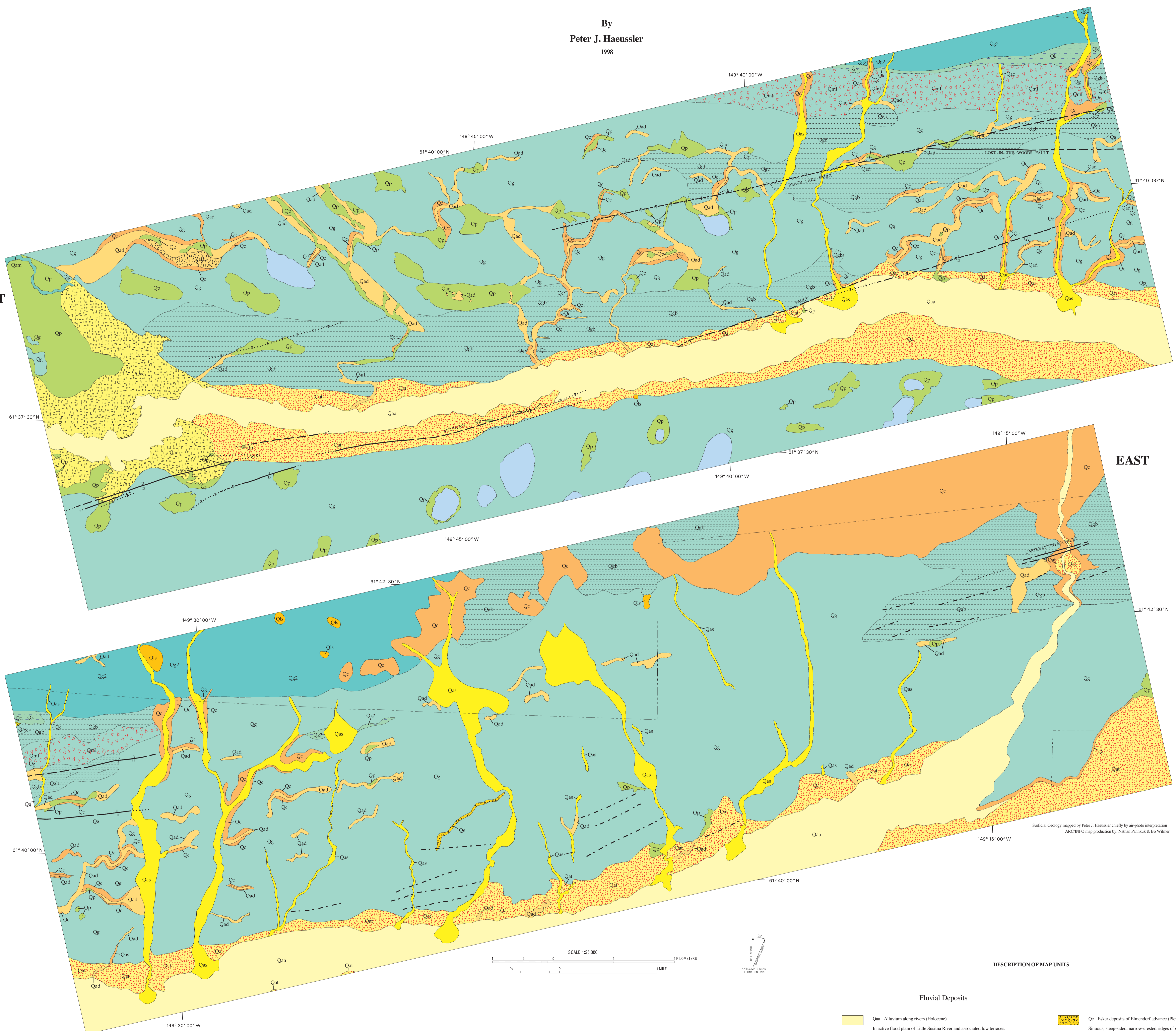


# SURFICIAL GEOLOGIC MAP ALONG THE CASTLE MOUNTAIN FAULT BETWEEN HOUSTON AND HATCHER PASS ROAD, ALASKA

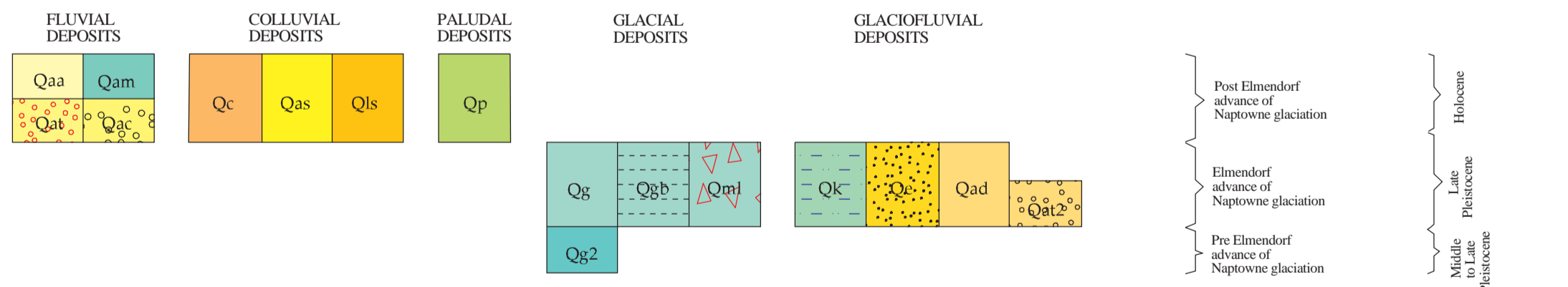
By  
**Peter J. Haeussler**  
1998

WEST

EAST



### CORRELATION OF MAP UNITS



### DESCRIPTION OF MAP UNITS

- Fluvial Deposits**
  - Qm - Alluvium along rivers (Holocene)
  - Qd - Alluvium along small meandering streams (Holocene)
  - Qs - Alluvium in river terraces (Holocene or Pleistocene)
  - Qa - Alluvium in paleodrainage (Holocene or Pleistocene)
  - Qc - Alluvium in paleodrainage (Holocene or Pleistocene)
  - Qd - Abandoned river channel deposits (Holocene or Pleistocene)
- Colluvial Deposits**
  - Qc - Undifferentiated colluvium (Holocene)
  - Qc - Undifferentiated colluvium and alluvium (Holocene)
  - Qc - Landslide deposits (Holocene)
- Paludal Deposits**
  - Qp - Peat deposits (Holocene)
- Glacial Deposits**
  - Qg - Basal drift of Elmerford advance (Pleistocene)
  - Qg - Thin drift of Elmerford advance (Pleistocene) mounding bedrock
  - Qg - Lateral moraine of Elmerford advance (Pleistocene)
  - Qg - Drift of pre-Elmerford advances (Pleistocene)
- Glaciofluvial Deposits**
  - Qk - Kame terrace deposits of Elmerford advance (Pleistocene)

Base from U.S. Geological Survey, 1979 (with some revisions in 1992 and 1993)  
