

EXPLANATION

----- PINCH OUT OF PLEISTOCENE GLACIAL MARINE UNIT (Gpm). PLEISTOCENE UNIT PRESENT ONLY IN SOUTHWEST HALF OF AREA.

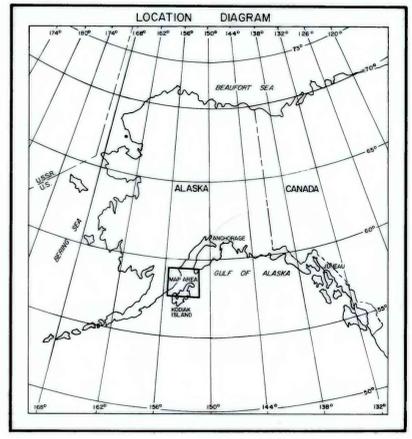
ISOPACH MAP OF QUATERNARY GLACIAL-MARINE SEDIMENTS

Shown on this isopach map are probable Quaternary sediments of Shelikof Strait, comprising a marine sequence of probable Holocene age and a glacial unit of probable Pleistocene age. The information presented will be useful in petroleum exploration drilling. These units were identified from acoustic data. The primary systems utilized for this interpretation were a 16-kJ sparker displayed in analog format and with sixfold CDP processing.

In the northeastern half of the surveyed area, the Quaternary section is less than 200 meters thick and was mapped from the 16-kJ analog sparker. In the southwestern half of the area, the Quaternary section thickens to more than 500 meters, and the base is discernible only on the sparker CDP seismic records. Thicknesses were calculated on the basis of a velocity of 1800 meters/second for the entire Quaternary section, as determined from the velocity analysis on the digital seismic data.

The zigzag line on the map represents the pinchout of the Pleistocene glacial-marine unit, which is absent to the northeast. In the southwest, the Pleistocene glacial-marine deposits have been mildly folded and truncated, and they are separated from the overlying horizontally stratified Holocene marine sediments by an angular unconformity.

The base of the Quaternary was generally mapped by tracing the erosional surface formed by the top of the truncated folds and faults in the underlying Tertiary. The irregularities in thickness of the Quaternary sediments are partly the result of the irregularities of that surface. In the southwestern half of the area, the Tertiary-Quaternary contact is displaced by numerous small faults (not shown at scale of this map).



OPEN-FILE REPORT SERIES ON SHELIKOF STRAIT, ALASKA, 1980

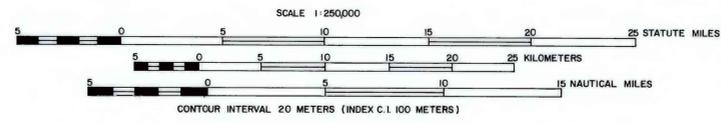
This report is one of six (5 maps and 7 cross sections) on the surface and near-surface geologic environment of Shelikof Strait, Alaska. This series was developed in preparation for Oil and Gas Lease Sale 60 of the Outer Continental Shelf of Lower Cook Inlet, scheduled for September 1981. The publications in this series are:

- Bathymetric map of the Outer Continental Shelf of Shelikof Strait, Alaska, by John Whitney and K. D. Holden: U.S. Geological Survey Open-File Report 80-2031, scale 1:250,000, 1 sheet.
- Isopach map of upper Holocene marine sediments, Outer Continental Shelf, Shelikof Strait, Alaska, by K. D. Holden: U.S. Geological Survey Open-File Report 80-2032, scale 1:250,000, 1 sheet.
- Isopach map of Holocene marine sediments, Outer Continental Shelf, Shelikof Strait, Alaska, by Peter J. Hoose, K. D. Holden, and Lynn Lybeck: U.S. Geological Survey Open-File Report 80-2033, scale 1:250,000, 1 sheet.
- Isopach map of Quaternary glacial-marine sediments, Outer Continental Shelf, Alaska, by John Whitney, K. D. Holden, and Lynn Lybeck: U.S. Geological Survey Open-File Report 80-2034, scale 1:250,000, 1 sheet.
- Map showing selected geologic features on the Outer Continental Shelf, Shelikof Strait, Alaska, by Peter J. Hoose and John Whitney: U.S. Geological Survey Open-File Report 80-2035, scale 1:250,000, 1 sheet.
- Geologic cross sections of the Outer Continental Shelf, Shelikof Strait, Alaska, by John Whitney, Peter J. Hoose, Laura Me Smith, and Lynn Lybeck: U.S. Geological Survey Open-File Report 80-2036, 1 sheet.

The information presented in these six reports was interpreted from 2557 kilometers of multi-sensored high-resolution geophysical data collected in 1979 by Nekton, Inc., for the U.S. Geological Survey. The acoustic systems used included a 16-kilojoule (kJ) sparker with both sixfold common-depth-point (CDP) processing and analog format, a low-energy (1-3 kJ) sparker, an electromechanical boomer, a 3.5-kHz piezoelectric profiler, a fathometer, and side-scan sonar. The tracklines along which data were collected are shown on each map. This survey was performed under an exclusive contract with the U.S. Geological Survey; the data are available to the public as Sale 60, Data Set AK-18248 from the National Geophysical and Solar-Terrestrial Data Center (address: NOAA/EDS/NGSDC, Code D-621, Boulder, CO 80302).

The 4.8 km X 4.8 km grid superimposed on each map represents the tract boundaries from the Bureau of Land Management Protraction Diagrams.

SOURCE OF SHORELINE FROM BLM PROTRACTION DIAGRAMS NO 4-6, NO 5-1, NO 5-3, NO 5-4 AND NO 5-5. PUBLISHED IN 1975 AND 1976.



MAP PROJECTION UTM, CLARKE 1866 SPHEROID, ZONE 5.

This map is not intended for navigational purposes. It has not been edited for conformity with Geological Survey editorial standards or stratigraphic nomenclature.

ISOPACH MAP OF QUATERNARY GLACIAL-MARINE SEDIMENTS, OUTER CONTINENTAL SHELF, SHELIKOF STRAIT, ALASKA
 JOHN WHITNEY, K.D. HOLDEN AND LYNN LYBECK
 1980