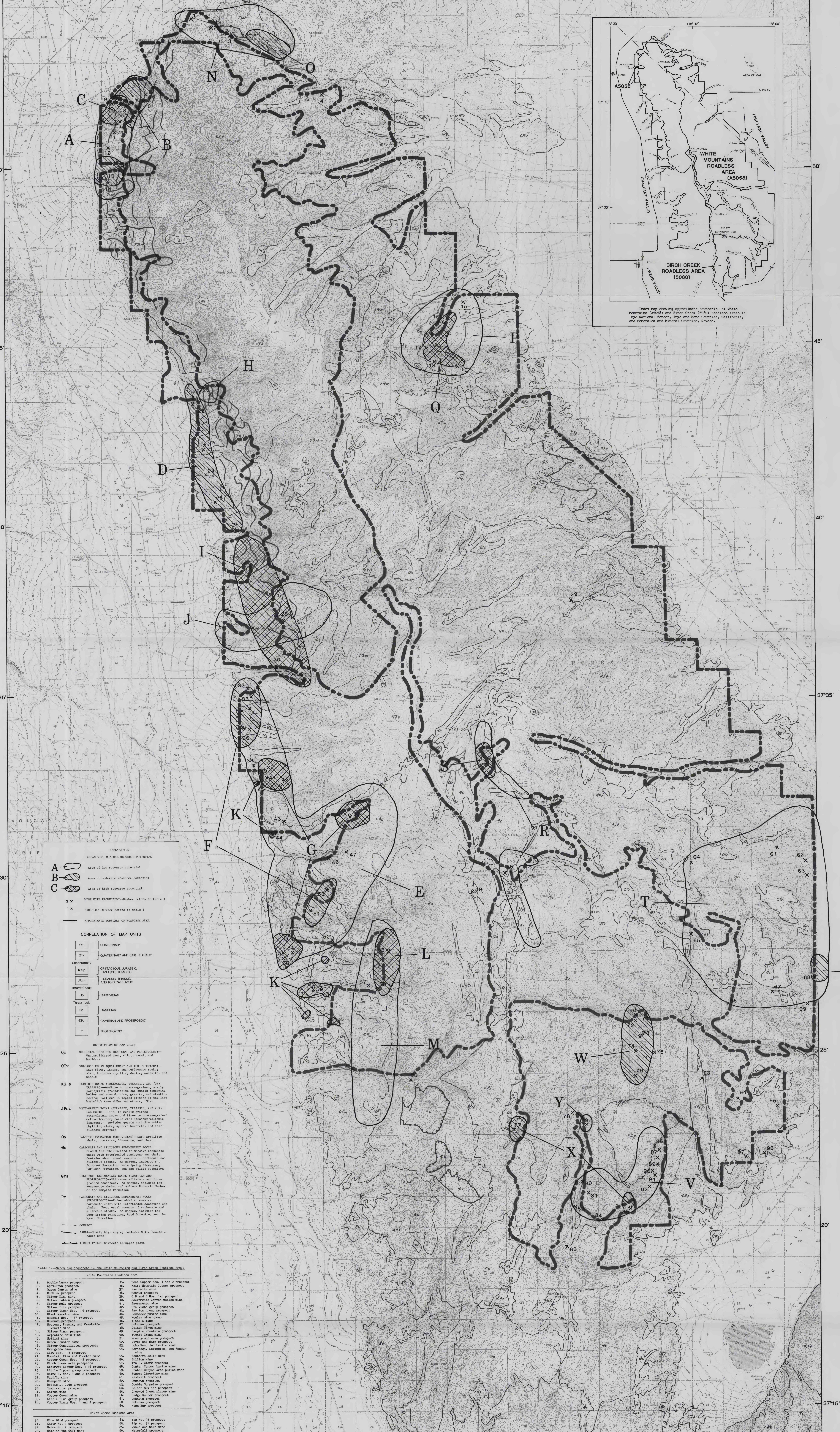
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-1361-D



Index map showing approximate boundaries of White Mountains (A5058) and Birch Creek (5060) Roadless Areas in Inyo National Forest, Inyo and Mono Counties, California, and Esmeralda and Mineral Counties, Nevada.

