



Noisy Oceans: Beyond Navy Sonar (An Offshore Oil and Gas Perspective)

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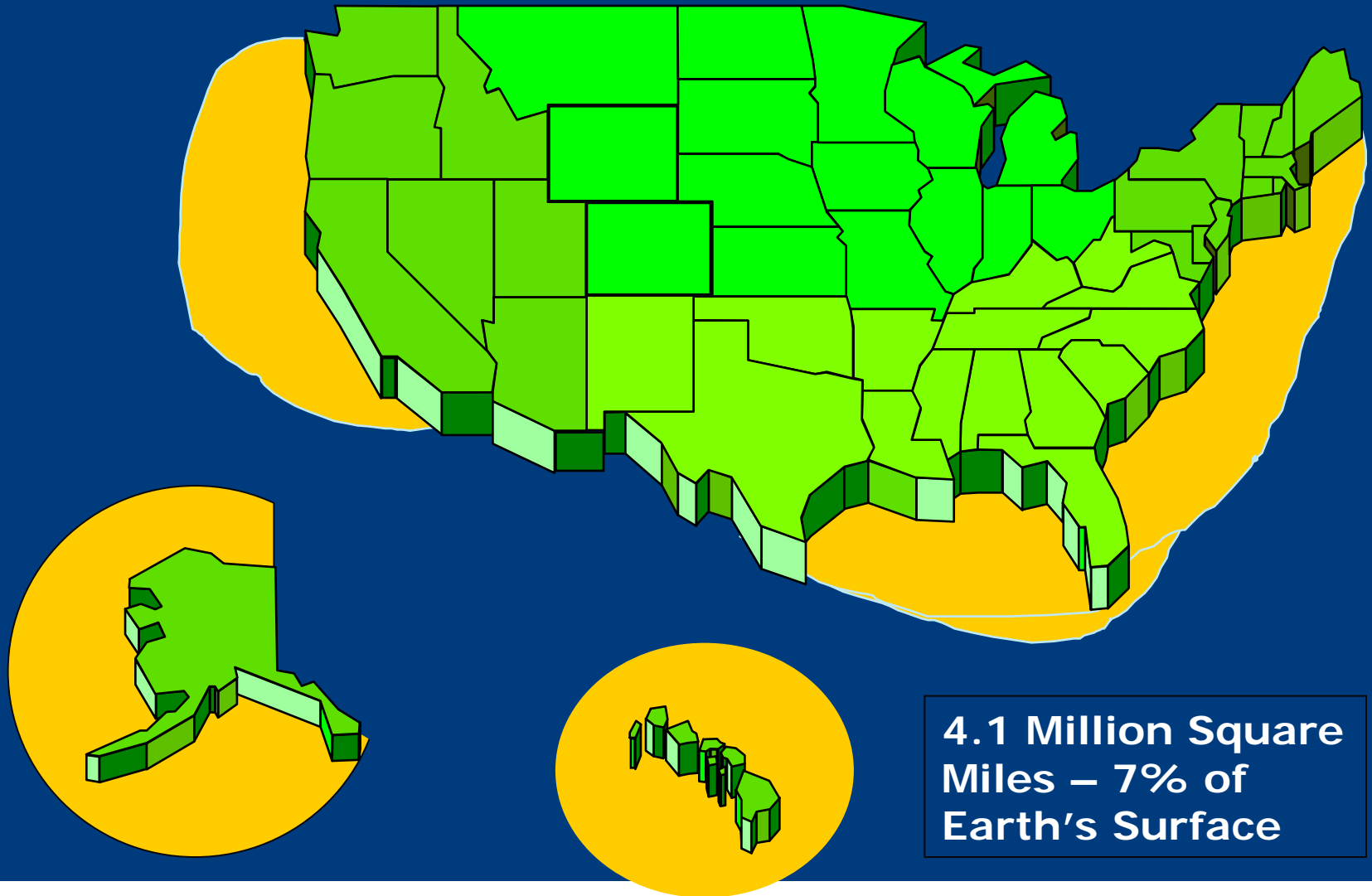


Outline

- Federal Jurisdictional Waters
- Primary Sound Sources
- Current Mitigation Measures
- Joint Industry Program (JIP)
- Questions

