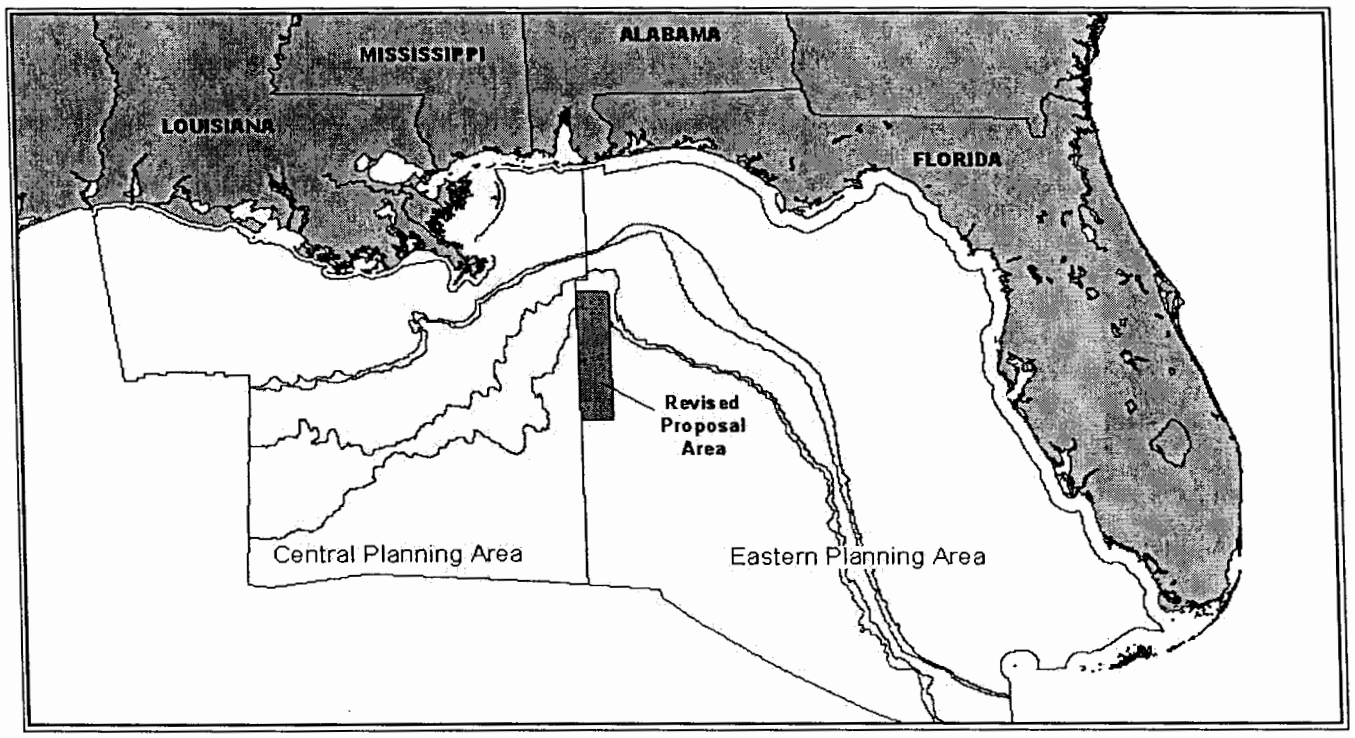
OCS EIS/EA
MMS 2001-083

Revised Proposal for Gulf of Mexico OCS Oil and Gas Lease Sale 181

Eastern Planning Area

Environmental Assessment



MMS
U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

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Finding of No New Significant Impacts

The Minerals Management Service (MMS) has prepared an environmental assessment (EA) for the proposed reduced-area configuration for Eastern Gulf of Mexico Outer Continental Shelf (OCS) Oil and Gas Lease Sale 181 (Revised Proposal). This environmental assessment was conducted to determine whether or not the information and analyses in the final environmental impact statement (Final EIS) for Proposed Lease Sale 181 have changed sufficiently to warrant further analysis for the Revised Proposal. Because the Final EIS examined the potential environmental impacts of similar activities as those projected for the Revised Proposal, the EA incorporates much of the material of the Final EIS by reference. It also examines the potential environmental effects of the Revised Proposal and alternatives with consideration of any new information regarding potential impacts or issues that were not available at the time the Final EIS was prepared.

The information and analysis presented in the Final EIS were reviewed to determine if the kinds, levels, or locations of impacts addressed in the Final EIS will significantly change as a result of the reduced area proposed for Lease Sale 181. The overall level of activities and potential impacts will be less than those analyzed in the Final EIS. The most notable changes are the deferral of the shallow water blocks (less than 200 meters) and the blocks in the eastern part of the original Proposed Lease Sale 181 area. Therefore, there will be no impacts to sensitive benthic communities or archaeological resources in those areas, nor will multiuse conflicts with the Department of Defense activities occur.

Based on the analyses in the EA, no new significant impacts were identified for the Revised Proposal for Lease Sale 181 that were not already assessed in the Final EIS. Therefore, the MMS has determined that a supplemental EIS to the multisale EIS is not required and is issuing this Finding of No New Significant Impacts.

Supporting Documents

U.S. Dept. of the Interior, Minerals Management Service. 2001. Revised Proposal for Gulf of Mexico OCS Oil and Gas Lease Sale 181, Eastern Planning Area Environmental Assessment. OCS EIS/EA MMS 2001-083 (attached).

Federal Register. 1999. Call for Interest and Information and Notice of Intent to Prepare an Environmental Impact Statement, Outer Continental Shelf, Eastern Gulf of Mexico, Oil and Gas Lease Sale 181. January 25, 1999.

Price, J.M., C.F. Marshall, G.B. Rainey, and E.M. Lear, eds. 2001. Oil-spill risk analysis: Gulf of Mexico Outer Continental Shelf (OCS), in support of the environmental impact statement (EIS) for proposed Lease Sale 181. U.S. Dept. of the Interior, Minerals Management Service, Branch of Environmental Operations and Analysis, Washington, D.C. OCS Report MMS 2001-007 (available on request).

U.S. Dept. of the Interior, Minerals Management Service. 2001. Gulf of Mexico OCS Oil and Gas Lease Sale 181, Eastern Planning Area: Final Environmental Impact Statement. OCS EIS/EA MMS 2001-051 (available on request).

Thomas R Kitsos

Thomas R. Kitsos
Acting Director
Minerals Management Service

Date 9/26/01

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1. PURPOSE AND BACKGROUND

1.1. PURPOSE

The purpose of the proposed Federal action is to offer for lease the areas in the Eastern Planning Area (EPA) of the Gulf of Mexico Outer Continental Shelf (OCS) that contain economically recoverable oil and natural gas resources. The proposed action will provide qualified bidders the opportunity to bid upon and lease acreage on the Gulf of Mexico OCS in order to explore, develop, and produce oil and natural gas in an environmentally responsible manner. This environmental assessment (EA) has been prepared to determine whether there are any new significant issues or environmental impacts that might occur as a result of offering a reduced-area configuration of proposed Eastern Gulf of Mexico OCS Oil and Gas Lease Sale 181 (Revised Proposal), and whether a supplemental environmental impact statement (EIS) should be prepared. This EA, used in conjunction with the *Gulf of Mexico OCS Oil and Gas Lease Sale 181 Final Environmental Impact Statement* (Final EIS), hereby incorporated by reference, can be used to compare the types, intensities, and areal extents of the impacts expected to be associated with the original proposed action analyzed in the EIS to the impacts expected to be associated with the Revised Proposal examined in this EA.

The Revised Proposal for Lease Sale 181 encompasses 256 blocks, about 1.5 million acres, offshore Alabama in the westernmost portion of the Eastern Planning Area of the Gulf OCS (Figure 1). Three mitigation measures in the form of lease stipulations are included in the Revised Proposal. Proposed Lease Sale 181 is the only Eastern Gulf sale scheduled during the current 5-Year Oil and Gas Leasing Program, and the first proposed sale in the Eastern Gulf since 1988.

1.2. BACKGROUND

On January 25, 1999, the MMS published the Call for Information and Notice of Intent to Prepare an EIS for proposed Eastern Gulf of Mexico Lease Sale 181 in the *Federal Register*. In accordance with the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA), scoping was conducted to solicit comments on proposed Lease Sale 181. Scoping meetings in support of the development of the Draft EIS were held in Florida, Alabama, and Louisiana in July 1999. The Notice of Availability of the Draft EIS was published in the *Federal Register* on December 5, 2000; public hearings on the Draft EIS were held in Florida, Alabama, and Louisiana in January 2001; and the comment period on the Draft EIS closed on January 23, 2001. The Final EIS was released in July 2001. The Final EIS evaluated 3 sale-area configurations and a no action alternative, as well as 11 mitigation measures in the form of lease stipulations. Because the Revised Proposal was developed after publication of the Final EIS, the Revised Proposal was not one of the alternatives evaluated in the Final EIS. Only 3 of the proposed 11 lease stipulations evaluated in the Final EIS are applicable to the blocks included under the Revised Proposal. The issues and resources identified for and addressed in the EIS that are applicable to the Revised Proposal will be addressed in this EA.

This EA implements the "incorporation by reference" process outlined in 40 CFR 1502.21, which encourages agencies to incorporate material by reference to "cut down on the bulk without impeding agency and public review of the action." Because the recent Final EIS for Lease Sale 181 (USDOI, MMS, 2001) examined the potential environmental impacts of activities similar to those projected for the Revised Proposal, this EA incorporates much of the material of the Final EIS by reference. By incorporating the information and analyses in the Final EIS by reference, this EA focuses on environmental issues specific to the Revised Proposal.

A notice announcing the preparation of this EA was published in the *Federal Register* on July 27, 2001. The comment period closed August 27, 2001. The MMS received two letters of comments on the EA, and these comment letters are summarized Section IV.A.

1.2.1. Related Documents and References

The documents related to and supporting this EA are as follows:

Federal Register. 1999. Call for Interest and Information and Notice of Intent to Prepare an Environmental Impact Statement, Outer Continental Shelf, Eastern Gulf of Mexico, Oil and Gas Lease Sale 181. January 25, 1999.

Federal Register. 2001. Preparation of an Environmental Assessment on Proposed Eastern Gulf of Mexico Lease Sale 181. July 27, 2001.

Price, J.M., C.F. Marshall, G.B. Rainey, and E.M. Lear, eds. 2001. Oil-spill risk analysis: Gulf of Mexico Outer Continental Shelf (OCS), in support of the environmental impact statement (EIS) for proposed Lease Sale 181. U.S. Dept. of the Interior, Minerals Management Service, Branch of Environmental Operations and Analysis, Washington, DC. OCS Report MMS 2001-007.

U.S. Dept. of the Interior. Minerals Management Service. 2000. Gulf of Mexico OCS Oil and Gas Lease Sale 181, Eastern Planning Area: Draft Environmental Impact Statement. OCS EIS/EA MMS 2000-077.

U.S. Dept. of the Interior. Minerals Management Service. 2001. Gulf of Mexico OCS Oil and Gas Lease Sale 181, Eastern Planning Area: Final Environmental Impact Statement. OCS EIS/EA MMS 2001-051.

