



Line A-B on the bathymetric map traverses a region of collapse depressions, craters, pockmarks, and broad channels. The upper profile shows a 3.5-kHz sounding along line A-B, while the lower one is part of a corresponding side-scan sonograph of specific features along line A-B. The top section of the side-scan record is a non-exaggerated bathymetric trace along the central line of the sonograph. Water depths along line A-B range from 50 to 68 m.

BATHYMETRIC PROFILE
VERTICAL EXAGGERATION : 1X

INTRODUCTION

As part of a detailed, multisystem investigation of the northeastern Gulf of Alaska continental margin, a 25-km² sea-floor area offshore of the mouth of the Alsek River was surveyed in 1980. The area had been previously identified as containing pockmarks, slumps, and other types of sediment-failure features (Molnia and Rappeport, 1982; Molnia, 1979; Molnia and others, 1978). The multisystem survey of this area, designated the Alsek Sediment Instability Area, was run with a 100-m line spacing utilizing a precision range-range system for navigation, 3.5- and 12-kHz echosounding systems, 400- to 800-J minisparkers, 5- to 25-in² airgun acoustic systems, and a digitally recording and processing side-scan sonar system with slant-range correction. The resulting data were used to compile a 100-percent overlap mosaic of the sea floor.

This bathymetric map is one of a series of products prepared to accompany the sea-floor side-scan sonar mosaic (Molnia and Rappeport, 1982). This bathymetric map, which is contoured at a 1-m interval encompasses the entire area of the side-scan sonar mosaic. Water depths in the Alsek Sediment Instability Area range from 32 to 82 m.

METHOD

The data base for this bathymetric map was obtained by digitizing water depths measured at more than 5,000 locations on 24 separate 3.5-kHz echo-sounder profiles. Because each shipboard survey line was completed in less than 90 minutes, only one tidal height correction, based on the time of the midpoint of each line, was uniformly applied to that line. This was accomplished by determining the precise tidal height for the line's midpoint and then subtracting or adding this difference from mean lower low water (m.l.l.w.), to uniformly correct each depth picked on the entire line. The maximum tidal range during the May and June 1980 period of data collection was about 3 m. Hence, the maximum error introduced by our correction method to any depth on this map should be much less than 0.5 m.

All tidally corrected data points were computer contoured at a 1-m interval. Individual features of the sidescan mosaic were checked again the computer-generated map, and the map was corrected wherever necessary.

REFERENCES CITED

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TRANSVERSE MERCATOR PROJECTION

**BATHYMETRIC MAP OF ALSEK SEDIMENT INSTABILITY AREA
NORTHEASTERN GULF OF ALASKA**

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