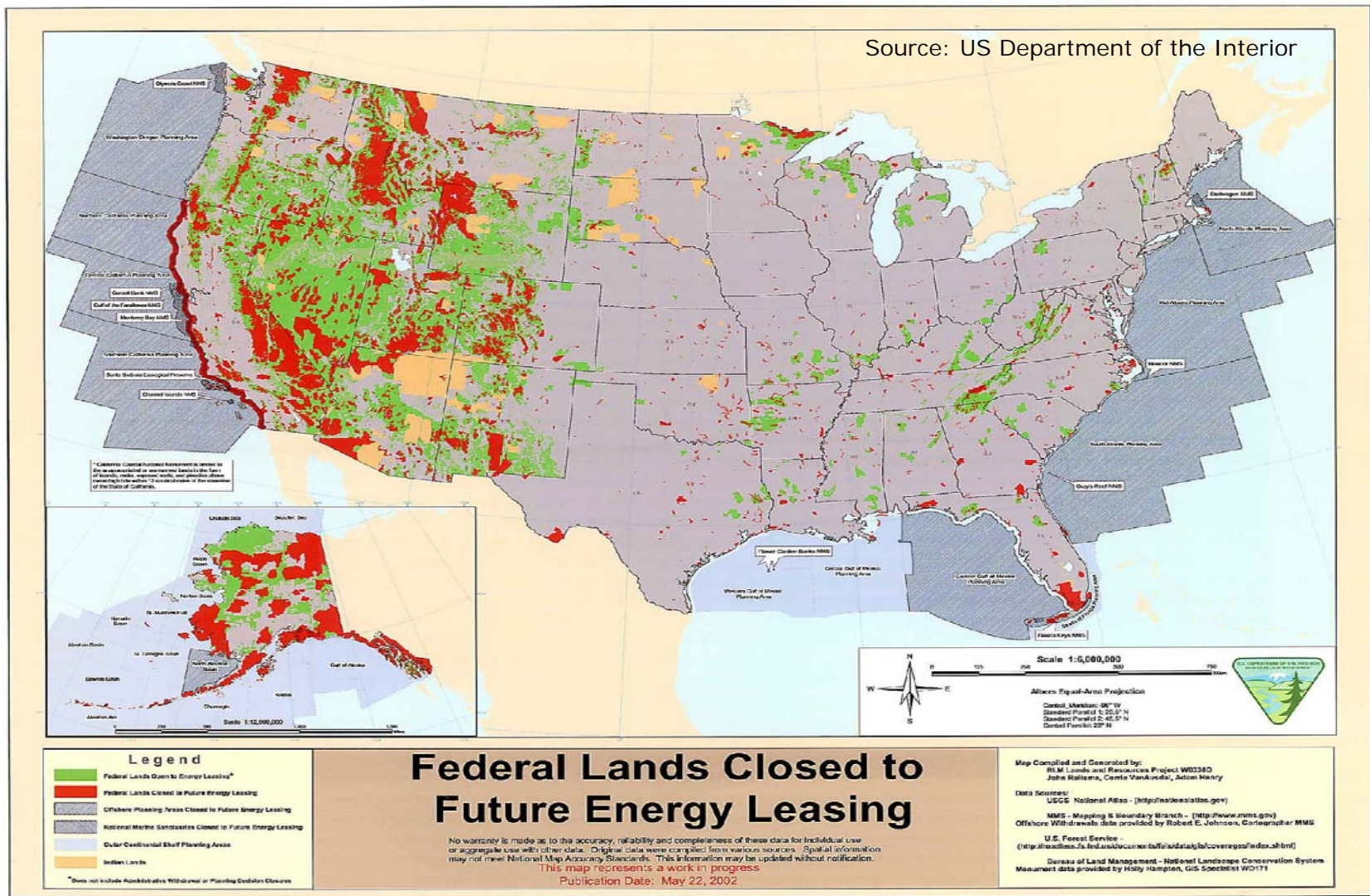


US Exclusive Economic Zone (1.76 Billion to 3.00 Billion Acres)