1.2.2. Significant Issues

The major issues analyzed in this EA are the same as those analyzed in the Final EIS for Lease Sale 181. These issues were identified during the EIS scoping process and public review and comment on the Draft EIS for Lease Sale 181 (USDOI, MMS, 2000). The significant issues are addressed in terms of the potential effects of activities resulting from the reduced-area lease sale on sensitive coastal environments, deepwater benthic communities, water quality, air quality, endangered and protected marine and coastal species (marine mammals, sea turtles, birds, beach mice, and Gulf sturgeon), fish resources and essential fish habitat (EFH), commercial and recreational fishing, archaeological resources, and human resources and land use. Continuing consultation with Federal agencies and the affected States after completion of the Final EIS for Proposed Lease Sale 181 has not identified any new significant issues.

1.2.3. Update on Regulatory Framework

1.2.3.1. Regulations on the Discharge of Synthetic-Based Drilling Fluids

The Revised Proposal area is under U.S. Environmental Protection Agency (USEPA) Region 4 jurisdiction for discharges. Any discharges in the area would occur under general permit GMG 280000 as promulgated on October 26, 1998 (63 FR 55718). These regulations were discussed in the Final EIS (pages I-8, I-9, IV-26 through IV-29, IV-164, IV-165, and the response to API-37 on page V-121) and are in effect until October 31, 2003. Under the general permit, discharges of synthetic-based drilling fluids (SBF) or cuttings associated with SBF drilling are not permitted. On January 22, 2001, USEPA promulgated guidelines (66 FR 6850) on limitations for the potential discharge of SBF cuttings. It is up to each Region to decide whether to allow the discharge of SBF and which limitations to implement. The USEPA Region 4 modified their National Pollutant and Discharge Elimination System (NPDES) permit on March 14, 2001 (66 FR 14988). These modifications were not included in the Final EIS. The modifications changed the requirements for discharges of produced water by including a series of tables for calculating the critical dilution criteria and removing the requirement to use the CORMIX model for proposed discharges. The modified permit also adds effluent limitations for miscellaneous discharges of chemically treated seawater and freshwater. Operators may apply for individual permits, which could result in the granting of permission to discharge cuttings according to the recent guidelines.

1.2.3.2. MMS Notices to Lessees and Operators

Since completion of the Final EIS, there have been several changes to Notices to Lessees and Operators (NTL's) that may be applicable to operations resulting from the Revised Proposal. NTL's are formal documents that provide clarification, description, or interpretation of a regulation or OCS standard; provide guidelines on the implementation of a special lease stipulation or regional requirement; or provide guidance on administrative information such as telephone listings, office addresses, or changes in MMS personnel. Copies of the NTL's are available through the MMS Public Information Office by calling 1-800-200-GULF or on the MMS website at http://www.mms.gov.

1.2.3.3. NTL 2000-G20 — Deepwater Chemosynthetic Communities

NTL 2000-G20 supersedes NTL 98-11. (This NTL was mistakenly identified as NTL 2000-11 on page IV-161 of the Final EIS.) The Deepwater Chemosynthetic Communities NTL is designed to protect these unusual biological assemblages discovered in the Gulf of Mexico only 17 years ago. Features or areas that could support high-density chemosynthetic communities include hydrocarbon-charged sediments associated with surface faulting, acoustic void zones associated with surface faulting, anomalous mounds or knolls, and gas or oil seeps. Damage to these communities could result from oil and gas activities that disturb the seafloor in the immediate vicinity of these communities. Such activities include, but are not limited to, drilling, anchoring, emplacing seafloor templates, discharging muds and cuttings, and installing pipelines.

The OCS applications or plans submitted for pipelines or for exploration or development activities in all areas deeper than 400 m go through a review by biologists to determine whether there are potential chemosynthetic communities located near the proposed impacting activities. Operators are required to maintain the following separation distances from features or areas that could support high-density chemosynthetic communities:

- at least 1,500 ft from each proposed muds and cuttings discharge location; and
- at least 250 ft from the location of all other proposed seafloor disturbances (including those caused by anchors, anchor chains, wire ropes, seafloor template installation, and pipeline construction).

New MMS-funded studies to improve methodologies for detection of chemosynthetic communities are being designed or are already underway. These studies include groundtruthing of remote-sensing methodologies such as 3D seismic.

1.2.3.4. NTL 2000-G21—Information Requirements for Exploration Plans and Development Operations Coordination Documents

NTL 2000-G21, also known as the Interim Plans NTL, supersedes NTL 2000-G10. This NTL provides interim guidance on preparing Exploration Plans and Development Operations Coordination Documents required by 30 CFR 250, Subpart B, while MMS is in the process of drafting revised Subpart B regulations.

1.2.3.5. NTL 2001-G04 — Remotely Operated Vehicle Surveys in Deepwater

NTL 2001-G04 provides guidance for remotely operated vehicle (ROV) surveys and reports newly required in the Central and Western Planning Areas of the Gulf of Mexico for operations in areas with water depth greater than 400 m. Information gained from the ROV surveys will be used to evaluate the effectiveness of existing requirements and mitigation intended to protect benthic communities. If new information gained from the results of these ROV surveys indicates that previously unknown, high-value bottom communities exist, such information could lead to development of additional mitigation measures.

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1. REVISED PROPOSAL — PROPOSED ACTION

The Revised Proposal is the offering for oil and gas leasing a 256-block area in the westernmost part of the Eastern Planning Area of the Gulf of Mexico OCS (Figure 1). The area encompasses about 1.5 million acres located 100-200 mi offshore Alabama in water depths ranging from 1,550-3,000 m. This specific configuration was not one of the alternatives evaluated in the Final EIS. Only 3 of the 11 proposed lease stipulations evaluated in the Final EIS are applicable to the Revised Proposal.

The MMS estimates that 15-115 million barrels of oil and 225-750 billion cubic feet of gas could be discovered and produced as a result of the Revised Proposal. The general assumptions and types of

activities are the same as those described in the Final EIS. The assumptions and descriptions are incorporated by reference and are summarized in the following paragraphs and Table 1. The levels of activities projected to result from the Revised Proposal are lower than the levels evaluated in the Final EIS. The projected activities for both the Revised Proposal and the original proposed action are presented in Table 1.

2.2. ALTERNATIVES

The alternative to the Revised Proposal is the No Action Alternative. This alternative is equivalent to cancellation of proposed Lease Sale 181. The opportunity for development of the estimated 15-115 million barrels of oil and 225-750 billion cubic feet of gas would not occur. No impacts would occur to sensitive benthic resources or archaeological resources in the 256 blocks. There would be no incremental cumulative impact to other sensitive marine and coastal resources. The No Action Alternative is evaluated in the Final EIS as Alternative C.

2.3. MITIGATION MEASURES

Three mitigation measures to help reduce potential conflicts between military and oil and gas activities are included in the Revised Proposal in the form of lease stipulations. These measures will be considered for adoption by the Assistant Secretary of the Interior for Land and Minerals (ASLM). Any stipulation or mitigation requirements to be included in leases resulting from the sale will be described in the Record of Decision for the final Notice of Sale. Mitigation measures in the form of stipulations are added to the lease terms and are therefore enforceable as part of the lease. The three stipulations were evaluated in the Final EIS; the evaluations are incorporated by reference and are summarized below.

The mitigation measures included in the Revised Proposal were developed as a result of scoping efforts over a number of years for the continuing OCS Program in the Gulf of Mexico and from specific consultation and coordination with the Department of Defense (DOD) for Lease Sale 181. It is expected that these measures will serve to eliminate dangerous conflicts between oil and gas operations and military operations in this part of the Eastern Gulf, thus allowing both of these activities of great importance to the national interest to take place without risk to either. Continued close coordination between MMS and the military may result in improvements in the wording and implementation of these stipulations.

2.3.1. Military Warning Areas Stipulation — Hold and Save Harmless, Electromagnetic Emissions, and Operational Restrictions ("standard" Eastern Gulf of Mexico military stipulation)

A standard military warning areas stipulation has been applied to all blocks leased in military areas in the Gulf of Mexico since 1977. This stipulation for the Eastern Gulf is applied to all blocks leased within a warning or water test area (Figure 2). The stipulation was applied to blocks in warning areas in past lease sales in the Eastern Gulf and is considered by the Department of the Interior (DOI) and DOD to be an effective method of mitigating potential multiple-use conflicts. The text of the stipulation is provided on page II-25 of the Final EIS.

Effectiveness of the Lease Stipulation

The hold harmless section of the military stipulation serves to protect the U.S. Government from liability in the event of an accident involving the lessee and military activities. The actual operations of the military and the lessee and its agents will not be affected.

The electromagnetic emissions section of the stipulation requires the lessee and its agents to reduce and curtail the use of radio, CB, or other equipment emitting electromagnetic energy within some areas. This serves to reduce the impact of oil and gas activity on the communications of military missions and reduces the possible effects of electromagnetic energy transmissions on missile testing, tracking, and detonation.

The operational section requires notification to the military of oil and gas activity to take place within a military use area. This allows the base commander to plan military missions and maneuvers that will avoid the areas where oil and gas activities are taking place or to schedule around these activities. Prior notification helps reduce the potential impacts associated with vessels and helicopters traveling unannounced through areas where military activities are underway.

This stipulation reduces potential impacts, particularly in regards to safety, but does not reduce or eliminate the actual physical presence of oil and gas operations in areas where military operations are conducted. The reduction in potential impacts resulting from this stipulation makes multiple-use conflicts most unlikely. Without the stipulation, some potential conflict is likely. The best indicator of the overall effectiveness of the stipulation may be that there has never been an accident involving a conflict between military operations and oil and gas activities.

2.3.2. Evacuation Stipulation for the Eglin Water Test Areas

This stipulation, restricting oil and gas activities in the Eglin Water Test Areas (Figure 2), was developed in close coordination with Air Armament Center (AAC) personnel at Eglin Air Force Base (AFB) in Florida. The stipulations are designed to prevent space-use conflicts between the oil and gas industry and military operations in the Eastern Gulf. Air Force operations staged from Eglin AFB and Tyndall AFB in Florida make extensive use of the airspace over the Eastern Gulf. These uses include equipment and weapons testing, which results in debris of various sizes falling into the Gulf. Shipping is warned of such tests and is cleared from the Gulf, and commercial and private air traffic is routed away from the testing areas. In addition, mishaps can occur during routine training missions, resulting in material hitting the water. The text of the stipulation is provided on pages II-27 and II-28 of the Final EIS. This stipulation would be applied to any lease resulting from proposed Lease Sale 181 in the following blocks:

DeSoto Canyon	Lloyd Ridge
241-243, 285-288, 329-333, 373-377, 417-421, 461-465, 505-509, 549-553, 593-597, 637-641, 681-685, 725-729, 769-773, 813-817, 857-861, 901-905, 945-949, 989-993	21-25, 65-69, 109-113, 153-157, 197-201, 241-245, 285-289, 329-333, 373-377, 417-421, 461-465, 505-509

Effectiveness of the Lease Stipulation

This stipulation will provide for evacuation of personnel and shut-in of operations during any events conducted by the military that could pose a danger to ongoing oil and gas operations. It is expected that the invocation of these evacuation requirements will be extremely rare.

