



Gulf of Mexico Large Marine Ecosystem U.S. Perspectives

**Alex Chester, Acting Director
Southeast Fisheries Science Center
NOAA National Marine Fisheries Service**

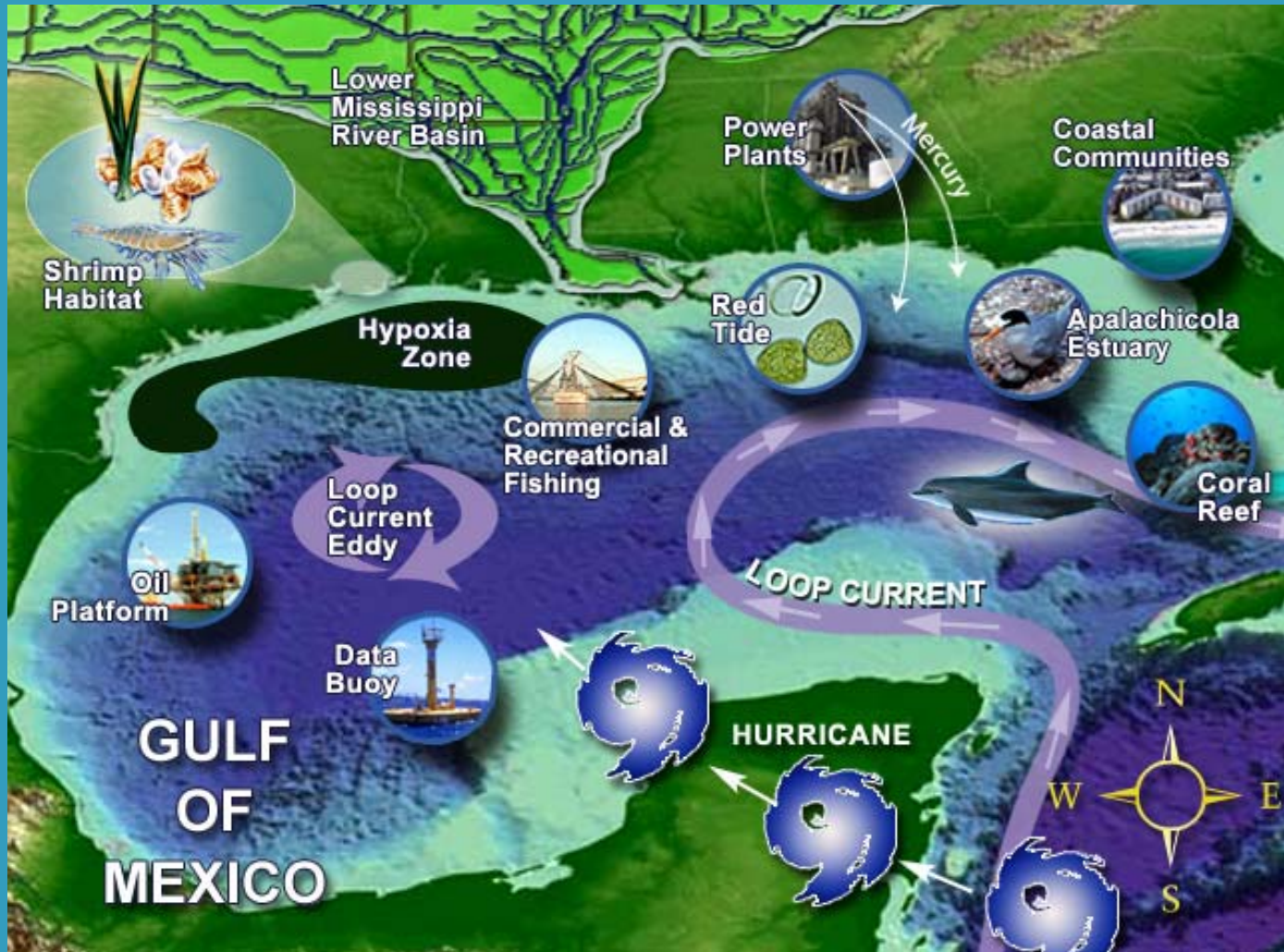


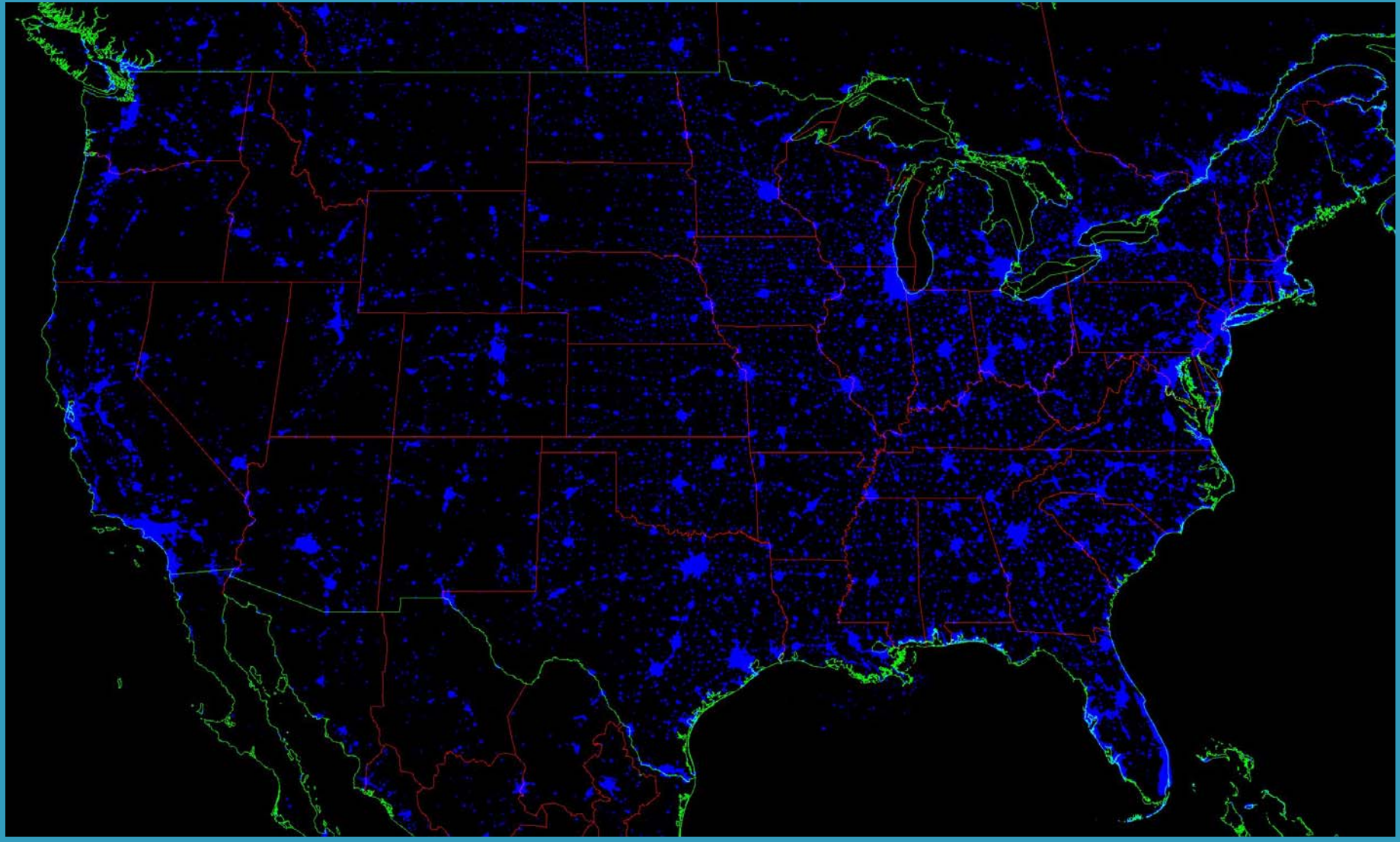
Gulf of Mexico LME

Objective:

