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Seismic-reflection and sidescan-sonar data collected
on the Potomac River, Maryland and Virginia,
during May 1979

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The U.S. Geological Survey collected 2,170 line kilometers of single-channel seismic-reflection profiles and sidescan-sonar records on the Potomac River during R/V NEECHO cruise NE-3-79 in May 1979 (Fig. 1, maps 1-4). The purposes of the survey were to define: (1) areas of sediment accumulation and erosion; (2) the thickness of Holocene sediments; (3) the internal structure of the near-surface sediments; (4) the types of bottom topography; and (5) the general geologic framework of the tidal river and estuary.

The survey utilized a variety of acoustic systems. Bottom data were obtained by using a Raytheon ^{1/} model DE-719 fathometer (200 kHz) and an EDO Western model 606 sidescan-sonar system (100 kHz). Subbottom data were collected with a 7-kHz Raytheon model PTR-106 system and a small airgun system (170-645 Hz band pass; 1 in³ chamber). An EDO Western sidescan fish (model 604-150) coupled with a 2.5-kHz seismic-reflection system also was used during the longitudinal run up the river. The totals for the various kinds of data collected were 481 line kilometers each of fathometer, sidescan sonar, 7-kHz, and airgun records, and 246 line kilometers of 2.5-kHz records. Positional control for all tracklines was provided by

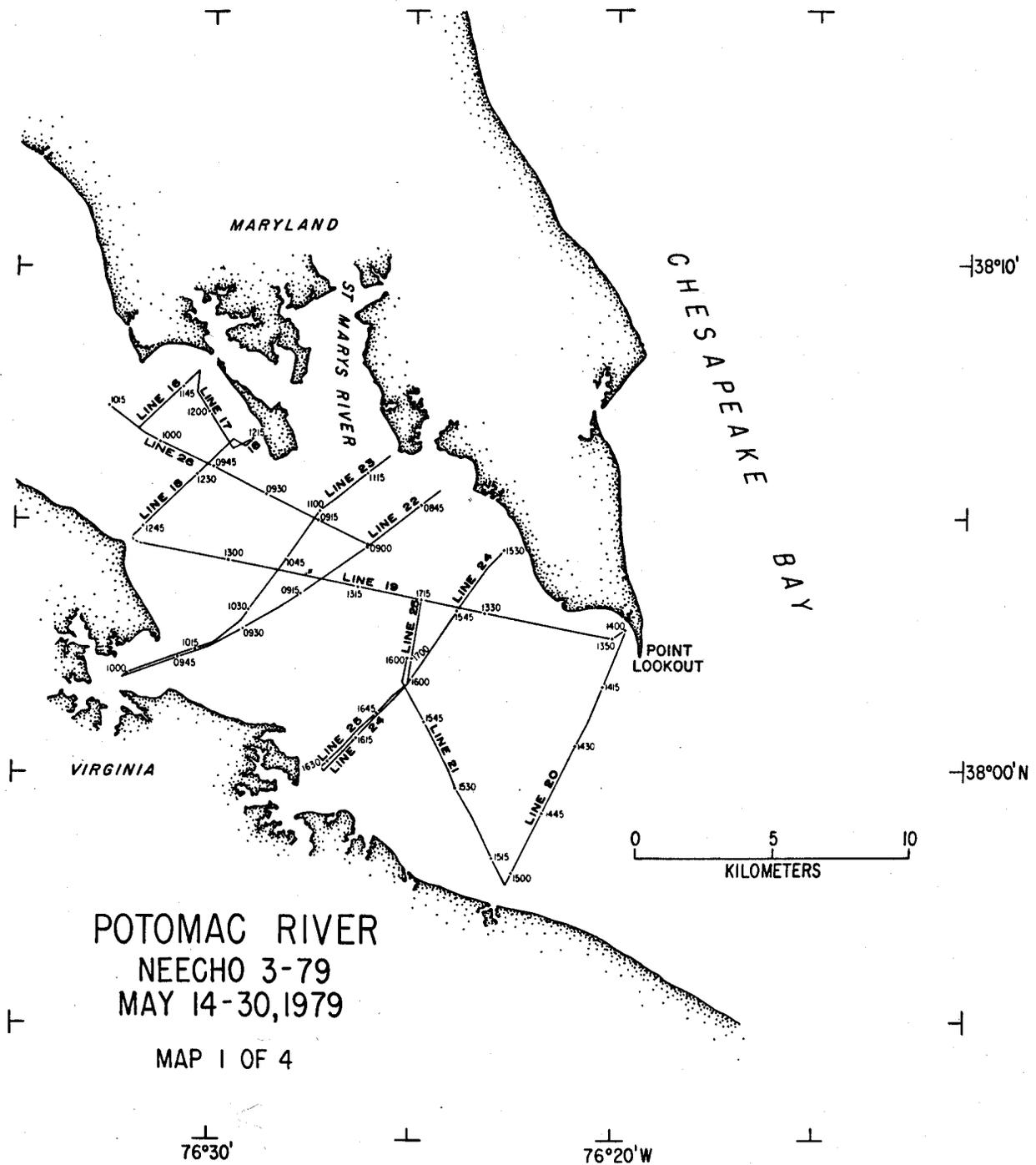
^{1/} Use of trade names in this report is for descriptive purposes only and does not constitute endorsement by the U.S. Geological Survey.

