International Science Coordination to Inform Ocean Energy Management

Rebecca Green, Ph.D.
Senior Oceanographer
Gulf of Mexico Region
Bureau of Ocean Energy Management

Gulf of Mexico Workshop on International Research

BOEM MISSION

Manage ocean energy and mineral resources on the Outer Continental Shelf in a safe and environmentally sound manner.

Oil & Gas

5-year leasing plan

Regional lease sales

Renewable Energy

Site identification through stakeholder input and state task forces

Marine Minerals

Through negotiated agreement with state and local entities

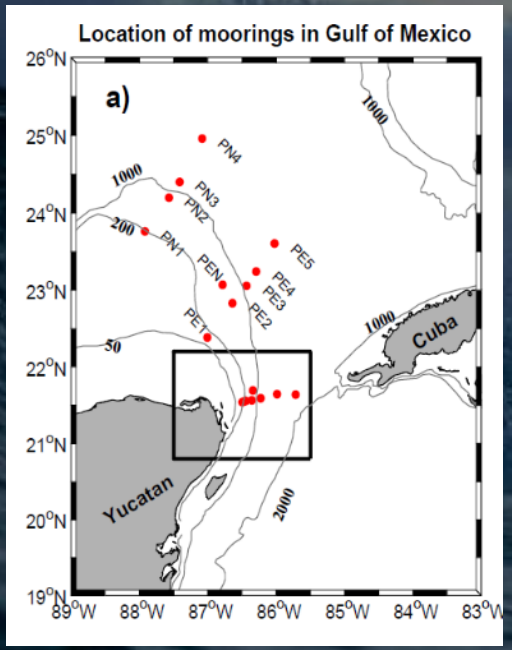
ENVIRONMENTAL MISSION

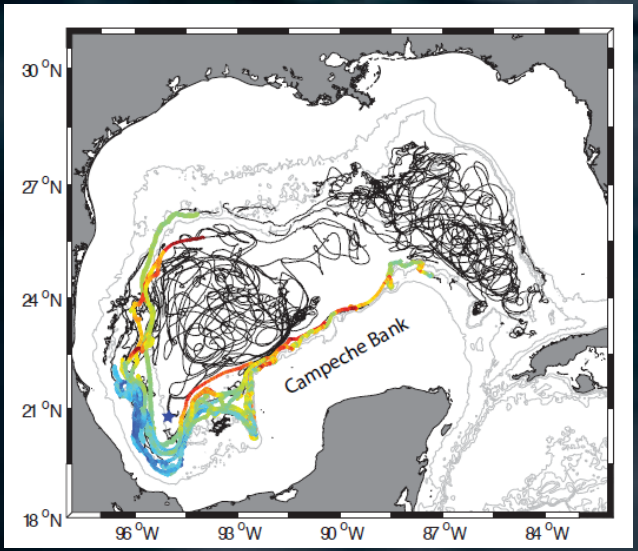
Use the best available science to protect the environment while ensuring the safe development of the nation's offshore energy and marine mineral resources.

BOEM
Bureau of Ocean Energy Management

ENVIRONMENTAL STUDIES PROGRAM

- Conduct scientific research needed to manage offshore energy activities in an environmentally responsible manner.
- Authorized by Outer Continental Shelf Lands Act (OCSLA).
- Encompasses biological, physical, and social science research from coast to deep ocean.
- Many years of joint research with Mexican scientists in physical oceanography.
- Committed to expanding international partnerships to inform environmental studies on a Gulf-wide scale.





HISTORY OF JOINT PHYSICAL OCEANOGRAPHY

BOEM / MMS Studies with Mexico

- Deepwater Current Measurements at 25°N 90°W in Mexican Territory
- Full-Water Column Current Observations in the Western Gulf of Mexico
- USA-Mexico Workshop in 2007
- Current Measurements in the Yucatan-Campeche Area in Support of Dynamics of Loop Currents Study
- Lagrangian Study of Deepwater Currents

