

LOS ANGELES COUNTY
SIGNIFICANT ECOLOGICAL AREA STUDY
1976

Prepared for
Los Angeles County
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and
Environmental Systems Research Institute

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INTRODUCTION

Biological Resources in Los Angeles County

Los Angeles County possesses an extremely diverse topography. Within its approximately 4000 square miles, it contains coastline, flatlands, mountains, and desert. San Diego County is the only other county in the United States that possesses such a rich geographical diversity. Elevations within the County range from sea level to over 10,000 feet. Consequently, the climate ranges from mild near the coast, to severe in the high mountains and in the desert. This tremendous variation in physical environments has produced a very unique and diverse collection of biological resources.

Biotic communities are assemblages of plant and animal species that are found in specific physical habitats. They are ecological units containing a diverse group of organisms that exist together in an orderly predictable manner and have a very close and complex set of interrelationships. These communities are commonly identified and discussed with reference to one or two dominant plant species and the nature of the vegetation.

According to the Munz (1974) classification of biotic communities, fourteen of the fifteen communities occurring in southern California can be found in Los Angeles County. This is an extremely high number, but it does not fully reflect the diversity of communities that can be found within the County. The Munzian system only identifies major vegetation types, and does not deal with intra-community variation. A new system proposed by Thorne

(1976) takes this parameter into account. For example, Munz identifies the community called chaparral. It can be found the length of the state, in all the major mountain ranges, on all exposures, and from sea level to over 5000 feet. However, the chaparral found on the desert side of the San Gabriel Mountains is considerably different from that found on the coastal side of the Santa Monica Mountains, and both of these are different from that found in northern California. For these reasons, Thorne identifies seven types of chaparral in the state. Based on Thorne's classification, no less than thirty-six communities are found in Los Angeles County, an impressively high number for an area its size.

In 1963, the California Department of Fish and Game inventoried the natural communities of the State (Table 1). The results were tallied in a condensed Munzian system, and revealed several important trends. Man's activities have reduced the diversity of biological resources in Los Angeles County. By 1963, urban and agricultural development had already eliminated nearly 30% of the natural biotic communities in the County, and this figure has risen sharply in the intervening period. Only chaparral and desert vegetation covered over 10% of the region, and both of these classifications lumped several distinct communities that occurred at much lower percentages. In addition, only a small portion of the chaparral in the County occurred outside the Angeles National Forest. The majority of communities existed only as very limited examples.

Widespread habitat loss and degradation is now indicated

Table 1. Major habitat types in Los Angeles County in 1963
(California Department of Fish and Game 1966)

	<u>Total Area</u> (Acres)	<u>County Area</u> (Percent)
Urban-agriculture	763,673	29.3
Chaparral	722,096	27.6
High desert	399,956	15.4
Coast sagebrush	176,848	6.8
Grassland	173,997	6.7
Pinyon-juniper	140,172	5.4
Pine-fir-chaparral	97,812	3.8
Riparian woodland	35,937	1.4
Woodland-chaparral	29,582	1.1
Inland sagebrush	22,776	0.9
Woodland-grass	17,749	0.7
Woodland-sagebrush	10,942	0.4
Lakes, bays, reservoirs	7,838	0.3
Seasonal Marsh	3,120	0.1
Marsh	1,692	0.1
Hardwood	1,250	trace

by the high number of rare, endangered, threatened plant and animal species found here. Eleven animal species and nineteen plant species in Los Angeles County now fit one of these categories (Table 2). These numbers are among the highest for any single county in California. Unless trends are reversed or halted, the County will lose these species as well as others.

The biological resources of the County can be discussed best on a regional basis. The County can be divided into six major regions of similar geography and climate. These are the coastline, coastal transverse mountain range, interior transverse mountain ranges, peninsular mountain ranges, Antelope Valley and Mojave Desert, and the San Fernando Valley and Los Angeles Basin. The diversity of biotic communities within each region and their status is briefly described below. The community classification and discussion used here are based on those proposed by Thorne (1976).