EXPLANATION

AREAS WITH MINERAL RESOURCE POTENTIAL

A — Area of low resource potential
B — Area of moderate resource potential
C — Area of high resource potential

3 ⚒ MINE WITH PRODUCTION--Number refers to table 1
1 × PROSPECT--Number refers to table 1
—— APPROXIMATE BOUNDARY OF ROADLESS AREA

CORRELATION OF MAP UNITS

Qs — QUATERNARY
QTv — QUATERNARY AND (OR) TERTIARY
Unconformity
KTRp — CRETACEOUS, JURASSIC, AND (OR) TRIASSIC
JPzm — JURASSIC, TRIASSIC, AND (OR) PALEOZOIC
Thrust(?) fault
Op — ORDOVICIAN
Thrust fault
Єc — CAMBRIAN
ЄPs — CAMBRIAN AND PROTEROZOIC
Pc — PROTEROZOIC

DESCRIPTION OF MAP UNITS

Qs — SURFICIAL DEPOSITS (HOLOCENE AND PLEISTOCENE)--Unconsolidated sand, silt, gravel, and boulders

QTv — VOLCANIC ROCKS (QUATERNARY AND (OR) TERTIARY)--Lava flows, lahars, and tuffaceous rocks; also, includes rhyolite, dacite, andesite, and basalt

KTRp — PLUTONIC ROCKS (CRETACEOUS, JURASSIC, AND (OR) TRIASSIC)--Medium- to coarse-grained, mostly porphyritic granodiorite and quartz monzonite bodies and some diorite, granite, and alaskite bodies; includes 14 mapped plutons of the Inyo batholith (see McKee and others, 1982)

JPzm — METAMORPHIC ROCKS (JURASSIC, TRIASSIC, AND (OR) PALEOZOIC)--Fine- to medium-grained metavolcanic rocks and fine- to coarse-grained metasedimentary rocks with abundant volcanic fragments. Includes quartz sericite schist, phyllite, slate, spotted hornfels, and calc-silicate hornfels

Op — PALMETTO FORMATION (ORDOVICIAN)--Dark argillite, shale, quartzite, limestone, and chert

Єc — CARBONATE AND SILICEOUS SEDIMENTARY ROCKS (CAMBRIAN)--Thin-bedded to massive carbonate units with interbedded sandstone and shale. Contains about equal amounts of carbonate and siliceous strata. As mapped, includes the Emigrant Formation, Mule Spring Limestone, Harkless Formation, and the Poleta Formation

ЄPs — SILICEOUS SEDIMENTARY ROCKS (CAMBRIAN AND PROTEROZOIC)--Siliceous siltstone and fine-grained sandstone. As mapped, includes the Montenegro Member and Andrews Mountain Member of the Campito Formation

Pc — CARBONATE AND SILICEOUS SEDIMENTARY ROCKS (PROTEROZOIC)--Thin-bedded to massive carbonate units with interbedded sandstone and shale. About equal amounts of carbonate and siliceous strata. As mapped, includes the Deep Spring Formation, Reed Dolomite, and the Wyman Formation

—— CONTACT
—— FAULT--Mostly high angle; includes White Mountain fault zone
▲▲▲ THRUST FAULT--Sawteeth on upper plate

Table 1.--Mines and prospects in the White Mountains and Birch Creek Roadless Areas