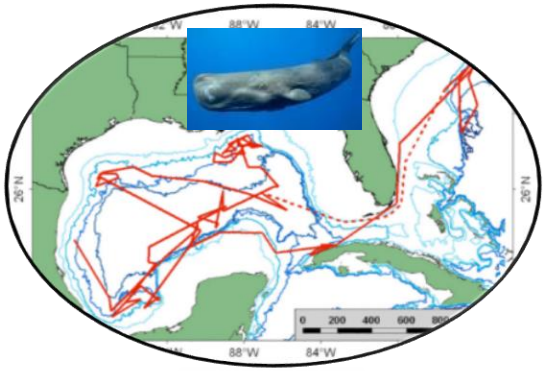
BOEM RESEARCH AREAS

avian biology
marine mammals
sea turtles
fish
corals
benthic ecology
chemical and physical oceanography
oil spill risk analysis
marine acoustics
meteorology, air quality
marine archaeology
economics
sociology and anthropology

ENVIRONMENTAL RESEARCH PRIORITIES

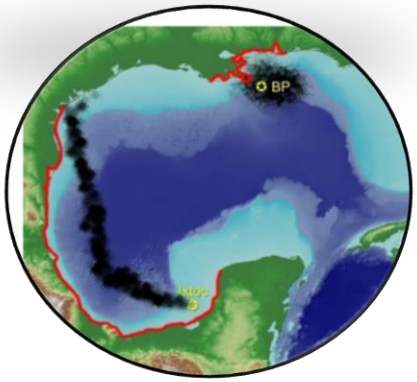
Baselines

- Establish existing conditions for assessment and management of environmental impacts on the human, marine, and coastal environments from OCS oil and gas activities.



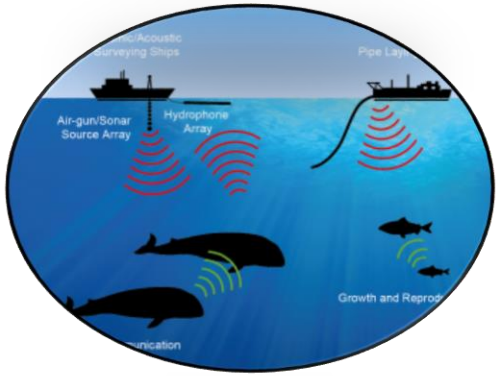
Fates and Effects

- Predict impacts on marine biota and human communities from chronic, low-level pollution or large spills associated with OCS oil and gas activities.



Monitoring

- Monitor human, marine, and coastal environments to provide time series and data trend information for identification of significant changes in environmental quality and productivity, and to identify causes of change.



DESIRED WORKSHOP OUTCOMES

Foster opportunities for international science and regulatory communities to work together as stewards of the Gulf of Mexico Large Marine Ecosystem.

- Enhance understanding of current international science initiatives.
- Expand an international network to facilitate collaborative research.
- Identify gaps in priority research areas for potential future funding.
- Strengthen partnerships for growing “One Gulf” perspective!

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Texas A&M University Corpus Christi | HARTE Research Institute for Gulf of Mexico Studies

The National Academies of Sciences · Engineering · Medicine

Gulf Research Program

NOAA Office for Coastal Management

National Oceanic and Atmospheric Administration

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GULF RESEARCH PROGRAM

Photo: SeaWiFS Project, NASA/GSFC, ORBIMAGE

Program Overview

March 29, 2017
Chris Elfring
Executive Director

The Gulf Research Program (GRP)

- A $500 million, 30-year program (2043) managed by the National Academies. Funds grants, fellowships, and other activities
- Directed to operate in three areas:
  - Oil system safety
  - Human health
  - Environmental resources
- Directed to work via three mechanisms:
  - Research & development
  - Education & training
  - Environmental monitoring
- Guided by *Strategic Vision* (2014) and
- 20+ member Advisory Board (pro bono service)