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.

frequent radar fixes, by dead reckoning, and by sightings on buoys, landmarks, and other navigational aids.

The quality of the acoustic records varied with location in the river. Good fathometer and sidescan-sonar records were collected along all tracklines. However, because of the nature of the sediments within some sections of the river, the degree of subbottom penetration in many places was limited. In general, the subbottom penetration and resolution were poor in the upper and middle reaches of the river (Fig. 1, maps 3, 4), whereas the subbottom records from the lower reach usually were quite good (Fig. 1, maps 1, 2).

The original records may be examined at the U.S. Geological Survey, Woods Hole, MA 02543. Microfilm copies of the data are available for purchase from the National Geophysical and Solar-Terrestrial Data Center (NGSDC), Boulder, CO 80303.



POTOMAC RIVER
NEECHO 3-79
MAY 14-30, 1979

MAP 1 OF 4

Fig. 1

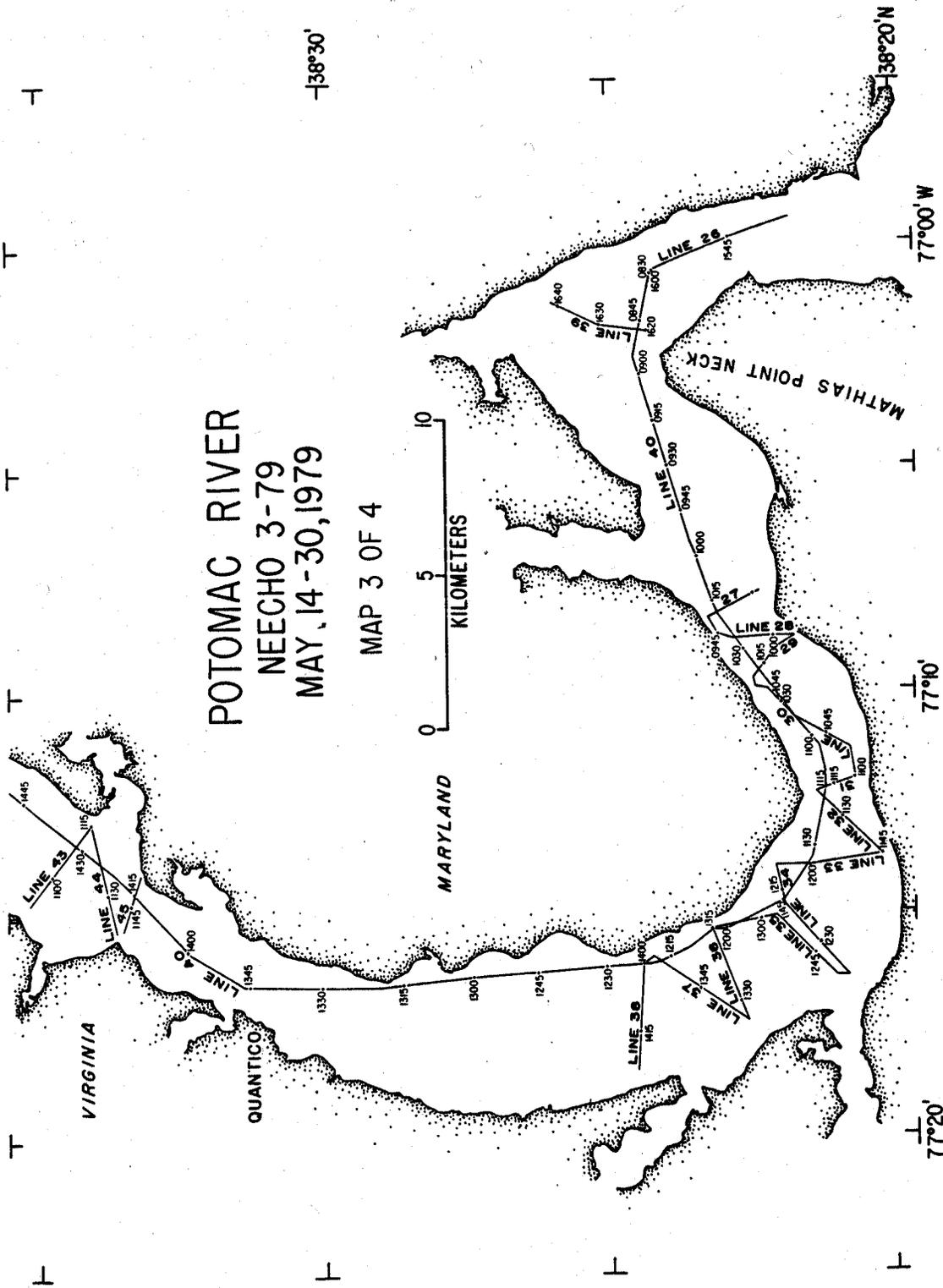


Fig. 1

