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BACKGROUND: In preparation for Oil and Gas Lease Sale 65 (October 1978), the U.S. Department of the Interior sponsored several biological and geological studies on the continental shelf offshore west Florida. Results of these studies showed that several areas contain features that favor accumulation of marine biota by providing substratum for attachment of benthic epibiota and shelter and food for demersal fishes. This study was funded to identify and delineate such areas so that they could be considered for further study and/or protection from possible effects of offshore oil and gas activities.

OBJECTIVES: To identify and delineate marine benthic habitats in 49 lease blocks located offshore west Florida that were included in Lease Sale 65.

DESCRIPTION: Two cruises were conducted during July-August 1978 to provide data for mapping of geophysical and biological features of 49 lease blocks in the eastern Gulf of Mexico. The blocks included 3 in the Pensacola Area, 17 in the Destin Dome Area, 5 in the Tarpon Springs Area, 4 in the Elbow Area, 8 in the St. Petersburg Area, and 12 in the Charlotte Harbor Area. The first cruise involved collection of geophysical data within each block using a precision depth sounder, dual side-scan sonar, and high resolution

subbottom profilers. East-west survey lines were spaced at 0.2-km intervals, and north-south lines at 2.4-km intervals; the survey grid for each block was designed to complement that of previous geophysical surveys. The second cruise was conducted to provide visual "ground truth" for habitat delineations and to allow a description of associated biota. Twenty-three transects were selected following a review of geophysical data. Transects were surveyed using a towed television/still camera system in conjunction with navigational and bathymetric instrumentation.

For mapping purposes, the 49 blocks were grouped into 10 "areas," or sets of contiguous blocks. These were: Area 1--Pensacola Area Blocks 884, 928, and 972, and Destin Dome Area Block 4; Area 2--Destin Dome Area Blocks 313, 314, 357, and Dome Area Blocks 529, 573, 574, 618, 661, and 662; Area 4--Destin Dome Area Blocks 473, 474, 518, 519, 562, and 563; Area 5--Tarpon Springs Area Blocks 233, 234, 277, 278, and 279; Area 6--Elbow Area Blocks 567, 609, 696, and 697; Area 7--St. Petersburg Area Blocks 661, 662, 705, and 706; Area 8--St. Petersburg Area Blocks 753, 754, 797, and 798; Area 9--Charlotte Harbor Area Blocks 143, 144, 145, 187, 188, and 231; and Area 10--Charlotte Harbor Area Blocks 583, 584, 627, 628, 671, 672, 715, and 716.

Navigational post-plot maps (scale:1:48,000) were produced for each group. A second set of maps (scale:1:48,000) was prepared to show bathymetry and seafloor characteristics for each group. Six categories of seafloor type were assigned: pinnacles, hard bottom, scattered hard bottom, coarse bottom, bedforms, and soft bottom. A third set of maps (scale:1:24,000) presented geologic cross sections for each group.

SIGNIFICANT CONCLUSIONS: The study successfully mapped the distribution of seafloor types within each lease block and provided descriptions of the associated biota at selected locations. Further study to assess and describe potentially sensitive and valuable habitats was recommended for 6 of the 10 groups of blocks surveyed.

STUDY RESULTS: Soft bottom (thick sand or silt) was the most widespread seafloor type, but coarse bottom (soft bottom with a surface rubble layer), hard bottom (low-relief, often scattered and/or partially buried outcrops), and high-relief pinnacles were locally abundant in some blocks. The biota associated with hard bottom and pinnacles typically included (depending on location) sea feathers and fans, hard corals, sponges, encrusting coralline algae, starfishes, sea urchins, and a variety of bottom fishes. The biota was sparse where a silt or sand veneer partially covered the hard substrate, as in several of the Destin Dome Area blocks. The most luxuriant and diverse epibiota was noted in association with large areas of scattered low-relief (<2 m) carbonate outcrops in Charlotte Harbor Area Blocks 143, 144, 145, and 188.

Locations recommended for further study included: areas of extensive pinnacles (up to 12 m relief) in Destin Dome Area Blocks 573, 574, and 661; localized carbonate outcrops (up to 11 m relief) in Destin Dome Area Blocks 473, 518, and 562; extensive hard-bottom areas in Tarpon Springs Area Blocks 233, 234, 277, 278, and 279; small (<2 m relief) outcrops in portions of Elbow Area Block 567; areas of scattered, low-relief,

limestone outcrops in St. Petersburg Area Blocks 661, 662, 705, and 706; and extensive areas of scattered, low-relief (<2 m) outcrops in Charlotte Harbor Area Blocks 143, 144, 145, and 188.

STUDY PRODUCTS: Woodward-Clyde Consultants. 1979. Eastern Gulf of Mexico Marine Habitat Study. A final report for the U.S. Department of the Interior, Bureau of Land Management Gulf of Mexico OCS Office, New Orleans, LA. Vol. I (Technical Report) - NTIS No. PB294-152; Vol. II (Maps and Cross Sections) - NTIS No. PB294-153; Vol. III (Operations Report) - NTIS No. PB80-164122. Contract No. AA551-CT8-22.