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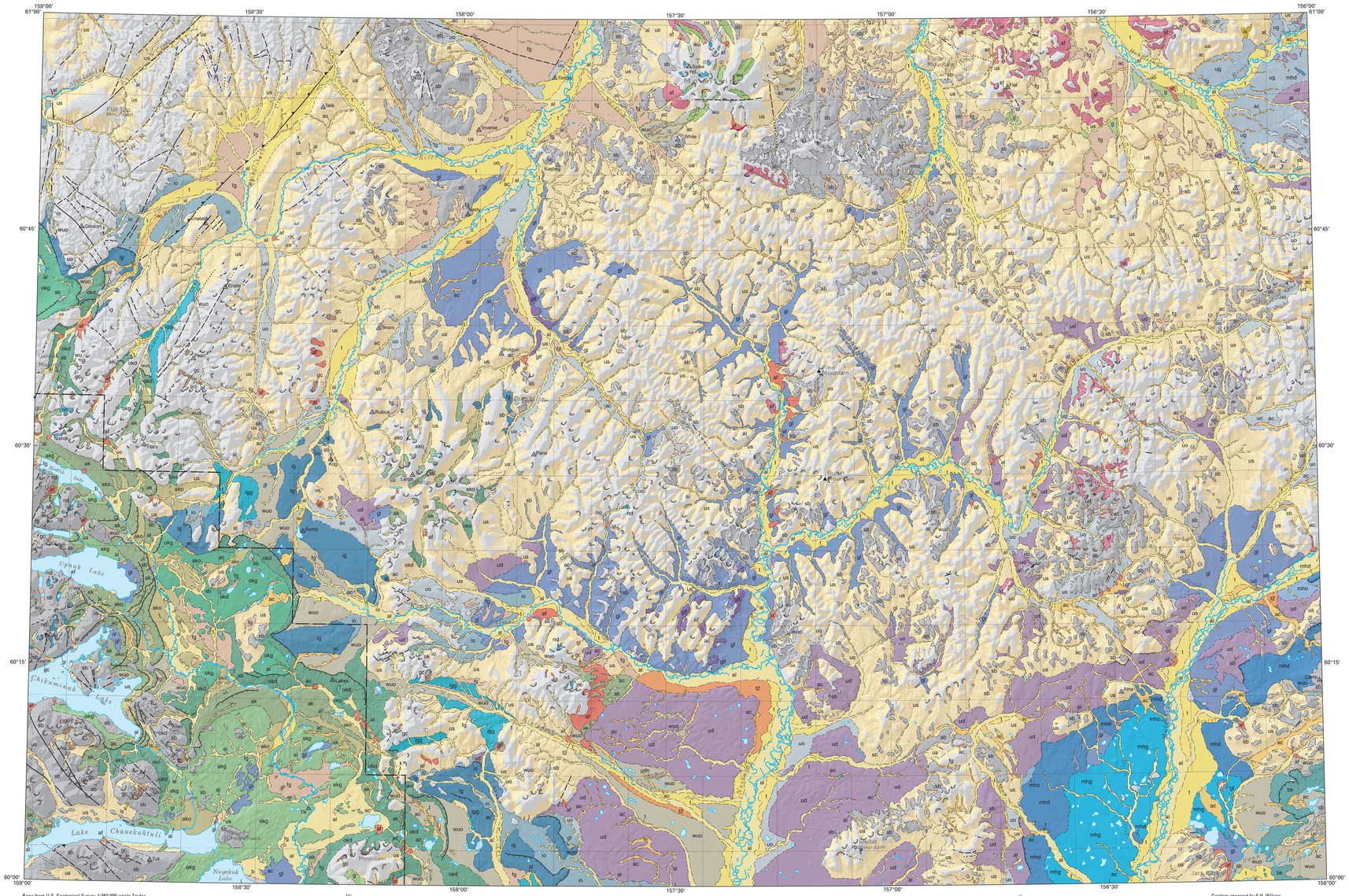
U.S. Department of the Interior
U.S. Geological Survey

Scientific Investigations Map 3334
Pamphlet accompanies map



Base from U.S. Geological Survey 1:250,000-scale Taylor Mountains, 1954 (Minor revision 1974)

Shaded relief generated from U.S. Geological Survey National Elevation Dataset (NED) 44.5-meter Digial Elevation Model (DEM)

Universal Transverse Mercator projection; zone 4N

1927 North American Datum

APPROXIMATE MEAN DECLINATION, 2015

SCALE 1:250 000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology mapped by F.H. Wilson

