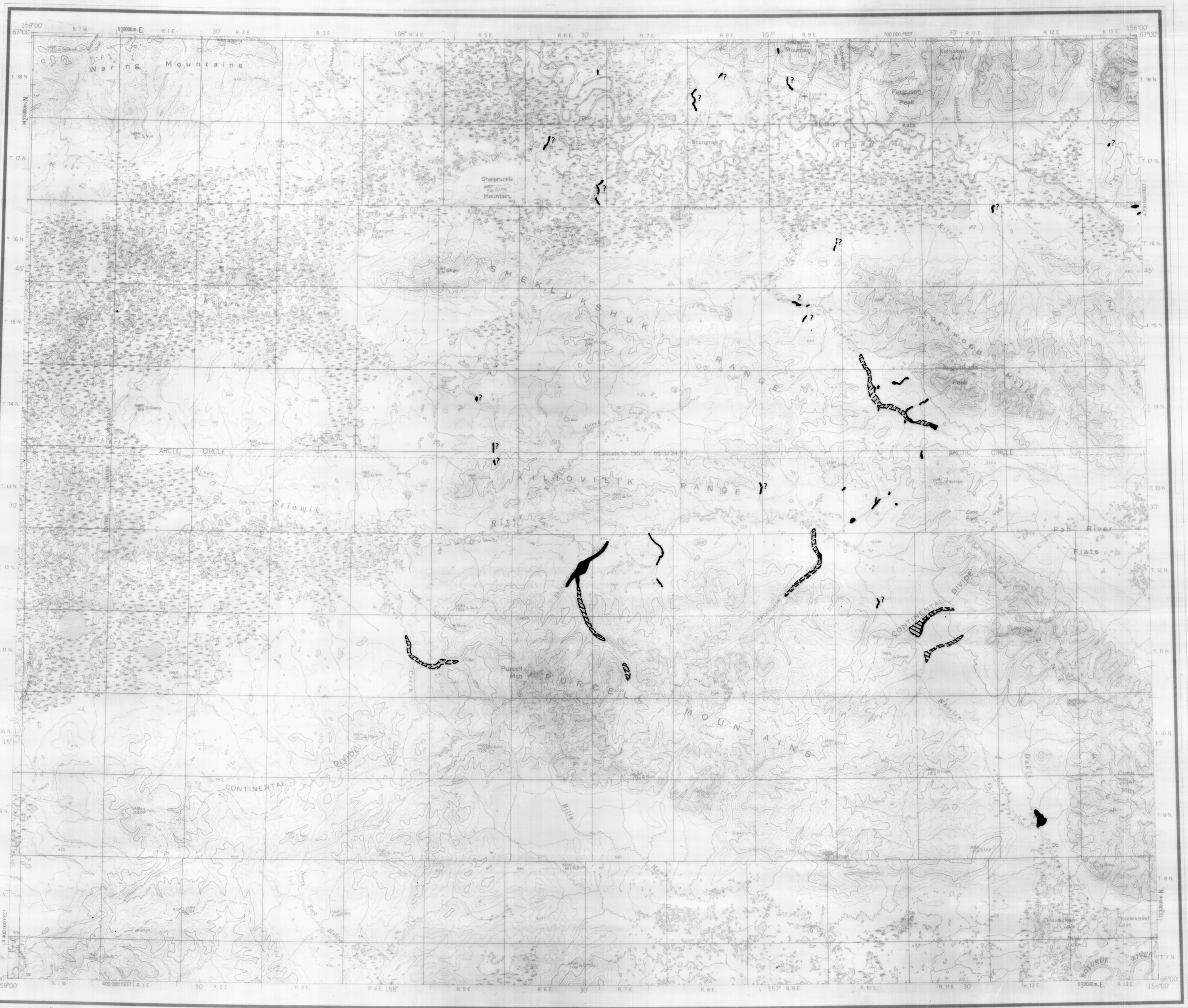
ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

REPORT OF INVESTIGATIONS 84–16
PLATE 31 OF 102



EXPLANATION

Stream-icing zones are seasonal-flood phenomena in high latitudes and alpine regions. Typically, zones subject to stream icing are characterized by stream overflow prior to the spring thaw and by residual ice deposits after the spring thaw. Often, stream-icing zones occur in areas where stream channels are braided (Hopkins, Karlstrom and others, 1955 and Harden and others, 1977).

The reconnaissance-level maps of stream-icing zones in this report were compiled from winter, spring and summer Landsat images recorded between 1972 and 1981. Selected 1:250,000-scale images provided the initial data sources. Band 7 images (0.9-1.1 μm) recorded during late winter and early spring were used to map stream overflow. Band 5 images (0.6-0.7 μm) recorded during late spring and summer were used to map residual ice deposits (Harden and others, 1977). Multi-date images at 1:1,000,000 scale of various bands were used as supplemental data sources. The observed maximum extents of all stream-icing features were mapped regardless of the frequency of occurrence. Unforested floodplains of braided streams were mapped from USGS 1:250,000-scale quadrangles and Landsat images.

Icing zones have not been field checked, but in most cases their validity is supported by their presence on images of different dates.

DESCRIPTION OF MAP UNITS

Maximum area observed to be covered by seasonal icing (residual ice sheet observed)

Area of observed winter-spring overflow (no residual ice sheet observed)

Area of suspected winter-spring overflow

Unforested floodplain of braided stream possibly subject to seasonal icing and flooding

SYMBOLS

Overflow boundary, dashed were approximate

? Occurrence uncertain or not observed on images of different dates

REFERENCES

Harden, D., Barnes, Peter, and Reimnitz, Erk, 1977, Distribution and character of naleds in northeastern Alaska. Arctic v. 30, no. 1, p. 28-40.

Hopkins, D. M., Karlstrom, T. N., and others, 1955, Permafrost and groundwater in Alaska: U.S. Geological Survey Professional Paper 264-F, p. 113-114.

Completed under Reimbursable Services Agreement 10-0211, University of Alaska Geophysical Institute, Fairbanks, Alaska.

Base from U.S. Geological Survey Shungnak Quadrangle (1955) Revised (1974), Alaska.

SCALE 1:250,000

5 0 5 10 15 20 25 MI

5 0 5 10 15 20 25 KM

CONTOUR INTERVAL 200 FEET
DATUM MEAN SEA LEVEL

COMPILATION SOURCES
(1:250,000 scale)

Path/Row	Scene No.-Band	Date
82/13	1686-21224-4	6/09/74
81/14	22301-21102-5	5/11/81
85/13	5802-20282-5	6/29/77

1:1,000,000—scale compilation sources are listed in the appendix of the report.

This report has not received final editing and review. The author is solely responsible for its content and will appreciate candid comments on the accuracy of the data as well as suggestions to improve the report.

STREAM–ICING ZONES IN THE SHUNGNAK QUADRANGLE, ALASKA

By Kenneson G. Dean

1984