It is expected that these measures will serve to eliminate dangerous conflicts between oil and gas operations and military operations. Continued close coordination between MMS and the military may result in improvements in the wording and implementation of these stipulations.

2.3.3. Coordination and Consultation Stipulation for Exploration Activities in the Eglin Water Test Areas

This stipulation, requiring close coordination with the military for oil and gas activities in the Eglin Water Test Areas (Figure 2), was developed by MMS and AAC personnel at Eglin AFB in Florida. The stipulation is designed to prevent space-use conflicts between the oil and gas industry and military operations in the Eastern Gulf. Air Force operations staged from Eglin AFB and Tyndall AFB in Florida make extensive use of the airspace over the Eastern Gulf. These uses include equipment and weapons

testing, which results in debris of various sizes falling into the Gulf. Shipping is warned of such tests and is cleared from the Gulf, and commercial and private air traffic is routed away from the testing areas. In addition, mishaps can occur during routine training missions, resulting in material hitting the water. The text of the stipulation is provided on pages II-28 and II-29 of the Final EIS. This stipulation would be applied to any lease resulting from proposed Lease Sale 181 on the same blocks as listed above for the Evacuation Stipulation for the Eglin Water Test Areas.

Effectiveness of the Lease Stipulation

This stipulation will provide for review of pending oil and gas operations by military authorities and could result in delaying oil and gas operations if military activities have been scheduled in the area that may put the oil and gas operations and personnel at risk.

2.3.4. Existing Mitigation Measures

Mitigating measures have been proposed, identified, evaluated, or developed through previous MMS lease sale NEPA review and analysis processes. Many of these mitigating measures have been adopted and incorporated into regulations and/or guidelines governing OCS exploration, development, and production activities. All OCS plans go through MMS review and approval to ensure compliance with established laws and regulations. Each exploration and development plan, as well as every pipeline application, goes through proposal-specific technical, safety, and environmental NEPA review. Mitigating measures must be incorporated and documented in plans submitted to MMS. Additional project-specific mitigation may be applied as conditions of plan approval. Operational compliance is enforced through the MMS onsite inspection program. The MMS has the authority to monitor and enforce these conditions, and under 30 CFR 250 Subpart N, may seek remedies and penalties from any operator that fails to comply with the conditions of permit approvals, including stipulations and other mitigation measures.

Mitigating measures that are a standard part of the MMS program will apply to any activities resulting from the Revised Proposal. These mitigation measures include limiting the size of charges used for explosive platform removal; requiring placement of explosive charges at least 5 m below the mudline; site clearance procedures to eliminate potential snags to commercial fishing nets; and required surveys to detect and avoid archaeological sites (Notice to Lessees and Operators [NTL] 98-06) and chemosynthetic communities (NTL 2000-G20). Avoidance of impacts to sensitive environmental resources could entail site-area reduction or relocation, reconfiguration of anchoring patterns, or rerouting of proposed pipelines. In water depths 60 m (greater than 200 ft), MMS requires that pipeline be buried to reduce the movement of pipelines by high currents and storms, to protect the pipeline from the external damage that could result from anchors and fishing gear, to reduce the risk of fishing gear becoming snagged, and to minimize interference with the operations of other users of the OCS.

The MMS's responsibilities under the Oil Pollution Act of 1990 (OPA 90) include spill prevention in Federal and State offshore waters, review and approval of oil-spill response plans (OSRP's), inspection of oil-spill containment and cleanup equipment, and ensuring oil-spill financial responsibility. The regulation at 30 CFR 254.2 requires that an OSRP must be submitted and approved before an operator can use a facility, or the operator must certify in writing to the MMS that it is capable of responding to a "worst-case" spill or the substantial threat of such a spill.

Some MMS-identified mitigating measures are incorporated into OCS operations through cooperative agreements or efforts with industry and various State and Federal agencies. These include the National Marine Fisheries Service (NMFS) Observer Program to protect marine mammals and sea turtles during explosive removals, regulations on minimum helicopter altitudes to prevent disturbance of wildlife, labeling operational supplies to track possible sources of accidental debris loss, development of methods of pipeline landfall to eliminate impacts to barrier beaches, and semiannual beach cleanup events.

The MMS also controls or mitigates potential environmental or safety problems associated with a specific proposal by enforcement of the use of the Best Available and Safest Technology (BAST) on offshore facilities, by enforcement of the MMS offshore inspection program, and by applying conditions to plan and permit approval. To assure that oil and gas exploration and development and production activities on the OCS are conducted in a safe and pollution free manner, OCS operations approved by MMS are required to use the BAST.

The MMS rules, lease stipulations, and regulations (including oil-spill contingency planning, use of blowout preventors, use of BAST, and other safeguards); compliance with NPDES permits and standards, and other available Federal regulatory mechanisms will be effective in mitigating possible cumulative adverse effects of oil and gas activities. The MMS also conducts onsite inspections to assure regulation compliance and confirm safety and pollution prevention requirements.

2.4. SUMMARY AND COMPARISON

2.4.1. Revised Proposal

This summary of the potential environmental consequences of the Revised Proposal is based on the analyses in the Final EIS. Although the same types of impacting factors and potential consequences that are discussed in the Final EIS would result from the Revised Proposal, the levels of activities and, consequently, the potential effects would be less than those for the original Lease Sale 181 proposal as described in the Final EIS.

Coastal Resources: No significant long-term impacts to barrier beaches and associated dunes are expected to occur. The Revised Proposal is expected to contribute to wetland loss. Any pipelines installed in Louisiana are expected to cause significant localized impacts to wetlands; these impacts can be reduced with effective mitigation. No permanent loss of seagrass is expected; associated turbidity may cause some die-back of leaves for one growing season. Current activity uses designated for coastal waters are not expected to be affected. Emissions are not expected to have concentrations that would change onshore air quality classifications. Increases in onshore annual average concentrations of NO_x, SO_x, and PM_{10} are estimated to be less than the maximum increases allowed under the PSD program. Effects on coastal and marine birds would be sublethal. Beach mice or the Florida salt marsh vole or their habitats are not expected to be impacted. Onshore archaeological resources are expected to be protected from potential impacts by existing mitigation measures. Small pollution events could temporarily affect the enjoyment or use of some beach segments in Alabama or Florida but would have little effect on the number of beach users or tourism. Helicopter and vessel traffic is not likely to affect wilderness or beach users. No significant change in land-use patterns or projected population growth is expected. Less than a 1 percent increase in employment in the coastal subareas of Texas, Louisiana, Mississippi, and Alabama is expected. Very little, if any, economic stimulus to the Florida Panhandle region is expected. The opportunity-cost associated with oil-spill cleanup activities is expected to be temporary and of short duration. No environmental justice issues are expected.

Offshore Resources: Little damage is expected to the ecological function or biological productivity of the widespread, low-density chemosynthetic communities or the typical deep-sea benthic communities. The rarer, widely scattered, high-density, Bush Hill-type chemosynthetic communities could experience minor impacts from drilling discharges or resuspended sediments. No fatalities or long-term adverse effects are expected on the size and productivity of any marine mammal or sea turtles species or population stocks in the northern Gulf of Mexico. Gulf sturgeon could be impacted by accidental oil spills; oil contact can cause nonfatal irritation of gill epithelium and an increase of liver function in a few adults for less than a month. Less than a 1 percent decrease in fish resources and/or standing stocks or in EFH is expected. Offshore live bottoms will not be impacted. Any effect on commercial fishing will be indistinguishable from variations due to natural causes. Discharges from routine operations and accidental oil spills will contribute less than 1 percent to any long-term, regional offshore water quality degradation. No impacts to offshore archaeological resources are expected to occur.

2.4.2. No Action Alternative

Under the No Action Alternative the development and production of the estimated 15-115 million barrels of oil and 225-750 billion cubic feet of gas and any potential environmental impacts would not occur.

3. ENVIRONMENTAL CONSEQUENCES

3.1. REVISED PROPOSAL

3.1.1. Assumptions and Scenario

The scenario and oil-spill estimates are based on the estimate that 15-115 million barrels of oil and 225-750 billion cubic feet of gas would be discovered and produced as a result of the Revised Proposal. The same types of impacting factors and potential consequences that are discussed in the Final EIS would result from the Revised Proposal, although the levels of activities would be less than those for the original Lease Sale 181 proposal (Table 1). The activities projected to occur as a result of the Revised Proposal are summarized below.

Exploration, development, and production activities resulting from the Revised Proposal are expected to take place over a 40-year period. Exploration activities would include drilling 10-50 exploration and delineation wells beginning as early as 2003. Development activities would begin with the installation of the first production facility (generally about 4 years after the lease sale). The life of a production facility is assumed to be approximately 35 years. The Revised Proposal is estimated to result in the installation of 2-3 platforms in support of 23-85 development wells (13-60 oil wells and 10-25 gas wells).

The Revised Proposal area is in water depths of 1,550 to 3,000 m. Few drilling rigs capable of drilling wells at these water depths are available in the Gulf of Mexico. These rigs are fully utilized; competition for their use may slow the progress of exploration and development drilling in the sale area.

All produced oil is assumed to be transported via pipeline to existing and projected host facilities in the Central Planning Area (CPA). Many operators of CPA deepwater facilities and pipeline transmission companies have and are planning their pipelines to be common carriers. From host facilities, the produced oil would be transported to shore via common-carrier pipelines supporting CPA production. All produced gas is assumed to be transported via pipeline to shore. Technological challenges to the installation and operations of pipelines in the deepwater environment are discussed in the Final EIS (pages IV-17 through IV-20, V-103 (response to comment FDEP-8), V-109 (response to comment FDEP-38), and V-113 (response to comment FDEP-55)) and in the recently published MMS report *Brief Overview of Gulf of Mexico OCS Oil and Gas Pipelines: Installation, Potential Impacts, and Mitigation Measures* (Cranswick, 2001).

Proposed pipeline routes are evaluated for potential impacts on biological communities, and existing regulations and mitigating measures protect these sensitive areas from potential impacts resulting from bottom disturbance. As the minimum water depth in the Revised Proposal area is 1,550 m and the practical water depth limit for conventionally moored (anchored), pipeline-lay barges is 300 m, only dynamically positioned pipelaying vessels are expected to be used, and no seafloor disturbance from anchoring would occur. In addition, pipeline burial — the greatest source of temporary sea-bottom disturbance — is not required at these water depths. Operators are required to perform geophysical surveys to identify any potential sensitive seafloor habitats or communities in areas of potential seafloor disturbance along proposed pipeline routes. Site-specific mitigations restrict pipelaying activities in the vicinity of live bottoms. Notice to Lessees and Operators (NTL) 2000-G20 requires avoidance (minimum 250-ft offset) of features or areas that could support high-density chemosynthetic communities identified on required geophysical survey records.

All OCS-related discharges must comply with the USEPA's NPDES permit restrictions and requirements. Discharges regulated under NPDES permits include drilling muds and cuttings, produced water, well treatment chemicals, deck drainage, and other waste streams. Sea water used for hydrostatic pressure testing of pipelines is discharged in accordance with NPDES permit restrictions.