White Mountains Roadless Area

1.	Double Lucky prospect	35.	Mono Copper Nos. 1 and 2 prospect
2.	Apex-Fawn prospect	36.	White Mountain Copper prospect
3.	Queen Canyon mine	37.	Eva Belle mine
4.	Ruth E. prospect	38.	Mohawk prospect
5.	Silver King mine	39.	G B and S Nos. 1-6 prospect
6.	Silver Button prospect	40.	Sacramento Canyon pumice mine
7.	Silver Mule prospect	41.	Sacramento mine
8.	Silver Pile prospect	42.	Ora Vista group prospect
9.	Silver Tiger Nos. 1-6 prospect	43.	Ray Tom group prospect
10.	Black Warrior mine	44.	Comstock pumice mine
11.	Russell Nos. 1-17 prospect	45.	Moulas mine group
12.	Unknown prospect	46.	Z and S mine
13.	Neptune, Phenix, and Creekside Quartz mine	47.	Unknown prospect
14.	Silver Pinon prospect	48.	Golden Siren mine
15.	Argentite Maid mine	49.	Campito Mountain prospect
16.	Mollini mine	50.	Twenty Grand mine
17.	Green Monster mine	51.	Moon group area prospect
18.	Silver Consolidated prospects	52.	Joyce and Mark prospect
19.	Evergreen mine	53.	Hobo Nos. 1-8 barite mine
20.	Claw Nos. 1-3 prospect	54.	Saratoga, Lexington, and Ranger mine
21.	Mountain View and Proctor mine	55.	Southern Belle mine
22.	Copper Queen Nos. 1-3 prospect	56.	Bullion mine
23.	Birch Creek area prospects	57.	Ira O. Clark prospect
24.	Stairway Copper Nos. 1-16 prospect	58.	Gunter Canyon barite mine
25.	Little Dipper group prospect	59.	Gunter Canyon Area pumice mine
26.	Heine B. Nos. 1 and 2 prospect	60.	Rogers limestone mine
27.	Pacific mine	61.	Zisiszit prospect
28.	Champion mine	62.	Unknown prospect
29.	Bobbie D. Lode prospect	63.	Double Surprise prospect
30.	Inspiration prospect	64.	Golden Skyline prospect
31.	Colton mine	65.	Crooked Creek placer mine
32.	Copper Queen mine	66.	Ridge Runner prospect
33.	Little Blue group prospect	67.	Unknown prospect
34.	Copper Kings Nos. 1 and 2 prospect	68.	Unknown prospect
		69.	High Bar prospect

Birch Creek Roadless Area

70.	Blue Bird prospect	83.	Tig No. 91 prospect
71.	Gator No. 1 prospect	84.	Tig No. 34 prospect
72.	Gator No. 2 prospect	85.	Wynne and Ward mine
73.	Hole in the Wall mine	86.	Waterfall prospect
74.	Charlies Angels Nos. 1 and 2 mine	87.	unknown prospect
75.	Charlies Angels Nos. 3 and 4 prospect	88.	Hap. No. 41 prospect
76.	Del Masso prospect	89.	Unknown prospect
77.	Mexican mine	90.	Unknown prospect
78.	Mt. Tom prospect	91.	Unknown prospect
79.	Burner-Adams prospect	92.	Unknown prospect
80.	Unknown prospect	93.	Juanita prospect
81.	Unknown prospect	94.	Space Age prospect
82.	Mollie Gibson mine	95.	Silver Queen prospect
		96.	Lakeview prospect
		97.	Kesef prospect

Base from U.S. Geological Survey, 1:62,500, Benton, Mount Bancroft, White Mountain Peak, 1962; Davis Mountain, 1963; Bishop, Blanco Mountain, 1957; Big Pine, Waucoba Mountain, 1958.

TRUE NORTH — MAGNETIC NORTH 13°
APPROXIMATE MEAN DECLINATION, 1983

SCALE 1:62500
1 ½ 0 1 2 3 4 MILES
3000 0 3000 6000 9000 12000 15000 18000 21000 FEET
1 .5 0 1 2 3 4 5 KILOMETERS
CONTOUR INTERVAL 80 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology generalized from McKee and others (1982).

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 White Mountains and Birch Creek Roadless Areas, Inyo National Forest, Inyo and Mono Counties, California, and Esmeralda and Mineral Counties, Nevada. White Mountains (A5058) and Birch Creek (5060) Roadless Areas were classified as further planning areas during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

SUMMARY

On the basis of geologic, geochemical, and geophysical investigations and consideration of known mineral deposits at mines and prospects, the resource potential for metallic (gold, silver, lead, zinc, copper, tungsten, uranium and barium) and nonmetallic commodities in the White Mountains and Birch Creek Roadless Areas is low to moderate with local areas of high resource potential. Various of these commodities occur in greater than normal amounts at the Sacramento Canyon to Gunter Creek area, Queen Canyon, Indian and Marble Creeks, upper Cottonwood and upper Crooked Creeks in the White Mountains Roadless Area and west of Birch Creek in the Birch Creek Roadless Area.

Mineral deposits and occurrences are related to the intrusion of Mesozoic plutons into Proterozoic to Permian sedimentary, metasedimentary, and metavolcanic strata. These strata and some of the plutons are hosts for fissure-filling quartz veins, mineralized fault or shear zones, and silicified zones, which contain gold, silver, lead, zinc, copper, uranium, and barite. In one area, metasomatism of metasedimentary and metavolcanic rocks has resulted in the formation of andalusite and rutile; the same process has produced sericite deposits.