GIS database and digital cartography by F.H. Wilson and K.A. Labay

Edited by Kate Jacques

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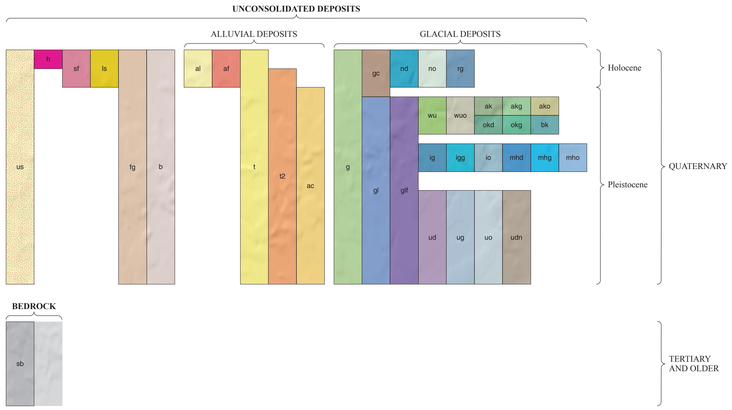
CORRELATION OF MAP UNITS

[See Description of Map Units (in pamphlet) for specific unit ages]



LIST OF MAP UNITS

[See Description of Map Units (in pamphlet) for complete unit descriptions]

UNCONSOLIDATED DEPOSITS

us — **Surficial deposits, undivided (Quaternary)**—Locally subdivided into:

- h — **Artificial fill (Holocene)**
- sf — **Solifluction deposits (Holocene)**
- ls — **Landslide deposits (Holocene)**
- fg — **Fine-grained deposits**
- b — **Beach deposits**

ALLUVIAL DEPOSITS

- al — **Flood-plain deposits (Holocene)**
- af — **Alluvial fan and talus deposits (Holocene)**
- t — **Terrace deposits (Quaternary)**
- t2 — **Older terrace deposits (Quaternary)**
- ac — **Abandoned channel deposits (Pleistocene)**

GLACIAL DEPOSITS

- g — **Glacial deposits, undivided (Quaternary)**—Where possible, subdivided into:
- gc — **Glacial deposits in cirques (Holocene or late Wisconsin?)**
- nd — **Drift, Neoglacial deposits (Holocene)**—Locally subdivided into:
- no — **Outwash, Neoglacial deposits**
- rg — **Rock glacier deposits (Holocene)**
- gl — **Glaciolacustrine deposits (Pleistocene)**
- glf — **Glaciolacustrine fan deposits (Pleistocene)**
- wu — **Late Wisconsin glacial deposits (late Pleistocene)**—Locally subdivided (west to east) into:
- wuo — **Outwash**—Includes deposits of Okstukuk and Brooks Lake glaciations and unassigned deposits
- ak — **Drift, Aleknagik glaciation**—Locally subdivided into:
- akg — **Ground moraine, Aleknagik glaciation**
- ako — **Outwash, Aleknagik glaciation**
- okd — **Drift, Okstukuk glaciation**—Locally subdivided into:
- okg — **Ground moraine, Okstukuk glaciation**
- bk — **Drift, Brooks Lake glaciation, Kvichak advance**
- ig — **Drift, Iowithla glaciation (Pleistocene)**—Locally subdivided into:
- igg — **Ground moraine, Iowithla glaciation**
- io — **Outwash, Iowithla glaciation**
- mhd — **Drift, Mak Hill glaciation (Pleistocene)**—Locally subdivided into:
- mhg — **Ground moraine, Mak Hill glaciation**
- mho — **Outwash, Mak Hill glaciation**
- ud — **Drift, unnamed glaciations (early Pleistocene)**—Locally subdivided into:
- ug — **Ground moraine, unnamed glaciations**
- uo — **Outwash, unnamed glaciations**
- udn — **Drumlins, unnamed glaciations**

BEDROCK

- sb — **Scoured bedrock**
- **Bedrock, undivided**

EXPLANATION OF MAP SYMBOLS

Contact—Long-dashed where location is approximate; short-dashed where location is inferred; dotted where location is concealed

Fault—Solid where location is certain; long-dashed where location is approximate; short-dashed where location is inferred; dotted where location is concealed

Thrust fault—Long-dashed where location is approximate; short-dashed where location is inferred; sawteeth on upper plate

High-angle thrust fault—Solid where location is certain; long-dashed where location is approximate; dotted where location is concealed; sawteeth on upper plate

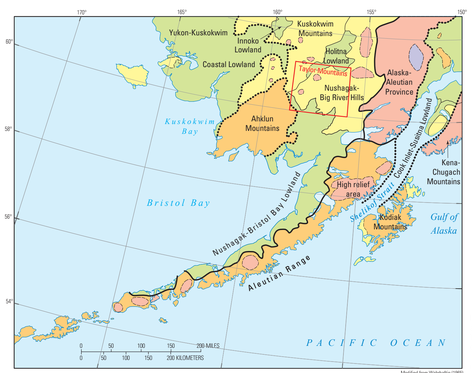
Moraine—End, recessional, and lateral moraine limit; hachures point to ice

