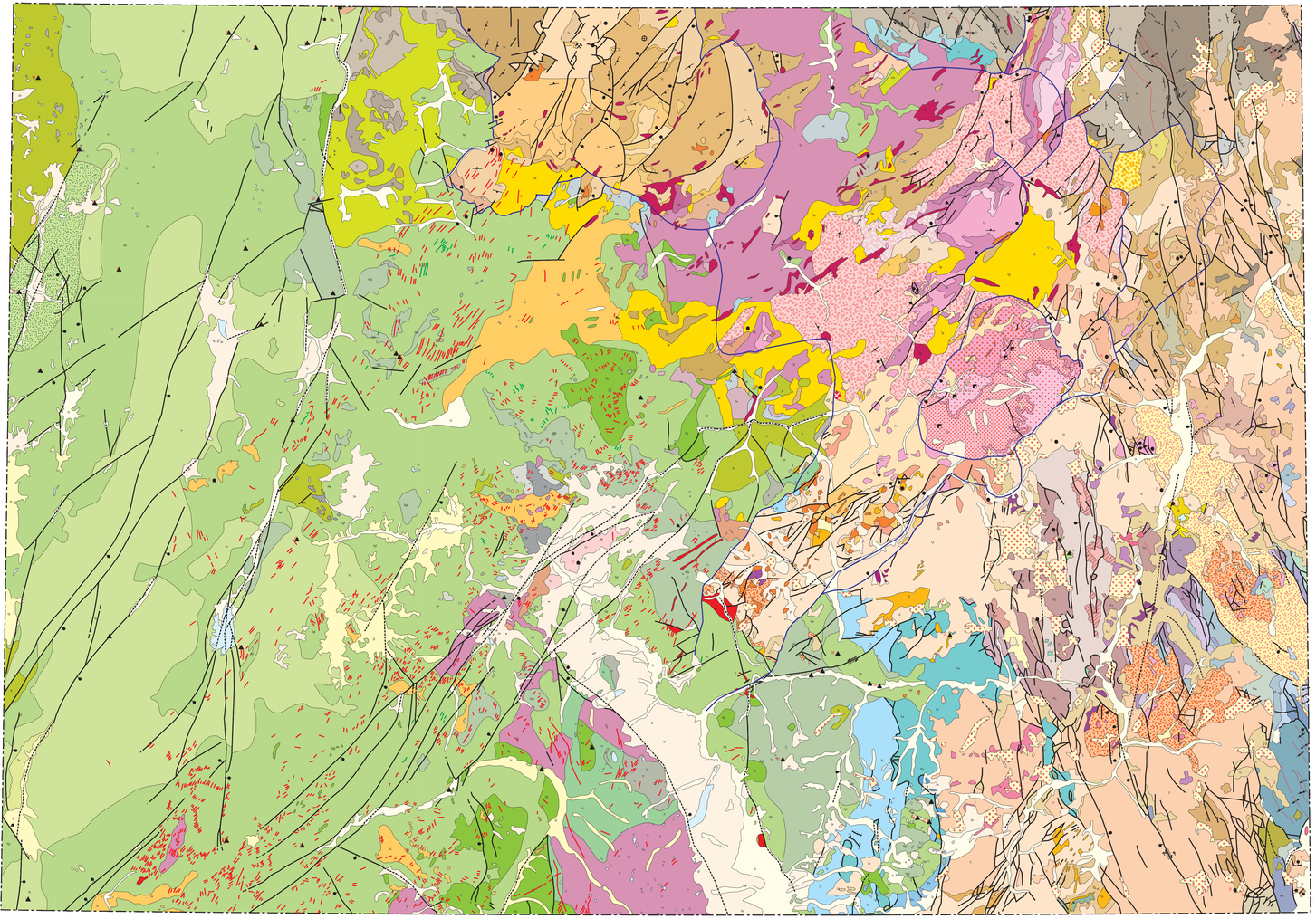

Geologic map of the Challis 1° x 2° quadrangle, Idaho
Paper version: USGS I-1819

SCALE 1: 250 000

5 0 5 10 15 MILES

5 0 5 10 15 20 KILOMETERS

Compiled by F.S. Fisher, D.H. McIntyre, and K.M. Johnson
Digital version created by N.A. Shock and G.N. Green
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LIST OF MAP UNITS

