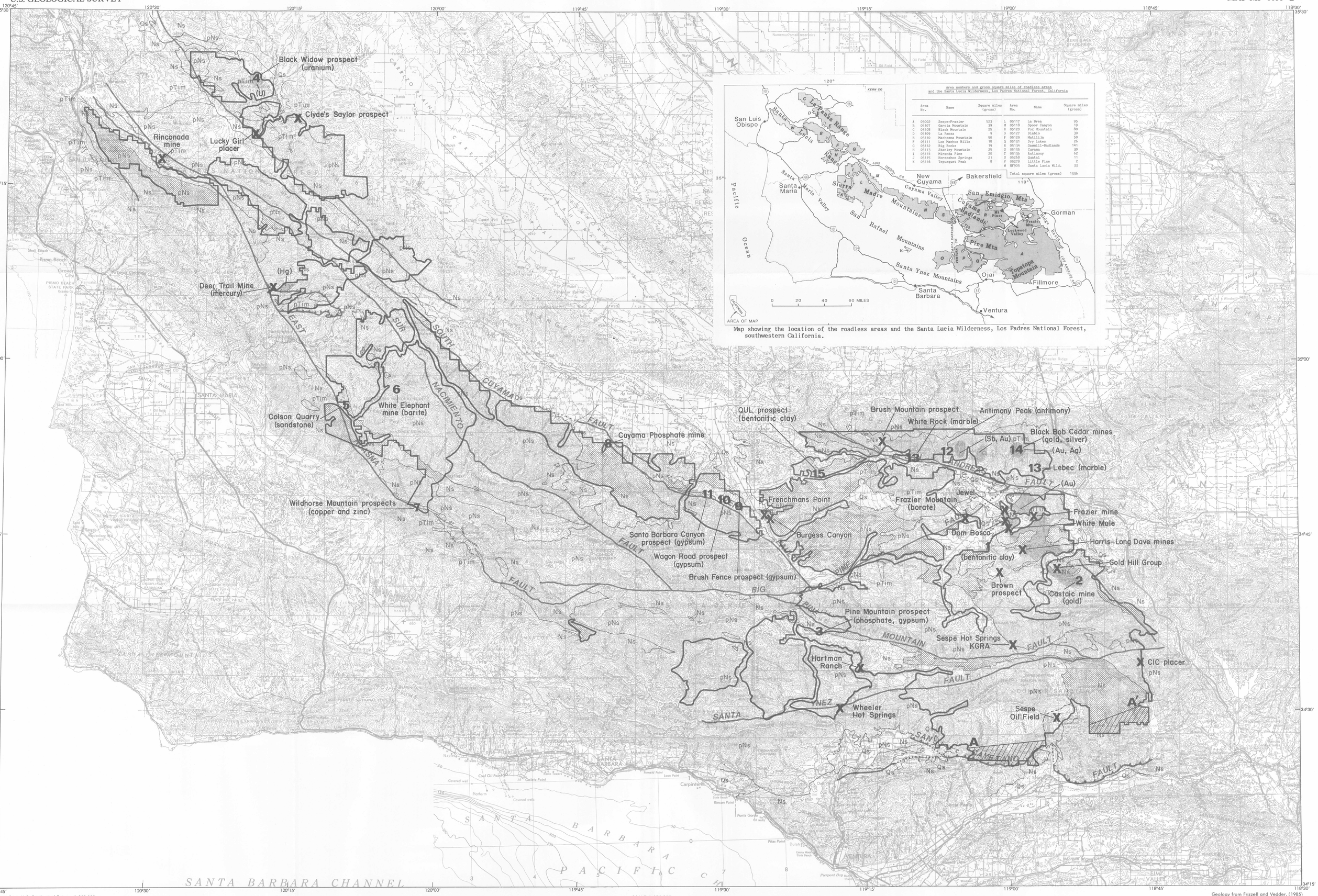

Area numbers and gross square miles of roadless areas and the Santa Lucia Wilderness, Los Padres National Forest, California