Coastline

The coastline of Los Angeles County possesses examples of several coastal, shoreline, dune, and scrub habitats. The major biotic communities found in this region include marine aquatic, coastal dune sand plant, coastal salt marsh, coastal sage scrub, and chaparral. Most of these have been considerably modified since 1900 by pollution, development, and intense recreational use. These activities are continuing to reduce habitat areas, and are threatening to eliminate several species and unique communities.

Marine aquatic communities include two distinct types of

Table 2 - Rare and Endangered Flora and Fauna Occurring in the Los Angeles County Study Area, i.e. outside the Angeles National Forest and the Channel Islands (E = endangered, R = rare).

<u>ANIMALS</u>		
<u>Species</u>	<u>Status</u>	<u>Comments</u>
California condor <u>Gymnogyps californianus</u>	E	Nesting is confined to the Coast Range Mountains in San Luis Obispo, Ventura, and Santa Barbara Counties. However, it is known to forage for food in undeveloped foothill, desert, and mountain areas of western Los Angeles County.
American peregrine falcon <u>Falco peregrinus anatum</u>	E	Active nests are no longer known from Los Angeles County. However, members of this subspecies may occur here as transients and winter residents.
Southern bald eagle <u>Haliaeetus leucocephalus leucocephalus</u>	E	Active nests are not known from Los Angeles County. However, this subspecies and the northern bald eagle are known to occur in the county during the winter.
California brown pelican <u>Pelecanus occidentalis californicus</u>	E	Nesting in southern California is confined to Anacapa Island. However, outside of the breeding season, this species can be found along the entire Los Angeles County coastline.
California least tern <u>Sterna albifrons browni</u>	E	Nesting colonies can be found in significant ecological areas #29 and #33. These organisms forage in nearby bays and estuaries. The species may also be found elsewhere along the Los Angeles County coast outside of the breeding season.

<u>Species</u>	<u>Status</u>	<u>Comments</u>
Light-footed clapper rail <u>Rallus longirostris levipes</u>	E	Although not recently recorded in the county, this species has the potential to occur in significant ecological areas #5, #29, and #30.
Belding's savannah sparrow <u>Passerculus sandwichensis beldingi</u>	E	This species nest in the saltmarsh habitat of significant ecological areas #29 and #30. It is also found at the Malibu Lagoon saltmarsh in significant ecological area #5.
Unarmored threespine stickleback <u>Gasterosteus aculeatus williamsoni</u>	E	This species occurs in significant ecological areas #19 and #23.
Mohave ground squirrel <u>Spermophilus mohavensis</u>	R	Populations of this species have not been reported recently from historic sites in Los Angeles County. However, it does have the potential to exist in habitat found in significant ecological areas #51, #52, #53, and #54.
El Segundo blue (butterfly) <u>Shilimiaeoides battoides allyni</u>	E	This species occurs in significant ecological area #28.

PLANTS

Santa Monica Mountain live-forever <u>Dudleya cymosa marcesens</u>	E	This species occurs in significant ecological area #4.
Many-stemmed dudleya <u>Dudleya multicaulis</u>	E	This species occurs in significant ecological area #18.
Santa Susana tarweed <u>Hemizonia minthornii</u>	E	This species occurs in significant ecological area #21.
Nevin's barberry <u>Berberis nevinii</u>	E	This species occurs in significant ecological area #24.

<u>Species</u>	<u>Status</u>	<u>Comments</u>
Slender-horned chorizanthe <u>Chorizanthe leptoceras</u>	E	This species occurs in significant ecological area #24.
Mohave spine flower <u>Chorizanthe spinosa</u>	E	This species occurs in significant ecological area #47.
Bedstraw <u>Galium grande</u>	E	This species occurs in significant ecological area #62.

