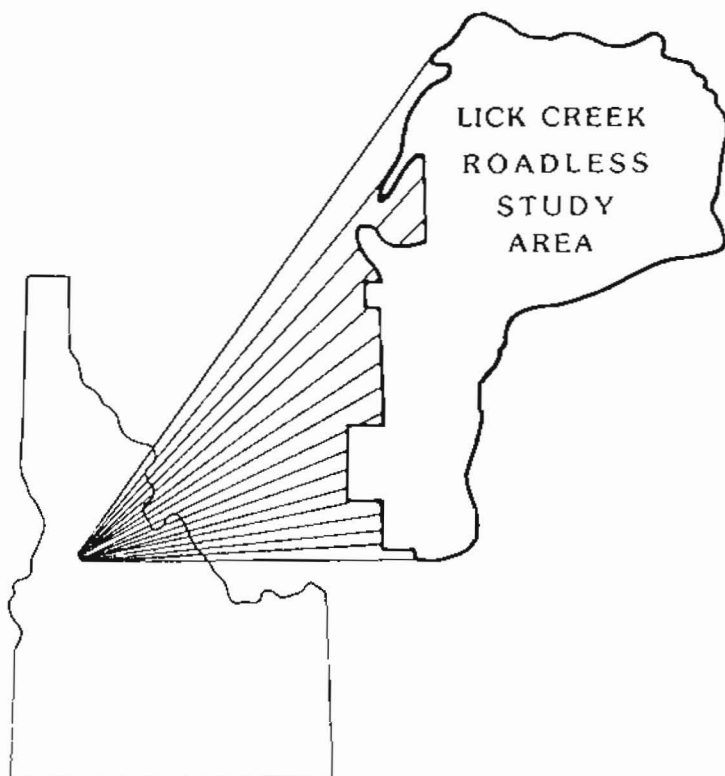


**MLA**

15-86

Mineral Land Assessment/1986  
Open File Report

## Mineral Resources of the Lick Creek Roadless Study Area, Valley County, Idaho



BUREAU OF MINES  
UNITED STATES DEPARTMENT OF THE INTERIOR

MINERAL RESOURCES OF THE LICK CREEK  
ROADLESS STUDY AREA, VALLEY COUNTY, IDAHO

by  
Michael C. Horn

Western Field Operations Center  
Spokane, Washington

UNITED STATES DEPARTMENT OF THE INTERIOR  
Donald P. Hodel, Secretary

BUREAU OF MINES  
Robert C. Horton, Director

## PREFACE

The Wilderness Act (P.L. 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and U.S. Bureau of Mines to survey certain areas on 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 survey of the Lick Creek Roadless Study Area (M4-455), Valley County, ID. The area was classified as a wilderness recommended area during the Second Roadless Area Review and Evaluation (RARE II) by the Forest Service, January 1979.

This open-file report will be summarized in a joint report published by the U.S. Geological Survey. The data were gathered and interpreted by Bureau of Mines personnel from Western Field Operations Center, East 360 Third Avenue, Spokane, WA, 99202. The report has been edited by members of the Branch of Mineral Land Assessment at the field center and reviewed at the Division of Mineral Land Assessment, Washington, DC.

## CONTENTS

	Page
Summary . . . . .	3
Introduction . . . . .	3
Setting . . . . .	3
Previous studies . . . . .	5
Present study . . . . .	5
Acknowledgements . . . . .	5
Geologic setting . . . . .	5
Mining activity . . . . .	6
Appraisal of mineral resources . . . . .	8
References . . . . .	9

## ILLUSTRATIONS

Figure 1. Location of the Lick Creek Roadless Study Area (M4-455), ID . . . . .	4
2. Lick Creek Roadless Study Area (M4-455), ID . . . . .	7

## SUMMARY

The 61,470-acre Lick Creek Roadless Study Area is in the western Salmon River Mountains, centered 12 miles northeast from McCall, ID. U.S. Bureau of Mines personnel examined the roadless area in 1984. There is no recorded mineral production from the study area and no current mineral-related activity was observed. The roadless area is underlain by granitic rocks of the Idaho batholith. Pegmatite dikes and aplite dikes are present locally. Sampling indicates these rocks are not mineralized. No mineral resources were identified.