Area No.	Name	Square miles (gross)	Area No.	Name	Square miles (gross)
A 05002	Sespe-Frazier	523	L 05117	La Brea	95
B 05107	Garcia Mountain	39	M 05118	Spoor Canyon	19
C 05108	Black Mountain	25	N 05120	Fox Mountain	80
D 05109	La Panza	9	O 05127	Diablo	30
E 05110	Machesna Mountain	50	P 05129	Matilija	50
F 05111	Los Machos Hills	18	Q 05131	Dry Lakes	26
G 05112	Big Rocks	19	R 05134	Sawmill-Badlands	181
H 05113	Stanley Mountain	25	S 05135	Cuyama	30
I 05114	Miranda Pine	20	T 05136	Antimony	62
J 05115	Horseshoe Springs	21	U 05268	Quatal	11
K 05116	Tepusquet Peak	8	V 05278	Little Pine	2
			W NF905	Santa Lucia Wild.	33
				Total square miles (gross)	1336

Map showing the location of the roadless areas and the Santa Lucia Wilderness, Los Padres National Forest, southwestern California.

Base from U.S. Geological Survey, 1:250,000, San Luis Obispo, 1956; Bakersfield, 1962; Santa Maria, 1969; Los Angeles, 1975.

SCALE 1:250 000

CONTOUR INTERVAL 100 AND 200 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology from Frizzell and Vedder, (1985)

MINERAL RESOURCE POTENTIAL MAP OF ROADLESS AREAS AND THE SANTA LUCIA WILDERNESS IN THE LOS PADRES NATIONAL FOREST, SOUTHWESTERN CALIFORNIA

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U. S. Bureau of Mines
1985

MINERAL RESOURCE POTENTIAL SYMBOLS

5 LOCATION OF IDENTIFIED MINERAL RESOURCES—See table 1, pamphlet

X LOCALITY DISCUSSED IN PAMPHLET

MODERATE POTENTIAL FOR THE PRESENCE OF UNDISCOVERED PETROLEUM RESOURCES—See Frizzell and Claypool (1983), Griscom (1985b), and discussion in pamphlet

LOW TO MODERATE POTENTIAL FOR THE PRESENCE OF UNDISCOVERED PETROLEUM RESOURCES—Neogene sedimentary rocks; see Frizzell and Claypool (1983) and discussion of geology in pamphlet

(Au) LOW TO MODERATE POTENTIAL FOR THE PRESENCE OF UNDISCOVERED RESOURCES—Potential is for element (or elements) noted in parentheses. See discussions in pamphlet

A A′ See discussion of Sespe-Frazier Roadless Area in pamphlet

APPROXIMATE BOUNDARY OF WILDERNESS AND ROADLESS AREAS

CORRELATION OF MAP UNITS

Qs	Holocene and Pleistocene	QUATERNARY
Ns	Neogene	TERTIARY
pNs	Pre-Neogene	TERTIARY; CRETACEOUS AND JURASSIC
pTim		PRE-TERTIARY

DESCRIPTION OF MAP UNITS

Qs SURFICIAL DEPOSITS (HOLOCENE AND PLEISTOCENE)—Consist of unconsolidated alluvial fan, flood plain, streambed, and terrace deposits

Ns SEDIMENTARY ROCKS (NEOGENE)—Consist of marine and lesser nonmarine sandstone, siltstone, shale, claystone, and conglomerate. Locally tuffaceous, cherty, porcelaneous, diatomaceous, phosphatic, and petroliferous

pNs SEDIMENTARY ROCKS (PRE-NEOGENE)—Consists of marine and lesser nonmarine sandtone, shale, conglomerate, siltstone, and rare limestone. Age of rocks ranges from Paleogene to Jurassic

pTim IGNEOUS AND METAMORPHIC ROCKS (PRE-TERTIARY)—Consists of massive to well-deformed granitic rocks and metasedimentary rocks that occur as screens within the granitic rocks, with lesser ophiolitic rocks and serpentinized peridotite. Includes very minor Tertiary igneous rocks