“To rehabilitate marine and coastal ecosystems, recover depleted fish stocks and to reduce nutrient overloading to the Gulf of Mexico large marine ecosystem (GoM LME) based on an assessment and management approach that considers LME productivity, fish and fisheries, pollution and ecosystem health, socioeconomics and governance”

Gulf of Mexico LME





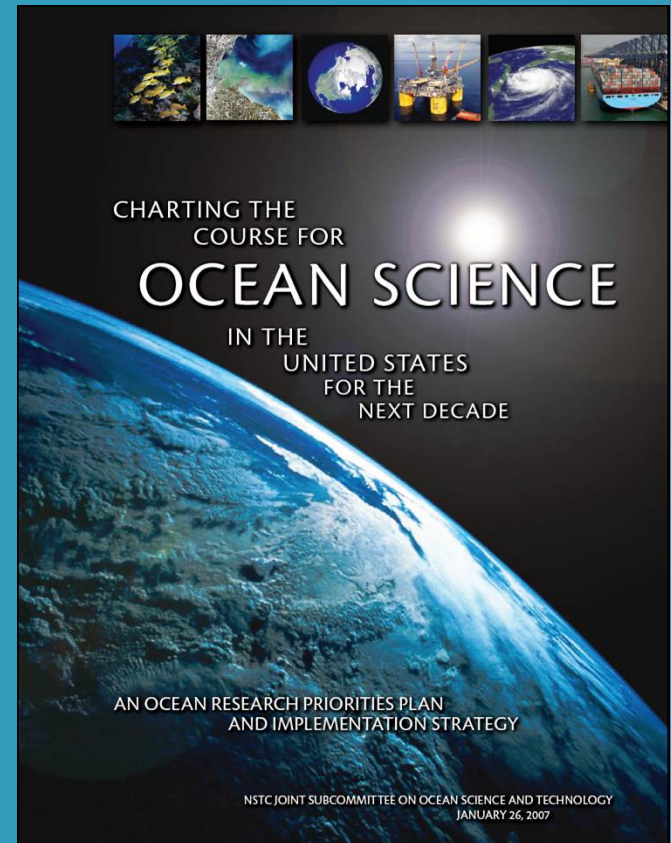


GoM: Economic Importance

- Tourism - \$20 Billion
- Commercial Fishing – Domestic landings 1.2 B pounds, \$617.8 M (12% and 16% of domestic total landings and value)
- Recreational Fishing – 94.2 M fish landed on 35.1 M angler trips representing 54% of total landings and 42% total angler trips nationally
- Oil production forecast to reach a possible high of 2.1 M barrels per day over the next decade

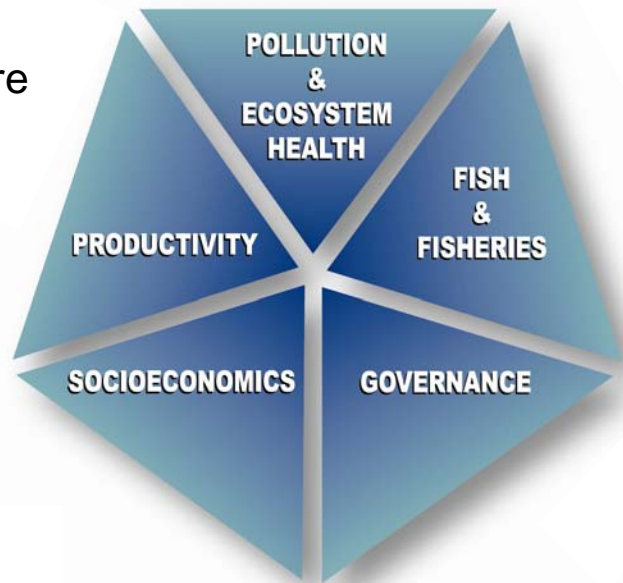
US Authorities for LME Approach

- Committee on Ocean Policy
 - Subcommittee on Integrated Management of Ocean Resources
 - Joint Subcommittee on Ocean Science and Technology
- Ocean Research Priorities Plan
- NOAA Strategic Plan 2006-2011
- NOAA 5- & 20-yr Research Plans
- Legislation MSA, ESA, MMPA



