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UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

3.5-kHz DATA COLLECTED IN THE WILMINGTON CANYON AREA DURING 1980, ENDEAVOR CRUISE 80-EN-056

by

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During 1980, geophysical data were collected seaward of New Jersey in the vicinity of Wilmington Canyon (Fig. 1) on three cruises, GYRE 80-G-7B (McGregor and Hampson, 1982), GYRE 80-G-8B (McGregor, Hampson, and Ryan, 1982), and ENDEAVOR 80-EN-056 (discussed here). The objectives of these surveys of the Continental Slope and upper Rise, including Wilmington Canyon and the adjacent margin, were to extend existing geophysical coverage (McGregor and Bennett, 1981) to the south of Wilmington Canyon and to provide detailed geologic and geophysical data on the possible origin and evolution of submarine canyons and on sediment transport and other processes within the canyon domain. The geology of this area near Wilmington Canyon was discussed by McGregor, Stubblefield, and others (1982) and Stubblefield and others (1982).

On ENDEAVOR Cruise 80-EN-056, during October 9-10, 1980, a series of 3.5-kHz profiles was collected (Fig. 2). The objective of acquiring these data was to supplement data from GYRE 80-G-7B so that a bathymetric map based on 1-km-spaced grid of data could be constructed. The 3.5-kHz system consisted of a hull-mounted transducer and a signal correlator. Ship's speed during the survey was 10 knots (18 km/hr). Data were recorded on a strip chart at a 1-second sweep rate. Navigational control for the cruise was based on Loran C. All times given on the data and navigation plots are in Greenwich mean time (GMT or Z).

The quality of the records is very good, although time marks had to be added manually. Maximum subbottom penetration was approximately 100 m.

Original records may be viewed at the U.S. Geological Survey, Woods Hole, MA 02543. Microfilms of the data and 1:40,000 scale trackcharts can be purchased only from the National Geophysical and Solar-Terrestrial Data Center, NOAA/EDIS/NGSDC, Code D621, 325 Broadway, Boulder, Colorado, 80303 (303-497-6338).

REFERENCES CITED

McGregor, B. A., and Bennett, R. H., 1981, Sediment failure and sedimentary framework of the Wilmington geotechnical corridor, U.S. Atlantic continental margin: Sedimentary Geology, v. 30, p. 213-234.

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Stubblefield, W. L., McGregor, B. A., Forde, E. B., Lambert, D. N., and Merrill, G. F., 1982, Reconnaissance in DSRV ALVIN of a "fluvial-like" meander system in Wilmington Canyon and slump features in South Wilmington Canyon: Geology, v. 10, p. 31-36.

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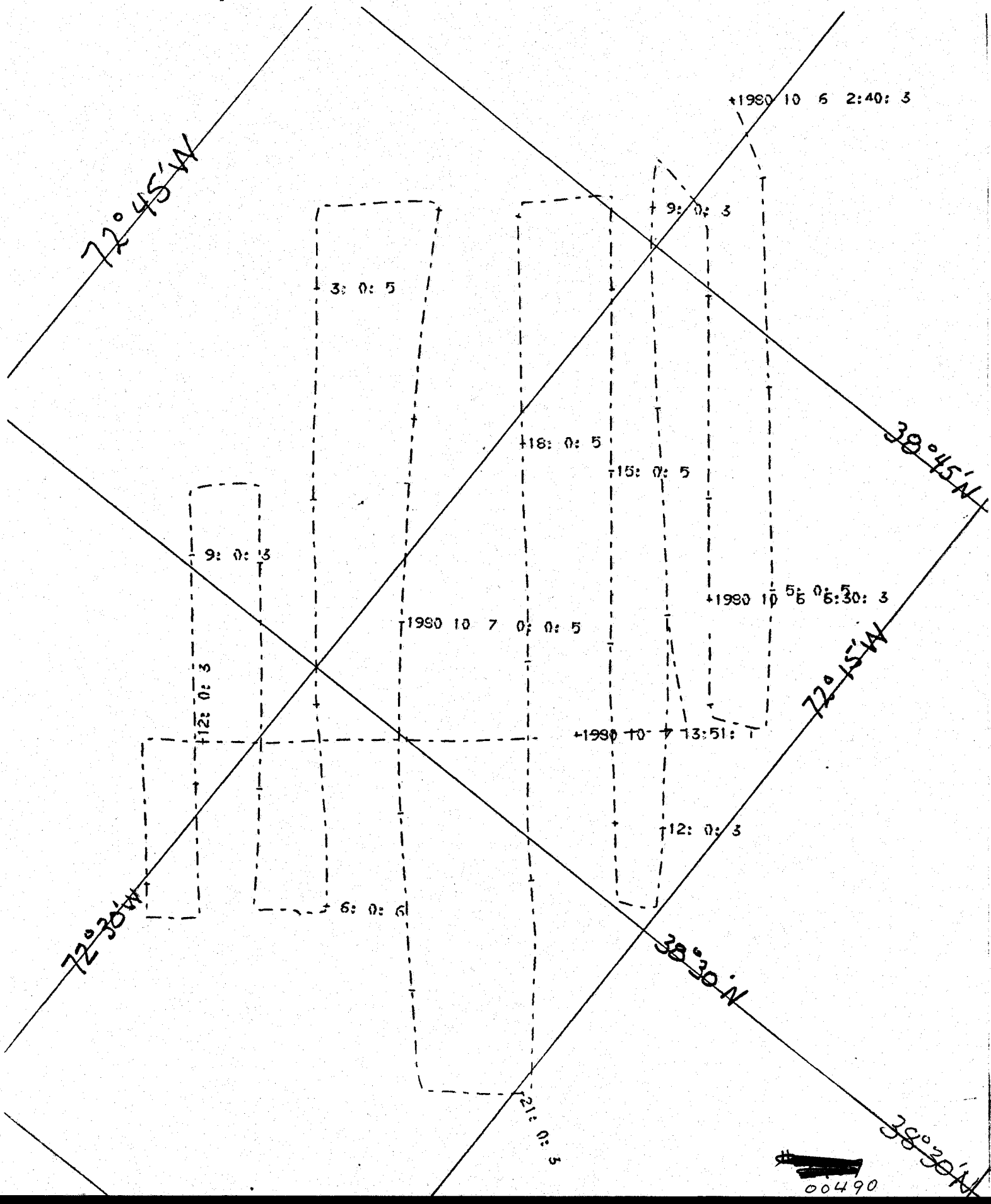
ALBERS EQUAL AREA PROJECTION

