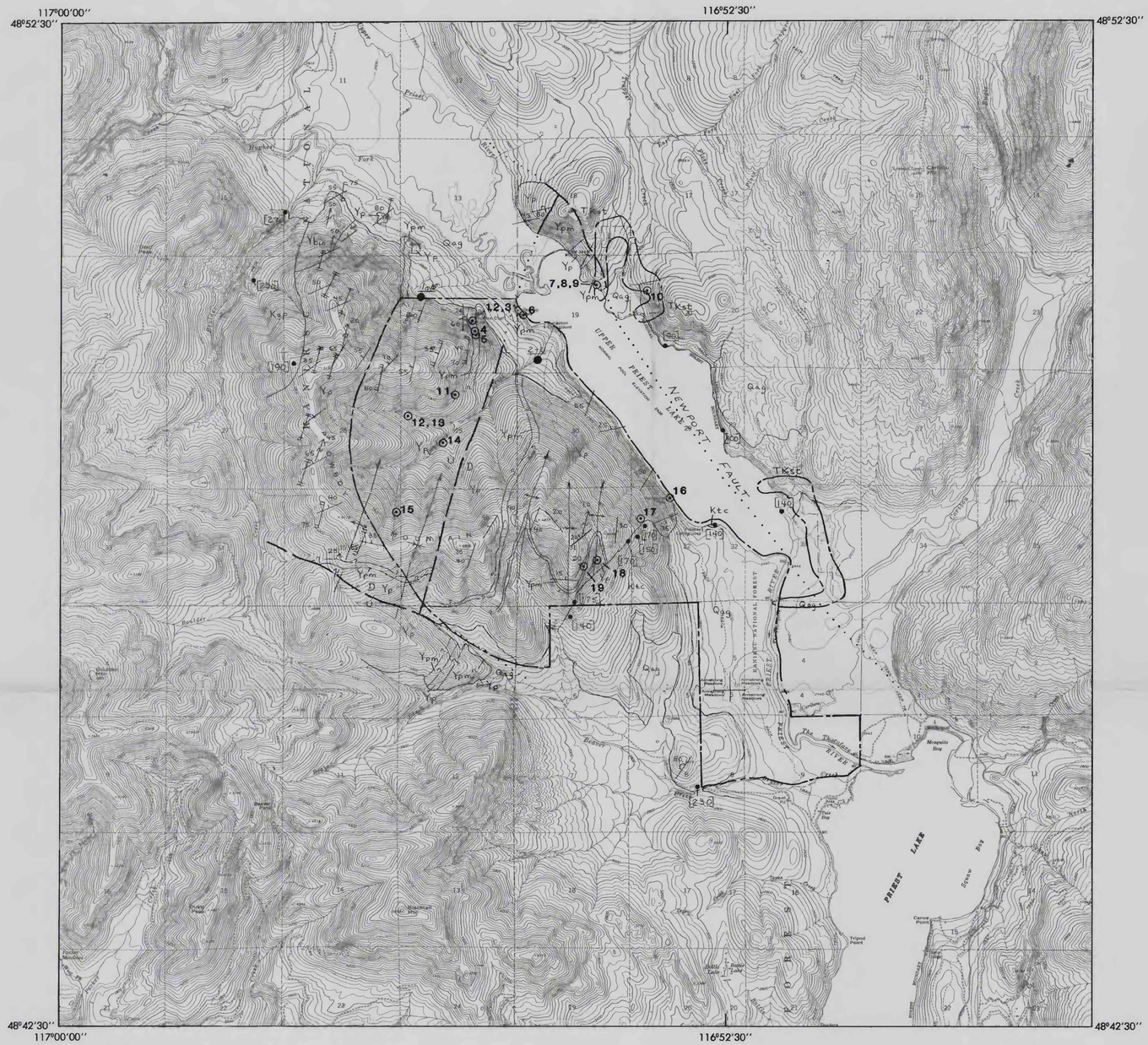
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY



Base from U.S. Geological Survey, 1:24,000
Priest Lake NW, 1967; Caribou Creek, Upper
Priest Lake, 1969

Geology from Miller (1983)

SCALE 1:48 000

1 ½ 0 1 2 3 MILES

1 .5 0 1 2 3 KILOMETERS

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MINERAL RESOURCE POTENTIAL MAP OF THE UPPER PRIEST ROADLESS AREA, BONNER COUNTY, IDAHO