4.1 Million Square Miles – 7% of Earth's Surface

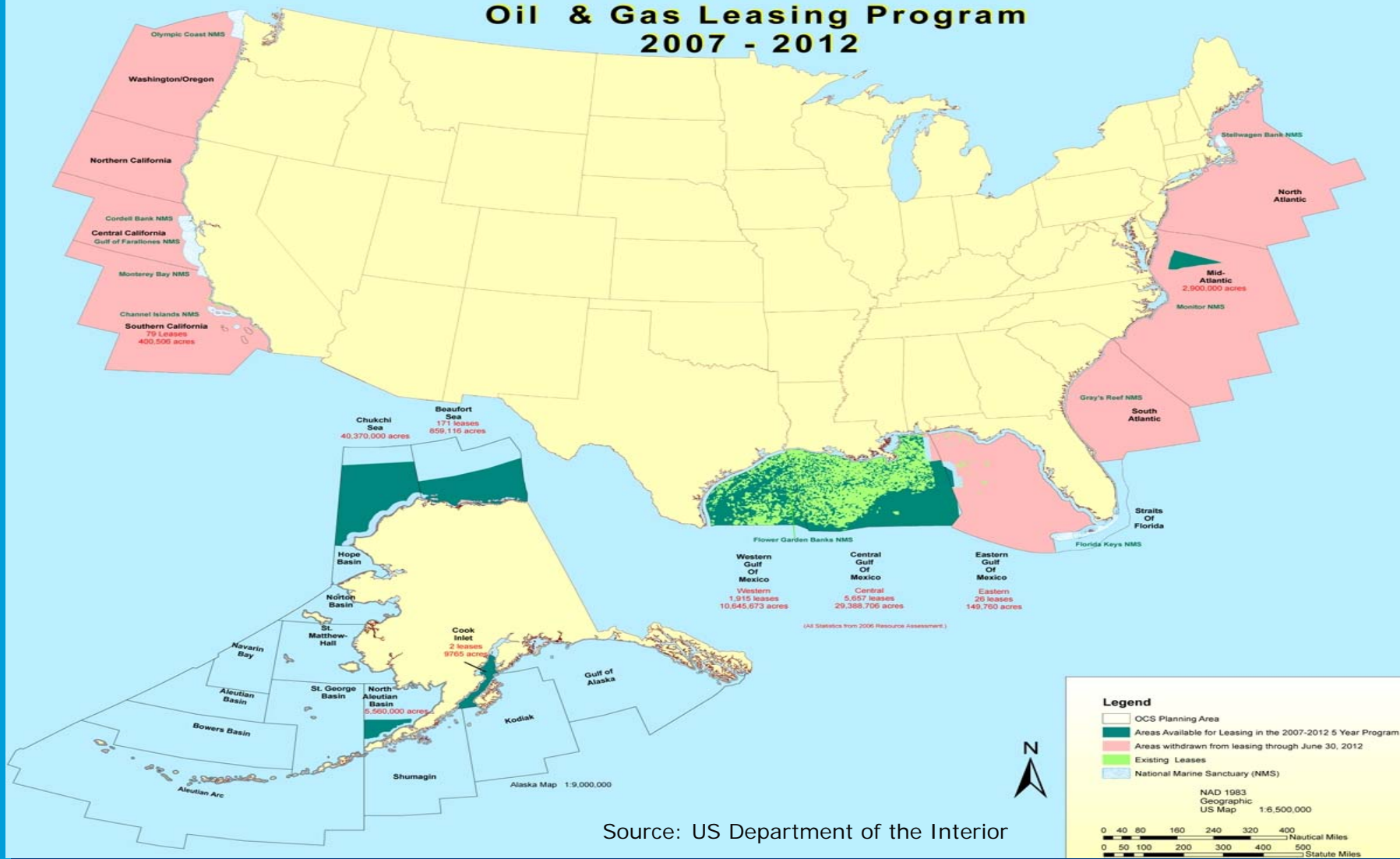
Federal Lands – Onshore & Offshore Restrictions



