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Surficial Geology Map Series
Grangeville 1° x 2° Quadrangle
Othberg

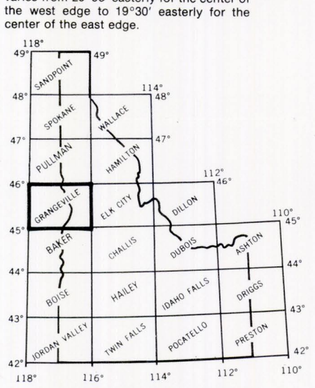
Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers

Contour Interval 200 Feet

Base by U.S. Geological Survey, 1963

1960 magnetic declination from true north varies from 20°00' easterly for the center of the west edge to 19°30' easterly for the center of the east edge.



Index to 1:250,000- scale maps by USGS.

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SURFICIAL GEOLOGIC MAP OF THE GRANGEVILLE QUADRANGLE, IDAHO

by

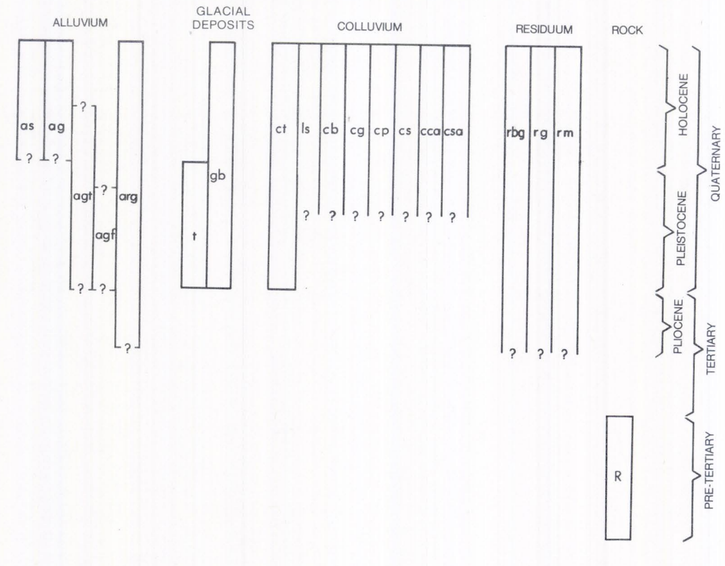
Kurt L. Othberg

1982

Field mapping supported in part by the U.S. Geological Survey.

Surficial geology mapped 1980-1981. Bedrock distribution adapted from Gaston, M.P. and E.H. Bennett, 1979, Geologic map of the Grangeville quadrangle, Idaho: Idaho Bureau of Mines and Geology Geologic Map Series, scale 1:250,000.

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

as Alluvial sand, silt, and clay: brown, fine-grained, stratified flood plain deposits. Primarily basaltic detritus in Meadows Valley. Chiefly quartz, mica, and feldspar particles along the North Fork of the Payette River. Thickness: more than 11 meters in Meadows Valley, and 2-60 meters along the North Fork of the Payette River.

ag Alluvial sand and gravel: primarily gray to black, pebble- to boulder-sized stream channel deposits. Clast lithology varies from all basalt, granite, or gneiss to mixed lithologies. Comprises active flood channel bars, canyon fans, and low terraces that resulted from temporary aggradation due to local landsliding. Many bars along the Salmon River consist of white, quartz- and mica-rich sand. Thickness: 2-5 meters.

agt Gravelly terrace alluvium: interbedded gray to black sand and pebble- to boulder-sized gravel with some layers of brown gravelly sand, silt, and clay. Clast lithologies are granitic, basaltic, and metamorphic. Consists of reddish brown coarse pebble gravel with primarily basalt clasts near Bear. Comprises inactive river terraces and fan-terrace combinations along canyons which are 12-120 meters high. Thickness: 5-120 meters.

agf Gravelly fan alluvium: dark brown to reddish brown, subrounded pebble gravel with a clayey silt matrix. Primarily basaltic clasts with occasional granitic cobbles and small boulders. Occurs on dissected, inactive alluvial fans with well-developed soils in the Meadows Valley area. Thickness: 2-25 meters.

arg Gravelly alluvium and residuum: black, brown, and reddish brown subangular basalt pebbles and cobbles in a silt and clay matrix. Variably thick fan deposits and basalt residuum on a graded surface or dip slope southwest of Grangeville. Thickness: 2-30 meters.

