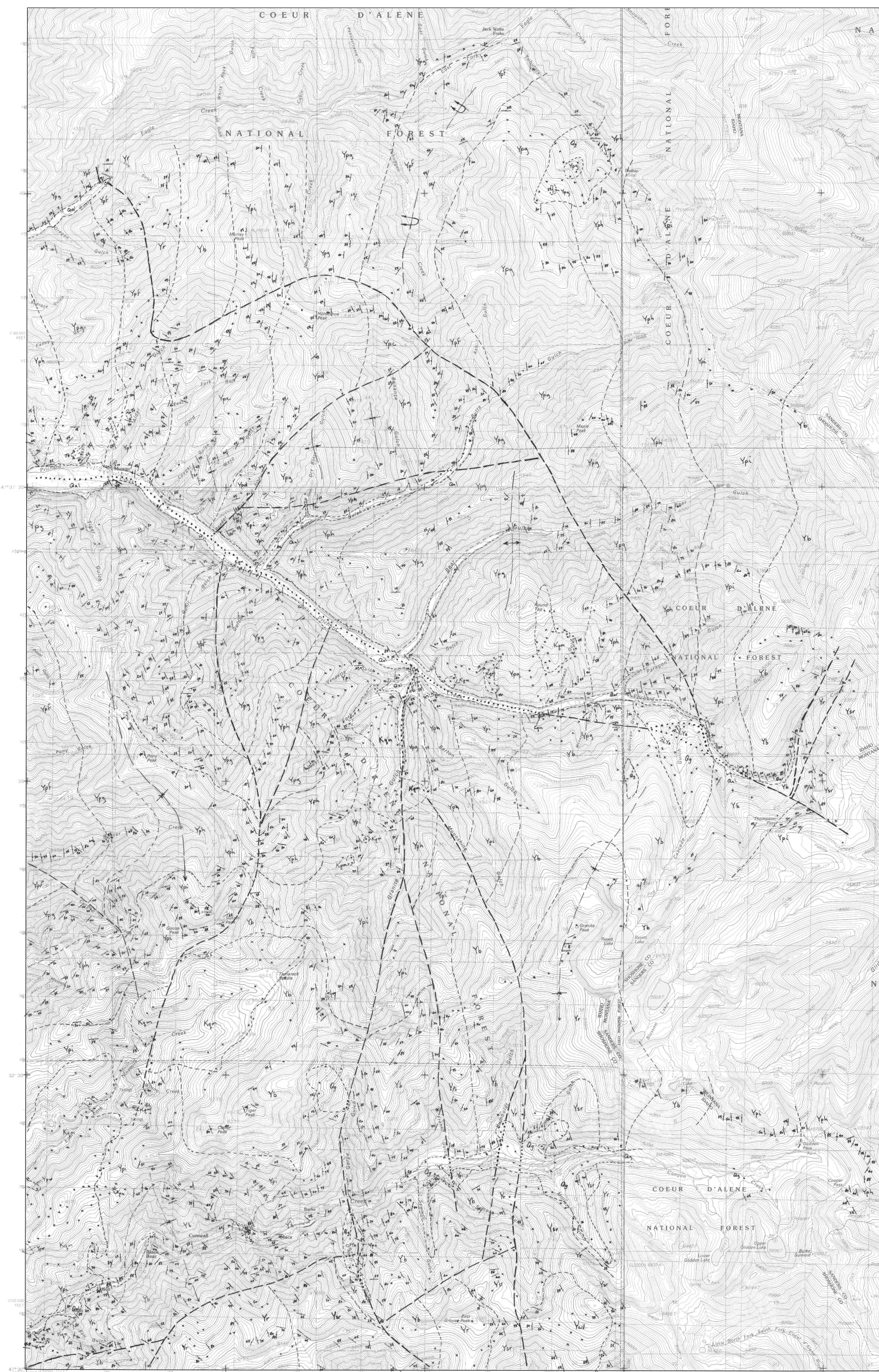


# GEOLOGIC MAP OF THE BURKE QUADRANGLE AND PARTS OF THE MURRAY, BLACK PEAK, AND THOMPSON PASS QUADRANGLES, SHOSHONE COUNTY, IDAHO

James L. Browne (deceased)  
2021

This technical report is a reproduction of independent geologic mapping from non-Idaho Geological Survey personnel. Its content, quality, and format does not conform to IGS standards. This preliminary geologic map is published by the IGS to further future scientific studies.