In addition to these species, one additional animal species and twelve additional plant species that are recognized as either rare or endangered are known to occur in Los Angeles County outside the study area. This list is a summary of the current available information, and should not be regarded as the only areas where any of these species might be found.

submerged vegetation, marine meadows and surfweed communities. Marine meadows are found in quiet waters of bays, lagoons, and estuaries, or deeper waters near the coast where wave action is mild or absent. This community is composed of a few flowering species and numerous algae. It is represented in Los Angeles County by habitat in scattered localities along undisturbed portions of the coastline. Surfweed is a sublittoral community that is also composed of few flowering plants and numerous species of algae. It occurs along rocky shores below low tide levels, but where wave action is present. It is found in scattered localities on the Malibu coast and on the Palos Verdes Peninsula. This community includes many submerged rocky shoreline habitats and kelp beds.

Although rocky and sandy intertidal areas do not contain vascular plants, they do support abundant and tremendously diverse algal and faunal communities. Literally hundreds of species may be present in an individual tidepool. These habitats make a significant contribution to the biotic diversity in Los Angeles County.

The climate along the coast is very mild. Temperatures do not fluctuate greatly, and the marine air crossing the region is quite moist. These factors give the region a long growing season. The variety of geological and topographical settings provide habitat for a number of terrestrial communities.

The coastal dune sand plant community is found in scattered localities in the upper sandy beaches along much of the County's coast and in the stabilized dune habitat at El Segundo. This Community is characterized by rhizomatous grasses, sprawling

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succulents, and semi-shrubs. Despite many favorable environmental conditions, this is a harsh environment. The substrate is sandy and loose, and there is strong and persistent wind. As beach-front development has taken place in the County, the amount of coastal dune sand plant community has been greatly reduced. In addition, beaches have received intense human use and few, if any, areas of undisturbed habitat remain.

Coastal salt marsh has almost been eliminated from the County, but isolated remnants can still be found at Ballona Creek and Alamitos Bay, and the potential for a salt marsh exists at Malibu Lagoon. At one time, coastal salt marsh covered approximately 6800 acres in Los Angeles County. However, due to airport, marina, recreational, residential, and industrial developments, this acreage has been severely reduced. Only 4% of those areas remain today, and portions of it are slated for development.

Coastal salt marsh vegetation extends from the upper intertidal zone to above the mean high tide level, and is dominated by succulent herbaceous perennials growing in salt-saturated soils. This vegetation can be broken into two communities, tidal marsh and salt-flat succulent. The distinction between the two is that tidal marsh is inundated regularly, while salt-flat succulent is submerged only during high spring and summer tides.

Coastal sage scrub is a low, relatively open shrubby vegetation that is found on dry, gravelly slopes below 3000 feet. Where it grows on ocean cliffs, it is called a sea-bluff succulent community. This is an uncommon association that differs greatly in species composition and physiognomy from inland coastal sage scrub. Sea-bluff succulent is composed of succulent herbs including many

endemic species. This community is restricted in distribution in the County, and is found only on the coastal bluffs of the Palos Verdes Peninsula and Malibu Coast.

Another form of coastal sage scrub, the maritime sage scrub community, is found covering the hill tops and slopes of the immediate coast. This community is richer in species than sea-bluff succulent due to a more favorable environment and contains many shrubs and herbs.

Chaparral is found in many drainages and on many slopes along the coastline. The coastal form of this community is called mixed chaparral. It is a wide-spread scrub vegetation found below 5000 feet in the Southern California Coastal Mountain Ranges. It is dominated by a variety of broad-leaved shrubs and herbs. Stands are dense and often impenetrable. Mixed chaparral and maritime coastal sage scrub are both found on the bluff-tops and hillsides of the Palos Verdes Peninsula, and along the Malibu Coast. These are the only places on the coast where these communities can be found.

Coastal Transverse Mountain Range

In Los Angeles County, this geographical region consists solely of the Santa Monica Mountains. They are relatively low mountains that run in an east-west direction along the Malibu Coast. Temperatures are not significantly lower at higher elevations, but rainfall is higher on the coastal exposures. There is a strong marine air influence over most of the mountain range due to its proximity to the ocean. Consequently, the climate is relatively mild, and several communities are well-developed. These

include freshwater aquatic habitat, riparian woodland, coastal sage scrub, grassland, oak woodland, and chaparral. Until a few years ago, development in the Santa Monica Mountains was isolated and relatively small in size. However, development has recently accelerated, and several of these communities are becoming more limited in distribution.