Resources were identified at nine mines or prospects in the White Mountains Roadless Area, five partly inside the area, and four outside, but near the area (table 1 in the accompanying pamphlet). An additional 51 properties (42 in the area, six partly inside the area, and three outside, but adjacent to it) have identified mineralization.

The most important nonmetallic mine inside the White Mountain Roadless Area, the Colton mine, has 1.2 million tons of indicated and inferred subeconomic sericite resources. The Pacific mine, partly within the roadless area, has 630,000 tons of indicated and inferred reserves and 430,000 tons of indicated and inferred subeconomic resources of sericite. The Champion mine has 250,000 tons of inferred subeconomic resources of andalusite and rutile. The Gunter Canyon area pumice deposits adjacent to the White Mountains Roadless Area have 9.6 million tons of indicated and inferred subeconomic resources.

Resources were identified at three mines or prospects in the Birch Creek Roadless Area and at two mines outside, but near the roadless area (table 5 in the accompanying pamphlet). An additional 23 properties (19 in the area and four outside, but adjacent to it) have identified mineralization.

INTRODUCTION

The White Mountains and Birch Creek Roadless Areas encompasses approximately 243 mi² and 42 mi², respectively, in the Inyo National Forest, Mono and Inyo Counties, California, and Esmeralda and Mineral Counties, Nevada. The climate is arid to semiarid. Most of the vegetation is typical of the Upper Sonoran and Transition zones and consists of sage, rabbit brush, and sparse grasses at lower elevations and pinon pine, juniper, and mountain mahogany on mountain slopes. At higher elevations limber pine and bristlecone pine are present up to timberline. Riparian vegetation includes willow, aspen, wild rose, and grasses.

GEOLOGY

The White Mountains include rocks as old as Proterozoic and deposits as young as Holocene. The rocks can be divided into four groups: (1) an upper Proterozoic through Cambrian sequence of carbonate, quartz sandstone, and shale that was deposited in a shallow-marine continental-shelf environment and Ordovician strata that consists of dark argillite, chert, and shale that was deposited in a deep-water marine environment. The Ordovician rocks were thrust into their present location from sites of deposition 40 mi or more to the northwest. (2) Metavolcanic and metasedimentary rocks similar to Paleozoic and Mesozoic rocks found tens of miles to the northeast in western Nevada occur near White Mountain Peak. They are of a higher metamorphic grade than older rocks nearby, suggesting that they are allochthonous. (3) Mesozoic plutonic rocks, mostly granodiorite, of the Inyo batholith, an eastern extension of the Sierra Nevada batholith. (4) Late Tertiary volcanic and sedimentary rocks, especially abundant in the northern part of the White Mountains, include rhyolitic lava flows, ash flows, ash-fall tuffs, and hypabyssal bodies. Andesitic lava flows and lahar deposits are common, and olivine basalt flows are found locally at many places throughout the White Mountains.

GEOCHEMISTRY

The geochemical survey of the White Mountains is based on rock, stream-sediment, and bulk-sediment samples for concentration of nonmagnetic heavy minerals from 386 sites. Analytical data and statistical summaries of the geochemical data are given in Diggles and others (1982), and Diggles (1983) described the geochemical anomalies detected in the roadless areas.

AEROMAGNETIC SURVEY

An aeromagnetic survey was flown along east-west flightlines across the White Mountains, and the resulting data were compiled into contour maps of total magnetic field anomalies. The largest magnetic anomaly in the mapped area occurs over the granodiorite of Mount Barcroft in the southwestern part of the White Mountains Roadless Area. The shape of this anomaly indicates that the southern contact of the pluton with the Campito Formation dips to the south and may extend for several miles below the Proterozoic and Paleozoic sedimentary rocks.

The quartz monzonite of Beer Creek in the Birch Creek Roadless Area also produces a distinctive magnetic anomaly. The shape of the anomaly indicates that the southwestern contact of the pluton dips to the southwest below the Wyman Formation and other Proterozoic, as well as Paleozoic, sedimentary rocks. The same magnetic anomaly overlaps the quartz monzonite of Sage Hen Flat, suggesting that the Proterozoic sedimentary rocks separating the Beer Creek pluton from the Sage Hen Flat pluton form only a thin septum at depth.

