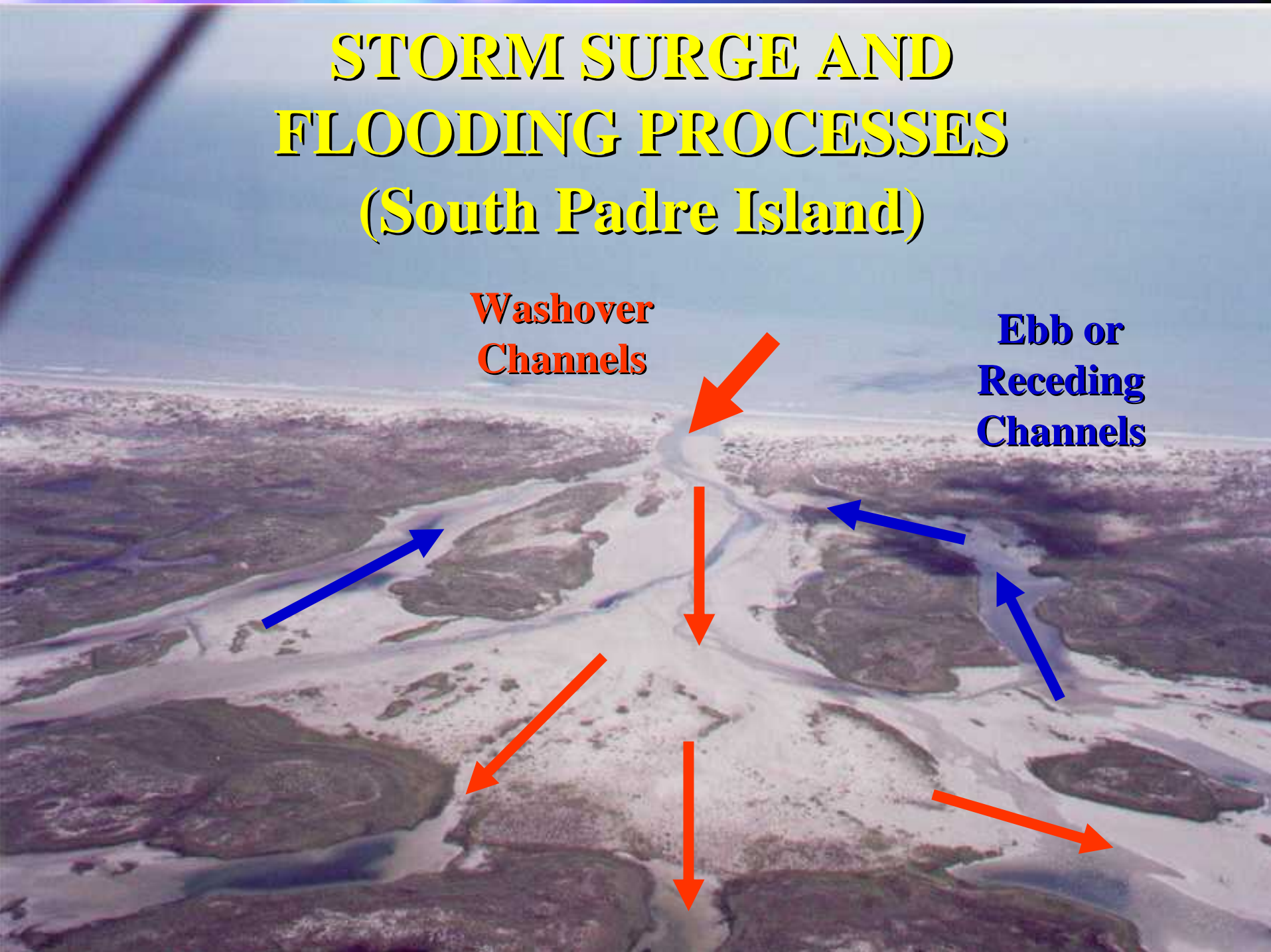


Ebb or Receding Channels

STORM SURGE AND FLOODING PROCESSES (South Padre Island)

**Washover
Channels**

**Ebb or
Receding
Channels**



Stricter Environmental Standards

- ✓ Wetlands and the Beach/Dune system are the least expensive and most efficient defense against storm-surge flooding
- ✓ Therefore, we need to strengthen and increase protection for our wetlands and beach/dune systems



Beach/Dune System

- ✓ Increase compensatory mitigation ratio from 1:1 to 2:1 or higher
- ✓ Use environmental impact fees
- ✓ Create performance bonds necessary to construct within 200 ft of the line of vegetation



Beach Nourishment



Subsidence and Erosion

- ✓ Results in significant damage to infrastructure and development
- ✓ Weakens our natural systems
- ✓ Intensifies risks associated with flooding and storm activity



