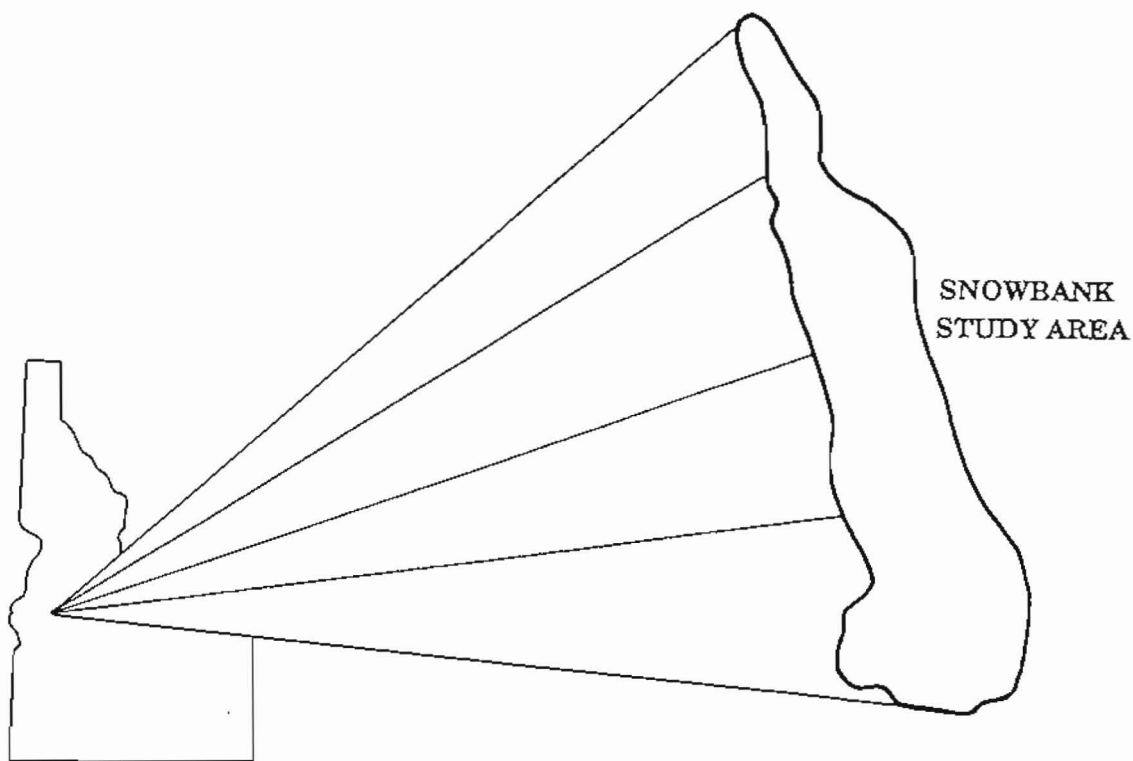


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Open-File Report

Mineral Resources of the Snowbank Study Area, Valley County, Idaho



BUREAU OF MINES

UNITED STATES DEPARTMENT OF THE INTERIOR

MINERAL RESOURCES OF THE SNOWBANK STUDY AREA,
VALLEY COUNTY, IDAHO

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PREFACE

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Bureau of Mines and U.S. Geological Survey to survey certain areas of Federal lands ". . . to determine the mineral values, if any, that may be present . . ." Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a Bureau of Mines mineral investigation of the Snowbank study area, Valley County, ID, which includes the lands recommended for Wilderness. Mining-related activities in the study area would be severely restricted under wilderness designation.

This open-file report contains data gathered and interpreted by personnel of the U.S. Bureau of Mines, Western Field Operations Center, Branch of Resource Evaluation, East 360 Third Avenue, Spokane, WA 99202. This report has been approved by the Branch of Mineral Land Assessment, Washington, DC.

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UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

yd ³	cubic yard
°C	degree Celsius
°F	degree Fahrenheit
ft	foot
in.	inch
mi	mile
ppb	part per billion
ppm	part per million
oz	troy ounce

SUMMARY

The Snowbank study area lies about 5 air mi (miles) southwest of Cascade, Idaho, and about 60 air mi north of Boise. The eastern boundary of the north-south-elongate study area lies 1 to 2 mi east of Cascade Reservoir; the western boundary is contiguous, in part, with the western boundary of Valley County. The relatively small, 8,200-acre study area is underlain by Cretaceous granitoid rocks of the Idaho batholith.