QUATERNARY SURFICIAL DEPOSITS

Qd Quaternary deposits undivided (Holocene and Pleistocene)

Qa Alluvium undivided (Holocene)

Qf Alluvial-fan deposits (Holocene)

Ql Landslide and related deposits (Holocene)

Qm Glacial deposits undivided (Pleistocene)

Qt Travertine (Pleistocene)

MIOCENE VOLCANIC AND SEDIMENTARY ROCKS

Tcb Columbia River Basalt group

Tpa Payette Formation

EOCENE CHALLIS VOLCANIC GROUP SEDIMENTARY AND INTRUSIVE ROCKS

Thunder Mountain Caldron Complex
Intrusive rocks

Tcd Rhyolite dikes

Tqp Quartz porphyry intrusions

Tr Rhyolite intrusions

Tmi Mafic intrusions

Granitic rocks of Casto Pluton

Tg Granite

Thg Hornblende granite

Tgp Gray porphyry

Extrusive and sedimentary rocks

Tla Latite of Laskent Mountain

Tdb Beds of Dewey Mine

Tss Sunnyside Tuff of Shannon and Reynolds (1973)

Tuu Upper Tuff

Tmo Megabreccia

Tslo Uppermost tuff that has mineralogy of lower tuff

Tcrl Rhyolite lava or tuff

Tcl Lower tuff

Tbr Buff rhyolite

Tpl Perlitic rhyolite

Tdq Dime-and-quarter size lapilli tuff

Tdql Lower densely welded tuff

Tll Lower latite lava

Tcv Challis volcanic group, undivided

Northern part of Van Horn Peak caldron complex and Panther Creek graben
Intrusive rocks

Tqp Quartz porphyry intrusions

Tr Rhyolite intrusions

Tmi Mafic intrusions

Tvp Tuff of Van Horn Peak

Granitic rocks of Casto Pluton

Tg Granite

Thg Hornblende granite

Tgp Gray porphyry

Tdi Dikes and plugs of intermediate composition

Extrusive and sedimentary rocks

Tsc Colluvium of Panther Creek

Tuff of Castle Rock and related rocks

Tmt Monzolit-forming tuff

Tcb Tuff of Castle Rock

Tfl Flow-layered rhyolite

Tb Basaltic lava

Tqb Quartz-biotite tuff

Tap Alkali-feldspar-plagioclase tuff

Tdt Dirty tuff

Tuffs of Camas Creek-Black Mountain and related rocks

Tc Tuffs of Camas Creek-Black Mountain

Tmt Tuff of Table Mountain

Tcs Tuff of Camas Creek-Black Mountain and bedded strata, undivided

Tp Tuff of Pennal Gulch

Trb Rhyolite of Red Butte

Tpq Quartz-phenocryst pellite

Tmn Tuff of Eightmile Creek

Tt Peraluminous-rich andesite, latite, and basalt lava

Tr Tuff of Ellis Creek

Tdf Ductile and rhyodacitic lava

Tmz Intermediate lava and breccia of mixed zone

Tb Latite tuff of Cereal Creek

Tb Flow-laminated rhyolite or quartz latite lava

Cereal Creek caldron segment and area north and east of Challis
Intrusive rocks

Tmi Mafic intrusions

Tmm Intermediate and mafic intrusions

Extrusive rocks

Tcr Tuff of Challis Creek, outflow unit

Tmt Tuff of Table Mountain

Tp Tuff of Pennal Gulch

Tmn Tuff of Eightmile Creek

Tt Peraluminous-rich andesite, latite, and basalt lava

Tdm Tuff of Dragon Mountain

Tr Tuff of Ellis Creek

Tdf Ductile and rhyodacitic lava

Tmz Intermediate lava and breccia of mixed zone

Tl Latite tuff of Cereal Creek

Tb Flow-laminated rhyolite or quartz latite lava

Twin Peaks caldera and southern part of Van Horn Peak caldron complex
Intrusive rocks

