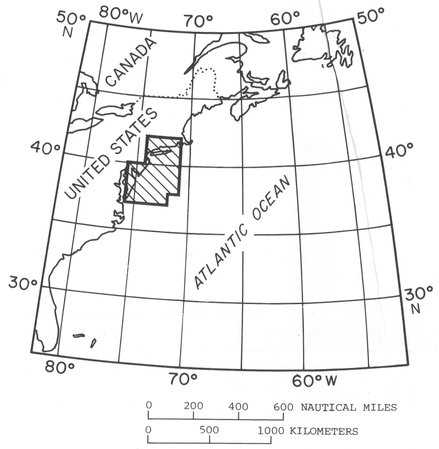
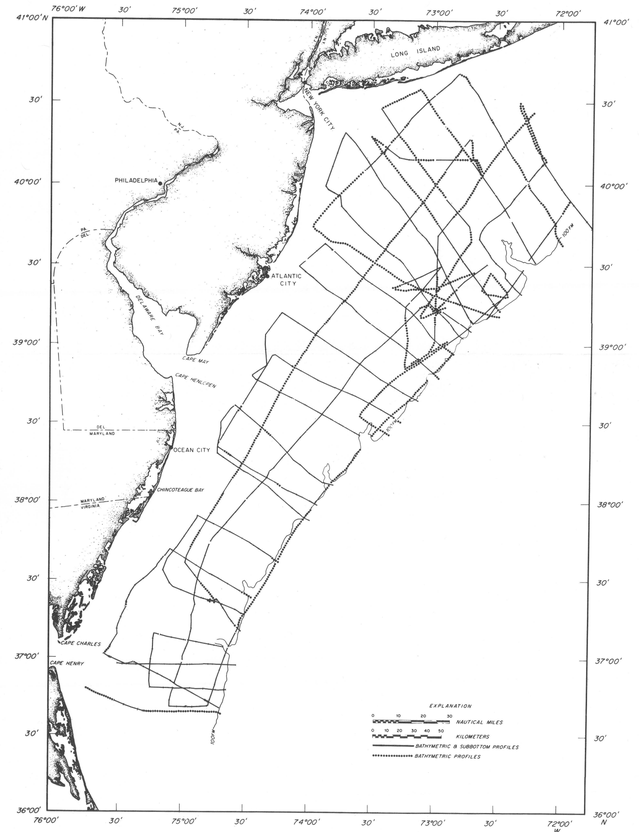
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-828
KNEBEL AND OTHERS—BALTIMORE
CANYON TROUGH AREA HAZARDS
SHEET 1 OF 3



INSET 1



INSET 2

INTRODUCTION

The three sheets of this map present data recently obtained by the U.S. Geological Survey that pertain to an assessment of geologic hazards in the Baltimore Canyon Trough area. The Baltimore Canyon Trough is a depression in the basement rocks beneath the Continental Shelf off the coasts of New Jersey, Delaware, and Maryland (Maher, 1965; Maher and Applin, 1971). This area recently was leased for oil and gas exploration.

For this report, geologic hazards are defined as those processes or conditions that might endanger the safe deployment of facilities on the Continental Shelf or the safe containment of oil and gas during recovery and transfer operations. Within this context we present data on sediment mobility and scour, on the characteristics and internal (acoustic) structure of the surface and shallow-subbottom sediments, and on the distribution of shallow faults.

Sheet 1 consists of a main map and two insets. The main map shows: (1) the locations of subareas 1-5 that are treated in detail on sheets 2 and 3; (2) the locations where bottom currents have been monitored (see sheet 2); and (3) the locations (exclusive of subarea 4) where sand waves have been found on the sea floor (see text this sheet and sheet 2). The bathymetric contours on the main map were taken from Uchupi (1965). The map is a Universal Transverse Mercator projection.

Inset 1 is an index map. It shows the area of the Atlantic coast and continental margin that is covered by the main map.

Inset 2 shows the locations of tracklines along which bathymetric and high-resolution, subbottom profiles were obtained during a regional survey of the Continental Shelf from south of Long Island, New York to east of Cape Henry, Virginia. During this survey, bathymetric profiles were obtained with a 3.5 kHz echo-sounder system, and subbottom profiles were collected with either the Uniboom (400-4,000 Hz band pass; 300 j) or the Sparker (200-650 Hz band pass; 1,000 j) acoustic system. Navigational control for all tracklines was provided by Loran-C. All profiles that were obtained during the regional survey were examined in order to determine the occurrence of sand waves and shallow faults. The five locations of sand waves as defined by these profiles are plotted on the main map. No shallow faults were observed.

REFERENCES CITED

Maher, J.C., 1965, Correlations of subsurface Mesozoic and Cenozoic rocks along the Atlantic coast: Tulsa, Okla., Am. Assoc. Petroleum Geologists, 18 p.

Maher, J.C., and Applin, E.R., 1971, Geologic framework and petroleum potential of the Atlantic Coastal Plain and Continental Shelf: U.S. Geol. Survey Prof. Paper 659, 98 p.

Uchupi, Elazar, 1965, Map showing relation of land and submarine topography Nova Scotia to Florida: U.S. Geol. Survey Misc. Geol. Inv. Map I-451, sheets 2, 3.

MAPS AND GRAPHIC DATA RELATED TO GEOLOGIC HAZARDS IN THE BALTIMORE CANYON TROUGH AREA

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1976

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1976.—REPRINTED 1980

For sale by Branch of Distribution, U.S. Geological Survey,
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