Three prospects were found in or near the study area during a library and field search. Gold was found at one of the prospects, but the mineralized structure, where observed, appears too narrow to contain resources; however, the other two prospects appear essentially unmineralized. No evidence of geothermal activity was observed. Rock in the area is not potentially useful as dimension stone because it does not split into flat slabs. To be used as aggregate, the rock would require crushing and hauling to distant markets. One of 18 alluvium concentrate (placer) samples contained free gold--\$1.07 worth per cubic yard of gravel (at a \$350 per oz gold price). No alluvial bars were seen; deposits are too small to contain resources.

INTRODUCTION

This report is part of the USBM (U.S. Bureau of Mines) Idaho Land Assessment Program to study the mineral resources of priority roadless areas in Idaho. The results of mineral inventories on specific study areas, such as Snowbank, provide minerals information needed by the President, the Congress, land management agencies, and ultimately, by the public, to make wise decisions regarding future land management practices. The information also helps fulfil a long-term Bureau of Mines objective, to ensure the nation has an adequate, dependable supply of minerals at a reasonable cost.

Geographic Setting

The Snowbank study area lies about 5 air mi southwest of Cascade, Idaho, and about 60 air mi north of Boise (fig. 1), in the Boise National Forest. The eastern boundary of the north-south-elongate study area lies 1 to 2 miles east of Cascade Reservoir, the western boundary is contiguous, in part, with the western boundary of Valley County. The 8,200-acre study area is reached by Idaho Highway 55, north from Boise, or south from McCall, to Cascade, Idaho. From Cascade, access is by way of Valley County and USFS (U.S. Forest Service) roads (fig. 2).

The study area mainly covers the upper portion of the east-facing slope of a N. 15° W.-trending fault block mountain ridge, along which occurs 8,318-ft Snowbank Mountain and 7,820-ft Lookout Peak. The area is mainly wooded with Douglas and grand fir, lodgepole pine, and Engelmann spruce at lower elevations; whitebark and lodgepole pine and subalpine fir predominate near timberline.

The climate consists of frigid, long, snowy winters and short, dry summers. The climate is similar to that of nearby McCall (fig. 1), although somewhat cooler and wetter because of higher elevation. At McCall, the mean minimum temperature in January is about 6°F, the mean July maximum is about 82°F; the warmest months are June through August, with a normal of about 60°F. Annual precipitation at McCall is over 25 in. (inch) (probably over 40 in. on Snowbank Mountain); the driest months are July and August, about 0.6 in. rain per month; December and January are the wettest, with average precipitation (as snow) of 3.5 and 3.6 in. per month, respectively (National Oceanic and Atmospheric Administration, 1974, p. 647-655).