The total volume of water-based drilling muds and cuttings is estimated to be 200,000-800,000 bbl and 30,000-100,000 bbl, respectively. The total volume of synthetic-based drilling muds and cuttings is estimated to be 14,000-55,000 bbl and 12,000-46,000 bbl, respectively. The USEPA established guidelines for retention on cuttings of synthetic-based fluids is 6.9 percent for internal olefins and 9.4 percent for vegetable esters (66 FR 6850). As part of the research for the development of the guidelines for limitations on the discharge of SBF, the USEPA determined that there are no adverse effects from the controlled discharge of SBF to water quality, sediment quality, or human health. The retention of SBF

measured on cuttings from 54 wells drilled in the Gulf of Mexico was 9.2 percent for internal olefins (Annis, 1997), which is the primary SBF used. The USEPA is suggesting the use of cuttings dryers to reduce the retained SBF. Estimating that 10 percent of the SBF is retained, then 1,200-4,600 bbl of SBF would be discharged to the Revised Proposal area from the 33-135 wells drilled over 40 years.

The potential for accidental discharge of SBF exists at a drilling site. The primary cause of accidental discharge of SBF would be a riser disconnect and the release of SBF contained in the riser. Recent disconnects have resulted in the release of 500-800 bbl of SBF at the seafloor. The possibility that SBF could be discharged during transport, particularly as the result of collision, exists. A review and discussion of the environmental impacts of SBF (Neff et al., 2000) indicates that the initial degradation of the SBF would result in localized anoxic conditions in the sediment but that complete recovery should occur within 3-5 years in deepwater environments and probably much faster in shallow water.

It is projected that 1-2 new gas pipeline landfalls and 0-2 pipeline shore facilities in Louisiana or Alabama could result from the Revised Proposal. Nine existing OCS-related service bases in Louisiana, Mississippi, and Alabama (Grand Isle, Leeville, Morgan City, Port Fourchon, and Venice, Louisiana; Pascagoula, Mississippi; and Dauphin Island, Mobile, and Theodore, Alabama) are expected to provide support for all activities resulting from the Revised Proposal. These ports may experience a slight increase in use and expansion. Projected support activities include 25-175 service-vessel trips annually and 250-3,250 helicopter trips annually. No new helicopter hubs are projected. No new construction or processing facilities are projected; existing facilities is expected to be sufficient to support the projected activities from the Revised Proposal.

Spills are unlikely events. Spill occurrence and contact does not equate to spill impact. Several events and conditions must occur for impacts to result from an accidental spill:

- a spill must occur;
- a surface slick must form and be large enough to persist on the surface of the water;
- winds and currents must transport the cohesive slick toward the environmental resource of concern or the shoreline;
- the oil spilled must not be of a type that weathers so quickly that it disperses into the water column and air before reaching the environmental resource of concern;
- cleanup must be so ineffective that the volume of oil not cleaned up remains a cohesive mass capable of being transported by winds and currents away from the spill site and toward the environmental resources of concern;
- the environmental resource of concern must be present and exposed to oil floating on the water surface or stranded on the beach; and
- the duration and intensity of exposure must be enough to cause damage.

The estimated number of small offshore oil spills associated with the 40-year life of the Revised Proposal are 50-400 oil spills of 1 bbl or less; 2-14 oil spills greater than 1 bbl and less than 50 bbl; and 0-1 oil spills greater than or equal to 50 bbl and less than 1,000 bbl.

The most likely number of large oil spills (greater than or equal to 1,000 bbl) estimated to occur associated with activities resulting from the Revised Proposal is zero; with a 2-16 percent probability that one large oil spill would occur; and a 1-2 percent chance that two large oil spills would occur.

Using the MMS Oil Spill Risk Analysis (OSRA) computer model to determine the trajectory of hypothetical spills, MMS analyzed the risk of an oil spill contacting coastal and offshore environmental resources or the designated 60-mi land segments (Figures 3, 4, and 5). The computer-generated risk analysis is based on the best available data from MMS-funded studies, the U.S. Weather Service, and other sources concerning wind and current conditions in the Revised Proposal area. The model trajectories are based on the assumption that a spill has occurred. Probabilities of contact were calculated for various time periods for spill trajectories for hypothetical spill locations within the Revised Proposal

area. **The probabilities presented below and in Table 2 are very conservative because they do not take into account the likelihood of whether a spill would actually occur, the original volume of oil spilled, the likelihood that the slick persists for the time period indicated, or reduction of the spill volume that would result from weathering or cleanup.**

For risk of contact with State waters in the eastern part of Louisiana, there is an average of less than 0.5 percent chance of contact within 3 days of spill travel time, 8 percent chance of contact within 10 days, and 13 percent chance of contact within 30 days of contact. For State water in the western part of Louisiana, there is an average of less than 0.5 percent chance of contact within 3 days, 5 percent chance of contact within 10 days, and 10 percent chance of contact within 30 days of contact. The risk of contact to land segments within Louisiana is much less (less than 0.5% to 4%) for a 30-day period.

There is an average of less than 0.5 percent chance of contact within 3 days spill travel time, 1 percent chance of contact within 10 days, and 3 percent chance of contact within 30 days for contact with Mississippi State waters. The risk of contact to land segments within Mississippi is much less (less than 0.5% to 4%) for a 30-day period.

There is an average of less than 1 percent chance of contact within 3 days, 2 percent chance of contact within 10 days, and 5 percent chance of contact within 30 days for contact with Alabama State waters. The risk of contact to land segments in Alabama is much less (less than 0.5% to 3%) for a 30-day period.

There is an average of less than a 0.5 percent chance of contact within 3 days spill travel time, 2 percent chance of contact within 10 days, and 4 percent chance of contact within 30 days for contact with Florida State waters, which extend about 9 mi off the coastline.

If a spill large enough to persist does occur, does not break up or disperse, and is not cleaned up within the first 10 days after the occurrence of the spill, there is a less than 0.05 percent to 1 percent chance that some oil from the slick would reach Florida shores. If one weights this likelihood of contact with the likelihood of spill occurrence, the weighted risk of a large spill occurring and contacting the Florida shoreline from operations resulting from the Revised Proposal is between 0.05 percent (0.0005) and 0. 16 percent (0.0016), i.e., much less than a 1 percent chance.

The Revised Proposal area is primarily deepwater. Section IV.A.3.i.(2) of the Final EIS discusses possible differences in spill risks related to deepwater operations in more detail. Although some factors in deepwater might result in increased size or frequency of spills, others will definitely decrease the risk of impact. Many of the historical causes of spill events are much less likely to happen. Historically, large spills have primarily resulted from collisions, hurricane and storm damage, and from anchor damage. Collisions and anchor damage are less likely to occur in deepwater, and newly built facilities are designed to withstand storm forces that resulted in spills in the past. Fewer potential spill sources are expected in deepwater as the offshore industry is centralizing their operations and installing fewer surface facilities. In the event of a pipeline leak, high-pressure valves close automatically when sensors detect a drop in flow pressure within the pipeline, limiting the amount of oil that could be spilled. The external water pressure may exceed the internal pressure of the pipeline and keep the oil inside the pipeline, minimizing the size of the spill. Field trials and modeling efforts on subsea spills in deepwater have recently been completed by IKU/SINTEF and the Deep Spill Working Group (Lane and LaBelle, 2000). Final results from this effort are not yet available. In general, preliminary results indicate that, while the configuration of currents in the water column will affect the rising plume, the plume still surfaces relatively near the source. Because such a deepwater spill would surface as a thin sheen, weathering processes will be accelerated. The *Gulf of Mexico Deepwater Operations and Activities Environmental Assessment* (USDOI, MMS, 2000a) and the Final EIS on the *Proposed Use of Floating Production, Storage, and Offloading Systems on the Gulf of Mexico Outer Continental Shelf, Western and Central Planning Areas* (USDOI, MMS, 2000b) provide a more thorough analysis of the possible environmental consequences of oil spills from deepwater operations.

When oil is spilled, several natural processes alter the chemical and physical properties of the original hydrocarbon mixture that make up crude oil. Collectively, these processes are called weathering. Although the data are limited, the MMS has researched the types of crude oils that are expected to be produced in the deepwater of the EPA. The API gravities were all about 30° in fields proximate to the EPA deepwater plays; API gravities of 30° and below indicate medium to fairly heavy crude. More detailed data is available on the Neptune field, considered representative of oil expected to occur in the EPA. Oil from the Neptune field has an API of 31°, a viscosity of 15 cP at 17°C, and formed a meso-emulsion when weathered. Based on this information, the MMS ran a numerical computer model of the

physical and chemical properties of the "representative" oil as a function of time at expected environmental conditions. The results of the modeling and analysis showed that a 6,300-bbl spill of the representative oil would dissipate by 30 days. Accounting for cleanup operations, approximately 48 percent of the slick would be gone by 24 hours.

Condensates are liquid hydrocarbons of high API gravity (above 60°) that are produced with "wet" gas. Condensate spills disperse rapidly into the water column and air; they do not form cohesive slicks. The estimated volume of oil anticipated to be produced as a result of the Revised Proposal includes both crude oil and condensate.

More detailed information on the fate of spills can be found in the Final EIS (Section IV.A.3.i.).

Oil spills occur in the Gulf of Mexico from a variety of sources: primarily from vessel accidents, oil storage, oil processing, and State exploration and production activities. Major spills from State oil development operations are relative rare, especially when compared to spills from tankers, barges, and other vessels. This is partially due to the large volume of oil being transported within the Gulf area by vessels involved in the importation and coastwise transport of petroleum products and crude oil associated with the extensive petrochemical infrastructure that exists in the Gulf coast area. Besides spills from transport operations using tankers, spills from pipelines carrying oil to and from coastal transfer and storage sites are the next most frequent. Estimates of the number of spills occurring in a typical year in the Gulf area are provided in the Final EIS for the various major sources of spills. The Final EIS also includes a discussion of the historical coastal spill occurrence for the northwest Florida area.

The spill response capability in the Gulf of Mexico has greatly improved in the last decade. If a spill does occur, the MMS requires the lessee to take immediate corrective action. Operators in the EPA are required to develop a site-specific Oil Spill Response Plan (30 CFR 254.1) that demonstrates that an operator can respond quickly and effectively whenever there is a spill from the operator's facility. The MMS conducts unannounced drills of these plans. Required information in these response plans includes specifications of appropriate equipment and materials, their availability, and deployment time. A complete analysis of an operator's ability to respond to a "worst case spill" from a facility is conducted by MMS during the review of these operator-submitted, oil-spill-response plans. The MMS conservatively estimates that spill response equipment can be deployed to the northernmost part of the Revised Proposal area within 11.5-17.5 hours.

3.1.2. Environmental Consequences of the Revised Proposal

Although the same types of impacting factors and potential consequences that are discussed in the Final EIS would result from the Revised Proposal, the levels of activities and potential effects would be less. The potential effects of the Revised Proposal are summarized below.

Coastal Resources

No significant long-term impacts to the physical shape and structure of barrier beaches and associated dunes are expected to occur.

