



Environmental Studies Overview Gulf of Mexico Region



Pasquale Roscigno, PhD

**Studies Chief
Office of Environmental Studies
Environmental Studies Program**



Environmental protection

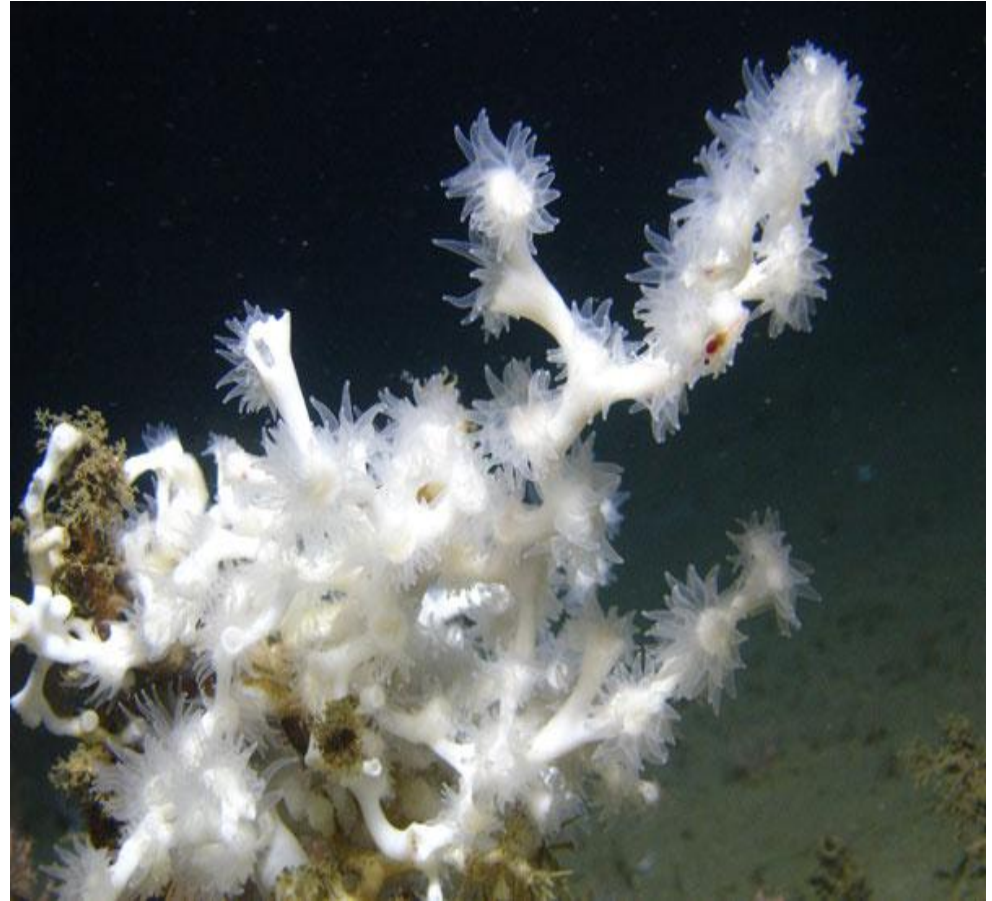
- Lease stipulations - terms and conditions
- National Environmental Policy Act (NEPA)
- Reviews of operator's plans for impacts
- Mitigations terms and conditions of plan approval

Environmental research

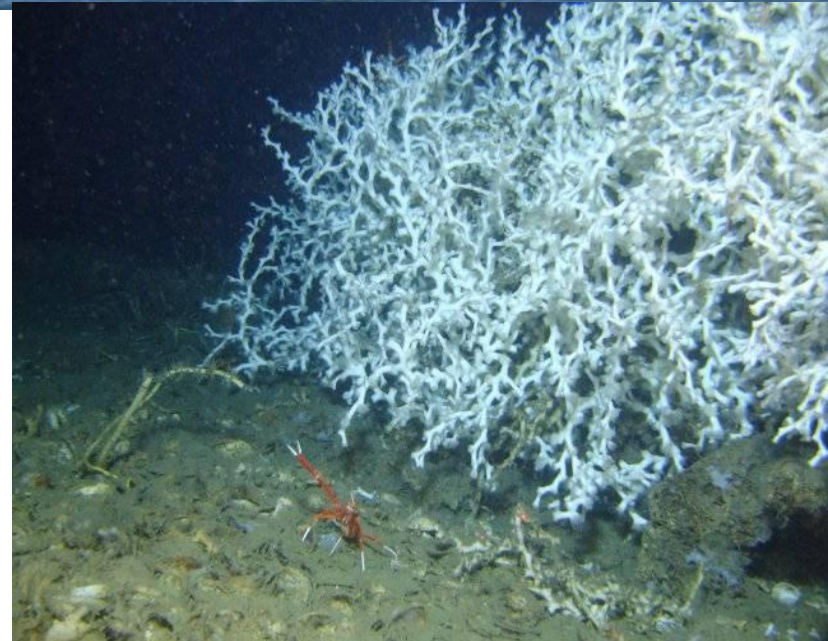
- Environmental Studies Program
- In-house Monitoring & Research Studies