GEOLOGY SYMBOLS

CONTACT

FAULT—Dotted where concealed

THRUST FAULT—Dotted where concealed. Sawteeth on upper plate

DETACHMENT STRUCTURE—Sawteeth on upper plate

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 survey of the Santa Lucia Wilderness and 22 roadless areas, that consist of the Sespe-Frazier, Garcia Mountain, Black Mountain, La Panza, Machesna Mountain, Los Machos Hills, Big Rocks, Stanley Mountain, Miranda Pine, Horseshoe Springs, Tepusquet Peak, La Brea, Spoor Canyon, Fox Mountain, Diablo, Matilija, Dry Lakes, Sawmill-Badlands, Cuyama, Antimony, Quatal and Little Pine Roadless Areas. All the roadless areas occur in the Los Padres National Forest, Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura Counties, California. The Santa Lucia Wilderness was established by Public Law 95-237, in 1978. The twenty-two 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

The study area in the Los Padres National Forest contains mines, prospects, and occurrences that contain identified resources of antimony, barite, bentonitic clay, building stone (sandstone and marble), copper, gold, gypsum, petroleum, phosphate rock, silver, uranium, and zinc, but geologic and geochemical investigations generally indicate little potential for the presence of these mineral commodities at other localities within the study area. The few areas with potential for additional mineral resource occurrences are associated with those occurrences that are known and are present in similar geologic settings. Anomalies identified from our geochemical study are related to localities previously known for mineralization; no new areas of mineral resource potential were delineated as a result of the geochemical study.

The Sespe-Frazier Roadless Area (RA) contains bentonitic clay, lode gold, gypsum, petroleum, and phosphate rock; the Black Mountain RA contains uranium; the Horseshoe Spring RA contains building stone (sandstone); the La Brea RA contains barite, copper, and zinc; the Fox Mountain RA contains phosphate rock; the Cuyama RA contains gypsum; the Antimony RA contains antimony, building stone (marble), gold, and silver; and the Quatal RA contains bentonitic clay.

Phosphate-rock reserves in the Sespe-Frazier RA are minable. Bentonitic clay in the Sespe-Frazier RA and sandstone in the Horseshoe Spring RA are marginal reserves because reserves outside the study area meet current market demands. Marble and other sandstone deposits in the study area are subeconomic resources because of high transportation costs and occurrences outside the study area that supply current needs. The deposits of antimony, barite, copper, gold, gypsum, silver, uranium, and zinc contain either marginal reserves or subeconomic resources because of combinations of low commodity prices, generally low grade and tonnage, high mining and beneficiation costs, and poor access.

Petroleum will probably continue to be found in and around the Sespe oil fields and may be present below thrust faults in two parts of the study area in the Sespe-Frazier RA.

Low to moderate potential exists for the presence of undiscovered antimony resources in parts of the Antimony RA. Low to moderate potential exists for the presence of undiscovered barite resources throughout the study area. Low to moderate potential exists for the presence of additional low-grade lode gold resources in parts of the Sespe-Frazier and Antimony RAs. Low to moderate potential exists for the presence of low-grade mercury resources in part of the Stanley Mountain RA. Low to moderate potential exists for the presence of additional undiscovered copper resources in Sespe and younger rocks throughout the study area, and a moderate potential exists for the presence of undiscovered oil and gas at two localities in the Sespe-Frazier RA. A low to moderate potential exists for the presence of additional low-grade uranium resources at depth in parts of the Black Mountain RA.

INTRODUCTION

This report summarizes the results of a mineral survey in the Santa Lucia Wilderness and 22 roadless areas in the Los Padres National Forest, Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura Counties, California. For purposes of this report the individual areas are referred to collectively as the study area. The roadless areas individually range from about 2 to 523 mi^2 and the study area totals some 1336 mi^2.

SOURCES OF DATA

The data in this report are derived from the papers of many workers in a variety of disciplines involved in the investigation of the study area. For more information, consult the reports cited in the references.

Other mineral resource evaluations have been carried out for different parts of the Los Padres National Forest. These include a study of mineral resources in the San Rafael Primitive Area (Gower and others, 1966), the Ventana Primitive Area (Pearson and others, 1967), and additions to the Ventana Primitive Area (Seiders and others, 1983). Mineral occurrences for the Antimony RA are discussed in a county report by Troxel and Morton (1962). Weber and others (1973) describe mineral occurrences in the southern part of Ventura County.

GEOLOGY AND STRUCTURE

Despite its large size, much of the study area is composed of similar rock types. Thick sequences of Mesozoic and Cenozoic sedimentary rocks underlie most of the study area. These sedimentary rocks overlie crystalline basement rocks composed mostly of pre-Tertiary metamorphic and igneous intrusive rocks.