## INTRODUCTION

This report describes the USBM (U.S. Bureau of Mines) portion of a cooperative study with the USGS (U.S. Geological Survey) to evaluate mineral resources and potential of federal lands recommended for wilderness, as required by The Wilderness Act of 1964. The USBM examines and evaluates individual mines, claims, prospects, and mineralized zones; USGS conducts broader geological, geochemical, and geophysical surveys. Such data helps Congress and other federal agencies make decisions affecting the use of public lands.

### Setting

The Lick Creek Roadless Study Area occupies 61,470 acres in the Payette National Forest, Valley County, Idaho. It is 4 to 20 mi (miles) northeast from McCall in the western Salmon River Mountains (fig. 1). Topography in the study area is rugged, characterized mainly by steep-sided valleys and ridges that range in elevation from about 5,600 ft (feet) in the south, near the Lake Fork Guard Station, to 9,322 ft at North Loon Mountain. Many of the valleys are U-shaped, typical of glaciated terrain. More than 30 lakes lie within these valleys.

The study area drains east and north to the Secesh River, south to Lick Creek and Lake Fork, and west to Payette Lake and the North Fork Payette River, all of which form natural boundaries of the study area. Access along the southern and eastern boundaries is by Lick Creek Road and along the western boundary by Warren Wagon Road. A network of foot trails provide access to the interior of the study area. The region has a severe climate with much of the more than 30 in. (inches) of annual precipitation occurring as snow. Snow usually blocks the roads from November to June.

Most of the area is heavily forested with a variety of evergreen trees. The forest understory consists of many species of small trees and shrubs, with grasses in small open meadows. Some drainages are choked with underbrush and downfallen timber.