**Provides information
needed to predict, assess,
and manage impacts from
offshore exploration,
development , and
production activities
on human, marine, and
coastal environments**



- **(BSEE) Pressure Wave and Acoustic Properties Generated by the Explosive Removal of Offshore Structures: Potential Effects on Protected Species**
- **Pelagic *Sargassum* Algae Distribution and Movement in the Gulf of Mexico**
- **Deepwater Coral Atlas and Modeling Program: Gulf of Mexico**
- **Florida Manatee Movement and Habitat Use in the Northern Gulf of Mexico**





- **Environmental Justice and OCS Petroleum: A geo-spatial analysis**
- **An Analysis of the Impacts of the *Deepwater Horizon* on the Seafood Industry**
- **An Analysis of the Fiscal Impacts of the OCS Industry in the Gulf of Mexico**
- **The Demographic Consequences of the Gulf of Mexico Offshore Petroleum Industry**

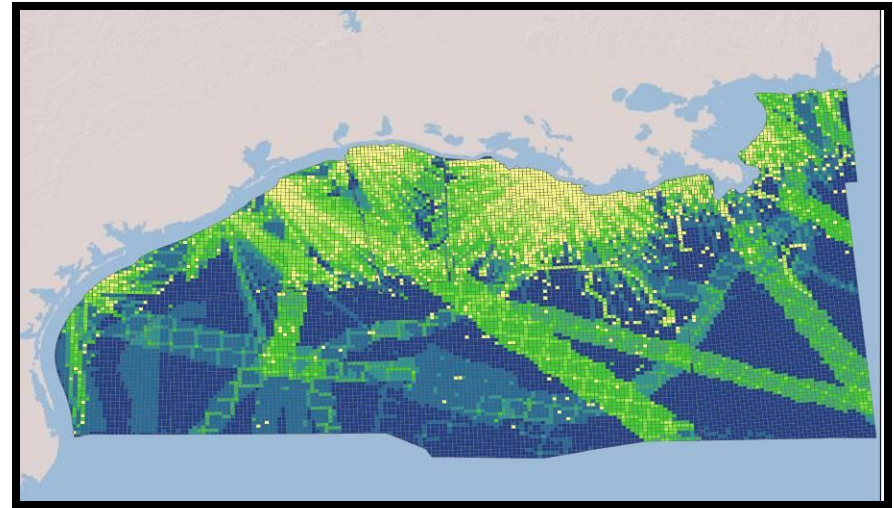




- **A Comparative Analysis of an Oil Spill on Biota Inhabiting Several Gulf of Mexico Shipwrecks Spanning the 19th to 20th Centuries**
- **Testing and Assessment of the Effects of an Oil Spill on Coastal Archaeological Sites**
- **(BSEE) Analyzing Impacts to Cultural Resources as a Result of Oil and Gas Activities in Deepwater (<500-10,000)**



- **NAAQS Exemption Level Study**
- **Year 2014 Gulfwide Emissions Inventory Study**
- **Coral Reef Ocean Acidification Sentinel Site in the Flower Garden Banks National Marine Sanctuary**
- **Enhancing the Capability of a New Meteorological Model for Air Quality and Other BOEM Applications in the Gulf of Mexico**
- **Managing Dredging Environmental Impacts by Optimizing the Use of Sand Resources**



Air Quality Emission Inventories for the Gulf of Mexico OCS

Hull Eiss Minerals Management Service Gulf of Mexico OCS Region

ABSTRACT

Darcy Wilson Eastern Research Group, Inc.

