DEPARTMENT OF THE INTERIOR
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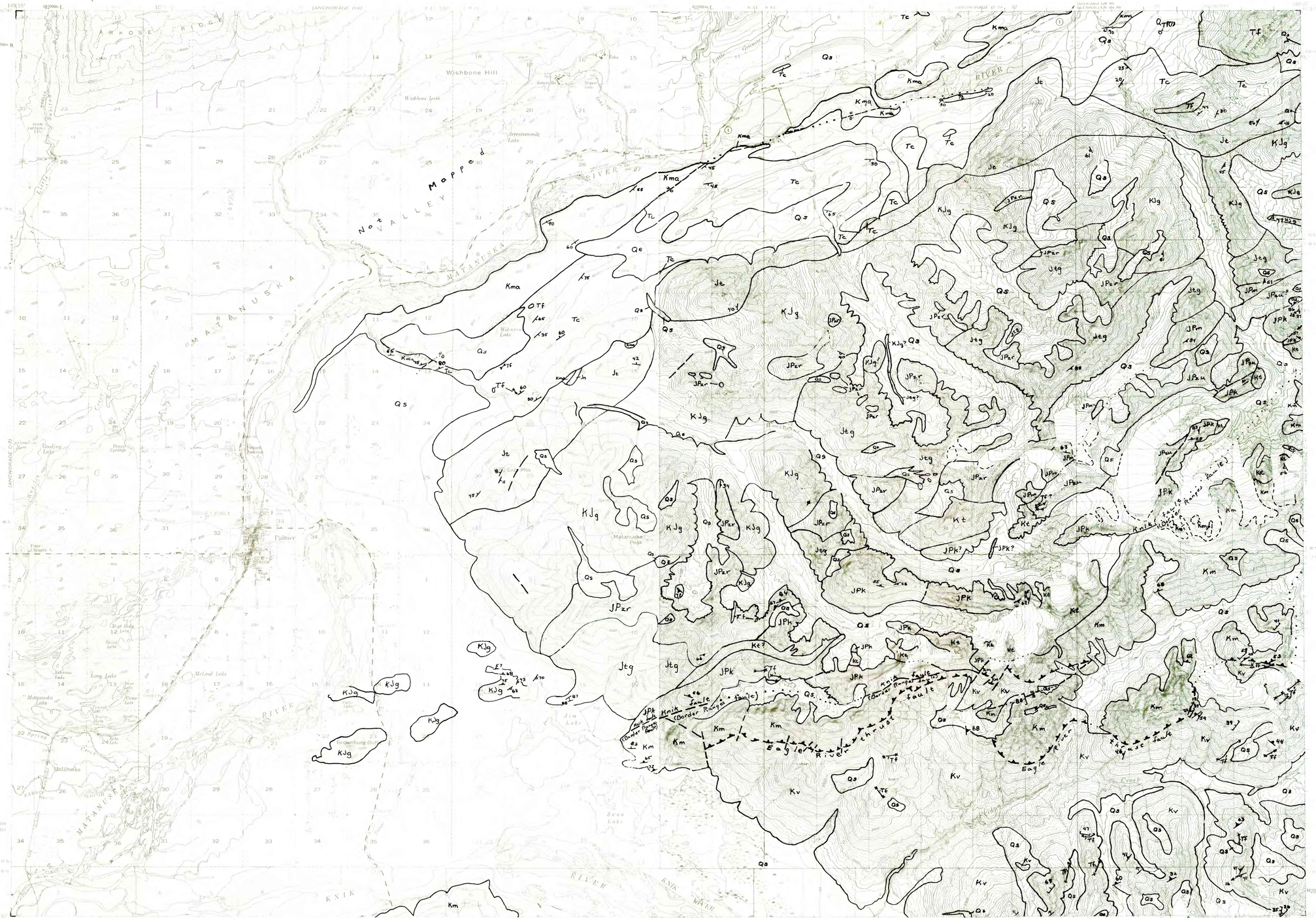


Base from U.S. Geological Survey, Anchorage C-5, 1960 and Anchorage C-6, 1951.

SCALE 1:63360

CONTOUR INTERVAL 100 FEET
DOTTED LINES REPRESENT 50 FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

APPROXIMATE MEAN DECLINATION, 1960

QUADRANGLE LOCATION

Geology mapped by Sandra H.B. Clark, 1971-72, assisted by Martha E. Yount, 1971-72 and Pamela S. Morse, 1971. Geology of the Matanuska Valley area from F.F. Barnes (1962)

# RECONNAISANCE GEOLOGIC MAP OF THE CHUGACH MOUNTAINS IN THE ANCHORAGE C-5 AND C-6 QUADRANGLES, ALASKA

By

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## EXPLANATION

### SEDIMENTARY ROCKS AND UNCONSOLIDATED DEPOSITS

**Qs** Undifferentiated surficial deposits (Pleistocene and Recent)
Includes glacial, lacustrine, alluvial, colluvial, landslide deposits, and rock glaciers.