Large areas underlain by pre-Tertiary metamorphic and intrusive rocks occur in both the extreme northeastern and northwestern parts of the study area. Most of the rest of the study area is underlain by highly folded, in part chaotic, pre-Neogene sedimentary rocks. They comprise a thick, heterogeneous, incomplete marine section of interbedded sandstone, siltstone, shale, conglomerate and minor marble, ranging in age from Late Jurassic to Oligocene, with local nonmarine interbeds.

Neogene (Miocene and Pliocene) marine sedimentary rocks include organic-rich siltstone and shale, interbedded sandstone, and lesser conglomerate. These rocks formed mostly from sediments deposited in relatively restricted marine basins where the organic remains of aquatic flora and fauna living in the water column constituted a relatively important source of sediment. Neogene nonmarine rocks occur mostly in the Cuyama Badlands, Lockwood Valley, and along the eastern boundary of the study area in the Ridge Basin. These reddish rocks include interbedded arkosic sandstone, claystone, conglomerate, and bentonitic clay representing alluvial-fan, stream, and lacustrine deposits.

GEOPHYSICAL STUDIES

Geophysical studies included the compilation and analysis of gravity, magnetic, and radiometric data (Griscom, 1985a,b; Dickinson, 1982; Dickinson and others, 1982). The gravity data indicate relatively thin sections of Neogene rock in the southern half of the Santa Lucia Wilderness and south of the South Cuyama oil field in the northern Fox Mountain RA. It confirms thicker amounts of Neogene sedimentary rocks below the San Cayetano thrust in the southern part of the Sespe-Frazier RA and also may indicate a small amount of Neogene sedimentary rocks below the Pine Mountain fault at Pine Mountain. Magnetic data reflect the presence of granitic bedrock highs and indicate ultramafic rocks, but the data do not provide information on mineral deposits in the study area.

Although the radiometric data are equivocal, rather distinct radiometric anomalies occur over claims on Superior Ridge south of the study area and in the Hartman ranch area in the upper Sespe drainage. Uranium mineralization has occurred in the lower Sespe Formation in both these areas.

GEOCHEMISTRY

The inorganic geochemical studies (Smith and others, 1985; Adrian and others, 1984) showed that the largest anomalies were found in heavy-mineral concentrates from the Antimony RA. High values of antimony, arsenic, tungsten, tin, and bismuth appear to be related to previously recognized mineralization at Antimony Peak (antimony sulfide vein), Black Bob Canyon (the Black Bob gold deposit), and Brush Mountain (uranium prospects). Smaller, more scattered, and less consistent anomalies for tungsten, molybdenum, lanthanum, and bismuth from heavy-mineral concentrates from streams draining igneous and metamorphic terrain in the Sespe-Frazier RA are believed to be spatially related to numerous known gold occurrences there. All anomalies identified from this geochemical study seem to be related to areas previously known for mineralization. No new areas of mineral resource potential were delineated as a result of the geochemical sampling program.

The organic geochemical study (Frizzell and Claypool, 1983) involved analyzing samples for oil-source capability and thermal maturity of the kerogen. The data indicate that most of the organic matter present in pre-Neogene rocks has little capacity to generate oil and that terrestrial woody humic matter, possible source of natural gas, is the likely source of the organic carbon. Neogene marine rocks, on the other hand, contain organic matter in quantities and qualities conducive to the generation of oil, as well as gas.

In addition to problems of locating suitable source rocks, rocks suitable for reservoir purposes are difficult to delineate. Data indicate that the pre-Neogene rocks have very low permeability and porosity and, thus, have poor reservoir potential.

SUMMARY ASSESSMENT OF MINERAL RESOURCE POTENTIAL

We have identified resources of several commodities (table 1, pamphlet) and noted localities with low to moderate potential for mineral resources (map; fig. 3, pamphlet), but the geologic and geochemical data only indicate low potential for the presence of undiscovered resources. Not noted for individual roadless areas, but present throughout the study area are low to moderate potential for the presence of undiscovered petroleum resources in areas underlain by Miocene and younger sedimentary rocks, and low to moderate potential for the presence of undiscovered barite resources.