The Revised Proposal is expected to contribute to wetland loss. Pipeline landfalls and construction of pipeline shore facilities in Alabama are unlikely to significantly impact wetlands there due to State regulatory requirements. Pipelines installed in Louisiana are expected to cause significant localized impacts to wetlands. Much of the spoil banks from pipeline installations will subside and retain some altered wetland characteristics. The remaining channels will erode and widen over time. Wetland loss could be reduced with effective mitigation.

Accidental oil spills pose the greatest threat to submerged aquatic vegetation. Contact by an oil slick may cause minor impacts; spill clean up may generate the greatest direct impacts. No permanent loss of seagrass is expected to result from oil contact. Impacts to submerged vegetation by pipeline installation are projected to be very small and short term because of U.S. Army Corps of Engineers and State requirements that pipeline routes avoid beds of submerged vegetation. Associated turbidity is projected to be below significant levels although some die-back of leaves is expected for one growing season.

Except for the short-term effects of dredging of navigation channels and accidental oil spills, impacts to coastal waters are not expected to disrupt current activity uses designated for these waters.

Emissions of pollutants into the atmosphere from the activities associated with the Revised Proposal are not expected to have significant impacts on onshore air quality. Emissions are not expected to have

concentrations that would change onshore air quality classifications. Increases in onshore annual average concentrations of NO_x, SO_x, and PM_{10} are estimated to be less than the maximum increases allowed under the PSD program. The OCS emission rates used for the analysis model were derived from the 1991-1992 MMS-funded inventory of offshore structures and emissions (Steiner et al., 1994). An MMS-funded Gulfwide emissions-inventory study is currently underway (MMS Contract No. 31021-J) and is expected to be completed in April 2003.

It is expected that most of the effects on coastal and marine birds would be sublethal. Chronic sublethal stress is often undetectable in birds and may weaken individuals, facilitating infection and disease. Lethal effects would result primarily from a major accidental oil spill and associated spill-response activities.

The Revised Proposal is not expected to harm the Alabama, Choctawhatchee, St. Andrew, and Perdido Key beach mice or the Florida salt marsh vole or their habitats.

The Revised Proposal is expected to result in small pollution events that could temporarily affect the enjoyment or use of some beach segments in Alabama or Florida, but have little effect on the number of beach users or tourism. Helicopter and vessel traffic would add very little additional noise and is not likely to affect wilderness beach users.

Onshore archaeological resources are expected to be protected from potential impacts through the review and approval processes of the various Federal, State, and local agencies involved in permitting onshore activities. The impact of spill contact on a historic site would be temporary and reversible visual contamination. Should an oil spill contact a prehistoric archaeological site, damage might include loss of C-14 dating potential, direct impact from spill cleanup equipment, and/or looting.

The Revised Proposal is not expected to significantly change land-use patterns or projected population growth within the 10 counties (Jackson County, Mississippi; Mobile and Baldwin Counties, Alabama; and Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin Counties, Florida) of the expected impact region. The Revised Proposal is expected to generate less than a 1 percent increase in employment in the coastal subareas of Texas, Louisiana, Mississippi, and Alabama; there would be very little, if any, economic stimulus to the Florida Panhandle region. The opportunity costs associated with oil-spill cleanup activities is expected to be temporary and of short duration. The Revised Proposal is not expected to result in any environmental justice issues.

Offshore Resources

The Revised Proposal is expected to cause little damage to the ecological function or biological productivity of the widespread, low-density chemosynthetic communities. NTL 2000-G20 requires OCS structures or anchors to avoid (250-ft offset) features or areas (identified on required geophysical surveys) that may support high-density chemosynthetic communities. Pipeline installation activities are expected to cause little damage to the ecological function or biological productivity of the widespread, low-density chemosynthetic communities. The rarer, widely scattered, high-density, Bush Hill-type chemosynthetic communities could experience minor impacts from drilling discharges or resuspended sediments located at more than 1,500 ft away as required by NTL-2000-G20. If the presence of a high-density community is overlooked, potentially severe or catastrophic impacts could occur. Hundreds of years are required to reestablish a seep community once it has disappeared. There is evidence that substantial impacts on these communities would permanently prevent reestablishment.

Little damage to the ecological function or biological productivity of the widespread, typical deep-sea benthic communities is expected. Deepwater coral reefs and other potential hard-bottom communities not associated with chemosynthetic communities appear to be very rare and would be particularly sensitive to impacts from OCS activities.

There are very few records of any scleractinian corals in the Gulf deeper than 2,000 m; there have been no corals sampled from the area of the Revised Proposal. Collections by Texas A&M University in the 1960's and 1970's (Pequegnat, 1983) sampled 264 deepwater stations throughout the entire Gulf including Mexican waters and the eastern Gulf. Only at 14 of those stations was any type of scleractinian coral collected, and those were limited to a single species of solitary cup coral, *Deltocyathus italicus*. Pequegnat reported no coral collections in his depth "zones" of 2,727-3,200 m or 3,225-2,850 m. The better known branching coral *Lophelia prolifera* was never collected by Pequegnat at any of his 264 deep Gulf stations. *Lophelia* "reefs" are better known in the north Atlantic and have been well documented. Only two instances of these sorts of high-density reefs have been discovered in the Gulf of Mexico — one

in Viosca Knoll Block 826 and the other from an area in Viosca Knoll Block 907 (Moore and Bullis, 1960). Both of these areas are in much shallower water than the Revised Proposal area; the shallowest portion of the Revised Proposal area is about 1,550 m.

Another factor to consider is that these larger accumulations of branching corals, such as the *Lophelia* reefs, require significant areas of hard substrate. In general, areas of hard bottom are avoided for OCS operations because of potential engineering hazards for structure placement and because hard bottom is a major characteristic of the potential for chemosynthetic communities. The normal review process for proposed deepwater activities would result in the avoidance of hard-bottom areas that could harbor accumulations of corals.

The Revised Proposal is not expected to cause fatalities or to have long-term adverse effects on the size and productivity of any marine mammal species or population stock in the northern Gulf of Mexico.

The Revised Proposal is unlikely to have significant long-term adverse effects on the size and productivity of any sea turtle species or population stock in the northern Gulf of Mexico. Lethal effects are most likely to be from chance collisions with OCS service vessels and ingestion of plastic materials; few lethal impacts are expected. Deaths due to structure removals are not expected due to established mitigation measures.

The Gulf sturgeon could be impacted by accidental oil spills. Contact with oil could cause nonfatal irritation of gill epithelium and an increase of liver function in a few adults for less than a month.

Tables III-14 and III-15 in the Final EIS list most fish species in the region managed by either Gulf of Mexico Fishery Management plans or the NMFS. With just three exceptions (Spanish mackerel, king mackerel, and dolphin fish), all of the species listed in Table III-14 in the Final EIS would likely not occur in the natural deepwater environment of the Revised Proposal area. The other species would have been present if the lease sale area remained at its original size and extended into water depths as shallow as about 25 m. In deepwater environments, far offshore, reef-fish and similar taxa would only occur as larval or very young juvenile stages. These fish would not survive without being recruited to appropriate shallow water habitat (less than 200-300 m). However, many of the species addressed in Table III-14 in the Final EIS (except shrimp, drum, and tilefish) will occur in the area once there are structures in place. Even if bottom depths are far below the possible habitat for managed species such as lobster, gag grouper, or snapper, OCS structures will act as artificial reefs providing habitat for these taxa at various depths ranging from hundreds of feet deep to the surface. Some of the species have been deleted from the table for the Revised Proposal area (Table 3) because of the greater water depth and lack of suitable habitat on artificial reefs. The deleted species are brown shrimp, white shrimp, pink shrimp, and tilefish.

The managed species listed in Table III-15 in the Final EIS are all highly migratory pelagic species. These taxa would have occurred in the original Lease Sale 181 area where it extended into shallower continental shelf waters. Because the Revised Proposal area is restricted to deep waters, four species were deleted from the table (Table 4) in accordance with the EFH habitat descriptions by NMFS (GMFMC, 1998; USDOC, NMFS, 1999). The deleted species are the dusky, bull, Atlantic sharpnose, and blacktip sharks. With the notable exception of silky sharks, the species listed in Table 4 are highly migratory and pelagic species and they would occur in open water whether or not structures are present in the area. Silky sharks have been observed to congregate around offshore blue-water structures during certain times of the year.

The boundary of the NMFS long-line closure area for swordfish nursery remains the same as described in the EIS, with the upper area's south boundary at 28° N. latitude. This closure area encompasses 160 blocks within the Revised Proposal area; the remaining lease sale area (about 36%) is outside the closure area. As mentioned in the Final EIS, the blocks outside the closure area are within 48 nmi of the long-line closure area. This proximity, in addition to the length of typical long-line sets and time required for their retrieval, will probably preclude much of the long-line fishing from these blocks as well.

The Revised Proposal is expected to result in less than a 1 percent decrease in fish resources and/or standing stocks or in EFH. Recovery of fish resources and EFH can occur from more than 99 percent, but not all, of the expected coastal and marine environmental degradation. Fish populations, if left undisturbed, will regenerate in one generation, but any loss of wetlands as EFH would be permanent. Offshore live bottoms will not be impacted.

The Revised Proposal is expected to result in less than a 1 percent change in activities, in pounds landed, or in the value of landings. The resultant influence on commercial fishing will be indistinguishable from variations due to natural causes.

Contaminants discharged from routine operations and entering Gulf waters from accidental oil spills related to the Revised Proposal would contribute less than 1 percent to any long-term, regional offshore water quality degradation that may be occurring. Current and future limits on discharges are expected to reduce any effects.

Offshore archaeological resources are not expected to be impacted. The archaeological survey and archaeological site clearance required prior to an operator beginning oil and gas activities on a lease provide a substantial reduction (estimated to be 90% effective) in the potential for a damaging interaction between an OCS impact-producing factor and archaeological resources. Should contact occur, there could be damage to or loss of important or unique archaeological information. Ferromagnetic debris has the potential to mask the magnetic signatures of historic shipwrecks.

3.1.3. No Action Alternative

If Lease Sale 181 were to be cancelled, there would be no exploration or development activities. No environmental effects would occur. The energy that would have been incorporated into the U.S. economy from the estimated 15-115 million barrels of oil and 225-750 billion cubic feet of gas that would have been produced would have to be provided by other sources.

4. CONSULTATION AND COORDINATION

4.1. DEVELOPMENT OF THE REVISED PROPOSAL

The Revised Proposal for Eastern Gulf of Mexico Lease Sale 181 was developed by the DOI in response to concerns expressed by Congress, the DOD, the State of Florida, and other stakeholders and interested parties. The Revised Proposal was developed in consultation with these parties and was announced by the Secretary of the Interior on July 6, 2001.

A notice announcing the preparation of this EA was published in the *Federal Register* on July 27, 2001. In this announcement, the MMS requested interested parties to comment on issues specific to the reduced sale area. The comment period closed on August 27, 2001.

The MMS received two letters of comments on the EA. These comment letters are summarized below. Also below is a summary of how MMS is responding to the general topics addressed in the comment letters.

Florida Department of Environmental Protection (FDEP): The FDEP requested detailed information on several NTL's, as well as a summary of all NTL's that might apply to activities resulting from the Revised Proposal. The FDEP requested that the EA include preliminary results of on-going, MMS-funded studies. The FDEP requested additional information on synthetic-based drilling fluids (SBF) and related regulations, deepwater fisheries, recommended mitigation measures in the Lease Sale 181 Biological Opinion (BO) from NMFS, and spill risk and response. The FDEP recommended several studies and cooperative efforts with other agencies.