The granite of Pellisier Flats and the adamellite of Boundary Peak in the northern end of the White Mountains Roadless Area produce a single anomaly with a shape suggesting that the composite plutonic body broadens with depth. The steep westward dip of the western boundary of these plutons is largely a result of the steep topography on the west side of the White Mountains. Other boundaries represent more gently sloping contacts with Paleozoic and Triassic sedimentary rocks.

A broad magnetic low occurs over the Proterozoic and Paleozoic sedimentary rocks at the southern end of the White Mountains Wilderness, suggesting that these sedimentary rocks form an especially thick sequence in this region and that plutonic rocks are not present.

MINING ACTIVITY

History and production, White Mountains Roadless Area

The earliest known mining activity around 1861 was in the southern end of the White Mountains. The most important mines included the Sacramento, Twenty Grand, Southern Belle, and Poleta mines, which produced ore containing gold, silver, copper, and lead. Ores from these mines were first processed at the Ida mill in Owensville, near the present town of Laws, California (Clark and Clark, 1978).

The earliest discovery in the northern end of the White Mountains was in 1870 at the Indian Queen-Poorman mine north of the White Mountains Roadless Area. By 1888 it had a 4-stamp mill; operations were continuous until around 1917, then intermittent until 1983. Other silver-, lead-, and zinc-rich areas were found in this area and south to Montgomery Canyon. Whiting (1888) reported that mines in Montgomery Canyon had produced $60,000 worth of metals, but by 1890 most of the rich, easily accessible silver ores had been removed.

Interest in the nonmetallic deposits located on the west range front between Sacramento and Silver Canyons began around 1920. A deposit of andalusite in Jeffrey Mine Canyon was mined from 1921 to 1945. Deposits of sericite flank the andalusite deposits and have been mined since the mid-1940's. Barite was mined in the Gunter Canyon area from the late 1920's to the late 1950's. Some barite came from the Hobo property, but most of it came from the Gunter Canyon Barite mine adjacent to the roadless area. Production from several pumice deposits from the mid-1920's to 1983 has supplied local markets with this material.

Placer gold is found along Crooked Creek, where a deposit of gold-bearing Tertiary stream gravels has been dissected by Crooked Creek. The amount of gold recovered from these gravels is unknown but assumed to be small.

Recorded production from metallic and nonmetallic mines in and near the roadless area is listed in tables 2 and 3 of the accompanying pamphlet.

History and production, Birch Creek Roadless Area

Incomplete records indicate that about 200 tons of ore from four mines in and near the roadless area yielded a total of 49 oz of gold, 2,301 oz of silver, 980 lbs of copper, and 43,072 lbs of lead between 1908 and 1941. These past producers are the Wynne and Ward (164 tons), Hole in the Wall (15 tons), the Charlies Angels Nos. 1 and 2 (Gold Wedge) (11 tons), and the Mexican mines (12 tons). Tucker (1934) reports the Bull Domingo mine (Gator No. 2 prospect) was worked around 1871; it had a small Vaso smelter. Early records of the Gibralter (Wynne and Ward) mine show that by 1888 some ore with an average value of $80 per ton in gold and silver was shipped (Goodyear, 1888).

Mining claims, White Mountain Roadless Area

Approximately 6,500 claims have been located in the White Mountains since the early 1860's. The number of workings are several times less than 6,500, indicating that some properties were relocated numerous times.

About 90 percent of the roadless area is open to mineral location. Areas not open include: the Ancient Bristlecone Pine Forest, the White Mountain Natural Scientific areas, the former Champion mine property, and the power withdrawal sites in Montgomery and Cottonwood Canyons, on the west range front. The central part of the White Mountains Roadless Area is the proposed White Moumtain Wilderness; it is not open to mining-claim location after 1983.

Mining claims, Birch Creek Roadless Area

Since 1879, about 1,100 lode and 10 placer claims have been located within the Birch Creek Roadless Area. In 1982, 245 lode claims were valid within the area.

Mineral properties

Locations of 69 of 131 mines and prospects in the White Mountains Roadless Area and 28 of 39 mines and prospects in the Birch Creek Roadless Area examined during this study are shown on the map. Descriptions of all 97 properties are given in tables 4 and 6 of the accompanying pamphlet.

