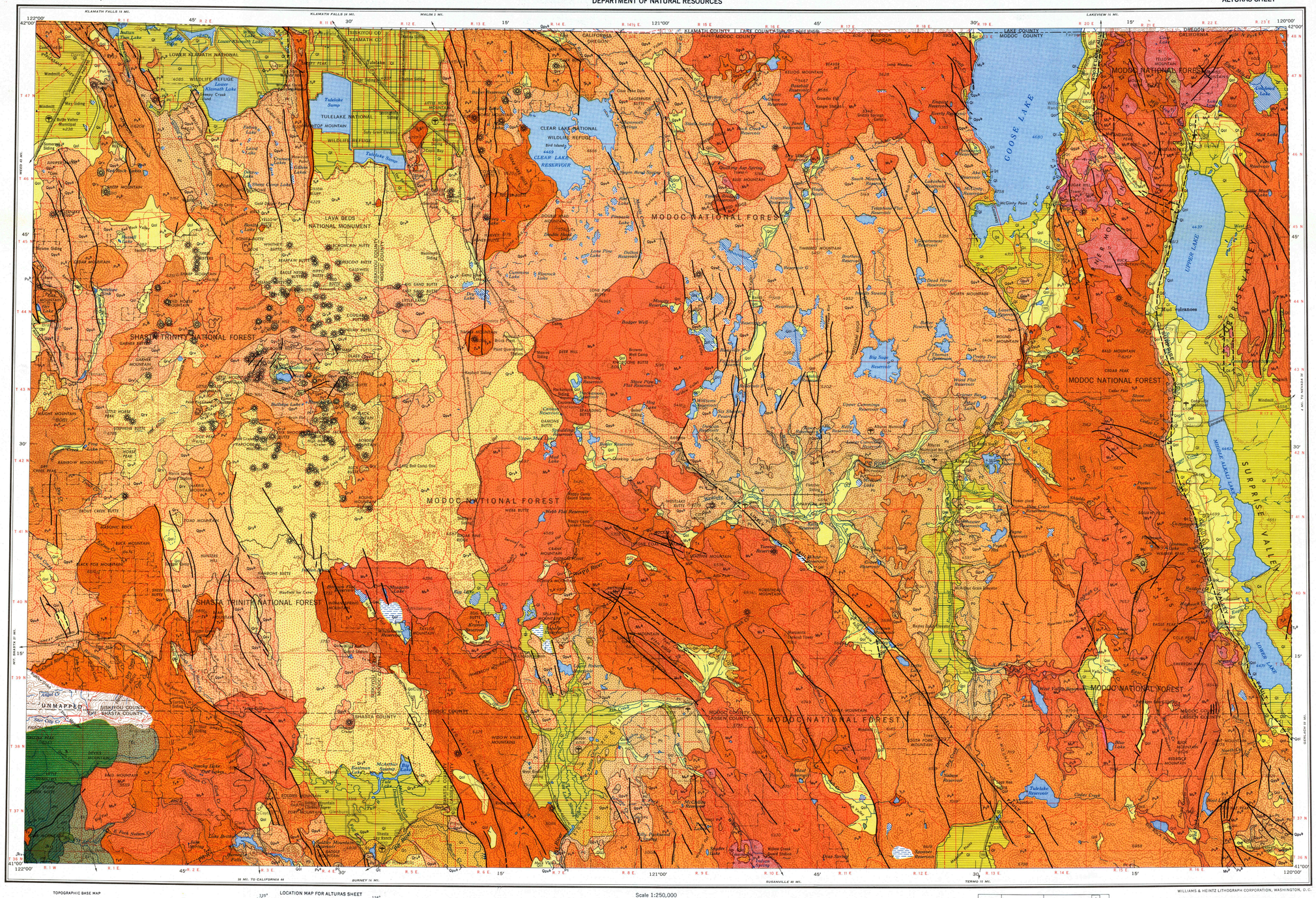
DIVISION OF MINES
GORDON B. OAKESHOTT, CHIEF

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

GEOLOGIC MAP OF CALIFORNIA
ALTURAS SHEET



EXPLANATION

SEDIMENTARY AND METASEDIMENTARY ROCKS

CENOZOIC

QUATERNARY

Recent

- Qd — Sand dunes
- Qal — Alluvium
- Qsc, Qf, Qfc — Stream channel deposits; Fan deposits; Basin deposits (GREAT VALLEY)
- Qsl — Salt deposits
- Ql — Quaternary lake deposits
- Qg — Glacial deposits
- Qt — River terrace deposits

Pleistocene

- Qm — Pleistocene marine and marine terrace deposits
- Qc — Pleistocene nonmarine
- Qp — Plio-Pleistocene nonmarine

TERTIARY

Pliocene

- Pc — Undivided Pliocene nonmarine
- Pnc — Upper Pliocene nonmarine
- Pu — Upper Pliocene marine
- Pmc — Middle and/or lower Pliocene nonmarine
- Pm — Middle and/or lower Pliocene marine

Miocene

- Mc — Undivided Miocene nonmarine
- Muc — Upper Miocene nonmarine
- Mu — Upper Miocene marine
- Mmc — Middle Miocene nonmarine
- Mm — Middle Miocene marine
- Ml — Lower Miocene marine

Oligocene

- Oc — Oligocene nonmarine
- O — Oligocene marine

Eocene

- Ec — Eocene nonmarine
- E — Eocene marine

Paleocene

- Epc — Paleocene nonmarine
- Ep — Paleocene marine

Undivided

- QTc — Cenozoic nonmarine
- Tc — Tertiary nonmarine
- Tl — Tertiary lake deposits
- Tg — Tertiary auriferous gravels

