DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I-680

Base by U.S. Geological Survey, 1964
Roads modified 1971

SCALE 1:250 000

5 0 5 10 15 MILES

5 0 5 10 15 KILOMETERS

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
DATUM IS MEAN SEA LEVEL
1971 MAGNETIC DECLINATION AT SOUTH EDGE OF SHEET VARIES FROM 19° TO 20° EAST

EXPLANATION

QUATERNARY (Holocene and Pleistocene)

- Qal — Alluvium
- Qf — Alluvial-fan deposits
- Qs — Sedimentary deposits
- Qb — Basalt
- Qp — Playa deposits
- Windblown sand
- Qls — Landslide deposits
- Qlb — Late basalt
- Qa — Ash
- Qmv — Mafic vent complexes

TERTIARY AND QUATERNARY (Pliocene and Pleistocene)

- QTtg — Terrace gravels
- QTsb — Sedimentary rocks and basalt; QTs, *sedimentary rocks*; QTb, *basalt*
- QTp — Pyroclastic rocks of cinder cones
- QTps — Subaqueous pyroclastic deposits
- QTmv — Mafic vent complexes

TERTIARY (Pliocene)

- Tobt — Olivine basalt of Twelvemile Table
- Tobg — Olivine basalt and andesite of Gum Boot Canyon
- Tdo — Welded tuff of Double-O Ranch
- Tsb, Tst, Tob, Twt — Tuffaceous sedimentary rocks, basalt, and welded tuff; Tst, *tuffaceous sedimentary rocks*; Tob, *basalt*; Twt, *welded tuff*
- Toa — Olivine andesite
- Ta — Andesite
- Twtp — Welded tuff of Prater Creek
- Tdw — Drinkwater Basalt
- Tr, Tvs — Rhyodacite; Tvs, *volcanic sedimentary rocks*
- Twtt — Welded tuff of Twelvemile Table
- Tdv — Welded tuff of Devine Canyon
- Ttb — Ash-flow tuff near Buchanan

(Miocene and Pliocene)

- Tb — Basalt
- Tha — Hypersthene andesite
- Tsts — Tuffaceous sedimentary rocks
- Tmv — Mafic vent complexes
- Trr — Intrusive rhyodacite
- Trrr — Rhyolite and rhyodacite
- Tts — Tuffaceous sedimentary rocks
- Ttp — Tims Peak Basalt

(Miocene)

- Tba — Basalt and andesite
- Tpc — Pumiceous sedimentary rocks
- Thc — Hunter Creek Basalt
- Tdc — Dinner Creek Welded Tuff
- Trd — Rhyodacite
- Tsv — Sedimentary and silicic volcanic rocks

UNCONFORMITY

JURASSIC (Upper Jurassic, Middle Jurassic, Lower Jurassic)

- JTr — Lonesome and Trowbridge Formations of Lupher (1941)
- Jsv — Sedimentary and volcanic rocks
- Jsn — Middle member of Snowshoe Formation of Dickinson and Vigrass (1965)
- Jwsw, Jwb — Warm Springs and Weberg Formations of Lupher (1941); Jwb, *basalt*
- Js — Sedimentary rocks

TRIASSIC (Upper Triassic)

- Ŧsv — Sedimentary and volcanic rocks

DEVONIAN, PERMIAN(?) AND TRIASSIC(?) (Permian through Permian)

- ŦPs, ŦPv — Sedimentary and volcanic rocks; ŦPs, *sedimentary rocks*; ŦPv, *volcanic rocks*
- PDs — Sedimentary rocks

Contact

Fault, approximately located
Dotted where concealed. Bar and ball on downthrown side