Eutrophication, Hypoxia
 Wetland Loss, Natural Disasters
 Energy Production, Coral Reefs

Sea Surface Temperature
 Ocean Color
 Wetlands Productivity



Protected Resources (Corals,
 Marine Mammals, Turtles)
 Shrimp & Shrimp Bycatch
 Snapper/Grouper Complex
 Highly Migratory Species
 Data Collection Activities

Natural Disasters
 Energy Needs
 Balancing Competing
 Needs

Fishery Management Councils
 Gulf Alliance
 EPA Gulf of Mexico Program

Legislative Mandates (Magnuson Stevens, ESA, MMPA etc)
 International Agreements (ICCAT, IOCARIBE, Mexus-Gulf etc)



Gulf of Mexico Transboundary Issues

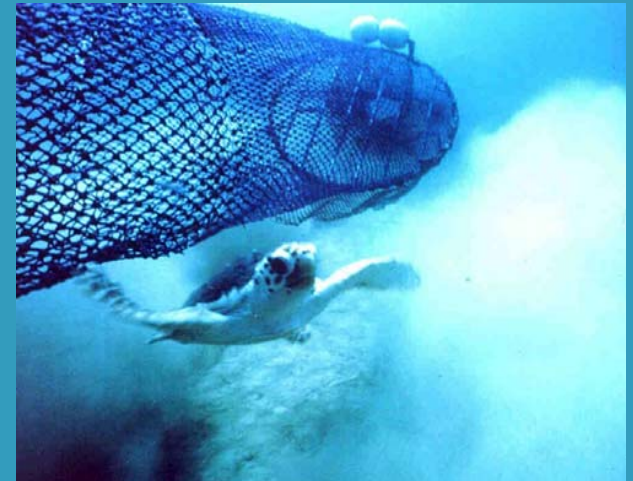
- Living Marine Resources
 - Highly Migratory Species
 - Protected Resources (Turtles, Marine Mammals, Corals)
 - Shrimp, Shrimp Bycatch
 - Red Snapper
- Habitat Modification
 - Wetlands
 - Hypoxia
 - Harmful Algal Blooms
- Pollution
 - Oil/Gas exploration
 - LNGs
 - Eutrophication/Nutrient Enrichment