Tcd Rhyolite dikes, plugs, and flows

Tcd Felsic dike rocks

Tqp Quartz porphyry intrusions

Tpe Intrusive rocks of Pine Creek-Copper Eddy Creek

Tdi Diorite complex

Tgp Gray porphyry

Tr Intermediate dikes or flows

Tdi Dikes and plugs of intermediate composition

Tp Intermediate intrusive rocks of Spider Creek-Parker Creek

Tmm Intermediate and mafic intrusions

Extrusive rocks
Tuff of Challis Creek

Tcl Caldera-wall slump debris (megabreccia)

Tcu Tuff of Challis Creek, upper unit

Tcm Tuff of Challis Creek, middle unit

Tcl Tuff of Challis Creek, lower unit

Tc Tuff of Challis Creek, outflow unit

Tqb Quartz-biotite tuff

Tc Tuff of Camas Creek-Black Mountain

Tmb Megabreccia of Box Creek

Tp Tuff of Pennal Gulch

Trb Rhyolite of Red Butte

Tmn Tuff of Eightmile Creek

Tt Peraluminous-rich andesite, latite, and basalt lava

Tr Tuff of Ellis Creek

Tmr Rhyolite of Mill Creek Summit

Tdi Sedimentary breccia

Tdf Ductile and rhyodacitic lava

Tvc Volcaniclastic and sedimentary rocks

Custer graben area
Intrusive rocks

Tdi Dikes and plugs of intermediate composition

Tcd Rhyolite dikes

Td Dikes

Tr Rhyolite intrusions

Tgr Intrusive rocks east of Bonanza

Extrusive and sedimentary rocks

Tcl Rhyolite lava

Tp Tuffs of Pennal Gulch and Camas Creek-Black Mountain, undivided

Tvc Volcaniclastic rocks

Tmn Tuff of Eightmile Creek

Tmr Rhyolite of Mill Creek Summit

Tdf Ductile and rhyodacitic lava

Tvc Volcaniclastic and sedimentary rocks

Tar Arkosic sandstone and conglomerate

Southwestern part of quadrangle
Intrusive rocks
Rhyodacite drumes and plugs at Bradbury Flat