Response: Recent changes to applicable regulations and/or NTL's are noted in the EA. Copies of NTL's are available through the MMS Public Information Office by calling 1-800-200-GULF or on the MMS website at http://www.mms.gov. Preliminary data and results of MMS-funded environmental studies are not released until MMS technical reviews and acceptance are completed. Progress reports and preliminary results of MMS-funded studies are often presented at the annual MMS Gulf of Mexico Region Information Transfer Meetings (ITM's). The next ITM will be held January 8-10, 2002, in New Orleans. Information on upcoming ITM's and ongoing MMS studies can be found on the MMS website. Additional information on deepwater fisheries and a discussion of the NMFS BO for Lease Sale 181 are included in the EA. The MMS performed an Oil Spill Risk Analysis (OSRA) model run specifically for the Revised Proposal; the analysis of the OSRA model results is included in this EA. Recommendations on future environmental studies and cooperative efforts with other agencies will be addressed in the Decision Document for Lease Sale 181, which also serves as the Record of Decision for the Lease Sale 181 EIS.

American Petroleum Institute (API): The API strongly supports OCS Lease Sale 181 going forward as proposed in the current 5-Year Plan and urges MMS to ensure that the sale occurs as scheduled in December 2001 with reasonable minimal stipulations. The API points out that in the Final EIS the titles for Tables IV-40 and IV-41 are not correct. They also state that the text does not support the statement that "The majority of non-OCS-related spills occurs from oil development in State offshore and coastal waters ..." (second paragraph, page IV-135).

Response: The titles for Tables IV-40 and IV-41 were inadvertently switched. A brief discussion of non-OCS-related spills in State offshore and coastal waters is included in this EA.

4.2. ENDANGERED SPECIES AND ESSENTIAL FISH HABITAT CONSULTATIONS

The Endangered Species Act (ESA) establishes a national policy designed to protect and conserve threatened and endangered species and the ecosystem upon which they depend. The ESA is administered by the Fish and Wildlife Service (FWS) and NMFS. Section 7 of the ESA governs interagency cooperation and consultation. Under Section 7, MMS formally consults with NMFS and FWS to ensure that activities in the OCS under MMS jurisdiction do not jeopardize the continued existence of threatened or endangered species and/or result in adverse modification or destruction of their critical habitat. The results of these consultations are presented as a Biological Opinion (BO). The FWS and NMFS make recommendations on the modification of oil and gas operations to minimize adverse impacts, although it remains the responsibility of MMS to ensure that proposed OCS activities do not impact threatened and endangered species.

The FWS BO for Lease Sale 181 (dated June 8, 2001) includes seven *Conservation Recommendations*. The BO is included in the Final EIS in Appendix B. The recommendation on the Oil-Spill Response Stipulation is not applicable to the Revised Proposal. The MMS intends to continue coordination with the U.S. Coast Guard on spill contingency and response plans and with FWS on implementation of the Conservation Measures, as recommended. The MMS will continue to enforce operating regulations on marine debris disposal and spill contingency planning. The MMS will continue to require operators to comply with other Federal requirements including Federal Aviation Administration (FAA Advisory Circular 91-36C) recommendations for altitude restrictions over national wildlife refuges and parks, and national seashores. The MMS's policy is that NTL's are not appropriate means to remind operators to comply with existing laws and regulations. The MMS will give due consideration to funding sea turtle telemetry studies as recommended by FWS.

The NMFS BO for Lease Sale 181 (dated June15, 2001) includes two *Reasonable and Prudent Measures*, seven *Terms and Conditions*, and seven *Conservation Recommendations*. The BO is included in the Final EIS in Appendix B.

The MMS has and continues to take a proactive role in the stewardship and research of protected species inhabiting the offshore environment where oil and gas development occurs or is projected to occur. Many of the conservation recommendations outlined in the NMFS BO are in development or are currently being performed. For example, the MMS has and continues to fund cetacean surveys throughout the northern Gulf of Mexico, and has stepped up research to investigate sperm whale behavior and ecology through the Sperm Whale Acoustic Monitoring Program (SWAMP). Past, present, and future surveys for sea turtles and marine mammals include coordinated research efforts with the U.S. Navy and NMFS. Additionally, MMS will consult with FWS and NMFS about how MMS may best support sea turtle research in the Gulf of Mexico with respect to the agencies' responsibilities and information needs.

Potential impacts to wildlife, including sea turtles and marine mammals, from oil and gas industry activities in the Gulf of Mexico are of serious concern to MMS and staff. The MMS is proactively managing industry activities to ensure a healthy balance is achieved to protect the environment and meet our nation's demand for fossil fuels. In doing so, MMS is working with NMFS and industry to implement the reasonable and prudent measures identified in the NMFS BO for Lease Sale 181. Plans are actively being developed to raise the awareness of industry personnel working offshore to the impacts that trash and flotsam generated by their activities may have on sea turtles and marine mammals. These plans are more comprehensive in nature than what the NMFS BO sets forth with respect to this concern. Additionally, MMS acknowledges the potential for vessel collisions with sea turtles and whales. Plans are also in development to mitigate for this hazard by establishing a training and early warning program

for vessels supporting industry activities. By establishing such a program, it is intended to minimize the threat of such collisions with whales or sea turtles.

The Magnuson Fishery Conservation and Management Act of 1976 was reauthorized through passage of the Sustainable Fisheries Act of 1996. The Act, as amended, established eight Regional Fishery Management Councils (FMC's) to exercise sound judgment in the stewardship of fishery resources through the preparation, monitoring, and revision of fishery management plans (FMP). The reauthorization requires that the FMC's identify Essential Fish Habitat (EFH). The Gulf of Mexico FMC *Draft Generic Amendment for Addressing Essential Fish Habitat Requirements* identifies threats to EFH and makes a number of general and specific habitat preservation recommendations for pipelines and oil and gas exploration and production activities within State waters and OCS areas. A discussion of these recommendations and MMS implementation can be found in the Final EIS in Section III.B.10.c. To promote the protection of EFH, Federal agencies are required to consult with NMFS on activities that may adversely affect EFH designated in the FMP's.

In their comment letter on the Draft EIS for Lease Sale 181 (dated December 22, 2000, pages V-17 through V-18 of the Final EIS), NMFS provided five *EFH Conservation Recommendations.* The MMS letter of response to NMFS is included in the Final EIS in Appendix C.

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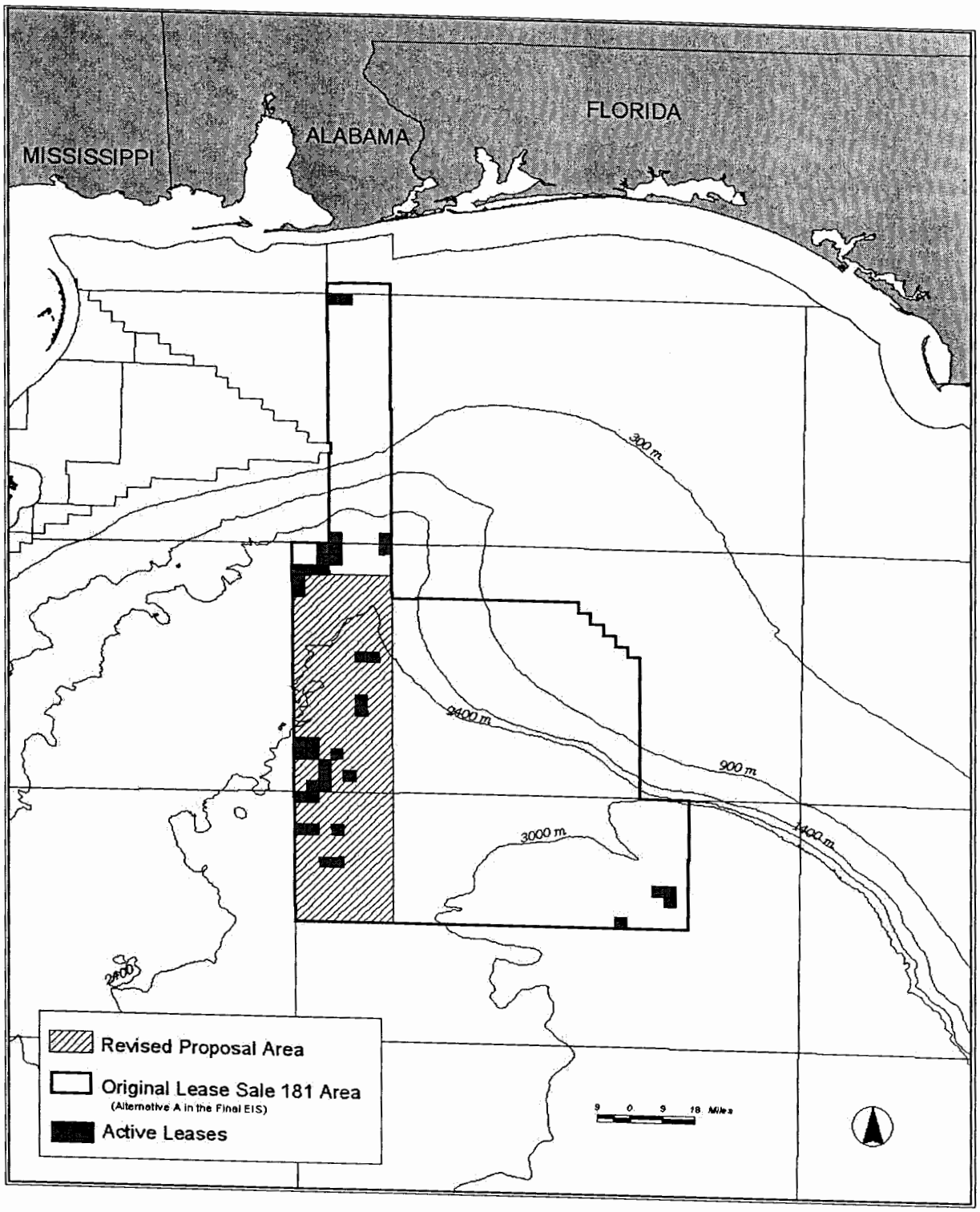

Figure 1. Revised Proposal for Lease Sale 181 Area.