MINERAL RESOURCE POTENTIAL

Mines and prospects

Resources were identified at nine mines or prospects in the White Mountains Roadless Area, five partly inside the area, and four outside but near the area (table 1). An additional 51 properties (42 in the area, six partly inside the area, and three outside, but adjacent to it) have identified mineralization.

The most important metallic mines in the area are: (1) the Sacramento mine, with 5,500 tons of measured and inferred marginal reserves averaging 0.47 oz gold per ton, 0.3 oz silver per ton, and 0.56 percent copper; (2) the Moulas mine, with 22,000 tons of indicated and inferred marginal reserves averaging 0.23 oz gold and 0.2 oz silver per ton; (3) the Green Monster mine, with 2,600 tons of indicated and inferred marginal reserves averaging 17 oz silver per ton, 4.0 percent zinc, and 0.73 percent lead, and a smaller amount of higher grade resources; and (4) the Saratoga, Lexington, and Ranger mines, with 1,600 tons of indicated and inferred marginal reserves averaging 0.41 oz gold per ton, and 0.54 oz silver per ton.

The most important nonmetallic mine inside the White Mountains Roadless Area, the Colton mine, has 1.2 million tons of indicated and inferred subeconomic sericite resources. The Pacific mine, partly within the roadless area, has 630,000 tons of indicated and inferred reserves and 430,000 tons of indicated and inferred subeconomic resources of sericite. The Champion mine has 250,000 tons of inferred subeconomic resources of andalusite and rutile. The Gunter Canyon area pumice deposits adjacent to the White Mountains Roadless Area have 9.6 million tons of indicated and inferred subeconomic resources.

Resources were identified at three mines or prospects in the Birch Creek Roadless Area and at two mines outside, but near the roadless area (table 5 in the accompanying pamphlet). An additional 23 properties have identified mineralization.

The most important mines in the area are: (1) the Gator No. 2 prospect, with 5,900 tons of indicated and inferred subeconomic resources averaging 4.0 oz silver per ton, 4.7 percent lead, and 1.9 percent zinc; (2) the Hole in the Wall mine, with 3,700 tons of indicated and inferred resources averaging 0.02 oz gold per ton, 7.3 oz silver per ton, 8.7 percent lead and 7.0 percent zinc; and (3) the Del Masso prospect with 21,000 tons of indicated and inferred subeconomic resources averaging 1.0 oz silver per ton and 2.8 percent lead.

Assessment of mineral resources

Twenty one areas (A-U) in the White Mountains Roadless Area and four areas (V-Y) in the Birch Creek Roadless Area are identified as having anomalous amounts of various metals or nonmetallic commodities. The mineral resource evaluation is based on a combination of geologic, geochemical, geophysical, and known mineral-deposit occurrence information. Areas designated as having resource potential are based on suites of elements occuring in anomalous amounts in geochemical samples, geologic environments favorable for mineral deposits, and presence of mineral claims with potential for additional resources. The terms high, moderate, and low resource potential, as used in this report, reflect degrees of probability that undiscovered resources exist.

Areas A, B, and C

Areas A, B, and C are within the White Mountains fault zone. Stream-sediment samples from these areas have anomalous lead, copper, zinc, and molybdenum. Silver was detected in five samples in area A. The resource potential for silver, lead and zinc is low in area A, moderate in area B, and high in area C. The lack of through-going structures in the range-front shear zone makes it difficult to trace mineralized zones for more than short distances.

Area D

The area along the range-front shear zone between Rock Creek and Middle Canyon yielded geochemical samples that suggest argillic alteration with possible accompanying lead-zinc-silver-copper mineralization. There is copper mineralization at a few mining claims, and the lead, zinc, and silver anomalies in the area probably came from small veins containing this suite of elements. Area D has moderate potential for small deposits of silver, lead, zinc, and copper in quartz veins.

Area E

Stream-sediment samples that yielded anomalous amounts of gold, silver, copper, tungsten, and bismuth were collected from the mouth of Coldwater Canyon. Tungsten is present in small amounts in scheelite-bearing tactite cobbles in the Quaternary fan deposits at the mouth of the canyon. Area E has a low resource potential for gold, silver and copper.