Tdri Rhyodacite plugs

Tdb Rhyodacite domes

Tbi Mafic intrusive rocks

Tdd Diabase and lamprophyre dikes

Tt Peraluminous-rich andesite, latite, and basalt intrusions

Tqr Syenite intrusion

Tdi Dikes and plugs of intermediate composition

Extrusive and sedimentary rocks

Tmo Mafic lava

Tcr Tuff of Red Ridge

Tcr Tuff of Challis Creek, outflow unit

Tp Tuff of Pennal Gulch

Tvc Volcaniclastic rocks

Tb Tuff of Steel Lake

Tt Peraluminous-rich andesite, latite, and basalt lava

Tmr Rhyolite of Mill Creek Summit

Tmo Mafic lava

Tvc Volcaniclastic and sedimentary rocks

Tdf Ductile and rhyodacitic lava

Tbd Mafic lava

Tgr Tuff of Germania Creek

Tlc Lava and ash-flow tuff of Burnt Creek

Tsc Tuff of Sage Creek

Tcg Conglomerate and langlomerate

Western and south-central parts of quadrangle
Intrusive rocks

Tdd Diabase and lamprophyre dikes

Trd Rhyolite dikes

Tri Rhyolite stock

Td Dikes

Tdu Tertiary dikes, undivided

Tg Granite

Tdi Diorite complex

Tgp Gray porphyry

Extrusive rocks

Tsc Welded tuff of Obsidian

Tsa Andesite

Trr Rhyolite flows

Tcy Challis volcanic group, undivided

CRETACEOUS INTRUSIVE ROCKS

Kc Granitic rocks of Idaho batholith, undivided

Klg Leucocratic granite

Kg Muscovite-biotite granodiorite and granite

Kgd Biotite granodiorite

Kgh Sphene-enriched biotite granodiorite

Kgp Porphyritic biotite granodiorite and granite

Kgh Hornblende-biotite granodiorite

Kt Tonalite and granodiorite

Km Mixed rock units

JURASSIC INTRUSIVE ROCKS

Jg Gabbro

PALEOZOIC SEDIMENTARY ROCKS

Pg Grand Prize Formation (Lower Permian)

Wood River Formation

PIPw Upper part (Lower Permian and Upper Pennsylvanian)

IPwl Lower part (Upper to Middle Pennsylvanian)

Pnr Salmon River assemblage (Paleozoic)

Mcar Sawtooth Canyon and South Creek Formations, undivided (Upper Mississippian)

Mcg Scott Peak Formation (Upper Mississippian)

Mmc Middle Canyon Formation (Upper Mississippian and Lower Mississippian)

Mw White Knob Limestone (Upper Mississippian)

Mmg McGowan Creek Formation (Lower Mississippian)

Mrb Copper Basin Formation, lower part (Lower Mississippian)

Dgi Grand View and Jefferson Dolomites, undivided

Dg Grand View Dolomite (Upper Devonian)

Dj Jefferson Dolomite (Upper and Middle Devonian)

Dsh Informal units D (Middle? and Lower Devonian) and S (Lower Devonian) of Hays and others (1978, 1980) and Beaverhead Butte Formation (Lower Devonian), undivided

S Lakeness Dolomite (Silurian)

Sm Roberts Mountain Formation (Silurian)

Ob Black, carbonaceous, graptolite-bearing shale and argillite (Ordovician)

Oss Saturday Mountain Formation, Kinnikinic Quartzite and Ella Dolomite, undivided (Ordovician)

Ox Upper carbonate unit (Ordovician)

OCu Siltstone, sandy siltstone and quartzite of Rich Hay mine area (Ordovician? or Cambrian?)

OCq Quartzite (Lower Ordovician or older)

Or Ramshorn Slate (Ordovician?)

OCt Burbower Dolomite (Lower Ordovician and Upper Cambrian)

Cg Garden Creek Phyllite (Cambrian?)

Ccp Quartzite, shale, and carbonate rocks of the Squaw Creek area (Cambrian)

PALEOZOIC (?) AND PROTEROZOIC (?) ROCKS

OCZl Interbedded quartzite, dolomite, and argillite of Lostine Gulch and Pennal Gulch areas (Ordovician?, Cambrian?, Late Proterozoic?)

ß Roof pendants and xenoliths of metamorphic rock in Idaho batholith, undivided (Paleozoic? or Proterozoic?)

ßs Schist roof pendant

ßq Quartzite roof pendant

ßc Calc-silicate rock roof pendant

MIDDLE PROTEROZOIC SEDIMENTARY AND METAMORPHIC ROCKS

Yl Lawson Creek Formation

Ys Swauger Formation

Yg Gunsight Formation

Ya Apple Creek Formation

Yb Big Creek Formation

Yy Yellowjacket Formation

Yh Hoodoo Quartzite

INTRUSIVE ROCKS OF UNCERTAIN AGE

d Diorite, quartz diorite and syenite

e Quartz syenite, syenite and granite

Eocene dikes

Cretaceous dikes

Boundaries of caldeiras and other volcano-tectonic structures