Purpose: To assess the potential impacts of air pollutant emissions from offshore oil and gas exploration, development, and production sources on the Outer Continental Shelf

Four MMS Gulf of Mexico OCS Emissions Inventory Studies:

- 2008 Survey Inventory
- 2008 Gulfwide Inventory
- 2005 Gulfwide Inventory
- 2008 Gulfwide Inventory (ongoing)

Detailed Emissions Data for:

- All OCS oil and gas production-related sources in the Gulf of Mexico
- Platform and non-platform sources, such as support vessels
- Criteria pollutants and greenhouse gases
- Including spatial allocation of emissions

2008 Gulfwide Inventory Results (results may be attributed due to their major contribution):

- OCS oil and gas production sources emit the majority of air pollutants in the Gulf of Mexico on the OCS
- Oil and gas production platforms emit the majority of the CO and VOC emissions
- Non-platform OCS oil and gas production sources emit the majority of the estimated NO_x, PM₁₀, and SO₂ emissions
- Platform sources account for almost all of the CH₄ emissions

Criteria Pollutant Non-Platform Estimates

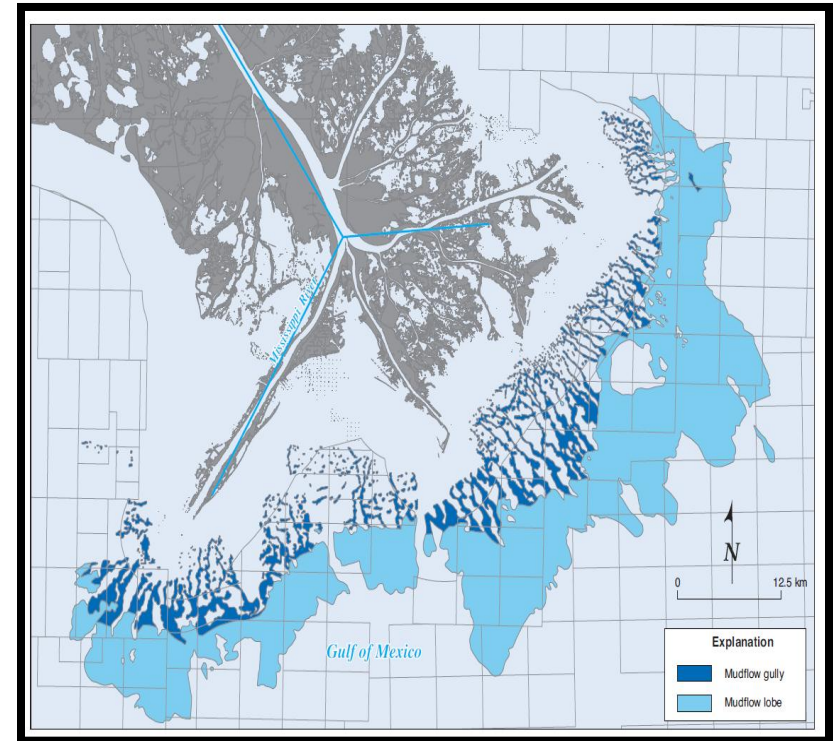
Greenhouse Gas Platform Estimates

Greenhouse Gas Non-Platform Estimates

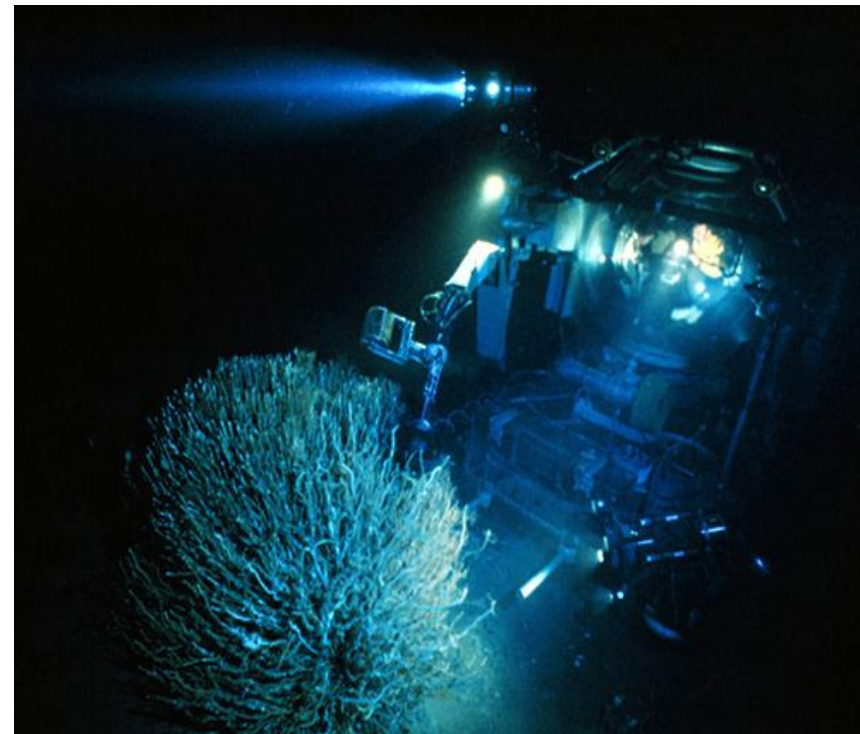
Total 2005 OCS GHG Estimates With US Total