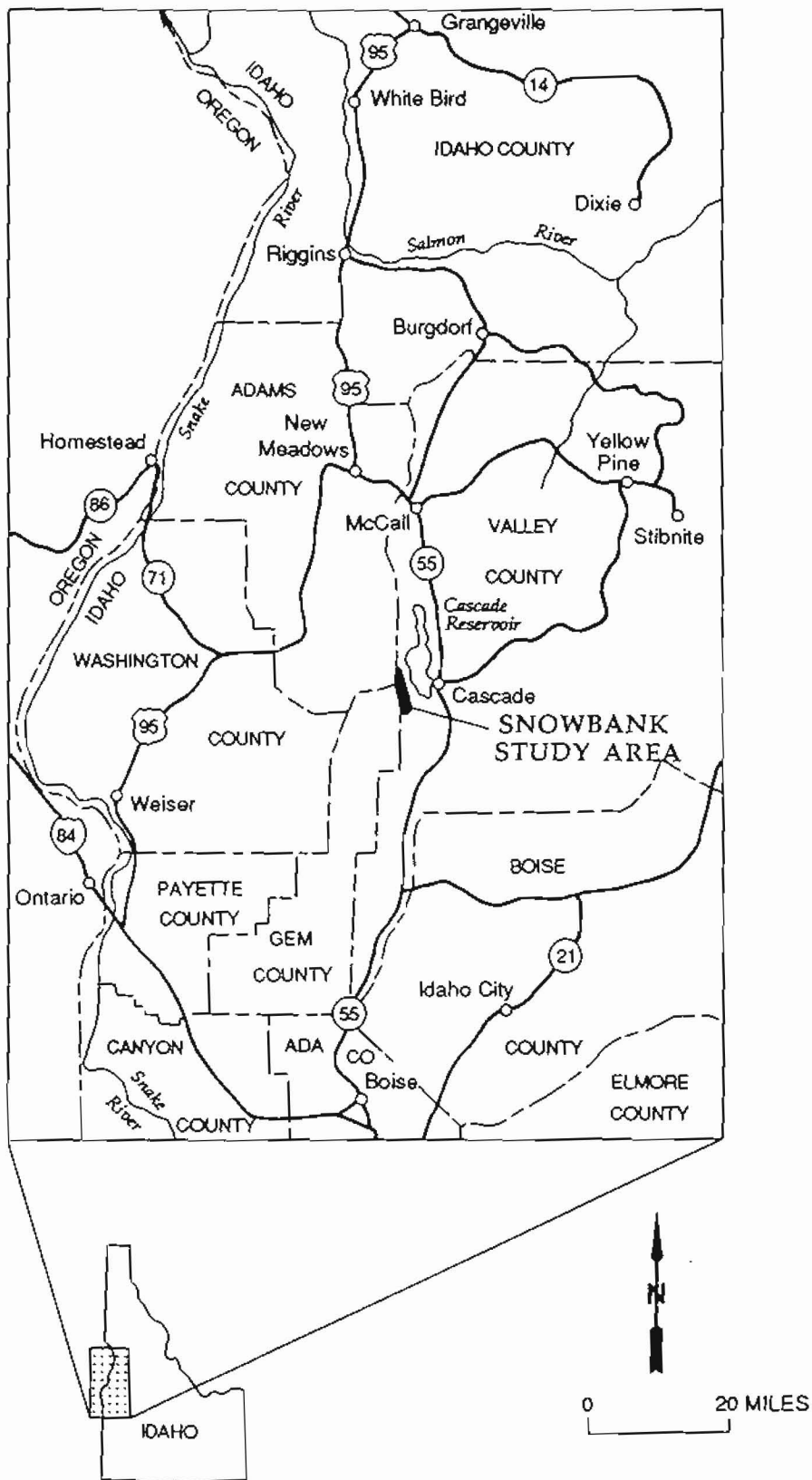


Figure 1.- Location of the Snowbank study area, Valley County, Idaho

GEOLOGIC SETTING

The Snowbank study area is predominantly underlain by Cretaceous rocks of the Idaho batholith (fig. 2). A narrow strip of Miocene Columbia River Basalt flows cap batholithic rocks along the north half of the western boundary (about 10 percent of the area). The basalt flows appear fresh and unaltered, except for weathering phenomena.

Five lithologic units occur within the batholith in and near the study area, according to Mitchell and Bennett (1979). Two of the units, schist and gneiss (pKm on fig. 2) and hornblende gneiss (pKg), are considered pre-Cretaceous in age, and are thus roof pendants. All batholithic rocks observed during this study, however, are granitoid or at least highly crystalline in texture, and unit contacts appear gradational. Three units, quartz diorite gneiss (Kqg), quartz diorite (Kqd), and migmatite (Km), are considered Cretaceous.

Metamorphic foliation occurs, to some degree, in all batholithic units, and though variable, commonly strikes northerly, subparallel to the mountain ridge. All of the batholithic rocks appear to be predominantly orthogneiss, except, perhaps, the schist and gneiss unit (pKm). The somewhat mafic quartz diorite (Kqd), quartz diorite gneiss (Kqg), and hornblende gneiss (pKg) units suggest this portion of the batholith may represent a southern extension of the eastern margin of the Hazard Creek Complex of Aliberti and Manduca (1988), and evolved within the island arc Wallowa Terrane, but adjacent to the island arc-craton boundary (the Little Goose Creek Complex). Paleozoic miogeosynclinal rocks appear to be absent, perhaps removed by some event prior to middle Cretaceous compressional deformation and emplacement of intrusives.

Tertiary block faulting is responsible for the present mountainous physiography. Major block faulting along Long Valley largely followed the penetrative compressional shearing and mylonized terrane of the Cretaceous Little Goose Creek complex.

The study area was glaciated during the Pleistocene, but glacier-related deposits within the study area include only till and lesser glacial outwash. Periglacial outwash, which elsewhere in the Cascade-Long Valley area includes placer deposits of monazite (Mackin and Schmidt, 1956, p. 375), do not occur in the study area.

MINES AND PROSPECTS

There appears to have been a paucity of mining activity in the Snowbank study area; however, evidence of three prospects was found during library and field searches. Prospect data is summarized in table 1.

Ridgenall and Adam Prospect

The prospect (pl. 1 and fig. 2, no. 1) is a mile north of the northern tip of the study area. A shallow, 20-ft-diameter pit, most likely a dozer scrape, occurs on the east side of a dirt road that extends north along the ridge crest. The pit is shown on the 15-minute USGS (U.S. Geological Survey) Cascade topographic quadrangle, and was reported by Strowd and others (1981, p. 5).

The prospect area is in quartz diorite gneiss of the Idaho batholith. The working is underlain by reddish regolith; no rock cropped out. Trace-element analysis of a subfoliate granodiorite rock sample dug out of the regolith revealed no metallic concentrations indicative of mineralization.