EN056
3.5 kHz track
Continental Rise
off New Jersey

1:250,000



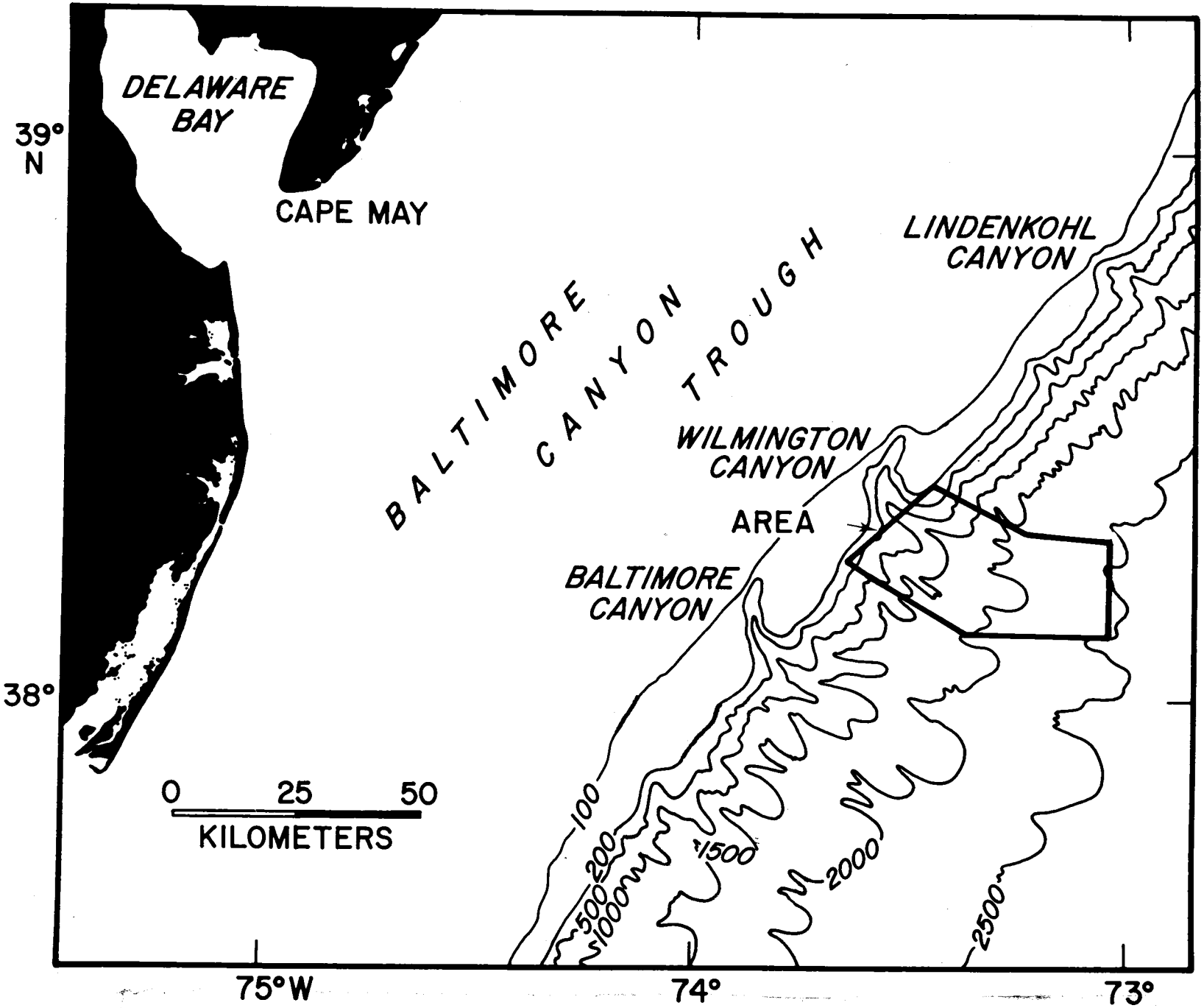


Figure 1. Index map showing location of study area in the vicinity of Wilmington Canyon. Contours are in meters.