Sespe-Frazier Roadless Area No. 5002

No mining is taking place in the Sespe-Frazier RA, although over 400 mining claims have been located there since 1885. Current mining claims include 152 unpatented placers and lodes, one patented lode, and five millsites (Hale and others, 1983, p. 9). Gold production, totaling about 1350 oz, terminated in the roadless area in 1941. Gypsum has been prospected since 1964, and a phosphate prospecting permit extends into the roadless area near Pine Mountain (Hale and others, 1983). Petroleum has been produced at the Sespe Canyon Field since before the turn of the century.

Although the gold bearing veins of the Frazier mine may extend into the study area and although some samples from 12 former mines or prospects contain greater than trace amounts of gold (Hale and others, 1983, tables 2 and 3), gold resources could only be identified at one locality mainly because many workings were caved and not well enough exposed to determine resources. Eight thousand tons of indicated and inferred subeconomic gold resources averaging 0.38 oz gold per ton occur at the Castaic mine (location 2, table 1, pamphlet; Hale and others, 1983, table 1, No. 26). Potential is low to moderate for the presence of undiscovered gold resources near mines and prospects in the northern part of the Sespe-Frazier RA.

Several localities are underlain by stream and terrace gravel and sand that have been investigated as possible sources of placer gold. Placer gold resources in the area are subeconomic because of low gold values and generally low volume; some, however, may be attractive for recreational panning and small portable dredging operations. Potential is low for the presence of undiscovered placer gold resources in the Sespe-Frazier RA.

Bentonitic clay has been produced from the Lockwood Clay of Neogene age just north of the roadless area since 1954. This unit extends into the northwest part of the study area (location 1, table 1, pamphlet) where 4.7 million tons have been estimated to occur. Bentonitic clay at this prospect constitutes marginal reserves because the mine adjacent to the roadless area has enough reserves to keep the clay plant supplied for 150 to 200 years at the 1981 rate of lightweight aggregate production (Hale and others, 1983, p. 17). Potential is low for the presence of undiscovered bentonitic clay deposits.

Phosphate and gypsum deposits (location 3, table 1, in pamphlet) are present near Pine Mountain. The phosphate rock deposit is thought to be minable under 1982 conditions. Low potential exists for the presence of undiscovered phosphate or gypsum resources elsewhere in the Sespe-Frazier RA.

The Sespe-Frazier RA includes parts of the eastern oil fields of the Ventura basin where about 82 percent of the oil comes from late Miocene or younger rocks. Pre-Miocene rocks yield about 5 percent of the oil in the Ventura fields despite their relatively low quantity and quality of organic matter. Oil will probably continue to be found in suitable reservoir rocks in the vicinity of the Sespe fields. Targets with moderate potential include Miocene and Pliocene rocks below the San Cayetano thrust within the roadless area. South of the line A-A′ (map), drilling depths necessary to penetrate the San Cayetano fault are probably less than 12,000 ft below sea level (Griscom, 1985b, after Nagle and Parker, 1971).

Gravity data suggest that Miocene age rocks may also be concealed below the Pine Mountain fault (Griscom, 1985b). If this is the case, these rocks may be drilling targets with moderate potential. Low to moderate potential exists for the presence of undiscovered petroleum in Miocene and younger sedimentary rocks, and the potential is low for the presence of undiscovered oil in other parts of the roadless area.

Sespe Hot Springs is a hot-water hydrothermal convection system and has reservoir temperatures between 230°-270° F (McCulloh and others, 1981, p. 359). Although these springs have potential for direct heat use, their remote location limits their usefulness for this purpose.

Mica and molybdenum occurrences have been noted in the Sespe-Frazier RA (Tucker and Sampson, 1932, p. 259 and p. 257), but exposures were not sufficient to determine their resource potential (Hale and others, 1983).

There is low potential for the presence for undiscovered resources of other mineral commodities in the Sespe-Frazier RA.

Garcia Mountain Roadless Area No. 5107

Although 28 mining claims have been located in the roadless area in the past, no mines were developed (Lipton, 1981, p. 6-7). Placer sampling indicated gold occurrences in trace quantities within the study area, but no significant volume of alluvium exists.

There is low potential for the presence of undiscovered mineral resources in the Garcia Mountain RA.