## INTRODUCTION

Geologic mapping presented here was conducted by Jim Browne of Coeur d'Alene, Idaho starting about 2014 and continuing until shortly before his death in 2019. Most of the locations and all the areas were first as a mafic outcrop by the Idaho Geological Survey from 1985 to 1989. Additional locations were added by Revett S. Browne (Browne, 2017). The Idaho Geological Survey based on a hand-colored paper map made that post-dated the original work. Units and bedding below are based on his original work in the Kellogg East and southern Grizzly Mountain quadrangles (Browne, 2017) and should only be considered approximate characterizations of individual map units. Starting in the late 1980s, the Idaho Geological Survey began publishing 1:24,000-scale and 1:25,000-scale geologic maps for the Idaho Geological Survey; all after refinement from the mining industry and without compensation. They represent the most detailed work done to date for the area from Coeur d'Alene Lake northeast to Lake Pend Oreille and east to Murray.

## DESCRIPTION OF MAP UNITS

**Quaternary** — Qal Alluvium — Recently deposited silt, sand, cobbles, and boulders in stream and river valleys.  
Qg Glacial Deposits — Boulder and cobble till.  
**Tertiary** — Ts Sediments — Tan to red and orange silt, sand, cobbles and boulders filling Tertiary stream and river valleys. Composed of material derived from weathering of surrounding bedrock.  
**Cretaceous** — Kqm Quartz monzonite — Monzonitic and syenitic rock with a wide compositional and textural range.