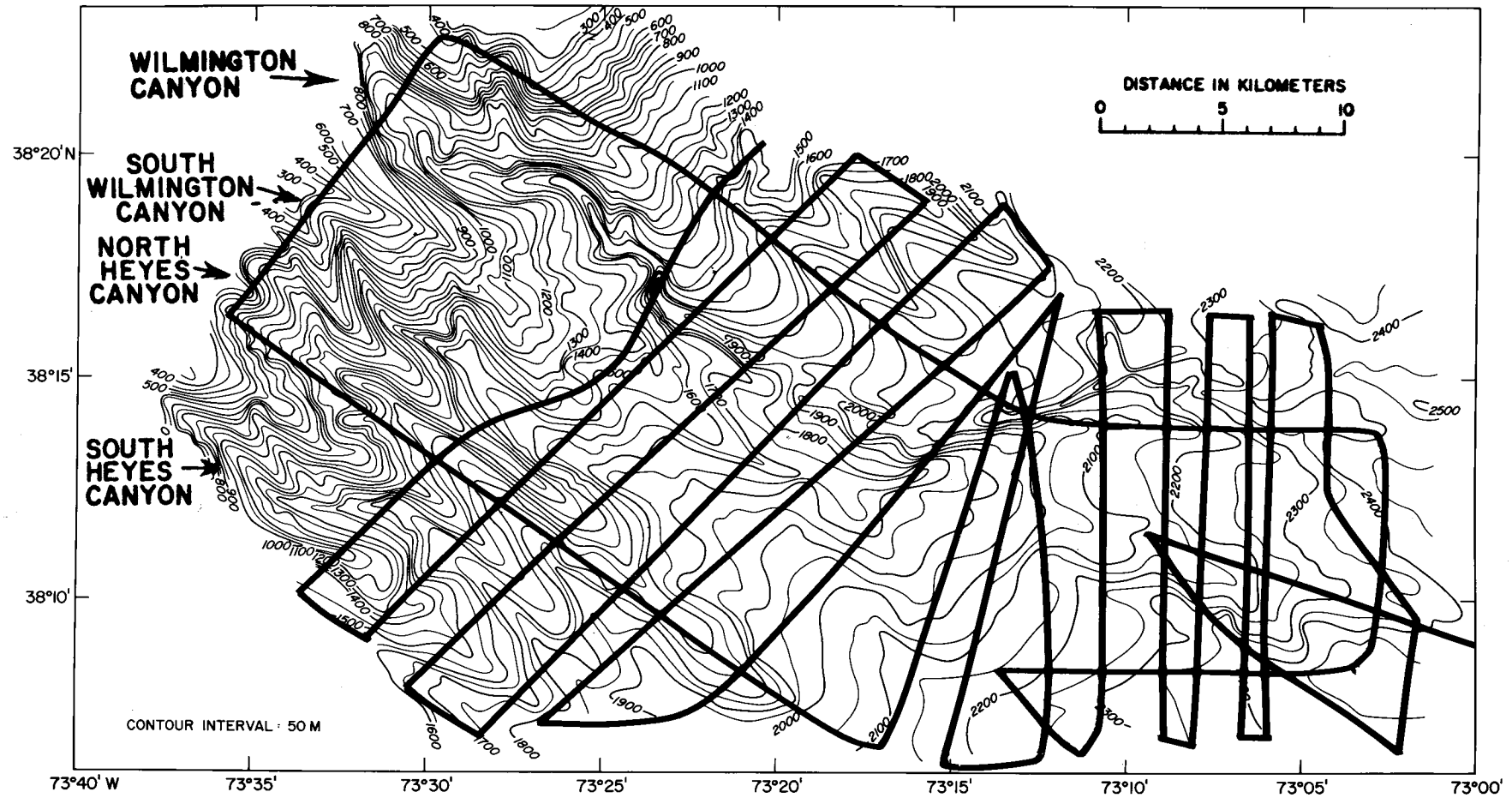


Figure 2. Bathymetric map of the slope and upper rise in the study area, together with trackline locations for cruise ENDEAVOR 80-EN-056. See Fig. 1 for location of this area. Canyon names are from Veatch and Smith (1939).