Black Mountain Roadless Area No. 5108

There are currently about 69 lode claims for uranium located in the roadless area. About 400 lbs of U_3O_8 (uranium oxide) was probably produced at the Black Widow prospect (Gabby, 1981, p. 8-9). The Black Widow, Black Widow Extension, and an unnamed prospect (all at location 4, table 1, pamphlet) contain subeconomic uranium resources (after Gabby, 1981, p. 9-11). Low to moderate potential exists for the presence of low-grade uranium resources at depth at these localities, but low potential exists for the presence of other undiscovered resources for other mineral commodities in the Black Mountain RA.

La Panza Roadless Area No. 5109

Twenty-nine mining claims, including 13 gold placer claims, have been located within the roadless area. Evidence of prospecting was found only at the Lucky Girl prospect (mostly outside the roadless area) where an estimated 15,000 cubic yards of sand and gravel deposits (about 3,000 cubic yards are in roadless area) with a gold content of 0.0002 oz gold/cubic yard (Barnes, 1981, p. 4, 8-9) were found. There is low potential for the presence of undiscovered mineral resources in the La Panza RA.

Machesna Mountain Roadless Area No. 5110

Current mining activity within and near the roadless area includes uranium prospecting and small-scale gold placer operations. Approximately 200 placer and 300 lode claims have been located in the Machesna Mountain area since the late 1800's, and there are currently 21 gold placer and 20 uranium lodes located there (Kuizon, 1983b, p. 6-7). Uranium occurrences in and near the study area are sporadic and discontinuous, and low potential exists for the presence of uranium resources at depth (Kuizon, 1983b, p. 8). There is low potential for the presence of undiscovered mineral resources in the Machesna Mountain RA.

Los Machos Hills Roadless Area No. 5111

Six lode and four placer mining claims were located within or adjacent to the roadless area between 1864 and 1930. There are no active mining claims, patented claims, or mineral leases (Denton, 1982, p. 4, 6-7). There is low potential for the presence of undiscovered mineral resources in the Los Machos Hills RA.

Big Rocks Roadless Area No. 5112

There are no current mining claims within the roadless area. Three lode claims located in 1955, possibly for uranium, were not found in the field. There are eight oil and gas lease applications filed, but no drilling has resulted (Kuizon, 1983a, p. 6). There is low potential for the presence of undiscovered mineral resources in the Big Rocks RA.

Stanley Mountain Roadless Area No. 5113

There have been at least 29 unpatented lode and placer claims, and one millsite located in and near the roadless area (Kuizon, 1983d, p. 9). Five lode claims and the millsite for the Deer Trail Mercury mine are adjacent to the west boundary. The Deer Trail mine contains about 32,000 tons of sandstone and vein calcite with cinnabar averaging 1.71 lbs mercury/ton (Kuizon, 1983d, p. 10). The Stanley Mountain RA has low to moderate potential for the presence of low-grade mercury resources near the mine, but has low potential for the presence of other undiscovered mineral resources.

Miranda Pine Roadless Area No. 5114

Seven mining claims, possibly for uranium, were located along the southern boundary of the roadless area in the late 1950's. Two oil and gas lease applications are filed in the eastern part of the roadless area. No evidence of mining activity was found in the study area (Kuizon, 1983c, p. 6). There is low potential for the presence of undiscovered mineral resources in the Miranda Pine RA.

Horseshoe Springs Roadless Area No. 5115

Mining is taking place at the Colson Stone quarry (location 5, table 1, pamphlet) adjacent to the southern part of the roadless area, where about 2,000 tons of dimension stone, used as flagstone and rubblestone, is being produced per year from the Monterey Formation. There are about 3.3 million tons of reserves at the quarry. Sandstone beds that extend for about 2 miles into the roadless area contain about 50 million tons of marginal reserves (Horn, 1983, p. 4). Low potential exists for the presence of undiscovered mineral resources in the Horseshoe Springs RA.

Tepusquet Peak Roadless Area No. 5116

No evidence of mining activity (Avery, 1981, p. 4-5), or potential for the presence of undiscovered mineral resources, was found in the Tepusquet Peak RA.