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Program Initiatives

- Reducing risk in offshore oil and gas operations

- Observation and monitoring for healthy ecosystems and coastal communities

- Planning and action for healthy and resilient coastal communities

- Building capacity to address cross-boundary challenges

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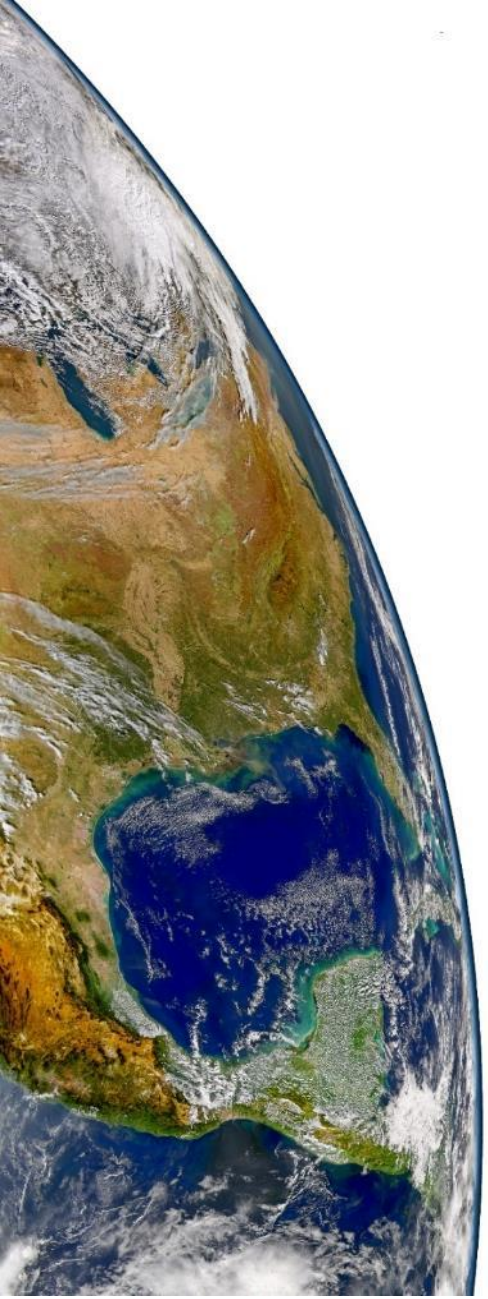
Legacy and Lasting Impacts

1. Engage **multiple generations of scientists**, through fellowships grants, and other career building activities, in research and policy making.
2. Catalyze long-term monitoring and research that will advance scientific understanding of **deep water ecosystems and processes** in the Gulf of Mexico
3. Support long-term monitoring and research to improve the science and practice **environmental restoration and restoration monitoring**
4. Participate and provide leadership in an **oil-system safety** network of stakeholders
5. Strengthen the science and practice of **coastal community resilience** in regions along the US outer continental shelf through research and capacity building
6. Encourage and develop capacity for **scientific synthesis** (e.g., integration of data and methods; application of scientific research) to improve the safety of energy production and protect human well-being and the environment

Why this Workshop?

- GRP is interested in the Gulf of Mexico as an integrated system, and that clearly includes US, Mexico, and Cuba.
- GRP held its fall 2016 meeting in Villahermosa, Tabasco, Mexico – interested in relationship-building.
- GRP Advisory Board includes Dr. Porfirio Alvarez-Torres as one pathway for connecting
- GRP "jumped aboard" to sponsor this workshop because strongly believe that collaborative priority-setting can be useful
  - GRP allows international participants in proposals but (at this point) only as sub-awardees (e.g., not primary applicants)
  - GRP fellowships are at this point "US only" but looking at options to have an international education component



Contact Information

Gulf Research Program

gulfprogram@nas.edu

www.national-academies.org/gulf

Sign up to receive email updates:
www.national-academies.org/gulf/enews

International Research: Opportunities to Inform Ocean Resource Management

Rebecca J. Allee, Ph.D.

NOAA Office for Coastal Management

NOAA's Mission: Science, Service and Stewardship

Office for Coastal Management: oversees implementation and provides technical assistance for`` federally approved state coastal zone management programs.

Integrated Ecosystem Assessment Program: provides scientific knowledge of the Gulf of Mexico integrated ecosystem, and transfers that knowledge to scientists and managers.

RESTORE Act Science Program: carries out research, observation, and monitoring to support long-term sustainability of the ecosystem, fish stocks, fish habitat, and the recreational, commercial, and charter-fishing industry in the Gulf of Mexico.

Science

- End-to-end modeling integrating ecological, physical, and socio-economic components
- Life histories and interactions of living marine resources, food web dynamics, and habitat utilization
- Ecological functions of key habitats and the connections between habitat change over time and effects on the ecosystem
- Impacts of freshwater inflows, sediment, and nutrient loads

Data and Monitoring

- Indicators of ecosystem structure and function
- Habitat quality, mapping, and characterization
- Fisheries-independent data collection
- Event monitoring
- Deep sea areas
- Biogeographic assessments for protected areas
- Data assimilation and synthesis

Questions?

becky.allee@noaa.gov