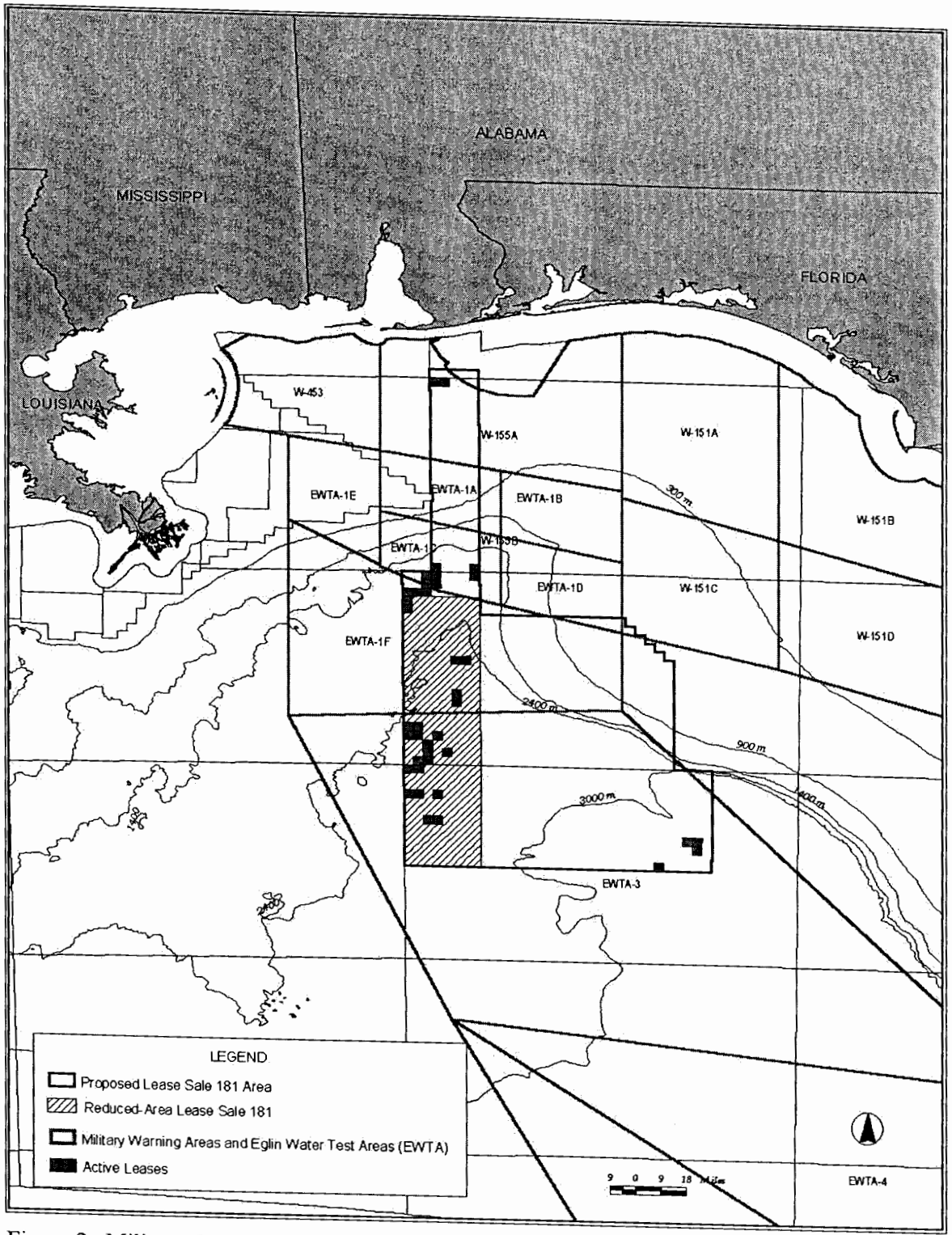

Figure 2. Military Warning Areas and Eglin Water Test Areas in the Revised Proposal for Lease Sale 181 Area.

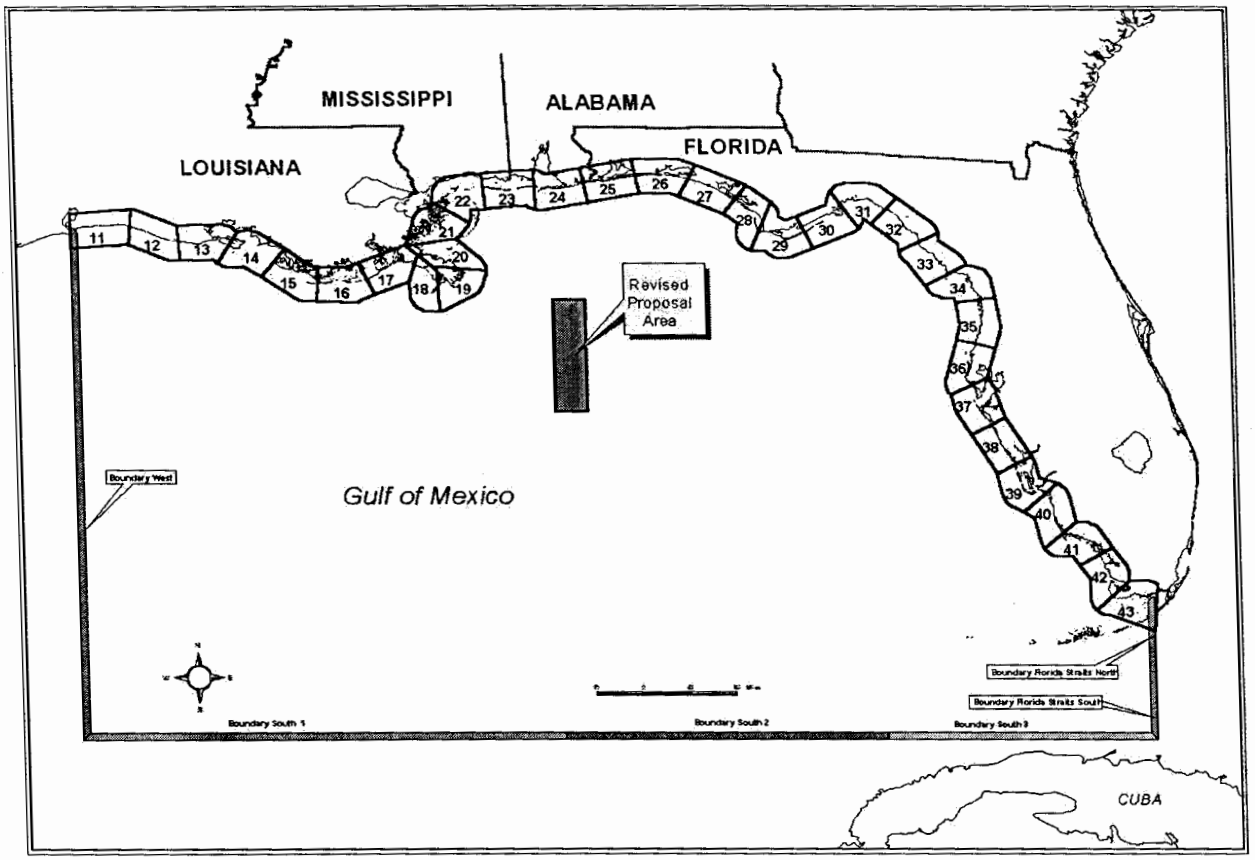

Figure 3. Equal-Length Land Segments Used in the Oil-Spill Trajectory Model for the Revised Proposal for Lease Sale 181.

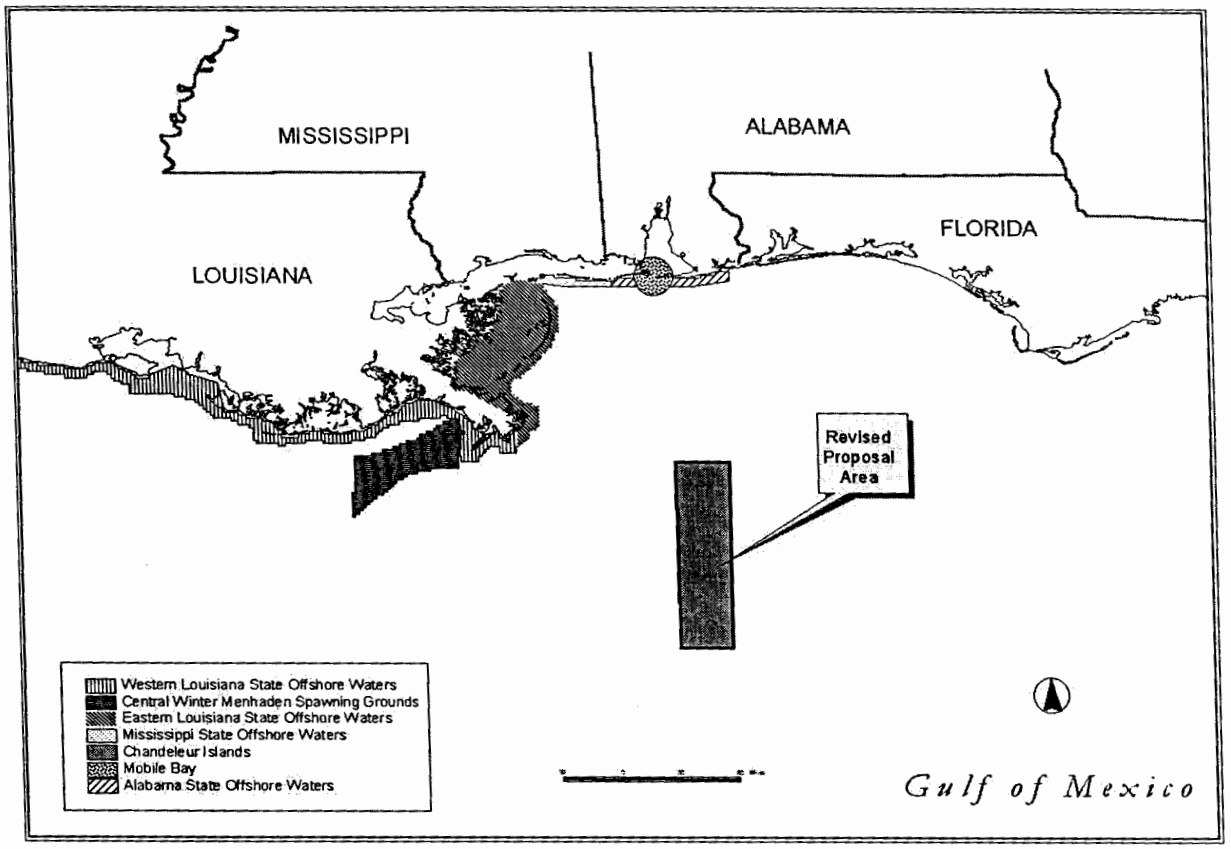

Figure 4. Environmental Features in the Central Planning Area Used in the Oil-Spill Trajectory Model for the Revised Proposal for Lease Sale 181.