La Brea Roadless Area No. 5117

Eighty-seven mining claims have been located in this roadless area. Six claims containing copper and zinc are present at Wildhorse Mountain (location 7, table 1, pamphlet) in a gabbroic member of the Gibraltar Coast Range ophiolite, but they are currently inactive. The prospect is estimated to contain more than 7,000 tons of ultramafic rock averaging 0.5 percent copper and 1.16 percent zinc (Benham and McCulloch, 1981, p. 4, 6-7). The potential for the presence of undiscovered copper and zinc resource in the roadless area is low.

Four thousand tons of barite were produced from veins in sandstone at the patented White Elephant mine (location 6, table 1, pamphlet) in 1929 and 1930. The mine contains about about 95,000 tons of inferred subeconomic barite resources averaging 73 percent barium sulfate ($BaSO_4$) (Benham and McCulloch, 1981, p. 4, 7-8). Low potential exists for the presence of undiscovered resources for other mineral commodities in the La Brea RA.

Spoor Canyon Roadless Area No. 5118

There are no active mines in or near the study area, nor have any mining claims been located in the area. Twelve oil and gas lease applications occur within the roadless area boundaries (Benham, 1983, p. 4). Low potential exists for the presence of undiscovered mineral resources in the Spoor Canyon RA.

Fox Mountain Roadless Area No. 5120

The Cuyama Phosphate mine, just north of the roadless area, produced phosphate rock for soil conditioner between 1965 and 1967. Production was 18,203 tons. The phosphate bearing rock occurs in the Santa Margarita Formation, which extends into the roadless area (location 8, table 1, in pamphlet), where more than 21 million tons of inferred subeconomic phosphate rock with an average of 4.84 percent P_2O_5 (phosphorous oxide) (McCulloch and Neumann, 1982, p. 6, 8) are identified.

Numerous oil and gas wells have been drilled in the roadless area, but there is no known production (McCulloch and Neumann, 1983, p. 7). Miocene rocks that may contain petroleum have been projected below the South Cuyama fault by some geologists, although gravity data do not support their presence in great thickness (Griscom, 1985b). If present, these rocks could be source and reservoir for oil and gas.

Low potential exists for the presence of undiscovered mineral resources in the Fox Mountain RA.

Diablo Roadless Area No. 5127

Field investigations revealed no claims, prospects, or mineralized areas (Capstick and Hyndman, 1982a, p. 4) within the roadless area. The Agua Caliente hot springs within the roadless area has temperatures of 90° F and has been used for direct heat purposes (Godwin and Stephens, 1979). Low potential exists for the presence of undiscovered mineral resources in the Diablo RA.

Matilija Roadless Area No. 5129

About 33 mining claims have been located in the roadless area but no mines have been developed (Lambeth, 1982, p. 8, 10). Several warm springs within the roadless area near and along the Santa Ynez fault have temperatures between 65° F and 116° F (Lambeth, 1982, p. 4, 11-12). The Sierra Blanca Limestone is exposed in Matilija Canyon and extends into the roadless area (Hart, 1978, p. 94).

Low potential exists for the presence of undiscovered mineral resources in the Matilija RA.

Dry Lakes Roadless Area No. 5131

There are no producing mines or active prospects within the Dry Lakes RA (White, 1982a). Wheeler Hot Springs, situated along the Santa Ynez fault zone, has a recorded surface temperatures ranging from 62° F to 118° F (White, 1982a, p. 12, 13, 15).

Low potential exits for the presence of undiscovered mineral resources in the Dry Lakes RA.

Sawmill-Badlands Roadless Area No. 5134

About 388 claims have been staked within the roadless area for oil, borate, gypsum, clay, or uranium (Longwill, 1982, p. 11).

Borates were produced from three mines on the eastern slope of Mt. Pinos partly within the roadless area. Production ceased around 1913 because larger and richer deposits were developed in eastern California (Longwill, 1982, p. 5, 9, 16). The Lockwood Clay crops out in the roadless area but it has never been mined there (Longwill, 1982, p. 9, 16).

Two gypsum deposits (Frenchman's Point and Burgess Canyon) in the western part of the roadless area have been mined for local use. Because the gypsum occurs in thin and discontinuous lenses in shale and sandstone, no resource estimates were made (Longwill, 1982, p. 10, 16).