t Sandy boulder till: gray and brown, nonsorted, unstratified gravelly sandy silt and clay. Contains boulders up to 6 meters in diameter. Includes subdued moraines and tills with dark brown, clay-rich, deeply oxidized soils and fresh moraines with relatively unweathered surface boulders and tills with thin, light brown soils. Includes some talus and other colluvium. Thickness: 1-10 meters.

gb Glaciated bedrock: ice-scoured bare rock and discontinuous till, talus, and felsenmeer. Includes outwash, alluvium, and moraines along valleys and blocky, periglacial deposits in cirques of possible Neoglacial age. Bedrock consists of granite, gneiss, and schist in the area of Grass Mountains and the North Fork of the Payette River, and metamorphosed volcanic and sedimentary rocks in the Seven Devils Mountains.

ls Landslide debris: nonsorted, unstratified slump and slide debris. Coarse basalt fragments in basaltic terrain. Includes debris of deeply weathered granite and metamorphic rocks near Fish Creek Guard Station. Consists of gray to green phyllite and schist debris along the Salmon and Little Salmon Rivers south of Lucile. Includes landslide scarps and blocks of rotated or translationally moved bedrock.

ct Bouldery talus: gray cobble to boulder gravel. Primarily granitic and gneissic clasts. Includes some bouldery till at elevations above 4,000 feet on steep northeast-facing slopes. Thickness: 3-10 meters.

cb Basaltic gravel colluvium: brown to black, coarse gravel with silt and sand matrix. Clasts chiefly angular basalt. Includes cobble- and boulder-sized talus mantling the base of canyon slopes and occurring downslope from outcropping basalt flows. Thickness: 1-10 meters. Overlies fractured basalt bedrock. Basalt outcroppings abundant along steep canyon walls.

cg Granitic sand colluvium: gray-brown coarse sand with a silt and clay matrix. Sand grains chiefly quartz, muscovite, and degraded feldspar. Includes gravelly colluvium and some till at elevations above 4,000 feet in major north-flowing drainages and above 6,000 feet elsewhere. Thickness: 1-10 meters. Outcrops of granite are locally abundant.

cp Phyllitic gravel colluvium: green and gray gravel in a silt and clay matrix. Clasts include angular phyllite, slate, and metamorphosed basalt, andesite, breccia, conglomerate, sandstone, and shale. Includes some till at elevations above 4,000 feet in major north-flowing drainages and above 6,000 feet elsewhere. Thickness: 1-10 meters. Bedrock outcroppings locally abundant.

cs Schist sand and gravel colluvium: gray to greenish gray tabular gravel in a micaceous silty sand matrix. Clast lithologies include greenschist and phyllite, coarse micaceous schist and gneiss, and amphibolite. Includes landslide debris not mapped or not recognized at this scale. Includes some till at elevations above 4,000 feet in major north-flowing drainages and above 6,000 feet elsewhere. Thickness: 1-10 meters. Bedrock outcroppings locally abundant.

cca Carbonate colluvium: dark gray gravel in a calcareous, silt and clay matrix. Tabular pebbles and cobbles are primarily limestone, dolomite, marble, and some greenstone. Thickness: 1-10 meters.

csa Sandy colluvium: light gray to buff silty and clayey sand. In part quartzose and micaceous. Includes some pebbles of sandstone, siltstone, shale, and quartzite. Thickness: 1-10 meters.

rbg Basaltic gravel residuum: brown and reddish brown, gravelly silt and clay. Clasts chiefly subangular basalt pebbles and cobbles. Gravel content increases with depth to contact with fractured basalt. Near Grangeville, grades into clayey residuum toward interfluves and may be overlain by 1 to 2 meters of eolian silt. Includes basaltic colluvium on steeper slopes. In the Lost Creek and Mud Creek drainages includes some clayey spheroidally weathered basalt on low, gentle slopes and basalt rubble primarily along the strike of south-facing edges of basalt flows. Thickness: 1-4 meters.

rg Granitic clay residuum: gray to light brown clayey silt and silty sand. Grades with depth into grus, which may be several meters thick. Granite boulders or bedrock outcrops occur on some ridges and steep valley slopes. On more gentle slopes, residuum covers hard granite to a depth of 5 meters or more.

rm Metamorphic rock residuum: light brown silty clay and silty sand. Pebbles and cobbles of weathered metamorphic rocks increase with depth. On more gentle slopes, residuum covers hard rock to a depth of 5 meters or more.

R Bedrock: primarily rock outcrops on unglaciated ridgetops. Includes some felsenmeer and colluvium. Soil is absent or patchy. Bedrock consists of metamorphosed volcanic and sedimentary rocks.

———— Contact: approximately located. Contacts separating surficial deposits are commonly gradational.

Cartography by Graphics