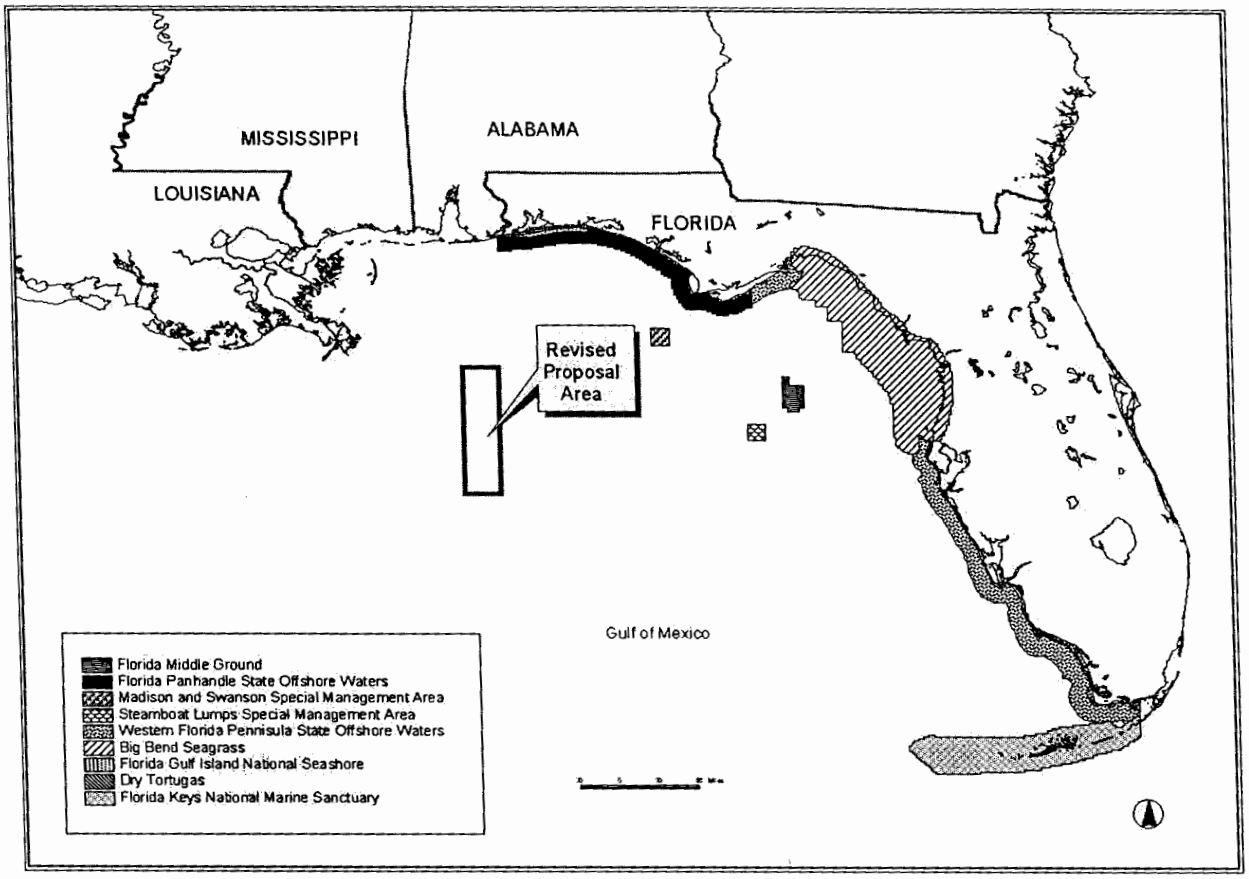

Figure 5. Environmental Features in the Eastern Planning Area Used in the Oil-Spill Trajectory Model for the revised Proposal for Lease Sale 181.

Table 1

Projected Offshore Activities Related to the Revised Proposal and Original Proposed Action for Eastern Gulf of Mexico Lease Sale 181
(over the projected 40-year life of the leases)

	Revised Proposal	Original Proposed Action				
Blocks	256	1,003				
Acreage (million acres)	1.5	5.9				
Resource Estimates:						
Oil (million barrels)	15 - 115	30 - 240				
Gas (billion cubic feet)	225 - 750	530 - 1,800				
	Water Depth Subareas (water depths in meters)					
	>900	0-60	60-200	200-900	>900	Total
Wells Drilled						
Exploration and Delineation Wells	10 50	6 - 33	3 - 22	3 - 19	18 - 111	30 - 185
Development Wells	23 - 85	11 - 54	6 - 36	5 - 31	33 - 184	55 - 305
Oil Wells	13 - 60	2 - 14	2 - 15	4 - 29	17 - 137	25 - 195
Gas Wells	10 - 25	9 - 40	4 - 21	1 - 2	16 - 47	30 - 110
Production Structures						
Installed	2 - 3	2 - 6	1 - 4	1 - 2	2 - 9	6 - 21
Removed Using Explosives	0	1 - 4	1 - 3	0 - 1	0	2 - 8
Total Removed	2 - 3	2 - 6	1 - 4	1 - 2	2 - 9	6 - 21
Pipeline Landfalls*	1 - 2	--	--	--	--	1 - 7
Service-Vessel Trips (1,000 trips)	1 - 7	4 - 14	2 - 9	2 - 5	5 - 23	14 - 51
Helicopter Trips (1,000 trips)	10 - 30	10 - 130	10 - 80	10 - 70	40 - 430	70 - 710

*Gas pipeline landfalls only. All oil pipelines are assumed to go to existing or projected host facilities in the CPA.

Table 2
Annual Mean Conditional Probabilities[1] of Contact to Environmental Features
for the Revised Proposal for Eastern Gulf of Mexico Lease Sale 181

Environmental Feature/Land Segment[2]	Percent Chance of Contact within 3/10/30 Days (- = less than 0.5%)
Land	- / 11 / 38
Alabama State Offshore Waters	- / 2 / 5
Central Winter Menhaden Spawn Grounds	- / 1 / 2
Chandeleur Islands	- / 3 / 6
Flower Garden Banks	- / - / -
Louisiana (Western) State Offshore Waters	- / 5 / 10
Louisiana (Eastern) State Offshore Waters	- / 8 / 13
Mississippi State Offshore Waters	- / 1 / 3
Mobile Bay	- / 1 / 1
Land Segment 11	- / - / 1
Land Segment 12	- / - / 1
Land Segment 13	- / - / 1
Land Segment 14	- / - / -
Land Segment 15	- / - / -
Land Segment 16	- / 1 / 2
Land Segment 17	- / 1 / 2
Land Segment 18	- / - / 1
Land Segment 19	- / 3 / 4
Land Segment 20	- / - / 1
Land Segment 21	- / 2 / 4
Land Segment 22	- / 1 / 4
Land Segment 23	- / 1 / 3
Land Segment 24	- / 1 / 3
Big Bend Seagrass	- / - / 3
Dry Tortugas	- / - / -
FL Gulf Island National Seashore	- / 1 / 3
FL Keys National Marine Sanctuary	- / - / 1
Florida Middle Ground	- / - / 1
FL State Panhandle Offshore Waters	- / 2 / 1
FL State Peninsula Offshore Waters	- / - / 4
Madison and Swanson Special Management Area	- / - / 1
Steamboat Lumps Special Management Area	- / - / 1
Land Segment 25	- / 1 / 3
Land Segment 26	- / - / 2
Land Segment 27	- / - / 2
Land Segment 28	- / - / 1
Land Segment 29	- / - / 1
Land Segment 30	- / - / -
Land Segment 31	- / - / -
Land Segment 32	- / - / 1
Land Segment 33	- / - / 1
Land Segment 34	- / - / -
Land Segment 35	- / - / -
Land Segment 36	- / - / -
Land Segment 37	- / - / -
Land Segment 38	- / - / -
Land Segment 39	- / - / -
Land Segment 40	- / - / -
Land Segment 41	- / - / -
Land Segment 42	- / - / 0
Land Segment 43	- / - / 2
Boundary Florida Straits North	- / - / 1
Boundary Florida Straits South	- / - / 6
Boundary South 1	- / 1 / 7
Boundary South 2	- / - / 1
Boundary South 3	- / - / 7
Boundary West	

[1] Conditional probabilities of contact are probabilities that assume that a spill occurs and remains as a cohesive slick on the surface of the water. Conditional probabilities do not factor in the risk of spill occurrence, consideration of the spill size, any spill response or clean-up actions, or any dispersion and weathering of the slick over time.

[2] The environmental features and land segments are identified on Figures 3, 4, and 5.

Table 3

Gulf of Mexico Essential Fish Habitat Assessment
(species under Gulf of Mexico Fishery Management Plans
with the potential to occur in Revised Proposal Area for Lease Sale 181)

Species	Presence in the Revised Proposal Area	Bay and Estuary Relationships	Adult Prey Species
Invertebrates			
stone crab	Uncommon; would only occur on artificial reef structure.	nursery area	opportunistic carnivore
spiny lobster	Likely recruited to structures, not present on bottom.	none noted	mollusks and arthropods
Fish (in taxonomic order)			
gag grouper	Possible recruitment, only on artificial reef structure.	seagrass beds, nursery nearshore	primarily fish
red grouper	Adult present year-round to north of Revised Proposal area but would occur only on artificial reef.	none noted	primarily fish
scamp grouper	Would occur only on artificial reef, likely recruited.	none noted	primarily fish
cobia	Could occur in open water but not likely this far offshore; may be attracted to structures.	nursery nearshore	primarily crustaceans and some fish
lesser amberjack	Occurs around platforms but presence highly unlikely in open water.	none noted	cephalopods
greater amberjack	Occurs around platforms but presence highly unlikely in open water.	none noted	variety fish, crustaceans, and cephalopods
dolphin fish	Adult present year-round, not associated with platforms.	none noted	pelagic fish
lane, gray, and red snapper	Would occur only on artificial reef, recruitment possible but not likely in deep water.	nursery nearshore	fish, crustaceans, mollusks, algae
yellowtail snapper	May occur in Revised Proposal area and be recruited to platforms.	none noted	benthic fish and crustaceans
king mackerel	Adults present year-round closer to shore; spawning, may extend into Revised Proposal area. Not associated with platforms.	none noted	mostly fish, anchovies, and herrings
Spanish mackerel	Uncommon; may extend into Revised Proposal area. Not associated with platforms	nursery nearshore	mostly fish, anchovies, and herrings
gray triggerfish	Would occur only at artificial reefs.	none noted	mostly bivalves and barnacles; also polychaetes and echinoderms

Table 4

Gulf of Mexico Essential Fish Habitat Assessment
(highly migratory species managed by NMFS in Revised Proposal Area for Lease Sale 181)

Species	Presence In or Near the Revised Proposal Area	Known Prey Species
Billfish		
blue marlin	Juvenile/subadult and adults occur in area beyond 100-m contour	Adults: fish at surface, and deepwater: scombrids, cephalopods
white marlin	Juvenile/subadult and adults occur in area beyond 50-m contour	Juveniles/fish; adults/squid and fish
sailfish	Juvenile/subadult only occurs in area	Pelagic schooling fish and squids
Swordfish	Spawning and eggs/larvae and adults occur in area	Larvae: zooplankton, fish larvae Juveniles: fish, squid, pelagic crustaceans Adults: pelagic fish, squid, demersal fish
Tunas		
bluefin tuna	Spawning and eggs/larvae occur in area no juvenile/subadult or adult noted	Juveniles: crustacea, larval, and small fish
skipjack tuna	Spawning and eggs/larvae occur in area no juvenile/subadult or adult noted	Larvae: small fish
yellowfin tuna	Spawning and eggs/larvae, subadult, and adult occurs in area	Larvae: small fish Juveniles: fish Adults: crustacea and fish
Sharks		
silky	Neonate/early juvenile only noted but adult attraction to platforms common in deep water areas.	None noted (unknown)
tiger	Neonate/early juvenile, late juvenile, subadult, and adult occurs to north of area shallower than 200 m. Presence possible in area.	None noted (unknown)
Longfin mako	Neonate/early juvenile, juvenile/ subadult and adults occur in area.	None noted (unknown)

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.