## RESULTS OF MULTIBEAM SWATH SURVEYING BY NOAA IN THE GULF OF MEXICO EXCLUSIVE ECONOMIC ZONE

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## Abstract

National Ocean Service/NOAA is conducting detailed, systematic multibeam swath surveys of the sea floor for all of the U.S. Exclusive Economic Zone. The EEZ extends seaward from the coastline for 200 nautical miles (370 km). The surveys cover 100% of the ocean floor. The area surveyed in the Gulf of Mexico, as of January 1990, comprises about 70,000 km<sup>2</sup>. Most of this area is south of Louisiana between 88°W and 91°W. It is anticipated that by the end of the 1990 field season, this coverage will extend westward to 92°W or 93°W.

The processed sounding data result in an evenly spaced 250 meter grid. Navigational accuracy is generally accurate to within 50 meters and it is estimated that most soundings, taking the sound velocity of sea water and other corrections into account, are measured to within one percent of true depth. The major data products are 1) Computer-produced multicolored bathymetric maps, each measuring one degree in longitude by one half degree in latitude, made at a scale of 1:100,000 with a contour interval of 20 meters and 2) the 250 meter gridded data, used to produce the map contours, made available on floppy disks for use in microcomputers. Plans call for three or four Gulf of Mexico maps to be published in 1990. However, after data processing and prior to the publication of a map, black and white diazo copies of the map are available to the public.

Details of many seafloor features are being revealed for the first time by these surveys. About 90 km southeast of the Mississippi delta, in depths of 1000 to 2000 meters, almost perfectly circular, flat topped, diapiric structures, with diameters of up to 15 km and with a relief of about 300 meters, have been found. Channels and canyons with distinct levees are shown to cross the continental margin. Large and small scale slumping is readily apparent from the sounding data.

In addition, there are other features related to the vertical and horizontal movement of underlying salt. The irregular nature of the Sigsbee Escarpment is clearly shown between 90°W and 91°W. Salients or canyons into this escarpment are clearly shown. These are generally connected to small basins landward of the escarpment. Many of these basins, generally circular with diameters typically measuring about 15 km, have reliefs of several hundred meters. Graben-like features appear to be associated with the rims of many of the basins.

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