Although anomalous uranium and gold occurrences were found in the roadless area, their local and sporadic nature suggests that potential is low for the presence of uranium or gold resources (Longwill, 1982, p. 10, 16).

Low potential exists for the presence of undiscovered mineral resources in the Sawmill-Badland RA.

Cuyama Roadless Area No. 5135

Gypsum has been prospected in the Cuyama RA since the late 1800's, and a small amount has been produced for local use. Although numerous uranium claims have been located in the roadless area, there are no current mining claims therein (Kuizon, 1981, p. 7, 9).

The Santa Barbara Canyon gypsum prospect (location 11, table 1, pamphlet) contains about 30,000 tons of gypsiferous rock averaging 83 percent $CaSO_4$ (calcium sulfate). The Wagon Road Canyon and Brush Fence Canyon prospects (locations 10 and 9, table 1, pamphlet), contain 276,000 tons, averaging 85 percent $CaSO_4$, and 61,000 tons, averaging 90 percent $CaSO_4$, respectively, of indicated subeconomic resources (Kuizon, 1981, p. 9-10).

Low potential exists for the presence of undiscovered mineral resources in the Cuyama RA.

Antimony Roadless Area No. 5136

Current mining claims within the roadless area include two lode gold claims, 7 limestone placer claims, and parts of 55 uranium claims. Small tonnages of antimony ore were produced periodically from the Antimony Peak patented property until the late 1940's. Marble had been produced from a few localities just south of the study area boundary during the 1950's and 1960's. Small quantities of gold, silver, and lead were produced in the early 1900's and 1930's (Kuizon, 1982, p. 7).

The patented Antimony Peak property (location 12, table 1, pamphlet) contains about 240,000 tons indicated and inferred marginal reserves, averaging 2.73 percent antimony, and about 230,000 tons of indicated and inferred subeconomic resources, averaging 1.02 percent antimony. The reserves are marginal because of high mining and beneficiation costs, low grade and price, and poor access. Low to moderate potential exists for the presence of additional similar antimony resources, and perhaps gold, near and east of Antimony Peak (Kuizon, 1982, p. 4, 13; Smith and others, 1985).

About 1,600 tons of marginal reserves averaging 0.13 oz gold per ton and 0.5 oz silver per ton occur at the Black Bob and Cedar properties (location 14, table 1, pamphlet). There are an additional 11,000 tons of inferred subeconomic resources averaging 0.038 oz gold per ton and 0.27 oz silver per ton (Kuizon, 1982, p. 4, 13).

A total of about 84 million tons of indicated and inferred subeconomic marble and dolomitic marble resources occur within the Cuyama area at the White Rock and Lebec properties (location 13, table 1, in pamphlet) (Kuizon, 1982, p. 5, 13).

Other localities containing iron, manganese, and uranium occurrences (Kuizon, 1982; Troxel and Morton, 1962) were not well enough exposed to determine if resources are present. Low potential exists for the presence of undiscovered resources for other mineral commodities within the Antimony RA.

Quatal Roadless Area No. 5268

Fifty-three unpatented mining claims have been located in the roadless area, and eight claims are currently located for gold and other minerals (White, 1982b, p. 8, 10).

Approximately 1.6 million tons of subeconomic bentonite resources, suitable for bloating clay in the manufacture of lightweight aggregate and for foundry sand bonding, occur within the roadless area (location 15, table 1, pamphlet) in the Lockwood Clay (White, 1982b). This deposit is subeconomic because of high production costs due to steeply dipping beds.

Low potential exists for the presence of undiscovered mineral resources in the Quatal RA.

Little Pine Roadless Area No. 5278

Five mining claims are located in the roadless area (Capstick and Hyndman, 1982b). No metallic or nonmetallic mineral resources have been identified within the Little Pine RA, and low potential exists for the presence of undiscovered mineral resources.

Santa Lucia Wilderness NF 905

Claims, sporadically located between 1900 and 1965, were mainly mercury placer claims located between 1900 and 1917. Mineralized and altered zones and host rocks at Rinconada Mine, a past producer of mercury adjacent to the wilderness, do not crop out inside the area (Sabine and Esparza, 1981). No potential exists for the presence of undiscovered mineral resources in the Santa Lucia Wilderness.

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