Universal Transverse Mercator projection, zone 6

Surficial Geology mapped by Peter J. Haeussler chiefly by air photo interpretation  
ASCE/NDPO map production by Nathan Fossick & the Wilbur



### SURFICIAL GEOLOGY OF THE HOUSTON-HATCHER PASS ROAD AREA

The surficial geology of the map area is dominated by sedimentary deposits laid down during and after the Nipponese glacialiation (Karlstrom, 1964) of late Pleistocene age. During this episode, a large valley glacier flowed westward down the Matanuska Valley along the southern flank of the Talkeetna Mountains. The youngest of two documented advances has been referred to as the Elmerford advance, which reached its maximum extent about 12,000 radiocarbon years ago (Schmidt and others, 1972; Regier and Upkniek, 1983). Deposits from this advance in the map area include glacial till (Qt), lateral moraine (Qm), and kame terraces (Qk). Older episodes of glaciation have been inferred by a number of workers (e.g., Karlstrom, 1964; Regier and Upkniek, 1983; Regier and Upkniek, 1989; Schmidt and Yelke, 1989). The ridge above and south of the map area, Bald Mountain, is considered to contain higher age alluvium than the map area. Bald Mountain is considered to contain higher age alluvium than the map area. Bald Mountain is considered to contain higher age alluvium than the map area.