Table 1.--Summary of prospects in the Snowbank study area and vicinity, Valley County, Idaho

Map No. (fig. 2)	Name	Summary	Workings	Sample Data (Pl. 1; table A-1)
BA121/1	Ridgenall and Adams	In quartz diorite gneiss; pit contains reddish regolith, no outcrop.	Shallow, 20-ft-diameter pit; probably a dozer scrape.	One grab sample (no. 1) of granitoid rock from the pit contained no significant metallic concentrations.
BA123/2	Jones and Morrell	In quartz diorite terrane. A sample, apparently of quartz and fault gouge, submitted to the USBM in 1962, contained minor molybdenite.	None.	Five random chip samples (nos. 5-9) of granitoid rock contained no significant metallic concentrations.
BA125/3	Hurdy (Hurley) Creek prospect	A narrow vein of quartz and fault gouge strikes N. 65° E. and dips 72° SE. Country rock is granitoid hornblende gneiss (foliation strikes N. 5° W., dips 90°).	Only one of three reported adits (Campbell, 1930, p. 275) was found; adit caved 30 ft from portal (fig. 3).	Two chip samples were taken across the vein, one inside and one outside of the portal (fig. 3, nos. 21 and 22). They were 1 ft and 0.2 ft long and contained 6,050 ppb (0.177 oz/ton) and 120 ppb gold, respectively.

Jones and Morrell Prospect

During late 1962, the USBM's Spokane office received a rock sample from W. B. Jones, who, along with his prospecting partner, John Morrell, had explored in the study area near Lookout Peak, then site of the Vanwyck lookout. The rock, reportedly came from 0.5 mi northeast of the peak (fig. 2, no. 2). It was examined petrographically at the USBM Albany (Oregon) Research Center and was found to contain minor molybdenite. Apparently, no further work was done on the prospect; a field search conducted during the present study did not disclose evidence of mineralization or workings. The source locality for the molybdenum-bearing rock was not found.

The prospect area is in quartz diorite terrane, similar to rocks near the Ridgenall and Adam prospect. The sample was reported to contain "...quartz, some clay minerals, limonite, and feldspar, a small amount of ferromagnesian minerals, and very small to trace amounts of molybdenite, biotite, and muscovite," according to H. D. Hess (1962, written commun.), Supervisory Geologist (retired), USBM Albany Research Center. The sample probably consisted of quartz and gouge vein material, based on the first three mineral components listed and the absence of an assigned rock name in Mr. Hess's report.

Similar material was not found in the vicinity of Lookout Peak during this study. Analyses of five random chip samples taken from the prospect area (one of basalt and four of granitoid gneiss--pl. 1 and table A-1, samples 5-9) do not contain elevated concentrations of precious-, base-, or indicator-elements indicative of mineralization. Similarly, two reconnaissance pan samples (4 and 10) taken from streams that drain the prospect area contained no significant metal concentrations.

Hurdy (Hurley) Creek Prospect

The prospect area (fig. 2, no. 3) was discovered in 1913 (Bell, 1913, p. 183-184), and was located as the Maloney group of ten claims prior to 1923, in the unorganized Caberton mining district. In 1923, the Hurley Creek Mining and Milling Company was incorporated, and by 1930, development reportedly included three adits, 200 ft, 450 ft, and 1,400 ft long (Campbell, 1930, p. 275). During the 1970's the property was held by Theodore Ax, of Nampa; in 1979, the prospect was relocated as the U Lode, claims 1-7, by Mr. Ax and George W. and Wilma J. (Mr. Ax's daughter) Wilhite, of Kuna. Mr. and Mrs. Wilhite now own the claims. The Hurley Creek adit visited during this study is apparently the 1,400-ft adit described by Campbell. At one time a stamp mill was set up below the portal, but was removed prior to 1970.

The prospect area is underlain by granitoid hornblende gneiss, the foliation of which is of variable strike, but commonly strikes about N. 5° W., parallel to the ridge crest dominated by Snowbank Mountain. Only one of the three adits reported by Campbell (1930, p. 275) was found (fig. 3). It was driven along a quartz and fault gouge vein, which strikes N. 65° E., approximately normal to the regional ridge crest, and dips 72° SE. The adit was caved 30 ft from the portal. Judging by the small dump, the adit had not been very long; however, much of the dump has been washed downstream during floods, due to the close proximity of Hurdy Creek. Part of the dump may also have been incorporated into fill for the adjacent logging road.

Two chip samples were taken across the vein, one inside and one outside of the portal (fig. 3 and plate 1, nos. 21 and 22). They were 1 ft and 0.2 ft long and contained 6,050 ppb (0.177 oz/ton) and 120 ppb gold, respectively.