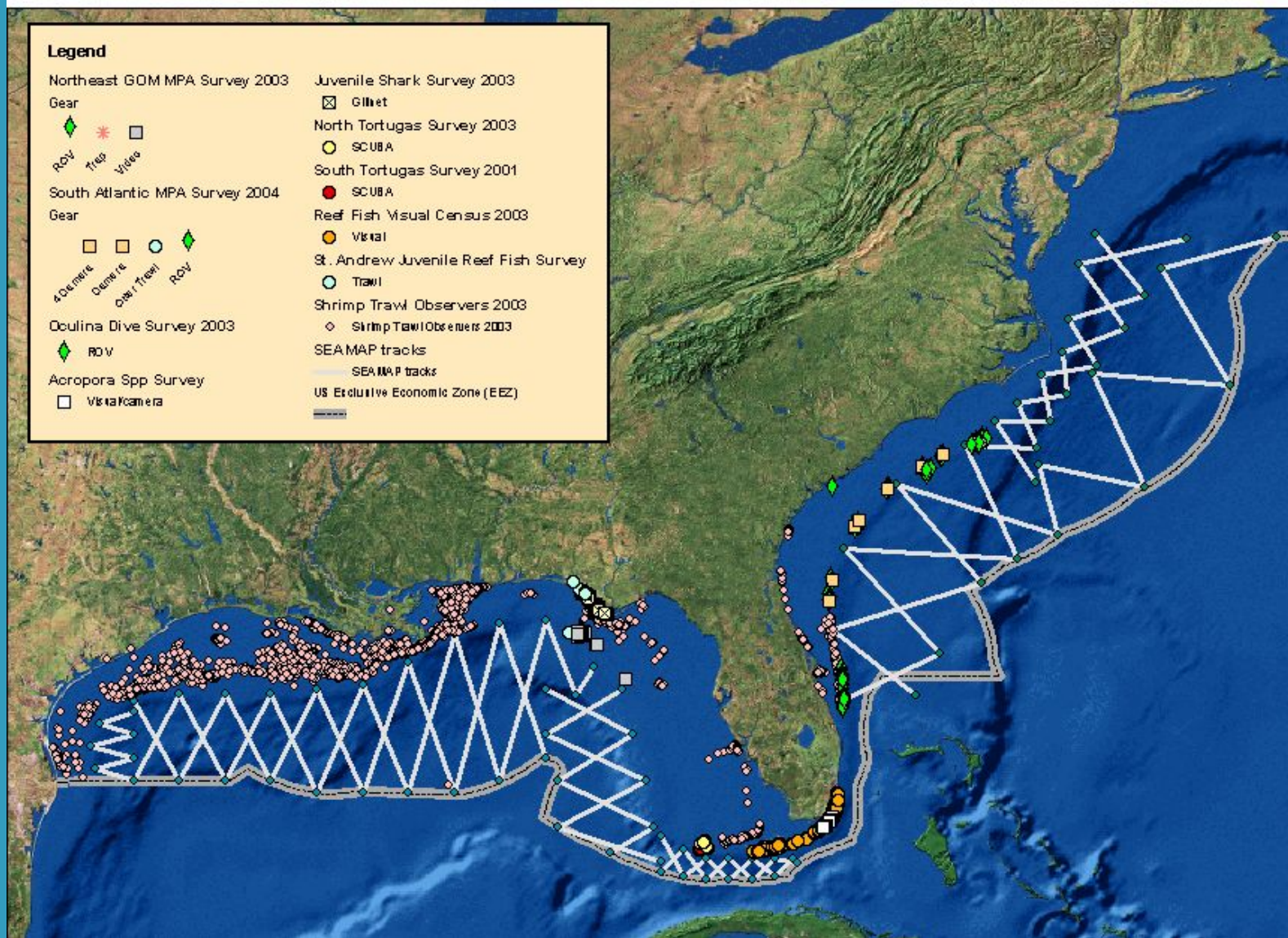


Living Marine Resources

- Monitoring
- Life history research
- Population assessments
- Bycatch reduction
- Science-based management
- Strong governance systems
- Enforcement