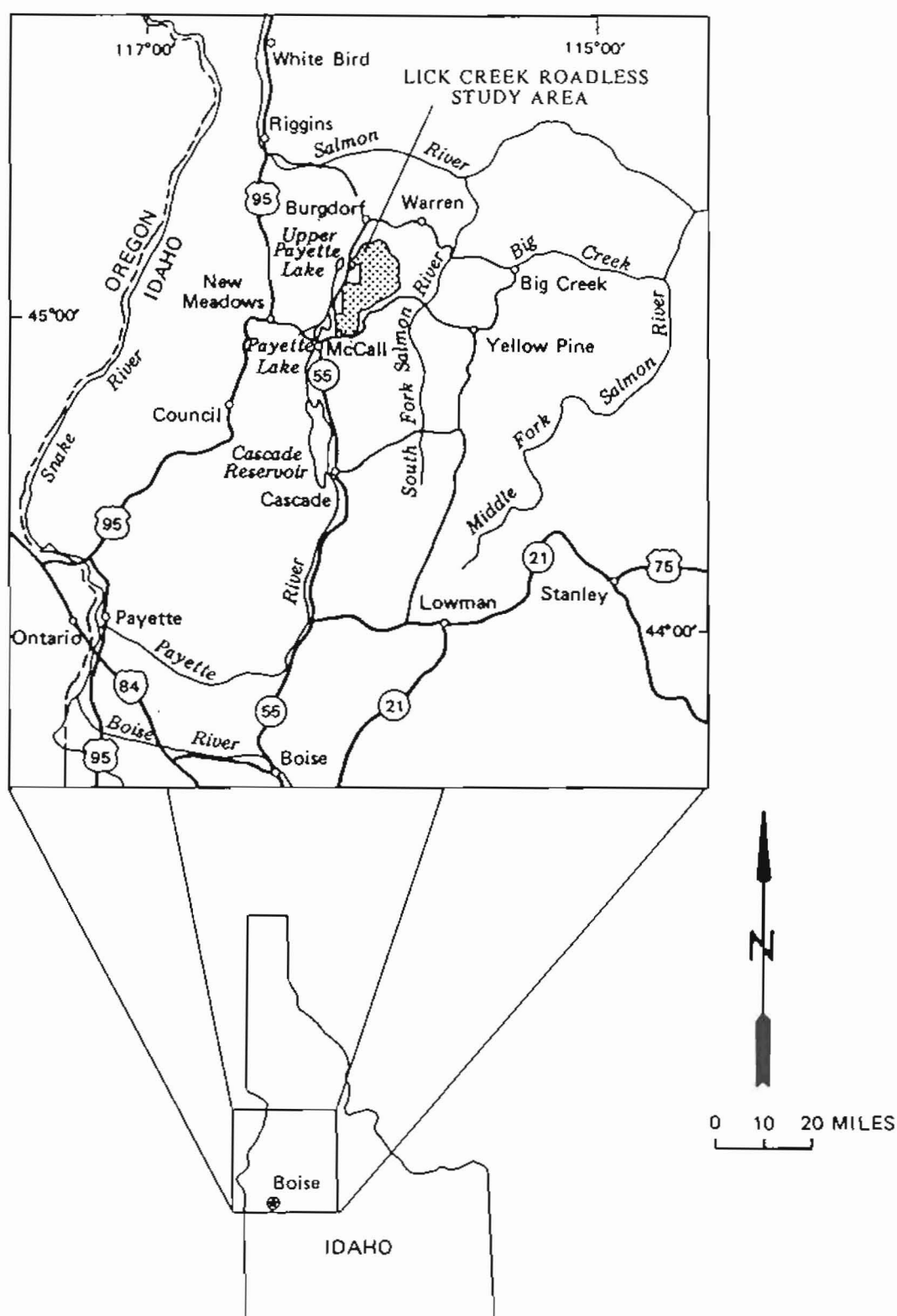


FIGURE 1. – Location of the Lick Creek Roadless Study Area (M4-455), ID

### Previous Studies

Regional geologic and mineral production information about mining districts in the Salmon River Mountains is available in yearly Reports of the Idaho State Mineralogist, as well as reports by the USGS, USBM, and the Idaho Geological Survey (formerly the Idaho Bureau of Mines and Geology). No reports were found that specifically describe the study area.

### Present Study

During the summer of 1984, USBM personnel conducted field examinations of the Lick Creek Roadless Study Area. Prefield studies included a review of Valley County and BLM (U.S. Bureau of Land Management) mining claim and mineral lease records, and library research. Records indicate there are no current claims or leases within the study area.

Field studies involved a search for all prospects and claims located within the study area. Those found were examined and, where warranted, sampled. Reconnaissance was done throughout the area on foot.

Nineteen chip or grab samples were collected at prospects and outcrops within the study area. All samples were pulverized and checked for radioactivity and fluorescence. A split of each sample was then sent to the USBM Reno Research Center where the presence and abundance of suspected minerals were determined by fire-assay, atomic absorption, and inductively coupled plasma analytical methods. The samples were also analyzed for 40 elements <sup>1/</sup> by semi-quantitative emission spectrography to detect unsuspected minerals.

### ACKNOWLEDGEMENTS

Special thanks are extended to Carroll W. Wikstrom, a very capable field assistant.

### GEOLOGIC SETTING

The study area is underlain by the Idaho batholith, a Cretaceous age intrusion of primarily felsic igneous rocks (Ross and Forrester, 1947). The main mass of the Idaho batholith is medium to coarse grained with locally gneissic texture. Composition ranges from quartz monzonite to diorite. Also present within the batholith are aplite and pegmatite dikes. Muscovite schist crops out locally in the Fall Creek Saddle area and one dacite porphyry dike was observed on the north slope of Victor Peak (fig. 2).

---

<sup>1/</sup> Aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, gallium, gold, iron, lanthanum, lead, lithium, magnesium, manganese, molybdenum, nickel, niobium, palladium, phosphorus, platinum, potassium, scandium, silicon, silver, sodium, strontium, tantalum, tellurium, tin, titanium, vanadium, yttrium, zinc, and zirconium.

Mineral deposits in mining districts outside the study area are generally associated with pendants of Paleozoic sedimentary rocks, extensively silicified shear zones or felsic dikes, Tertiary age granitic or volcanic rocks, or fissure veins in the granitic rocks of the Idaho batholith (Schrader and Ross, 1925; Shenon and Ross, 1936; Reed, 1937; Capps, 1940; Cook, 1956; Leonard, 1965; Bennett, 1980). Of these geologic environments, only felsic aplite and pegmatite dikes were found in the study area.