**Tc** Chickaloon Formation (Paleocene and Eocene)
Sandstone, siltstone, claystone, and coal in upper part; mainly sandstone and conglomerate near base.

**Kma** Matanuska Formation (Cretaceous)
Dark shale, sandstone, and a few thin beds of conglomerate.

### INTRUSIVE IGNEOUS AND ASSOCIATED ROCKS

**Tf** Leucocratic, fine-grained, hypabyssal intrusive rocks (Eocene or younger)
Rhyolite at Kings Mountain; dikes, sills, and other small intrusive bodies.

**Kt** Leucocratic plutonic rocks (Cretaceous)
Mainly trondhjemite and tonalite. Cretaceous age based on K-Ar age determinations (G. R. Winkler, unpublished data) and 103 m.y. U-Pb age determination on zircon (T. M. Stern, unpublished data).

**KJg** Plutonic and metaigneous rocks (Jurassic or Cretaceous?)
Mainly gabbro and tonalite; includes diorite, leucogabbro, pyroxene-hornblende gabbronorite and hornblende gabbro. Trondhjemite occurs locally. Includes strongly altered, cataclastic metaigneous rocks, and areas of mixed igneous and metamorphic rocks. Forms white to light green smooth, rubbly slopes. Jurassic age based on K-Ar determination from near Eklutna, Anchorage B-7 quadrangle (Clark and Bartsch, 1971, Clark, 1972a).

**Jtg** Plutonic rocks (Jurassic)
Mainly tonalite with minor gabbro, gabbronorite, quartz diorite, diorite, hornblende gabbro, pyroxenite and hornblendite; includes strongly altered and metaigneous rocks; forms darker more massive outcrops than KJg. Jurassic age based on K-Ar determinations (G. R. Winkler, unpublished data).

**JPzr** Roof pendants, blocks or septa surrounded by plutonic rocks (late Paleozoic to Jurassic)
A wide variety of rocks including altered andesite tuff, metadiorite, quartz-mica schists, epidote-plagioclase-quartz hornfels, actinolite and tremolite schists. In some rocks original fabrics are recognizable, in others they are obliterated by foliated or directionless metamorphic fabrics. Cataclastic textures are common. In outcrop, rocks are generally strongly altered and weather orange to red. Probably includes rocks derived from Peninsular or Kachemak Terrane (?) and others of unknown origin.

### CHUGACH TERRANE
### FLYSCH AND MELANGE

**Kv** Valdez Group (Upper Cretaceous)
Mainly metagraywacke, siltite and argillite turbidite deposits.

**Km** McHugh Complex (Cretaceous)
Melange of metaclastic and minor metavolcanic rocks; includes blocks of late Paleozoic to Early Cretaceous age (Clark, 1973, 1981).

### PENINSULAR TERRANE
### SEDIMENTARY AND VOLCANIC ROCKS

**Jn** Naknek Formation (Upper Jurassic)
Siltstone and shale with calcareous concretions.

**Jt** Talkeetna Formation (Lower Jurassic)
Mainly volcaniclastic breccia and tuff with some lava flows; andesitic in composition; generally altered to greenstone.

### PENINSULAR OR KACHEMAK TERRANE(?)
### METAMORPHIC AND ULTRAMAFIC/MAFIC ROCKS

**JPk** Knik River schist (Permian to Jurassic?)
Mainly amphibole schist, amphibolite, quartz-feldspar-mica-chlorite garnet schist, quartz mica schist; minor marble and metachert. Permian fusilinids of a type recognized from the Tethyan Seaway have been identified in the probable extension of the unit in the Anchorage B-7 quadrangle (Clark and Bartsch, 1971, Clark, 1972a). A K-Ar age determination of Lower Jurassic was obtained by Carden and Decker (1977), who informally called the unit the Knik River schist terrane.

**JPm** Metabasalt and metachert (Permian? to Jurassic?)
Mainly metabasalt with minor metachert, includes amphibolites and argillites. Outcrops commonly are strongly sheared with melange-like characteristics (Clark, 1972b).

**JPzu** Wolverine ultramafic complex (Upper Paleozoic to Jurassic?)
Mainly layered dunite, peridotite and clinopyroxenite; includes light-colored strongly altered layers of gabbro (Clark, 1972b).

## SYMBOLS

Strike and dip of:
- Beds
- Cleavage
- Parallel bedding and cleavage
- Metamorphic foliation
- Igneous foliation
- Parallel bedding and foliation
- Axial plane of small fold; bearing and plunge of axis shown by arrow

- Contact; approximately located, commonly faulted.
- Fault; approximately located, dotted where concealed.
- Thrust fault; teeth on upper plate, dotted where concealed.
- Extent of glaciers where different than shown on topographic base map.

## References Cited

Barnes, F. F., 1962, Geologic map of lower Matanuska Valley, Alaska: U.S. Geol. Survey Misc. Geol. Inv. Map I-359.

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