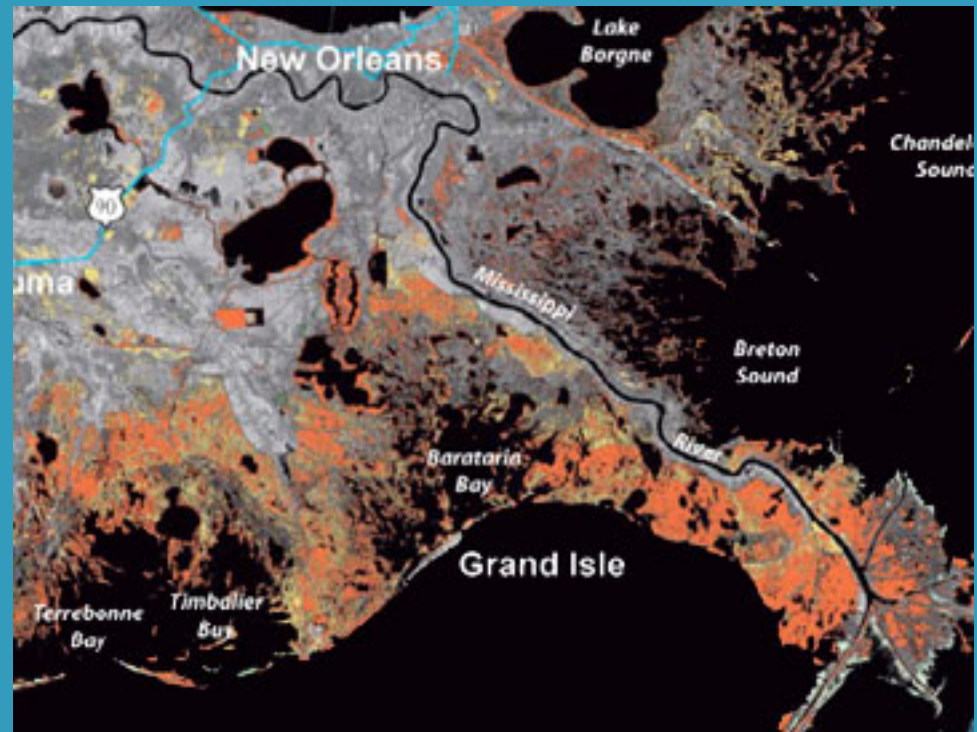


NOAA Fisheries Southeast Observation Stations



Habitat: Wetlands

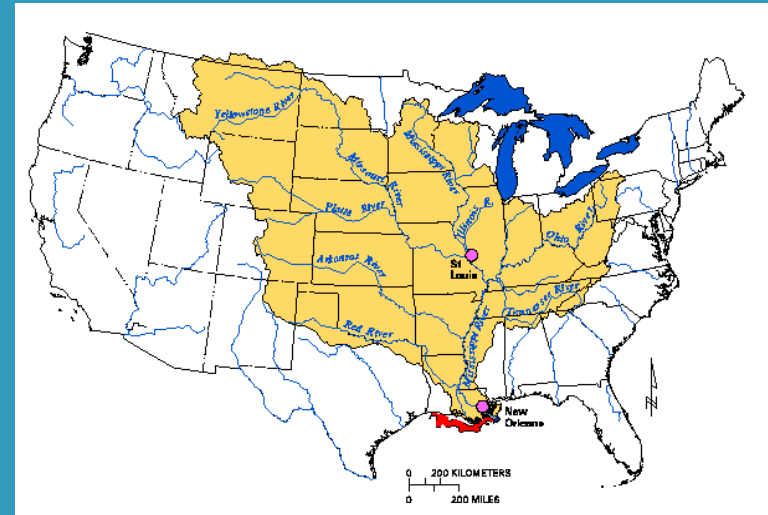
- Value
 - LMR habitat
 - Storm surge protection
 - Sediment trap
 - Nutrient filtration
- Threats
 - Development
 - Channelization
 - Invasive species
 - Hurricanes
 - Subsidence



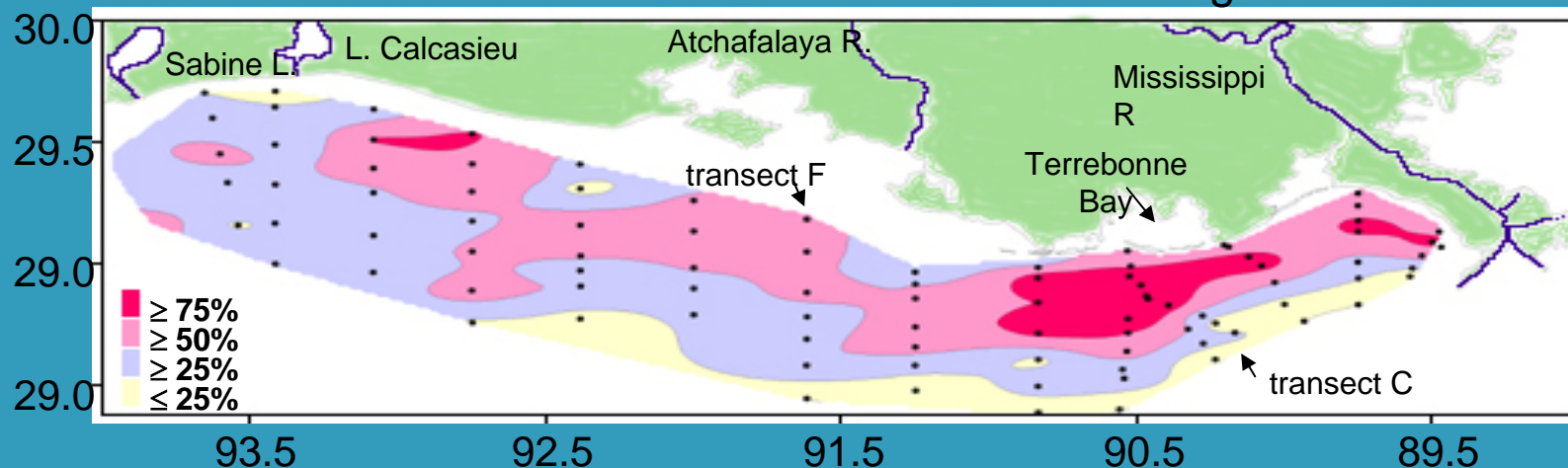
Lost wetlands in the Mississippi delta between 1932 & 2000 depicted in orange.