Area F

Two stream-sediment samples containing anomalous amounts of silver, zinc, copper, tungsten, molybdenum and bismuth were collected in the Milner Creek drainage. The area is underlain by granitic, metasedimentary, and metavolcanic rocks that are cut by many small diorite dikes. Area F has a moderate resource potential for silver, zinc, and copper.

Area G

Productive mines in Sacramento Canyon and along Piute Creek, as well as five geochemical samples containing anomalous amounts of arsenic, gold, copper, and nonmagnetic iron, suggest that area G has high potential for small gold resources. The metals are probably from quartz veins in the nearby granodiorite.

Area H

The Claw Nos. 1-3 prospect was worked for uranium although no production is recorded. Mineral resource potential for area H is considered to be low.

Area I

At least two properties are producing sericite from the Lone Tree-Milner Canyon area. Sericite is present in all parts of area I. The potential for additional sericite resources is high.

Area J

Jeffrey Mine Canyon is the site of the Champion mine, a group of nine claims that produced andalusite from 1921 to 1945. Other minerals found in the area include corundum, rutile, sericite, muscovite, alunite, lazulite, and woodhouseite (Kerr, 1932). Anomalous amounts of titanium were detected in stream-sediment samples from Jeffrey Mine Canyon. A low resource potential exists in this area for titanium from sericitized and pyrophyllitized rocks.

Area K

There are several small pumice deposits located at lower elevations along the range front. At least four properties have produced pumice in and adjacent to the roadless area between Sacramento and Silver Canyons. The areas designated area K are those where pumice is present. The potential for additional buried pumice resources is high.

Areas L and M

Two mines in upper Gunter Creek have produced barite, the Gunter Canyon Barite mine and Hobo Nos. 1-8. The deposits consist of small secondary veins. Stream-sediment samples from area M contained anomalous amounts of barium. Barite is present in area L and possibly present in area M. Barite has a high resource potential in area L and a low resource potential in area M.

Areas N and O

The area south of Queen Canyon has low potential for lead, silver, and zinc resources. The Queen Canyon mine in areas O and three mines nearby, but outside of the roadless area, contain silver and lead in quartz and (or) calcite veins in siliceous shale. Area N has low resource potential and area O has moderate resource potential for silver, lead, and zinc in veins.

Areas P and Q

Lead, zinc, and silver are present in anomalous amounts in four stream-sediment samples from Indian and Marble Creeks. Mineralization occurred in a replacement-type deposit in limestone at the Green Monster mine. In the southern part of the area, small mineral deposits occur near the contact between the quartz monzonite of Marble Creek and the Wyman Formation. The Evergreen mine is in this contact metamorphic zone. Metals present are silver, lead, copper and zinc. Area P had low potential and area Q has high potential for resources of silver, lead, copper, and zinc.

Areas R and S

Stream-sediment samples from west of Cottonwood Basin near the contact between the Reed Dolomite and the quartz monzonite of Beer Creek contain anomalous amounts of bismuth, tungsten, and copper. The Eva Belle mine in area S has lead, copper, and zinc in contact-metamorphosed dolomite and gold and silver in quartz veins in the Reed Dolomite. The Golden Siren mine in area S consists of gold-bearing quartz veins. Area R has low potential and area S has high potential for small lead, copper, zinc gold and silver deposits.

Areas T and U

Metals present in lower Cottonwood and Crooked Creek areas are gold, silver, lead, and tungsten. The metals are mostly in quartz veins and fracture zones in granitoid rocks. Detrital gold occurs in alluvial deposits in area T. Area T has low resource potential and area U has moderate resource potential for gold, silver, and lead.

Areas V, W, and X

In areas V, W, and X, silver and lead occur in anomalous amounts in several stream-sediment samples; nonmagnetic heavy-mineral concentrate samples contain anomalous iron. Hemimorphite (hydrous zinc silicate) and lead oxides are present in mines and prospects in Area V. Area V has low resource potential, and areas W and X have moderate potential for gold, silver, lead, and zinc deposits.

Area Y

The Burgner-Adams prospect contains fluorspar and additional fluorspar is present in area Y. The area has low potential for additional fluorspar resources.

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Explanatory pamphlet accompanies map

MINERAL RESOURCE POTENTIAL MAP OF THE WHITE MOUNTAINS AND BIRCH CREEK ROADLESS AREAS, WHITE MOUNTAINS, CALIFORNIA AND NEVADA

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