<http://www.gomr.mms.gov/home/gp/regulate/estimates/airquality/goads.html>

- **Workshop on Future Directions in Understanding Physical-Biological Oceanographic Interactions in Mid- to Deep Waters of the Gulf of Mexico**
- **(BSEE) Mississippi Delta Baseline Mudflow Hazard Maps**



- **Joint Efforts on Environmental Studies (BOEM) & Research Projects (BSEE)**
- **Interagency Protected Species Team**
- **Joint integration of BSEE and BOEM's Sea Floor Monitoring Teams**



↑ CONTINENTAL SHELF ↑

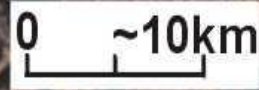
● BOXER

● BULLWINKLE

RECOMMENDED NEW STUDIES

● JOLLIET

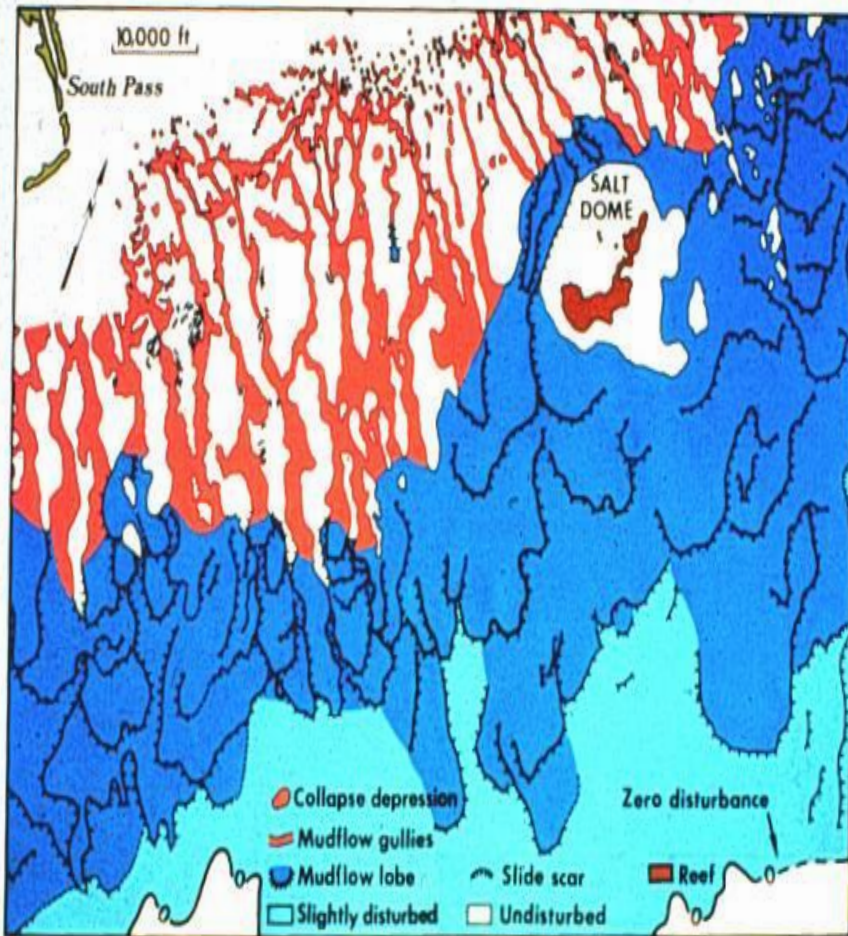
- Potential geohazards & distribution on slope
- Ground-truth seismic amplitudes
- Distribution and analysis of “furrows”
- Deepwater near-bottom currents



SEAFLOOR RENDERING SHOWING RUGGED TOPOGRAPHY,
GREEN CANYON AREA, GULF OF MEXICO.