Hypoxic Zone

- Large, fluctuating area of low DO
- Impacts productivity
- Multi-agency task force established
- HypoxiaWatch

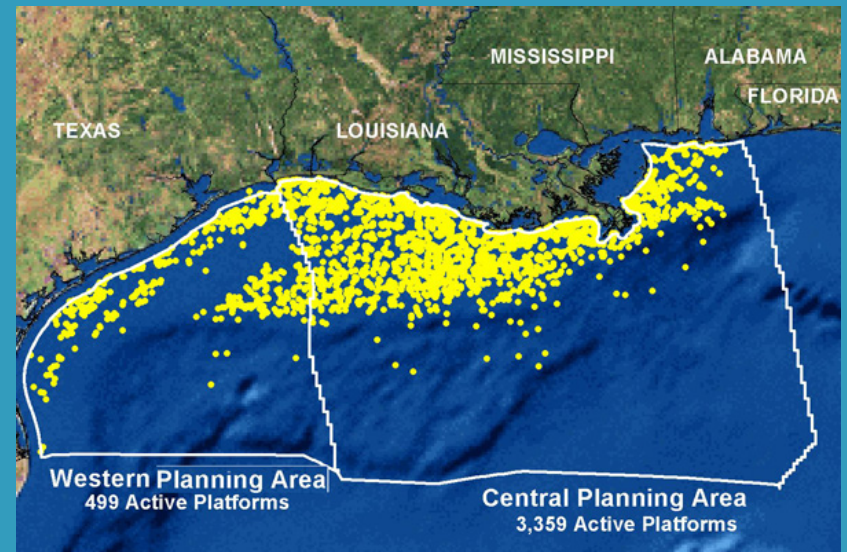


Frequency of Hypoxia 1985 – 2002
Bottom Water < 2 mg/L



Energy Production & Exploration

- Economic importance
- Ecological impacts
 - Fishery habitat
 - Pollution
 - Noise
 - Platform removals
- LNG Terminals



Map of the northern Gulf of Mexico showing the nearly 4,000 active oil and gas platforms

Integrated Ecosystem Assessment (IEA):

“A synthesis and quantitative analysis of information on relevant physical, chemical, ecological and human processes in relation to specified ecosystem management objectives”.

An IEA:

- Incorporates multiple indicators of the environment and ecosystem, including human factors
- Is geographically specified
- Establishes target levels and thresholds for important ecosystem components
- Evaluates the impacts of management options and risks of not attaining target ecosystem states



A satellite image of Hurricane Katrina, showing a well-defined eye and spiral cloud bands over the Gulf of Mexico. The surrounding landmasses, including North America and the Caribbean, are visible in green and brown, contrasting with the deep blue of the ocean.