MESOZOIC

CRETACEOUS

- K — Undivided Cretaceous marine
- Ku — Upper Cretaceous marine
- Kl — Lower Cretaceous marine
- Kv — Knoxville formation

JURASSIC

- Ju — Upper Jurassic marine
- Jm — Middle and/or Lower Jurassic marine

TRIASSIC

- TR — Triassic marine

PALEOZOIC

UNDIVIDED

- Ps — Pre-Cretaceous metamorphic rocks (ls = limestone)
- Psl — Pre-Cretaceous metasedimentary rocks
- P — Paleozoic marine (ls = limestone)

PERMIAN

- Pe — Permian marine

CARBONIFEROUS

- C — Undivided Carboniferous marine
- CP — Pennsylvanian marine
- CM — Mississippian marine

DEVONIAN

- D — Devonian marine

SILURIAN

- S — Silurian marine

ORDOVICIAN

- O — Ordovician marine

CAMBRIAN

- Є — Cambrian marine
- Єl — Cambrian – Precambrian marine

PRECAMBRIAN

- p€s — Undivided Precambrian metamorphic rocks; p€s = gneiss, p€s = schist
- p€sc — Later Precambrian sedimentary and metamorphic rocks
- p€sc — Earlier Precambrian metamorphic rocks

IGNEOUS AND META-IGNEOUS ROCKS

- Qv — Recent volcanic: Qv^r – rhyolite; Qv^a – andesite; Qv^b – basalt; Qv^p – pyroclastic rocks
- Qpv — Pleistocene volcanic: Qpv^r – rhyolite; Qpv^a – andesite; Qpv^b – basalt; Qpv^p – pyroclastic rocks
- Quaternary and Pliocene cinder cones
- Pv — Pliocene volcanic: Pv^r – rhyolite; Pv^a – andesite; Pv^b – basalt; Pv^p – pyroclastic rocks
- Mv — Miocene volcanic: Mv^r – rhyolite; Mv^a – andesite; Mv^b – basalt; Mv^p – pyroclastic rocks
- Ov — Oligocene volcanic rocks
- Ev — Eocene volcanic rocks
- QTv — Cenozoic volcanic: QTv^r – rhyolite; QTv^a – andesite; QTv^b – basalt; QTv^p – pyroclastic rocks
- Tv — Tertiary intrusive rocks
- Tv — Tertiary volcanic: Tv^r – rhyolite; Tv^a – andesite; Tv^b – basalt; Tv^p – pyroclastic rocks
- gr — Mesozoic granitic rocks
- KJfv — Franciscan volcanic and metavolcanic rocks (Franciscan group)
- um — Mesozoic ultrabasic intrusive rocks
- Jbv — Jurassic basic meta-igneous rocks
- JRv — Jura-Trias metavolcanic rocks
- Pzv — Pre-Cretaceous metavolcanic rocks
- pgm — Pre-Cenozoic granitic and metamorphic rocks
- Pzv — Paleozoic metavolcanic rocks
- Pev — Permian metavolcanic rocks
- Cv — Carboniferous metavolcanic rocks
- Dv — Devonian metavolcanic rocks
- pDv — Undivided pre-Devonian metavolcanic rocks

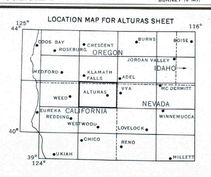
HEAVY BORDER ON BOX INDICATES UNIT THAT APPEARS ON THIS SHEET

TOPOGRAPHIC BASE MAP

Prepared by the Army Map Service (KCSX), Corps of Engineers, U. S. Army, Washington, D. C. Compiled in 1956 by photogrammetric methods and from: United States Quadrangles, 1:50,000, AMS, 1667 IV, 1950; 1767 I, 1951; United States Quadrangles, 1:62,500, U. S. Geological Survey, 1950–52; United States Quadrangle, 1:125,000, U. S. Geological Survey, Bartle, 1947. Planimetric detail revised by photo-planimetric methods. Horizontal and vertical control by USC&GS, USGS, and CE. Photography field annotated 1954.

Land net prepared by U.S. Geological Survey, 1957

LOCATION MAP FOR ALTURAS SHEET



Scale 1:250,000

5 0 5 10 15 20 Statute Miles

5 0 5 10 15 20 25 30 Kilometers

15 Nautical Miles

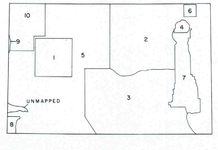
CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

GEOLOGIC MAP OF CALIFORNIA

OLAF P. JENKINS EDITION

ALTURAS SHEET

COMPILATION BY THOMAS E. GAY, JR. AND QUINTIN A. AUNE 1958



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INDEX TO GEOLOGIC MAPPING
(COMPLETE INDEX ON EXPLANATORY DATA SHEET)

1. Anderson, Charles A. 1941
2. Aune, Quintin A., unpublished
3. Aune, Quintin A. and Gay, Thomas E. Jr., unpublished
4. Chesterman, Charles W., unpublished
5. Gay, Thomas E. Jr. and Aune, Quintin A., unpublished
6. Hill, James M. 1915
7. Russell, Richard J. 1928, modified by Aune, Quintin A.
8. Sanborn, Albert F., unpublished
9. Williams, Howel 1949
10. Wood, Perry, unpublished