Joint Mudslide Study



- Office of Structural and Technical Support (BSEE)
- Resource Economic Analysis Unit (BOEM)
- Office of Environmental Studies & Regional Assessment Unit (BOEM)
- Recommendation: \$ 12 million Study is needed
- Potential Funding Vehicle: Joint Industry Project



Joint PWAP Study

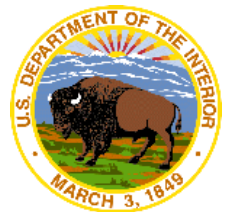


Western Planning A
499 Active Platforms

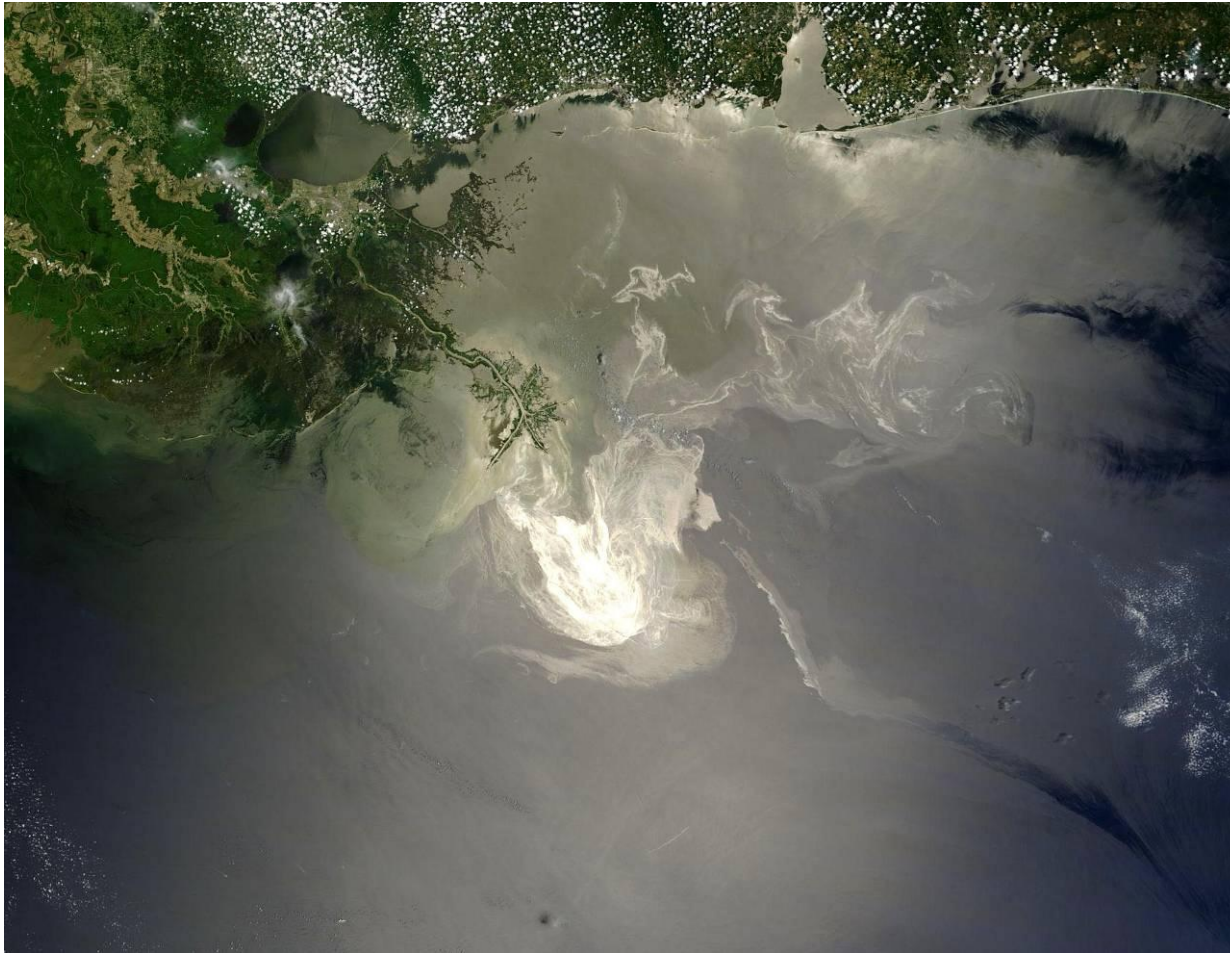
FLORIDA



- Technical Advisory Committee for Joint Industry Task Force for Oil Spill Planning & Response
- National Response Team Subsea Dispersant Use Subcommittee
- National Response Team Surface Dispersant Use Subcommittee



Deep Spill II in Norway ?



Future Opportunities



Subcommittee on
Ocean Science and Technology
Interagency Working Group on
Ocean Partnerships