#### MINING ACTIVITY

Mining in this region of Idaho began in 1862 with placer discoveries at Warren about 15 mi northeast of the study area. Lode discoveries of gold followed in 1866 (Lindgren, 1900, p. 238-239). The Warren, Resort, Marshall Lake, Edwardsburg, Profile, Thunder Mountain, and Yellow Pine mining districts were all incorporated east and northeast of the study area but did not include land within the study area (Mitchell and others, 1981). There is no recorded production from within the study area.

No active workings were observed during the investigation. BLM mining claim records show current claims near the study area at Slick Rock and on Enos Creek (fig. 2), but no evidence of workings were found.

USBM records indicate a graphite occurrence in sec. 32, T. 19 N., R. 4 E. (fig. 2). The occurrence is composed of alternating bands of graphitic schist and barren bands of quartzite. Screen tests revealed the graphite is locked with quartz and would present an ore dressing problem. The property was explored by two shallow pits in 1955. No further development was reported. This information was not confirmed during this investigation.

One adit was found in the SW1/4 sec. 5, T. 20 N., R. 5 E., at an elevation of about 8,000 ft (fig. 2). Inaccessible underground workings are visible for about 15 ft beyond a partially caved portal. The size of the dump indicates the adit is less than 50 ft long. The adit was driven on a zone of slightly brecciated granitic rock which is iron stained along fractures. The zone strikes N. 55° E. and dips 60° SE. Similar brecciation and iron staining is present in outcrops along the N. 55° E. trend about 4,000 ft to the northeast at Enos Lake, which is also at an elevation of 8,000 ft. Traceable outcrops are obscured by soil cover; however, evidence suggests the zone may be continuous beneath the east flank of South Loon Mountain which rises to about 8,800 ft along the trend.

Nineteen samples were collected from within the study area. One sample from the brecciated zone near Enos Lake contained 0.04 oz/ton (ounce per ton) gold and a select sample, one of three from the dump at the collapsed adit on the same zone, contained 0.1 oz/ton silver. Two samples from pegmatite dikes in the central and southern parts of the study area contained 0.04 and 0.02 oz/ton gold. The remainder of the samples contained no significant values of gold, silver, copper, lead, molybdenum, or tungsten.