By

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EXPLANATION

16 MINE, PROSPECT, OR MINERALIZED AREA--Numbers refer to table 1 in accompanying pamphlet

CORRELATION OF MAP UNITS

	Qag	QUATERNARY
Igneous complex of Selkirk Crest	TKst	TERTIARY AND (OR) CRETACEOUS
	Kgp, Ktc	CRETACEOUS
Belt Supergroup	Yb	PROTEROZOIC Y
	Yp/Ypm	PROTEROZOIC Y

DESCRIPTION OF MAP UNITS

Qag GLACIAL AND ALLUVIAL MATERIAL (QUATERNARY)

Tkst GRANODIORITE OF TRAPPER CREEK (TERTIARY AND (OR) CRETACEOUS)--Medium- to fine-grained muscovite-biotite granodiorite

Kgp MONZOGRANITE OF GRANITE PASS (CRETACEOUS)--Muscovite monzogranite. Medium- to coarse-grained; locally contains biotite

Ktc MONZOGRANITE OF TANGO CREEK (CRETACEOUS)--Highly porphyritic muscovite-biotite monzogranite

BELT SUPERGROUP (PROTEROZOIC Y)

Yb BURKE(?) FORMATION--Chiefly siltite with lesser amounts of quartzite and argillite

Yp PRICHARD FORMATION--Chiefly argillite, but with considerable amounts of quartzite and siltite. As mapped also includes:

Ypm Metadiabase sills--Diabase sills intruded into Prichard Formation

———?— CONTACT-Queried where projected

———?U/D——— FAULT-Dashed where approximately located; dotted where concealed; queried where inferred. U, upthrown side; D, downthrown side

ANTICLINE-Arrow indicates direction of axial plunge

SYNCLINE-Arrow indicates direction of axial plunge

80 STRIKE AND DIP OF BEDDING
Inclined
Vertical
Overturned

STRIKE AND DIP OF SLIP CLEAVAGE
Inclined
Vertical

70 STRIKE AND DIP OF ALINED TABULAR MEGACRYSTS

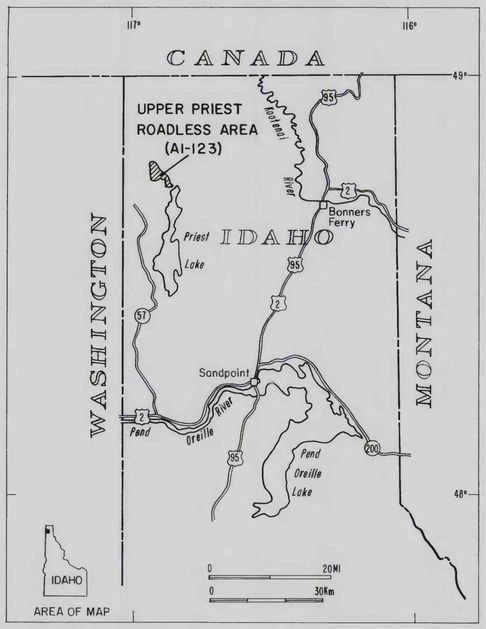
BEARING AND PLUNGE OF MINOR FOLD AXIS

[190] SCINTILLOMETER READING-Number in bracket indicates counts per second

9-u STREAM-SEDIMENT SAMPLE LOCALITY

APPROXIMATE BOUNDARY OF ROADLESS AREA

Note: Symbols may be combined



INDEX MAP SHOWING LOCATION OF UPPER PRIEST ROADLESS AREA (A1-123)

MISCELLANEOUS FIELD STUDIES
MAP MF-1448-B

STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U. S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a mineral resource potential survey of the Upper Priest Roadless Area in the Kaniksu National Forest, Bonner County, Idaho. Upper Priest Roadless Area (A1-123) was classified as a further planning area during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

SUMMARY

The Upper Priest Roadless Area has a low mineral resource potential. No geologic conditions favorable for mineral resource potential were found for metals, nonmetals, or fuels. Marginally anomalous amounts of zinc, lead, silver, tin, and tungsten were detected in stream-sediment sample concentrates, but they probably originate from widely scattered sparsely mineralized quartz veins common to the region. No other source for these slightly anomalous stream-sediment concentrations has been found.