Crater

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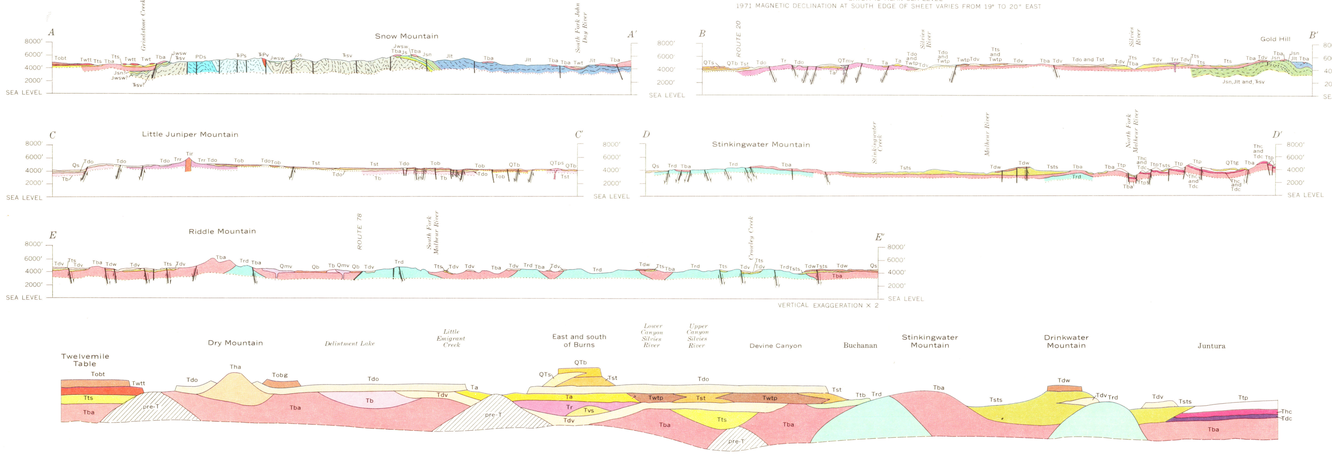
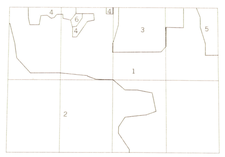


SKETCH DIAGRAM SHOWING RELATIONS OF MAJOR UNITS IN NORTH PART OF QUADRANGLE. NOT TO SCALE

INDEX MAP OF OREGON SHOWING LOCATION OF BURNS QUADRANGLE AND ADJACENT SMALL-SCALE GEOLOGIC MAPS

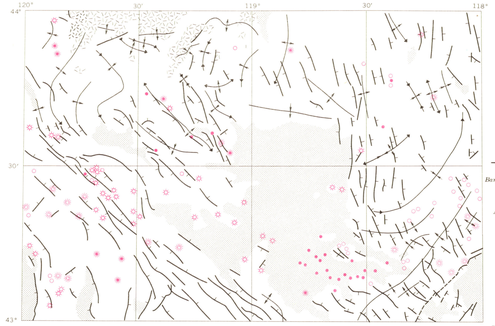
1. Burns quadrangle
2. Adel quadrangle (Walker and Repenning, 1965)
3. East half of Klamath Falls quadrangle (Walker, 1963)
4. East half of Crescent quadrangle (Walker and others, 1967)
5. East half of Bend quadrangle (Swanson, 1969)
6. Canyon City quadrangle (Brown and Thayer, 1966)
7. Owyhee region (Kittleman and others, 1967)
8. Mitchel Butte quadrangle (Corcoran and others, 1962)
9. West half of Jordan Valley quadrangle (Walker and Repenning, 1966)



INDEX TO GEOLOGIC MAPPING

1. R. C. Greene, 1966-68
2. G. W. Walker, 1965-67
3. R. E. Corcoran, Oregon Department of Geology and Mineral Industries, 1965-68
4. H. J. Buddenhagen, Oregon Department of Geology and Mineral Industries, 1964-68*
5. G. H. Haddock, 1963-64
6. M. H. Beeson, 1961

*Additional small areas of pre-Tertiary rocks also by H. J. Buddenhagen



TECTONIC MAP

EXPLANATION

Structures of middle and late Tertiary age

Large structural and physiographic basins

Mesozoic rocks

Paleozoic rocks

Fault — *Bar on downthrown side*

Inferred major fault zone

Anticline — *Arrowheads on crestline indicate local plunge*

Syncline — *Arrowheads on troughline indicate local plunge*

Homocline

Large mafic volcanoes

Cinder cones, palagonite tuff rings and cones

Large rhyodacite domes

Small rhyodacite domes

Small mafic vents

GEOLOGIC MAP OF THE BURNS QUADRANGLE, OREGON

By
Robert C. Greene, George W. Walker, and Raymond E. Corcoran

1972

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Oregon (Burns quad.). Geol. 1:250,000. 1972.
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For sale by the U.S. Geological Survey, price $1.00
Explanatory pamphlet accompanies map.