

DRILLING IMPACTS OCEAN OBSERVING SYSTEM (DIOOS)

STATEMENT OF PURPOSE: Newly authorized drilling for oil and gas will take place near Florida's coast in the very near future. Such activities, when interacting with ocean currents in the Gulf of Mexico and Straits of Florida (Loop Current, Florida Current, and Gulf Stream), can present significant risks to sensitive coral reefs, seagrass, mangroves and related ecosystems. Trajectories and dispersion of drilling wastes and spills must be well understood for proper management and conservation. A Drilling Impacts Ocean Observing System (DIOOS) is proposed to respond to these new threats to coastal resources and economies.

1. **Intent** - Identify components and strategy for improved observation and data systems to support:
 - Impact assessment of newly authorized oil and gas drilling in the Gulf of Mexico (US waters pursuant to the Gulf of Mexico Energy Security Act of 2006) and the Straits of Florida (in Cuban waters as reported by the Palm Beach Post last January 1,2007 at: <http://www.reefrelief.org/reefreliefnews/reefnews.asp?file=keysear.html>) on marine resources and associated economies;
 - Mitigation strategies for oil and gas drilling wastes and spill risks.
 - Impact quantification from oil and gas drilling wastes or spills to determine compensation amounts.
 - Identification of responsible parties for oil and gas drilling wastes or spill damages.
2. **Goal** - Collect, analyze, and communicate ocean data to assess and mitigate environmental risks to coastal regions from oil and gas drilling operations.
3. **Output of Proposed Work** – In the three year program effort:
 - Trajectories and dispersion of oil and gas drilling wastes and spills from drilling sites.

- 3-dimensional model of the shelf areas for dispersal and fate.
- Assessments of environmental conditions before and after oil and gas drilling operations.
- Benthic boundary layer transport model to calculate fate of drilling wastes and spills
- Model predictions integrated with observations to assess environmental impacts.

SUMMARY OF WORK TO BE COMPLETED DURING THE FIRST YEAR PROGRAM EFFORT AND THEREAFTER:

1. **Methodology** – Historical survey of operational drilling wastes and spills in the Gulf of Mexico, Straits of Florida, and other locations with similar current, tidal, weather, and ecological conditions to identify oil and gas drilling impacts to coral reefs, seagrass, mangroves, and related ecosystem elements. Evaluate relevant observational systems of the potentially effected coastal region (e.g., [SEAKEYS](#), [CHAMP](#), etc.) for DIOOS applications. Install physical, chemical, and biological sensors. Coordinate DIOOS efforts with [SECOORA](#).
2. **Products** – Historical survey, system evaluation, implementation results, recommendations, and status report (DICOOS Report 2008). Similar annual reports will be completed for 2009 and 2010 to identify benefits to and use by the IOOS community. A preliminary status report and recommendations will be presented at the 11th International Coral Reef Symposium 2008 (<http://www.nova.edu/ocean/ncri/11icrs/index.html>).
3. **Approximate Costs** - Approximate first year costs are \$200,000. Second year and third year costs will be for amounts not to exceed \$500,000 per year. Federal and other funds will supplement these state funds.

DESCRIPTION OF INTENDED BENEFITS TO AND EXPECTED USE OF RESULTS BY THE IOOS COMMUNITY:

1. **Coastal Resources Protection and Management** - Coastal resource managers within the Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, similar agencies of other states, and other government entities would use data and analysis to protect and manage marine resources and water quality.
2. **Oil and Gas Industry Standards to Reduce Risks** - Oil and gas production companies would use the data and analysis to improve operational systems and standards and to reduce drilling risks.
3. **Compensation Claims** - Local governments that have sustained adverse impacts from operational drilling wastes and spills would use data and analysis for damage compensation claims.
4. **Identify Impacts** - Business interests relying on healthy marine ecosystems will use data and analysis to identify drilling related impacts to minimize damages and compute losses.

DESCRIPTION OF THE PARTNERSHIPS TO BE EMPLOYED IN THE DEVELOPMENT AND COMPLETION OF THE

PROPOSED WORK:

1. **SEAKEYS and CHAMPS** - Partnership are anticipated the SEAKEYS, CHAMPS, and other related programs to integrate installations and data streams.
2. **Other Partnerships** - Other partnerships will be made with the academic, coral reef conservation, fisheries, tourism, and the oil and gas production communities for best management and oil and gas drilling practices.