ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

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REPORT OF INVESTIGATIONS 87-4
PLATE 4-1

SURFICIAL-GEOLOGY MAP OF THE LIME PEAK–MT PRINDLE AREA, EAST-CENTRAL ALASKA

by

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MAP SYMBOLS

Approximate maximum down-drainage extent of glaciation (Weber and Hamilton, 1984; Weber, unpublished maps, 1986). Shown when extent is not generally restricted to the cirque and proximal valley. Hatchers point upstream.

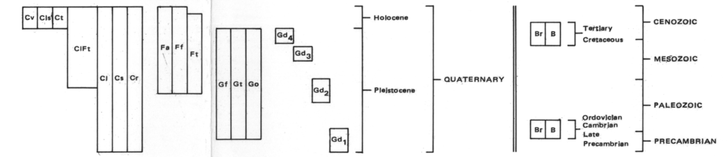
In cirques and their proximal valleys, soliflucted colluvium (Cs) and low-slope colluvium (Cl) that likely include drift are suffixed by the designation for drift and the probable latest age (eg. CsGd3); these drainages also include effects and/or deposits of glacial events prior to the event indicated. Boundaries between drift-bearing Cs and Cl and non-drift-bearing Cs and Cl are not distinguishable and thus not shown; multiple designations, therefore, do occur within some polygons. Other non-bedrock deposits in these valleys also likely include some drift, but this is not indicated.

Probable ice-stand during indicated glacial advance.

Cirque in which some glacial deposits are likely included but not shown because boundaries are not distinguishable. Hatchers point into the cirque.

Contact, dashed where approximate.

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

See text for detailed description of map units

Cv VALLEY COLLUVIUM AND ALLUVIUM, UNDIFFERENTIATED—Silt, sand, or gravel, or interbeds, or graded mixtures of all three, deposited or retransported in valley bottoms by mass-wasting processes or by streams.

Cls LANDSLIDE DEPOSITS—Silt, sand, or gravel, or graded mixtures of all three, derived from adjacent bedrock and deposited on slopes and at the base of slopes by slides or flows.

Ct TALUS—Cobbles and boulders derived from adjacent bedrock and deposited in chutes or at the base of steep slopes by rock falls.

ClFt ALLUVIAL-TERRACE DEPOSITS AND LOW-SLOPE COLLUVIUM—Alluvial-terrace deposits (Ft) overlain by a thin wedge of low-slope colluvium (Cl).

Cl LOW-SLOPE COLLUVIUM—Silt, sand, or gravel, or graded mixtures of all three, derived from underlying or nearby bedrock and deposited on ridges and slopes generally less than 25 degrees by mass-wasting processes.

Cs SOLIFLUCTED COLLUVIUM—Like low-slope colluvium (Cl), except that the silt and moisture contents are generally greater, downslope movement is shown by rounded or tabular lobes, and it is restricted to slopes.

Cr RUBBLE COLLUVIUM—Sand and gravel with some silt derived from near-by bedrock and deposited on knobs, ridges, and slopes generally greater than 25 degrees.

Fa ALLUVIUM—Silt and sand, or interbeds or graded mixtures of both, deposited in flood-plain overbank environments by fluvial, eolian, and lacustrine processes, and underlying silt, sand, or gravel, or interbeds or graded mixtures of all three, deposited in channel environments of flood plains by streams.

Ff ALLUVIAL-FAN DEPOSITS—Silt, sand, sandy-gravel, or gravel, or interbeds or graded mixtures of all four, deposited in a fan form by streams where they emerge from mountain valleys onto lower gradient surfaces.

Ft ALLUVIAL-TERRACE DEPOSITS—Like alluvium (Fa), except that overbank silt and sand deposits are generally thicker, and a soil is often present.

Gf OUTWASH-FAN DEPOSITS—Like alluvial-fan deposits (Ff), except that the sediments are transported and deposited by glacial-meltwater streams and consequently have a greater amount of silt.

Gt OUTWASH-TERRACE DEPOSITS—Like alluvial-terrace deposits (Ft), except that the sediments are transported and deposited by glacial-meltwater streams and consequently have a greater amount of silt.

Go OUTWASH—Like alluvium (Fa), except that the sediments are transported and deposited by glacial-meltwater streams and consequently have a greater amount of silt.

Gd_4 DRIFT 4—Till associated with the Convert glaciation of Weber and Hamilton (1984). Subangular to subrounded granitic cobbles and boulders in a well-graded grus matrix.

Gd_3 DRIFT 3—Till associated with the American Creek glaciation of Weber and Hamilton (1984). Subrounded granitic cobbles and boulders and some subangular quartzite boulders in a well-graded grus matrix.

Gd_2 DRIFT 2—Till associated with the Little Champion glaciation of Weber and Hamilton (1984). Subrounded granitic cobbles and boulders, and some angular chips of schist and quartzite in a yellowish-brown matrix of well-graded, arkosic silty sand.

Gd_1 DRIFT 1—Erratic boulders up to about 2 m diameter and locally thin till associated with the Prindle glaciation of Weber and Hamilton (1984).

Br BEDROCK RUBBLE—Thin cover of angular to subangular clasts derived from weathering of underlying bedrock.

B BEDROCK—Generally granitic rocks that form tors or resistant ridges.

Map is based on field work in July and August, 1986 and air-photo interpretation in January 1987. Reviewed by R.D. Reger.

SCALE 1:63,360

1 0 1 2 3 4 M

1 0 1 2 3 4 KILOMETERS

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

Base from U.S.G.S. CIRCLE B-4, B-5, B-6, C-4, C-5 and C-6 (1951-1974) Quadrangles, Alaska.