2007 – 2012 OCS 5 Year Leasing Program



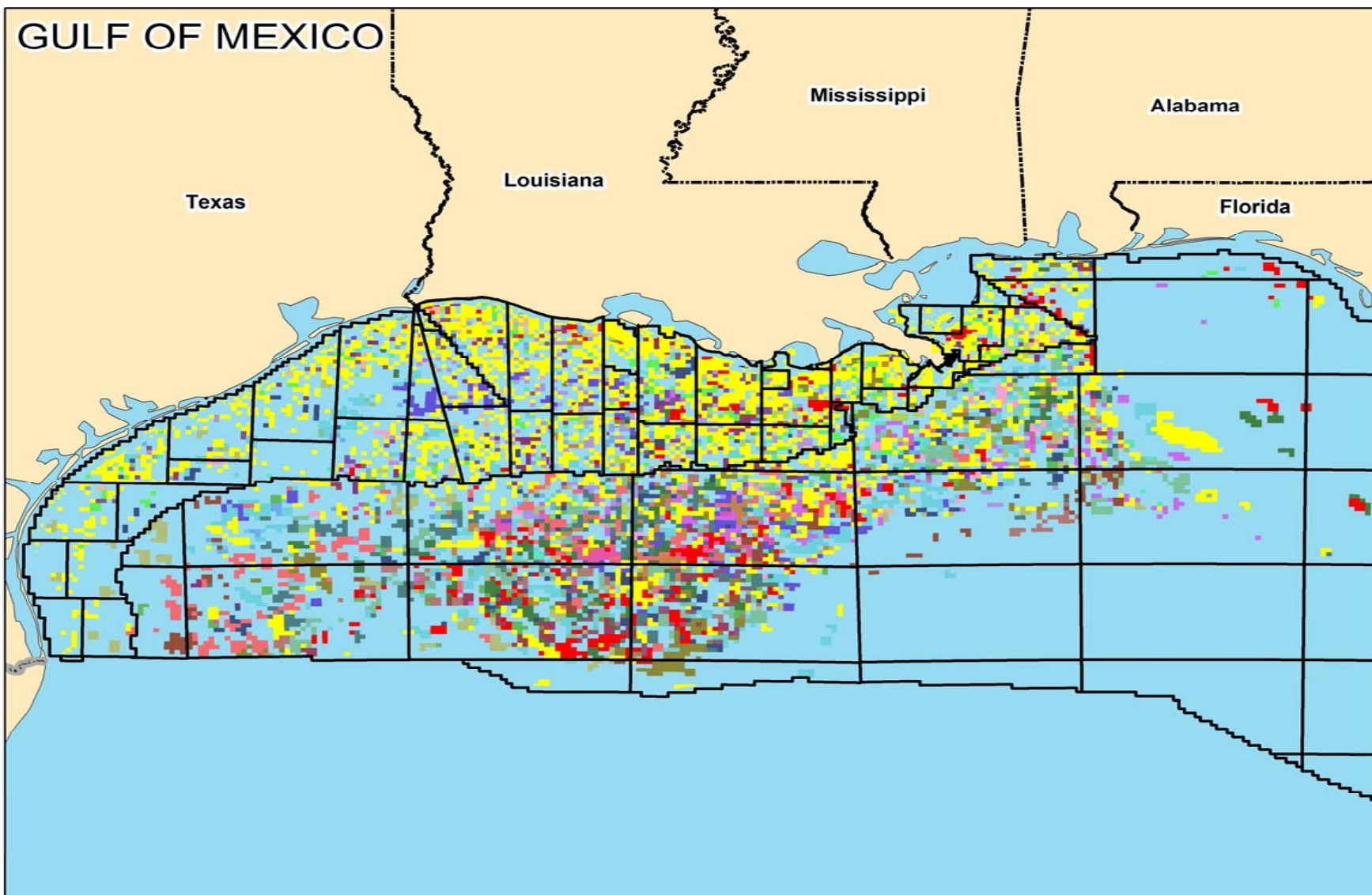
Outer Continental Shelf Oil & Gas Leasing Program 2007 - 2012



