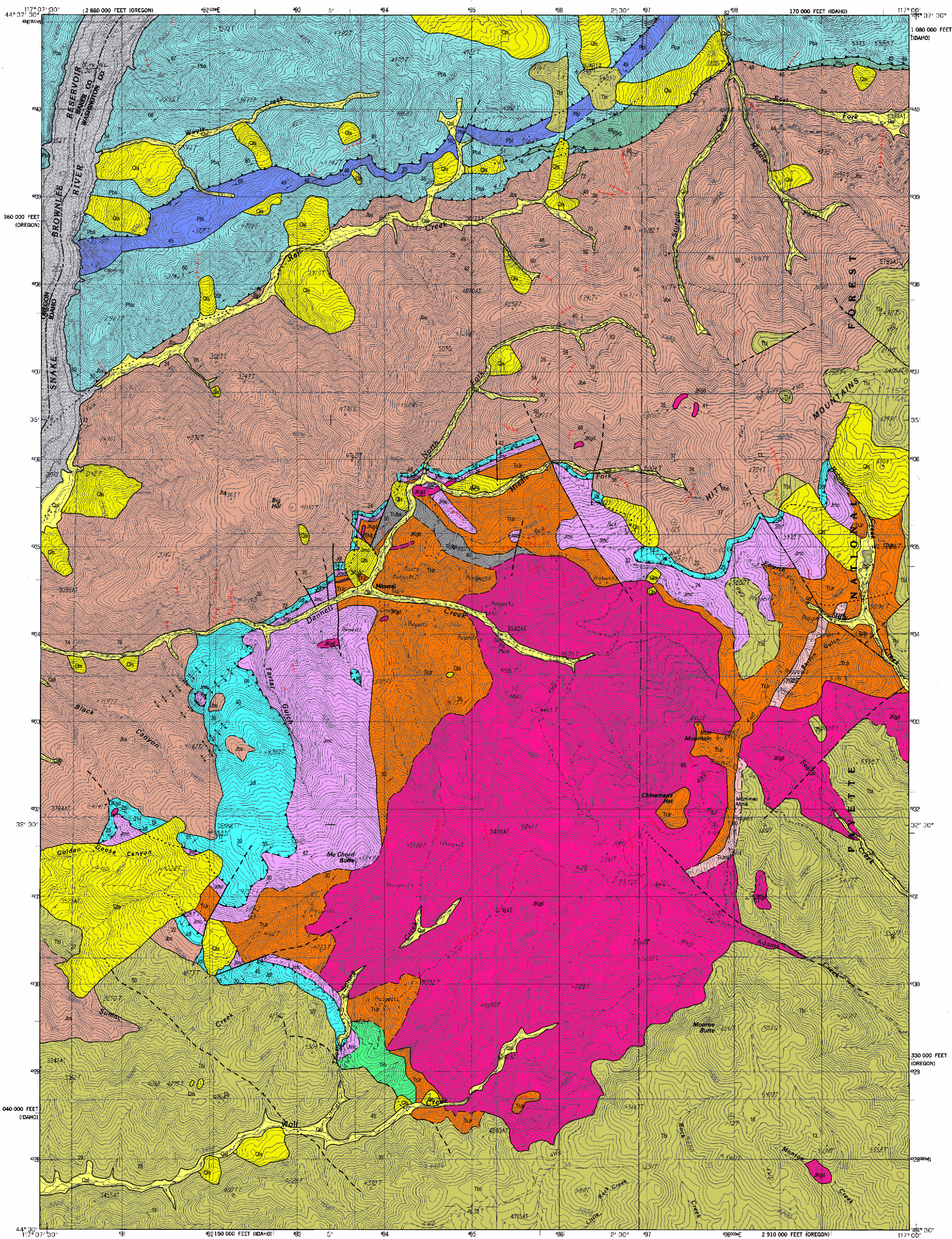


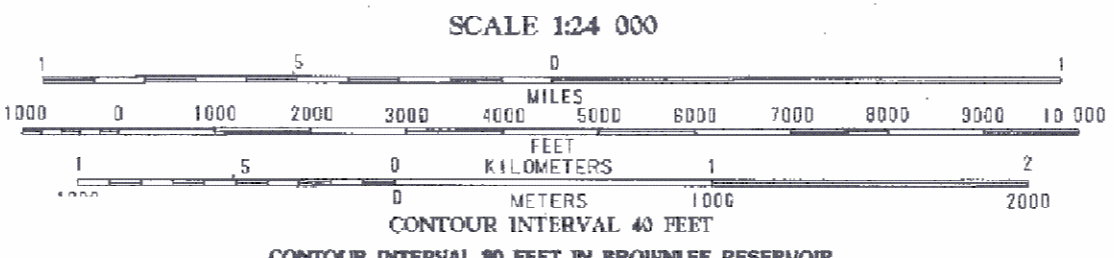
# Geologic Map of the Monroe Butte 7.5 Minute Quadrangle, Idaho-Oregon,

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This Technical Report is a reproduction of a map originally submitted as a senior thesis at Boise State University. Its content and format may not conform to the IGS standards.