INTRODUCTION

The Upper Priest Roadless Area is north of Priest Lake in northern Idaho, about 75 mi (120 km) northeast of Spokane, Wash. The area coincides with the Upper Priest Lake Scenic Area, established May 25, 1967. It covers most of Plowboy Mountain on the west side of Upper Priest Lake and two small noncontiguous areas on the east side of the lake. Upper Priest Lake, which is about 2 mi (3.2 km) north of Priest Lake, is reached by trail or boat on the navigable part of Priest River that connects the two lakes. Trailhead and boat-launching facilities at Priest Lake are accessible by a paved side road from State Highway 57. The roadless area encompasses 3,903 acres (15.8 km^2), ranging in elevation from 2438 ft (743 m) to 5130 ft (1564 m), all heavily timbered. The geology and geochemistry of the area is more comprehensively described by Miller (1983).

GEOLOGY

The Upper Priest Roadless Area straddles two fundamentally different terranes that are separated by the Newport fault. These two terranes represent highly contrasting structural levels. East of the fault are two-mica granitic and high-grade metamorphic rocks, and west of the fault are relatively unmetamorphosed rocks of the Belt Supergroup and relatively high level plutons. Most of the study area lies west of the fault and consists structurally of open north-northeast-trending folds in the Prichard Formation, cut by two high-angle faults.

The Newport fault, which underlies Upper Priest Lake, is locally exposed at the north end of the lake. Although the extent of movement on this fault is unknown, the relative motion is down on the west side. The fault is of regional extent and has been traced for about 125 mi (200 km). Forceful intrusion of the Tango Creek pluton may be the cause of the open folds in the Prichard Formation. The Granite Pass pluton appears to have been passively emplaced, at least along its east edge.

GEOCHEMISTRY

In the study area, only Deadman Creek and the stream in Togo Gulch have sufficient flow, and drain a reasonably large bedrock area, to be utilized for stream-sediment sampling. Analyses of both panned concentrates and bulk samples from these two streams indicate that most elements fall within the expected range for sediment derived from rocks found in the respective drainages. Zinc, lead, and trace amounts of tin, tungsten, and silver were detected in slightly anomalous amounts in stream-sediment and (or) panned-concentrate samples. Except for trace amounts of silver and lead mineralization in widely scattered quartz veins in the Prichard Formation, no significant concentrations of any metals were observed. The mineral resource potential for these metals is considered to be low.

Greater than average amounts of cobalt, chromium, copper, nickel, and vanadium, measured in the panned concentrates but not in the stream-sediment samples, reflect the contribution of heavier mafic minerals derived from the diabase sills. Detection of lanthanum in anomalous amounts in panned concentrates is probably due to the presence of abundant allanite from granitic clasts in glacial till.

MINING DISTRICTS AND MINERALIZATION

In October 1979, the U.S. Bureau of Mines searched county, State, Federal, and private records and reports, and examined all mines, prospects, and claims in the study area. Where warranted, samples were taken for analysis. Table 1 of the accompanying pamphlet lists the results of these examinations.

No production figures are recorded from the study area, which is in the Priest Lake mining district. Mining activity around Upper Priest Lake began in August 1886, when Jonathan Truesdale's group located the Mountain Chief claims on a lead-silver deposit in the study area. By 1908, 30 prospects were located on the shores and hills near Upper Priest Lake, including the Idaho Copper Co. and Gem Copper Mining Cos. claims. U.S. Forest Service officials reported that a shipment of ore from the Mountain Chief mine was milled in Metaline Falls, Wash., in 1958. With the creation of the Upper Priest Lake Scenic Area on May 25, 1967, the entire study area was withdrawn from mineral location. Bonner County mining-claim records indicate that 105 lode claims were located in the study area between 1886 and 1967. Under present economic conditions, however, no minable deposits are known in the Upper Priest Roadless Area. The potential for occurrence and favorable recovery of silver and lead in the Prichard Formation in the vicinity of the Mountain Chief mine (see map) is considered to be insignificant to low.

REFERENCES CITED

Miller, F. K., 1983, Geologic and geochemical map of the Upper Priest Roadless Area, Bonner County, Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-1448-A, scale 1:48,000.

Explanatory pamphlet accompanies map

Interior—Geological Survey, Reston, Va.— 1983

For sale by Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225