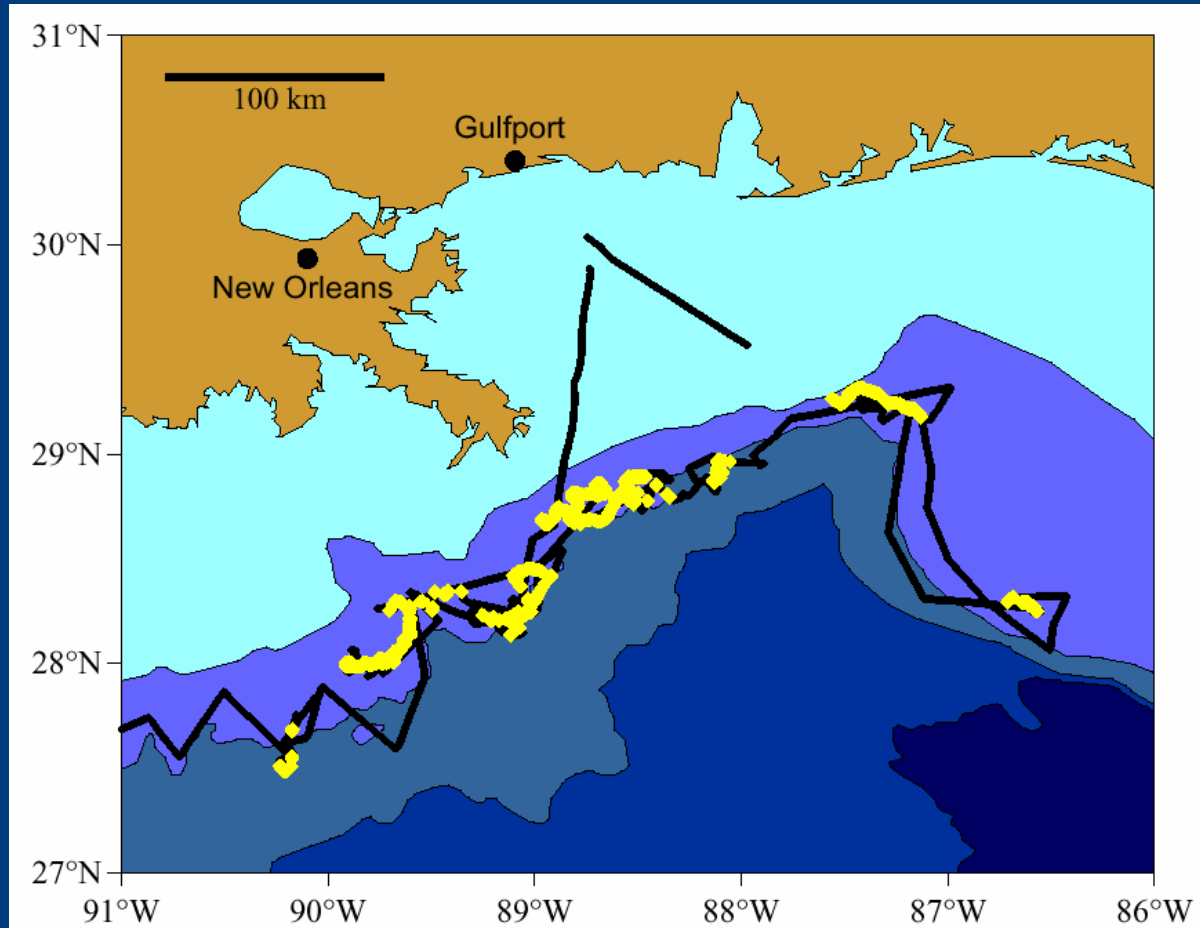
Source: US Department of the Interior



Gulf of Mexico – Federal Leases



Why all the interest now?



Location of sperm whale sightings – SWSS S-Tag Cruise, Summer 2002

Bold line indicates cruise track line. Depth contours shown: 200m, 1000m, 2000m, and 3000m.

Primary Sound Sources

- **Seismic Surveys**
 - Recording and Source Vessels
 - Air guns
- **Drilling Operations**
 - Support Vessels (Boats & Helicopters)
- **Production Operations**
 - Support Vessels (Boats & Helicopters)
- **Platform Removal**

Offshore Seismic – Primary Focus Area



Source: ProScience Consulting LLC

Semi-Submersible Drilling Rig - Dynamically Positioned



Transocean – Cajun Express

Shallow Water Platform



Deepwater Platform - Genesis Spar



Genesis Platform (Downtown Washington DC)





Current Mitigation Measures

Protected Species Stipulations

- Collection and removal of flotsam from all operations
- Post signs on all facilities noting no release of debris
- Implement an Observer Program on vessels
- Seismic surveys to use 500 meter impact zone
 - Visual Observers
 - Ramp-up Procedures
 - Reporting of Sightings
- Oil Spill contingency planning near sensitive areas



Joint Industry Program (JIP)

■ Objectives

- Identify specific, operationally focused questions that relate to the effects of sound generated by the offshore E & P industry on marine life
- Pursue a research program that will test scientific hypotheses, produce the data needed to address these questions
- Provide scientific information which reduces uncertainty and thereby improves regulatory decisions

■ Research Goals

- Afford a more comprehensive understanding of the potential environmental risks from oil and gas operations
- Inform and update policy decision makers, and regulatory development processes that affect exploration and production operations globally
- Determine the basis for mitigation measures that are protective of marine life, cost effective, and credible with outside stakeholders
- Provide data to assist in planning for efficient project development that is environmentally compatible



Research Areas

- Sound source characterization and propagation
- Physical, physiological and hearing effects
- Behavioral effects and biological significance
- Mitigation and monitoring
- Research tools and technology development



Questions / Discussion