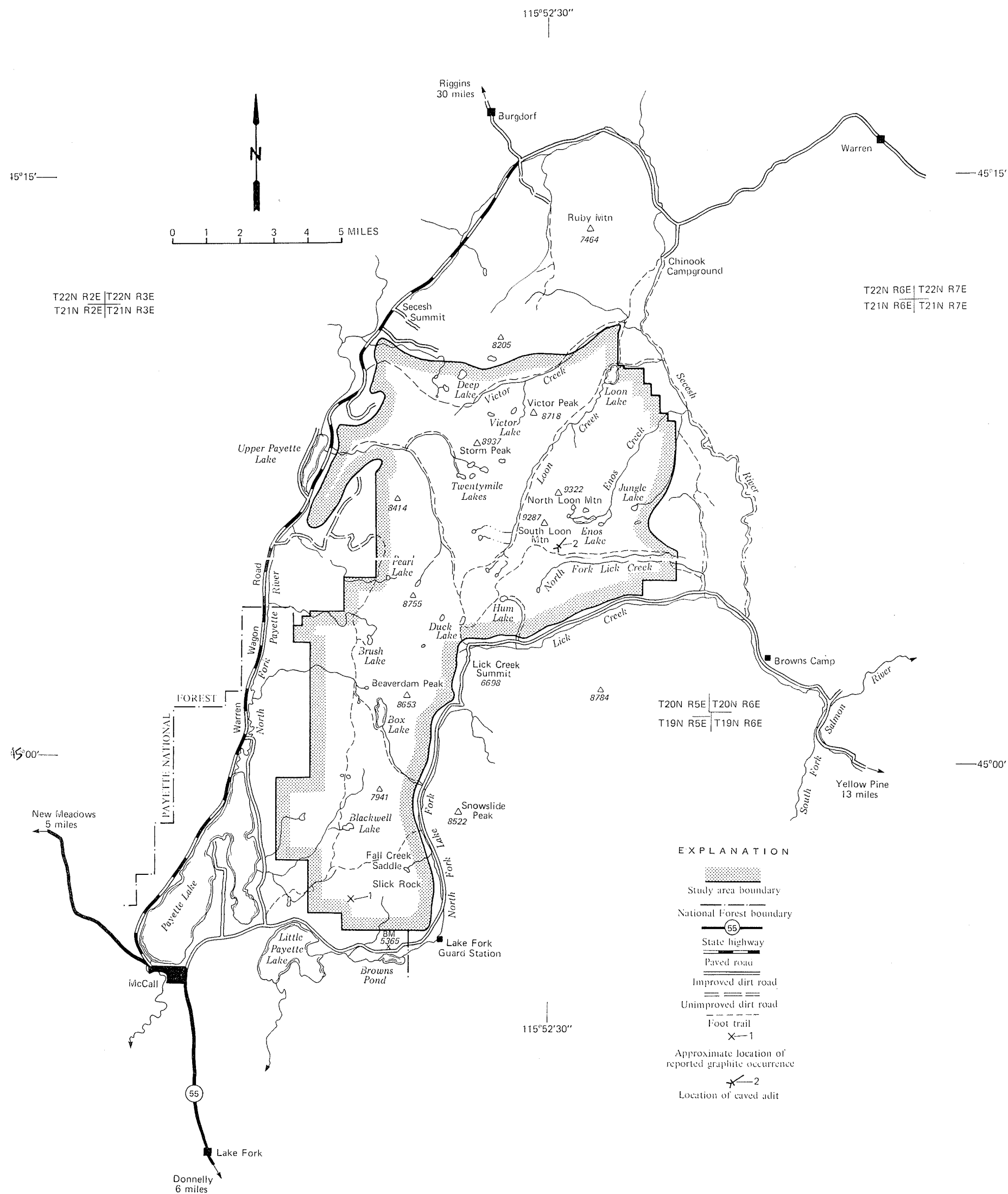


FIGURE 2. - Lick Creek Roadless Study Area (M4-455), ID

## APPRAISAL OF MINERAL RESOURCES

The granitic rocks in the study area do not appear to host other than minor occurrences of economic minerals. Dikes within the Idaho batholith are relatively small, and sample analyses indicate they are also relatively unmineralized within the study area. The lack of known mineralized structures, such as those in established mining districts outside the study area, make mineral exploration and development in the Lick Creek Roadless Study Area unlikely.

## REFERENCES

- Bennett, E. H., 1980, Granitic rocks of Tertiary age in the Idaho batholith and their relation to mineralization: *Economic Geology*, v. 75, p. 278-288.
- Capps, S. R., 1940, Gold placers of the Secesh Basin, Idaho County, Idaho: *Idaho Bureau of Mines and Geology Pamphlet 52*, 43 p.
- Cook, E. F., 1956, Tungsten deposits of south-central Idaho: *Idaho Bureau of Mines and Geology Pamphlet 108*, 40 p.
- Leonard, B. F., 1965, Mercury-bearing antimony deposit between Big Creek and Yellow Pine, central Idaho: *U.S. Geological Survey Professional Paper 525-B*, p. B23-B28.
- Lindgren, Waldemar, 1900, The gold and silver veins of Silver City, De Lamar, and other mining districts in Idaho: *U.S. Geological Survey 20th Annual Report*, v. 3, p. 65-255.
- Mitchell, V. E., Strowd, W. B., Hustedde, G. S., Bennett, E. H., 1981, Mines and prospects of the Elk City Quadrangle, Idaho: *Idaho Bureau of Mines and Geology, Mines and Prospects Map Series*, 72 p.
- Reed, J. C., 1937, Geology and ore deposits of the Warren mining district, Idaho County, Idaho: *Idaho Bureau of Mines and Geology Pamphlet 45*, 65 p.
- Ross, C. P. and Forrester, J. D., compilers, 1947, Geologic map of the State of Idaho: *Idaho Bureau of Mines and Geology*, scale 1:500,000.
- Schrader, F. C. and Ross, C. P., 1925, Antimony and quicksilver deposits in the Yellow Pine district, Idaho: *U.S. Geological Survey Bulletin 780-D*, p. 137-144.
- Shenon, P. J. and Ross, C. P., 1936, Geology and ore deposits near Edwardsburg and Thunder Mountain, Idaho: *Idaho Bureau of Mines and Geology Pamphlet 44*, 44 p.