### REFERENCES CITED

Barnes, F.F., and Sokol, Daniel, 1959, Geology and coal resources of the Little Susitna district, Matanuska coal field, Alaska, U.S. Geological Survey Bulletin 1059-D, p. 121-138, 5 map sheets, scale 1:240,000, 1:40,000, and 1:63,000.

Cornwell, R.A., Crane, G.K., and Hammond, W.R., 1996, Tidal megastone profiles across the Castle Mountain fault, southeastern Alaska, Alaska Division of Geological and Geophysical Survey Report of Investigations 94-26, 38 p.

Dettmer, R.L., Plafker, G., Hudson, T., Tyndal, R.G., and Povel, N., 1974, Surface geology and Holocene breaks along the Susitna segment of the Castle Mountain fault, Alaska, U.S. Geological Survey Miscellaneous Field Studies Map MF-784, 1 map sheet, scale 1:63,000.

Haeussler, P.J., 1994, Possible active fault traces on or near the Castle Mountain fault between Houston and Hatcher Pass Road, in Till, Allan, and Moore, Thomas, eds., Geologic studies in Alaska by the U.S. Geological Survey, 1993, U.S. Geological Survey Bulletin 1077, p. 49-58.

Karlstrom, T.N.V., 1964, Quaternary geology of the Kenai and Cook Inlet regions, Alaska, U.S. Geological Survey Professional Paper 443, 69 p.

Lahr, J.C., Page, R.A., Stephens, C.D., and Fogelman, K.A., 1986, Station, Alaska, earthquake of 1984: evidence for activity on the Talkeetna segment of the Castle Mountain fault system, Bulletin of the Seismological Society of America, v. 76, p. 967-983.

Regier, R.D., 1961a, Geology and geologic materials maps of the Anchorage C-3W Quadrangle, Alaska, Alaska Division of Geological and Geophysical Survey Geologic Report 65, 2 map sheets, scale 1:25,000.

Regier, R.D., and Upkniek, R.G., 1983, Upper Cook Inlet region and the Matanuska Valley, p. 185-201, in Pewe, T.L., and Regier, R.D., eds., Guidebook to permafrost and Quaternary geology along the Richardson and Glenn Highways between Fairbanks and Anchorage, Alaska, Fourth International Conference on Permafrost, Fairbanks, July 18-22, 1983, Field Trip Guidebook 1, Alaska Department of Natural Resources, Division of Geological and Geophysical Survey, 261 p.

Regier, R.D., and Upkniek, R.G., 1983, Upper Cook Inlet region and Matanuska Valley, in Pewe, T.L., and Regier, R.D., eds., Quaternary geology and permafrost along the Richardson and Glenn Highways between Fairbanks and Anchorage, Alaska, 26th International Geological Congress Field Trip Guidebook 17D, American Geophysical Union, p. 45-54.

Regier, R.D., Cornwell, R.A., and Finney, D.S., 1994a, Geologic and derivative materials maps of the Anchorage C-7 NW Quadrangle, Alaska, Alaska Division of Geological and Geophysical Survey Report of Investigations 94-24, scale 1:25,000.

Regier, R.D., Finney, D.S., and Cornwell, R.A., 1994b, Geologic and derivative materials maps of the Anchorage C-8 NW Quadrangle, Alaska, Alaska Division of Geological and Geophysical Survey Report of Investigations 94-27, 2 map sheets, scale 1:25,000.

Schmidt, R.R., and Yelke, L.A., 1986, Pleistocene glaciation of the upper Cook Inlet basin, in Hamilton, T.D., Bond, R.M., and Thomson, R.M., eds., Glaciation in Alaska, The geologic record, Anchorage, Alaska, Geological Society, p. 193-218.

Schmidt, R.R., Yelke, L.A., Rubin, M.G., and Doherty, Eimer, 1972, Radiometric dating of marine shells from the Boulder Cove site, Anchorage, Alaska, Geological Society of America Bulletin, v. 83, p. 1107-1113.

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