- Ywl** Lower Wallace Formation — Shown as lower Wallace formation unit 2 on map. If correct, then lower Wallace Formation unit 1 is missing in this quadrangle. Here consecutively shown as Lower Wallace Formation undivided. The west unit 1 is characterized by greenish-yellow to tan fine-grained dolomitic quartzite, grading to ochreous-weathering dolomitic quartzite grading to ochreous-weathering quartzitic dolomite (Browne, 2017). Unit 2 is described as quartzite and dolomitic quartzite, grading to ochreous-weathering quartzite, with thin interbeds of dolomitic argillite. It is capped by tan to gray-green dolomitic quartzite grading to ochreous-weathering quartzitic dolomite (Browne, 2017).
- Yar** St. Louis Formation — Tan to very thin bedded green and purple argillite with tan to greenish-white and gray to gray-green impure quartzite. Ochreous-weathering dolomitic argillite in upper one-quarter of formation with very thin beds of ochreous-weathering dolomite that become more prominent toward the top of the formation. Upper contact placed at this bed due to distinctive wavy gray argillite, peculiar to this interval, above which no purple argillite occurs.
- Yr** Revett Formation — Tan to thick-bedded tan to gray dolomitic quartzite, grading to thick-bedded gray-green argillite in places. Quartzite is generally more streaked and blocky and more resistant to weathering than quartizes of the underlying Burke Formation.
- Yd** Burke Formation — Tan to thick-bedded, gray and dark gray to pale green dolite and sub-vitreous fine- to medium-grained quartzite, commonly with interlayered gray-green argillite and argillite siltite, especially in the lower one-third of the formation. A few beds in upper one-third to one-half of the formation are vitreous and resemble Revett Formation. The boundary is determined by this association of quartzitic argillite generally found throughout the formation, especially in the argillite and siltite strata.
- Yp** Richard Formation — Undivided — Small bodies of Richard Formation within the quartz monzonite intrusion in the southwest part of map.
- Ypi** Member 1 — Thin to thick-bedded, tan to medium-grained, white to tan and dark gray quartzite, gray to dark gray siltite, and laminated to even thin bedded light and dark gray siltite-coupled siltite in places. Quartzite is generally more streaked and blocky and more resistant to weathering than quartizes of the underlying Burke Formation.
- Yph** Member 2 — Platy- to shaly-weathering, laminated to very thin bedded, light and dark gray siltite-coupled, graded in places, and siltite-black argillite couplets. Many planar bedded.
- Ypg** Member G — Light to dark gray siltite couplets, graded in places, and siltite-black argillite couplets, laminated to very thin bedded, with lesser quantities of thin- to thick-bedded, gray to dark gray siltite-coupled, and laminated to even thin bedded light and dark gray siltite-coupled siltite in places. Minor irregular bedding. Many different components may vary widely from one area to the next. Minor irregular bedding.
- Ypf** Member F — Platy-weathering, laminated to very thin and thin-bedded siltite-siltite couplets, graded in places. Black argillite laminae are rare. Gray to light gray, thin-bedded siltite-siltite couplets, and laminated to even thin bedded light and dark gray siltite-coupled siltite in places. The lack of shaly weathering, and the rarity of black argillite provides the minor differences between members G and H. Many planar bedded.
- Ype** Member E — Much like member G with siltstone of various alternating shades of gray to tan, and thin-bedded siltite-siltite couplets, and laminated to even thin bedded light and dark gray siltite-coupled siltite and quartzite. Considerable dark gray massive siltite in the uppermost part of the member. Characteristically, much of the fine-grained strata show irregular bedding, folding features, such as cutsets, abrupt thinning and thickening, and crumpling of strata.
- Ypd** Member D — Not present in the Kellogg East and southern Grizzly Mountain quadrangles (Browne, 2017) so no description available. Likely finer grained overall relative to overlying member E and consisting of thin-bedded siltite and silty argillite with minor quartzite.
- Ypc** Member C — Not present in the Kellogg East and southern Grizzly Mountain quadrangles (Browne, 2017) so no description available. Likely coarser grained overall relative to overlying member D.

## SYMBOLS

- Contact, approximately located.
- ..... Contact, concealed.
- - - Fault, approximately located.
- • • Fault, concealed.
- ↖ ↗ Strike and dip of inclined bedding.
- ↗ ↗ Strike and dip of vertical bedding.
- ↗ ↗ Strike and dip of overturned bedding.
- ↔ Anticline.
- ↙ ↘ Syncline.
- ↖ ↗ Plunging syncline. Arrow indicates direction of plunge.
- ↖ ↗ Overturned anticline.
- ✗ Individual outcrop, road cut exposure, or diagnostic rubble.

## REFERENCE

Browne, J.L., 2017, Geologic Map of the Kellogg East and southern Grizzly Mountain quadrangles, Shoshone County, Idaho: Idaho Geological Survey Technical Report T-17-1, scale 1:24,000.

**Base Map Credit**  
Base from scanned 1:24,000-scale USGS paper quadrangles, 1985.  
Topography and photogrammetric methods from aerial photographs taken 1980-1985.  
Map edited 1985.  
Projected coordinate system, west zone Transverse Mercator.  
1927 North American Datum.  
10,000-foot grid ticks based on Idaho coordinate system, west zone.  
1000-meter Universal Transverse Mercator grid ticks, zone 11.  
Declination from NOAA National Geophysical Data Center.

U.S. Geological Survey  
1:24,000 Scale  
Declination & Center of Map

SCALE 1:24,000  
1 0 1000 2000 3000 4000 5000 6000 7000 FEET  
1 0 1000 2000 3000 4000 5000 6000 7000 KILOMETER  
Contour Interval 40 feet

IDAHO  
QUADRANGLE LOCATION  
ADJOINING QUADRANGLES

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Technical report by James L. Browne, Jr.  
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This map can be downloaded in PDF format at [www.idahogeology.org](http://www.idahogeology.org).

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