Cirques—Hachures point into basin

Park boundary

Peaks mentioned in text

Survey monuments



Modified from Wahrhaftig (1965)

EXPLANATION

- EXTREMELY HIGH RUGGED MOUNTAINS (Summit altitudes more than 10,000 feet)
- MODERATELY HIGH RUGGED MOUNTAINS (Summit altitudes 5,000–10,000 feet)
- LOW MOUNTAINS, GENERALLY ROLLING (Summit altitudes 1,000–5,000 feet)
- PLATEAUS AND HIGHLANDS OF ROLLING TOPOGRAPHY AND GENTLE SLOPES (Summit altitudes 1,000–3,000 feet)
- PLAINS AND LOWLANDS (Flat areas, altitudes generally less than 1,000 feet)
- Boundary between major physiographic divisions
- Boundary between physiographic provinces
- Boundary between areas (unnamed in text) of differing typography within a section

Figure 1. Physiographic provinces of southwestern Alaska after Wahrhaftig (1965). Taylor Mountains quadrangle outlined. The Ahklun Mountains province covers the southwest portion of the quadrangle. Glaciers from the Alaska Range (Southern Part) division and the Ahklun Mountains province advanced into the map area during the Pleistocene.

Figure 2. Looking north toward Nishlik Lake. Unnamed lake in the foreground is contained behind a subtle moraine of the Aleknagik glaciation. Both the unnamed lake and Nishlik Lake are contained in a well-developed U-shaped valley providing evidence of past glaciation. Nishlik Lake is the northernmost and smallest of the Tikchik Lakes. These lakes have characteristics that suggest they may be land-locked fjords derived during earlier, more extensive glaciations and can be more than 275 meters deep, extending well below modern sea level. Many cirques, large and small are developed in the surrounding mountains. In the cirque at the head of the valley of this unnamed lake (to the right of the photograph is a more prominent moraine of a later phase of the Aleknagik glaciation or possibly an early Holocene event. The cirque (not shown) contains a feature that is apparently a rock glacier derived from this moraine. A small cirque on the ridge in the right of the photograph contains a Holocene moraine. Photo by Susan M. Karl, U.S. Geological Survey.

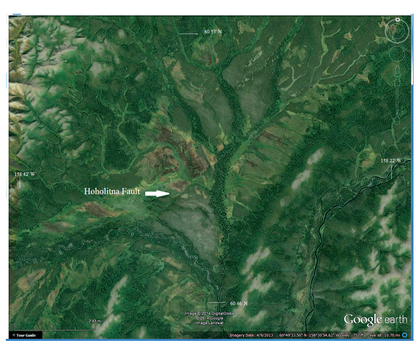


Figure 3. Google Earth image showing the Holohitna Fault cutting surficial deposits in the northwest Taylor Mountains quadrangle. Upper left corner of shows the linear trace of another fault that is part of the same system. Image date April 9, 2013.

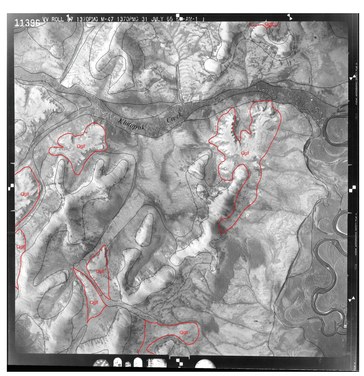


Figure 4. Vertical air photograph showing glaciolacustrine fan delta deposits, glf, in Klutapuk Creek and adjacent valleys (outlined in red). Right edge of photo showing the Nushagak River; creek trending west across photo is Klutapuk Creek. During an early glaciation the Nushagak River was blocked and a lake was impounded, filling many of the valleys of the central Taylor Mountains quadrangle; glaciolacustrine fan deltas developed along Klutapuk Creek as a result. Photo 11396, Mission M-47, July 1955, U.S. Air Force.

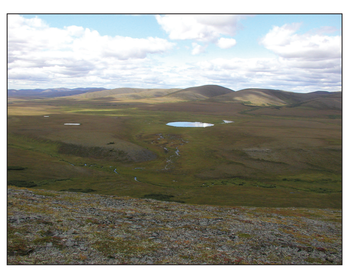


Figure 5. Eroded remnants of outwash fans surround an unnamed lake in the spillway between Moose and McGeary Creeks. McGeary Creek flows to the left, behind the lake. These fans are most likely associated with the very early glaciation responsible for the glaciolacustrine fans shown in figure 2. Outwash fans developed here as these deposits are slightly above the apparent lake level. Photo by Dwight C. Bradley, USGS.

Reconnaissance Surficial Geologic Map of the Taylor Mountains Quadrangle, Southwestern Alaska

By
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2015

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