That Sinking Feeling

Brownwood Subdivision, 1968



Brownwood Subdivision, 1976



Subsidence

- ✓ Texas is working to create a geodesy laboratory to ensure accuracy of subsidence rates
- ✓ Mitigation efforts depend upon the availability of accurate velocity data



Grants Program

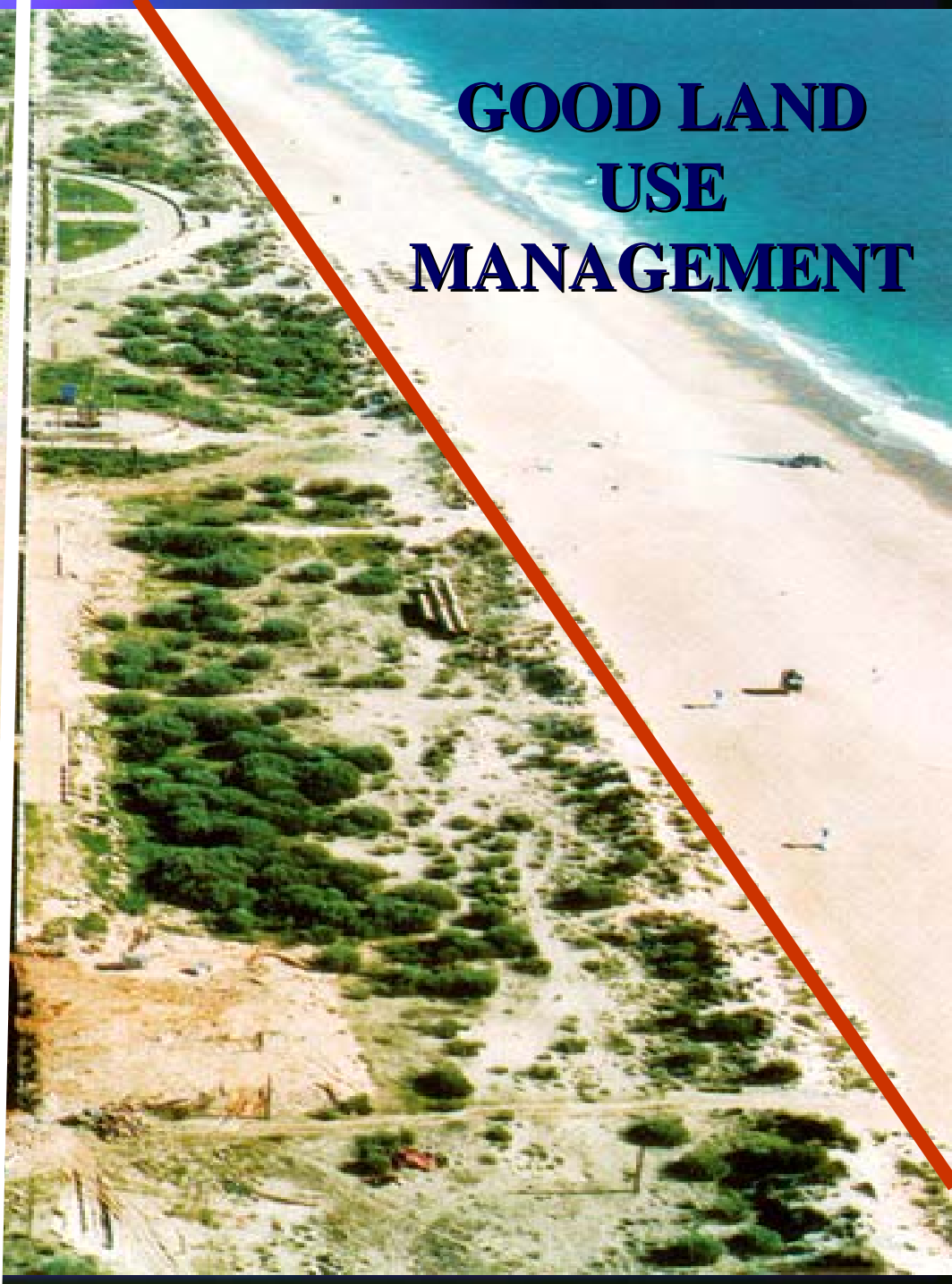
- ✓ Assisting the development of hazard mitigation plans
- ✓ Assessing trends in coastal vulnerabilities
- ✓ Assessing freshwater wetland storage capacities
- ✓ Texas is funding the fortification of offshore data collection platforms to monitor storm surge and coastal flooding



Gulf of Mexico Alliance

- ✓ Builds upon U.S. Ocean Action Plan and includes the five gulf states, Mexico, and Cuba
- ✓ Effort to bring national attention to regionally identified priorities
- ✓ It is important to use this partnership to foster support in our effort to mitigate coastal hazards





**GOOD LAND
USE
MANAGEMENT**