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STUDY TITLE: Deepwater Program: Bluewater Fishing and Deepwater OCS Activity, Interactions Between the Fishing and Petroleum Industries in Deepwaters of the Gulf of Mexico

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SPONSORING OCS REGION: Gulf of Mexico

APPLICABLE PLANNING AREAS: Eastern, Central, and Western Gulf of Mexico

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KEY WORDS: Eastern Gulf; Central Gulf; Western Gulf; California; North Sea; Canada; Australia; deepwater; oil and gas; fisheries.

BACKGROUND: Recent years have seen a great increase in oil and gas industry interest in the deepwater Gulf of Mexico. Deepwater development involves a number of environmental, socioeconomic, and technological issues. A "Deepwater Workshop" was held by the Minerals Management Service (MMS) in 1997. Workshop participants identified potential conflicts between bluewater fishing and deepwater oil and gas activities as a major concern.

OBJECTIVES: The objectives of this project were to 1) determine bluewater fishing endeavors and practices and deepwater outer continental shelf (OCS) energy development activities; 2) describe and map bluewater fishing and deepwater OCS energy development activities; 3) describe current Gulf of Mexico and relevant worldwide interactions and predict future situations that may occur in the Gulf of Mexico between bluewater fishing and deepwater OCS energy development activities; and 4) to recommend proactive mitigation measures for MMS and for the fishing and OCS energy industries.

DESCRIPTION: This report focuses on the deepwater Gulf of Mexico, defined as extending from a depth of 200 m to the border of the U.S. Exclusive Economic Zone.

The first two objectives were addressed by gathering descriptive information and spatially oriented data from a variety of sources for the two industries. Past and current information on the OCS energy industry was obtained from MMS data sets that contain active leases, filed Plans of Exploration (POEs), existing development facilities, and existing pipelines. Existing facility descriptions came from filed Development Operations Coordination Documents (DOCDs) or POEs, U.S. Coast Guard files, and industry operators. Descriptions of exploratory drilling rigs came from various drilling rig contractors. Future OCS activity was projected from the MMS data sets that included active leases with filed POEs or DOCDs, announced discoveries with filed POEs or DOCDs, and future pipelines. In addition, an analysis of lease bonuses paid on existing leases was made to determine which lease blocks received high bids.

The bluewater commercial fishing industry was described from data obtained from National Marine Fisheries Service (NMFS) data sets. Several data sets were examined, including the longline logbook data set, the shrimp data set, and the reef fish logbook data set. These data sets provide varying levels of spatial resolution, ranging from latitude/longitude (degrees and minutes) to large scale (kilometers) NMFS statistical grids. Catch and effort information was extracted from the data sets to characterize spatial and temporal patterns in the northern Gulf of Mexico. Recreational fisheries were characterized using NMFS survey data gathered during billfish tournaments held at northern Gulf of Mexico ports. Species composition and life history characteristics were described for primary deepwater fisheries species.

Spatially oriented data from oil and gas and fishing industries were mapped using Geographic Information Systems (GIS). Areas of potential overlap (conflict) also were identified using GIS.

Current domestic conflicts are being gathered from the U.S. Coast Guard, Fishermen's Contingency Fund, and California Fisheries Liaison Office. Information on international interactions was compiled from a variety of sources, including the Canada-Nova Scotia Offshore Petroleum Board, Fisheries and Offshore Consultative Group (North Sea), and United Kingdom Offshore Operators Association Compensation Fund.

SIGNIFICANT CONCLUSIONS: The primary deepwater commercial fishery in the Gulf of Mexico is pelagic longlining for tunas. This is followed by bottom longlining and, to a much lesser extent, bottom trawling and trapping. Conflicts have not been well documented in the deep waters of the Gulf, but anecdotal information indicates that interactions between longline fishers and geophysical survey vessels have been frequent and will be the most important interactions in the future. Measures to help avert or lessen the severity of future conflicts between the fishing and energy industries include the following: prepare an educational guidebook, improve contingency fund, appoint a liaison committee, regulate geophysical surveys, and improve communication.

STUDY RESULTS: Commercial deepwater fishing practices in the northern Gulf of Mexico include trapping for golden crab, trawling for royal red shrimp, bottom longlining

for groupers and tilefishes, and surface longlining for sharks and tunas. Of these gear types, the pelagic longline presents the greatest possibility for interactions or space-use conflicts with the oil and gas industry. Recreational fishers in the northern Gulf of Mexico target primarily epipelagic fishes such as tunas, dolphin, and billfishes. These fishers currently use deepwater platforms as fishing areas for epipelagic species. Another concern is the potential for interference with migratory routes due to attraction of epipelagic fishes (e.g., tunas, dolphin, billfishes, and jacks) to surface structures and mooring lines. Because of the highly migratory nature of many epipelagic species, these effects could extend to the regional scale (hundreds of kilometers).

The areal extent of deepwater fisheries in the northern Gulf of Mexico varies greatly, from widespread to localized. The royal red shrimp fishery appears to be concentrated in the area south of Alabama/Mississippi corresponding to statistical grid 10, with minimal effort expended in areas off the Florida Keys and Texas. Golden crab trapping is most prevalent off of southwestern Florida and the Florida Keys, with very few fishers actually participating in this fishery. There is some speculation that the deepwater crab fishery will expand in the future. The bottom longline fishery occurs near the shelf break, and is legislatively mandated to remain offshore of the 102-m depth contour. Most effort by reef fish permit holders for deepwater groupers and tilefishes occurs offshore of west Florida; however, appreciable effort has been expended offshore of Louisiana and Texas as well. The pelagic longline fishery is widespread in the open Gulf of Mexico and, of the gear types examined, presents the greatest possibility for interactions or space-use conflicts.

All phases of the deepwater offshore energy industry--geophysical surveys, exploratory drilling, development/production, and abandonment--could conflict with current deepwater fishing practices.

The most common facilities used in deepwater operations are fixed platforms, semi-submersible floating production systems, compliant towers, tension leg platforms, spars, and subsea completions. The spatial preclusion of seafloor or water column by these facilities depends upon the type of mooring system used and the water depth. Anecdotal information suggests that interactions between the geophysical surveying and pelagic longlining have been and will continue to be a problem.

Presently there are about 3,800 active leases in waters greater than 200 m deep, with approximately 42 platforms currently operating in these water depths. Areas expected to have high future activity are in Mississippi Canyon, Green Canyon, Garden Banks, and Viosca Knoll lease block areas. This was determined by analyzing the value structure of bonus bids offered on individual leases.

International conflicts between fishing and petroleum industries assessed from information obtained from Australia, Canada, Nova Scotia, and the United Kingdom indicated that most conflicts had occurred in water depths shallower than 200 m. In addition, most of the reported conflicts were associated with bottom founded gear such as otter trawls and traps. California has a history of space use conflicts mostly

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associated with trawling and gill net fisheries. California established a liaison between the fisheries and oil and gas industries to mediate or avert conflicts. Other areas, including the United Kingdom and Nova Scotia, have established groups to oversee interactions between fisheries and oil and gas activities.

STUDY PRODUCT(S): Continental Shelf Associates, Inc. 2002. Deepwater Program: Bluewater Fishing and OCS Activity, Interactions Between the Fishing and Petroleum Industries in Deepwaters of the Gulf of Mexico. A Final Report for the U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, Metairie, LA. OCS Study MMS-2002-078.