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CONTROL BY USGS 50M/30M  
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN IN 1981  
FIELD CHECKED BY J. D. PAYNE, MAP REVISION 1999  
PROJECTION: TRANSVERSE MERCATOR  
GRID: BOISE-MOSCOW STATE GRID TICS - IDAHO WEST ZONE  
800,000 STATE GRID TICS - OREGON WEST ZONE  
UTM GRID DECLINATION: 23° WEST  
1987 MAGNETIC NORTH DECLINATION: 11° 59' EAST



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## EXPLANATION

<p>Bedding Surface</p> <p>Foliation Surface</p> <p>Normal Fault</p> <p>Reverse Fault - Approximate</p> <p>Fault - Buried</p> <p>Normal Fault - Approximate</p> <p>Lithologic Contact</p> <p>Lithologic Contact - Approximate</p> <p>Anticline - Approximate</p> <p>Basaltic Dike</p>	<p><b>Qal</b> Alluvium (Qal) Unconsolidated surficial deposits composed of fluviatile-derived sediments. Dominant particle sizes range from well-sorted cobbles to angular fine sands. Deposits have widely variable thicknesses and include overbank, active channel, and slack-water deposits.</p> <p><b>Qls</b> Landslide/lump deposits (Qls) Poorly consolidated to unconsolidated debris that has become detached from underlying material and transported down-slope. Hummocky surface morphology and apparent detachment scarps are characteristic.</p> <p><b>Tbl</b> Columbia River Basalt, Intra member (Tbl) Olivine + plagioclase phenocryst basalt; plagioclase phenocrysts are characteristically large (3 to 30 mm diameter) and locally comprise more than 20% of the rockmass. Detailed description is presented by Fitzgerald (19807).</p>	<p><b>Jkg</b> Iron Mountain Granodiorite (Jkg) Composite plutonic complex consisting of equigranular granite, monzonite, and hornblende-quartz diorite. Dated at 2034 Ma by K-Ar in biotite (Hendricks, Skaria and Field, 1972). Includes several smaller bodies of hornblende + plagioclase porphyry in proximal country rocks.</p> <p><b>Jbs</b> Big Hill Shale (Jbs) Shale, phyllite, and siltstone with local carbonate, turbidite, and volcanoclastic layers; laminated to thickly bedded; total structural thickness in excess of 100 m (stratigraphic top not seen); lower 15-100 m contains abundant gritty sandstone, volcanoclastic breccia, and pebble conglomerate; coarse grained lithologies are mud supported, angular to sub-angular, and moderately sorted. Sandstone clast composition is approximately 45% lithic fragments, 35% quartz grains, and 20% feldspar grains.</p> <p><b>Jdl</b> Danneberg Creek Limestone (Jdl) Limestone and limestone-shale interbeds with a total thickness of approximately 50m; carbonate is now completely recrystallized to fine-grained marble; lower portion consists of laminated silty micritic mudstone that becomes gradational upwards with progressively thicker wackestones up to 1.5 m in thickness. Uppermost 5-35 m is massive, ledge-forming, blue-grey limestone or marble.</p> <p><b>Jmc</b> McChord Butte Conglomerate (Jmc) Heterogeneous volcanoclastic sandstone, shale, and conglomerate in a mud matrix; thickness varies significantly, ranging from ~20 to ~200 m. Clasts are angular to sub-angular and are matrix supported. Characteristically, the rock contains clasts of green metavolcanic material in a red mud matrix. Unit is equivalent to the Jdl Creek Conglomerate of Brooks (1967).</p> <p><b>Jtr</b> Rhyolite (Jtr) Phenocrystic and aphanitic rhyolite flows, tuffs, and breccias. Age uncertain, but probably Late Tertiary to Early Jurassic. May be correlative in whole or part with portions of the Huntington Formation.</p> <p><b>Jtrls</b> Black Shale (Jtrls) Graphic, laminated mudstone, phyllite, and shale interstratified(?) with adjacent rhyolite (Jtr).</p> <p><b>Jtrml</b> Mortimer Limestone (Jtrml) Limestone in the vicinity of the Mortimer mine that appears to be interstratified with adjacent rhyolite (Jtr). Everywhere observed, this unit has been completely recrystallized to a coarse-grained calcite marble due to contact metamorphism with the Iron Mountain granodiorite (Jkg).</p> <p><b>Jtrh</b> Huntington Fm. (Brooks, 1979) Marble to intermediate volcanic and volcanoclastic rocks; locally contains interbedded greywacke turbidites, shale, and volcanic ashes.</p>	<p><b>Pba</b> Burnt River Schist (Pba, Pbl, and Pbg) Heterogeneous package of argillite (Pba), limestone (Pbl), and greenstone (Pbg). Argillite contains abundant thinly bedded chert and phyllite with sparse layers of carbonates up to 1 m thick. Equivalent(?) to the Elkton Ridge Argillite of Gilley (1937). Pbl forms a regionally continuous limestone layer more than 100 m in structural thickness that is ledge-forming and completely recrystallized to fine grained marble (equivalent to the informally named Nelson Marble of Proskia, 1967). Pbg includes locally porphyritic igneous rocks and varies significantly in structural thickness. Original stratigraphic relationships between all members are uncertain.</p>
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