Hurricane Katrina
August, 2005

**T
H
A
N
K**
THANK YOU!
Alex.Chester@noaa.gov

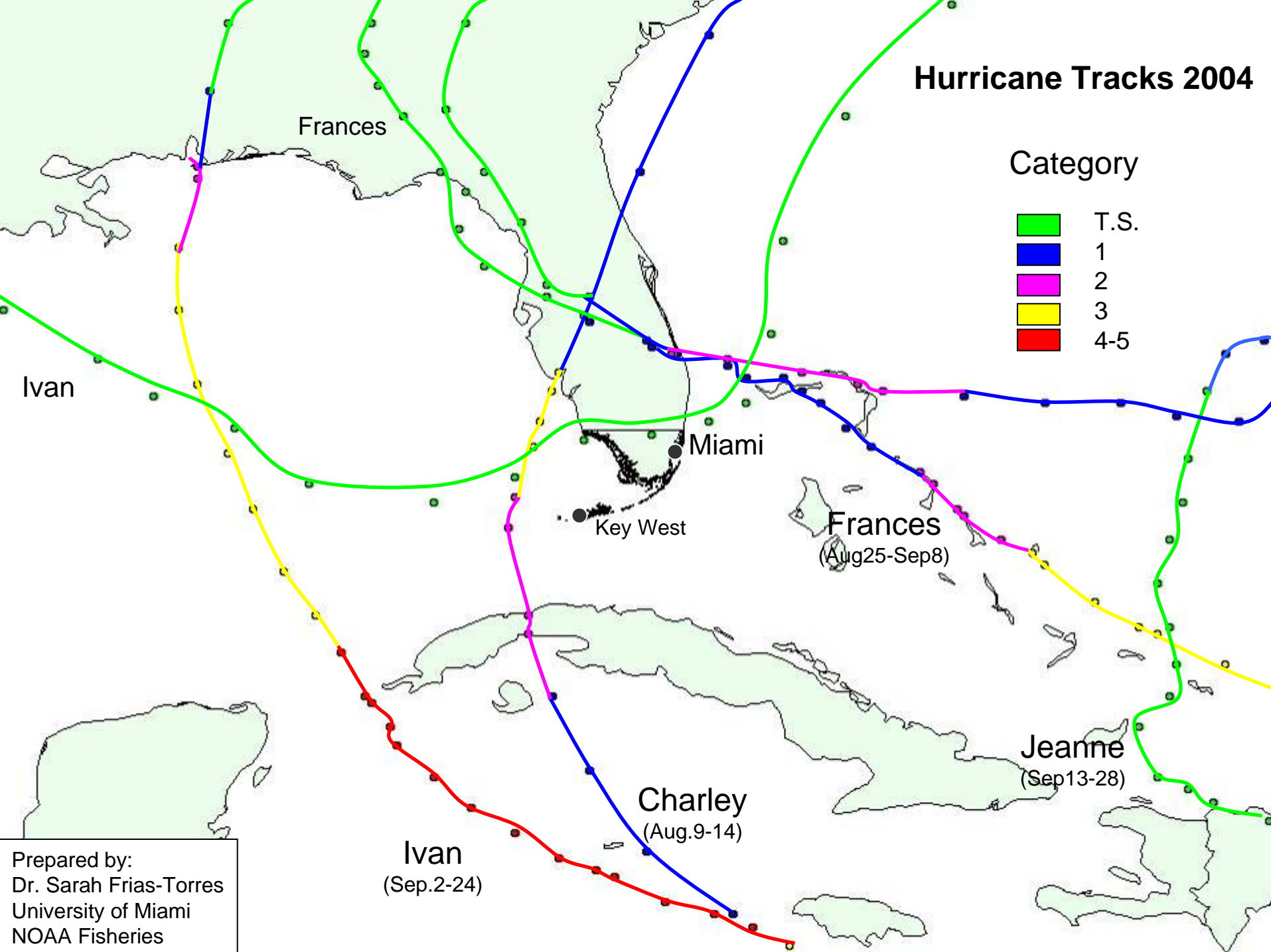


NOAA Fisheries Service is dedicated to the stewardship of living marine resources through science-based conservation and management, and the promotion of healthy ecosystems.



Hurricane Tracks 2004

Category



Prepared by:
Dr. Sarah Frias-Torres
University of Miami
NOAA Fisheries