Freshwater aquatic communities require year-round water. Although very limited in number, perennial streams which support quiet stream aquatic vegetation can be found in the Santa Monica Mountains. This community contains many free-floating, attached-floating, partially submerged and submerged aquatic plants. The species composition depends upon the depth, temperature, and alkalinity of the water, and the substrate present. This habitat is accompanied by a fauna of aquatic and semi-aquatic species that are restricted to this habitat type. This community is becoming extremely uncommon in Los Angeles County.

Riparian woodland is found along the margins of perennial streams as well as in drainages where water is found beneath the surface. This community consists of semiaquatic trees, shrubs, and herbs, and is very dense in several of the mountain canyons. Many canyon floors where this community is found are currently under pressure for residential development, and only a limited number of good examples remain.

The coastal sage scrub communities found in this region include maritime sage scrub and inland sage scrub. However, the coastal sea-bluff succulent vegetation is not present. Maritime sage scrub is found on the lower coastal slopes of the mountains, whereas inland sage scrub is found on the interior slopes. Here

conditions are hotter, drier, and higher in elevation. This community is not as rich in species as the maritime sage scrub, and lacks the numerous endemics and other species requiring the milder maritime climate.

Southern California grassland is found in the broader valleys and ridges of the mountains. Once dominated by native perennial grasses, this community is now composed of introduced annual grasses and herbs. However, there are a number of native annual forbs that are abundant in years of favorable rainfall. This community is probably maintained in part by continued grazing of domestic livestock.

On north-facing slopes and in shaded ravines, southern oak woodland can be found grading into surrounding coastal sage scrub and chaparral. This community is dominated by large evergreen oaks. Dense stands of shrubs often occupy the openings between the trees. In this region, the community was once more widespread than it is today. Many areas have been cleared for agricultural and urban development.

Chaparral communities including mixed chaparral and red-shanks chaparral can be found in the Santa Monica Mountains. Mixed chaparral is abundant on the upper slopes and ridges of the mountains and in drainages nearer to the coast. Red-shanks chaparral is not well developed in the Santa Monica Mountains, and can only be found as small isolated populations at higher elevations. Its presence in this region is unique in the County. It is typically taller than mixed chaparral and is formed by nearly pure stands of red-shanks (Adenostoma sparsifolium).

Interior Transverse Mountain Ranges

The interior transverse mountain ranges are made up of the Verdugo Mountains, San Gabriel Mountains, Simi Hills, Santa Susana Mountains, and the eastern slopes of the Tehachapi Mountains in the northwest corner of the County. Most of this region is within the Angeles National Forest and has remained in a natural state.

These ranges are higher in elevation than surrounding areas, and are characterized by greater seasonal differences in temperature and by drier air than the more coastal regions. Snow is common in these mountains in winter at altitudes over 4000 feet. In addition, the influences of the desert and the Tehachapi Mountains, which link this area to the Sierra Nevada, help make this one of the most diverse botanical regions in the county.

Freshwater and riparian habitats are found throughout the ranges. Coastal sage scrub, chaparral, grassland, oak woodland, pinyon-juniper woodland, and sagebrush scrub are found on the lower slopes and ridges, while several Pacific and Sierran coniferous forests are found at higher elevations. Mountain meadows are also known from this region.

Freshwater lake, pond, and quiet stream communities are similar to those found in the Santa Monica Mountains. Lower elevation riparian woodland here also resembles that found in the coastal transverse range. At higher elevations, the riparian woodland blends into mixed evergreen forest and the species differ significantly. Higher elevation riparian woodlands are a part of the County's biological resources that are restricted to this region.

As in the other inland mountainous regions of the County,

the inland sage scrub community is representative here. Many widespread vegetation along with others that are found in the drier inland regions.

sage scrub represent this vegetation in the drier inland

Mixed chaparral resembling the Santa Monica Mountains is found here, as well as coastal, montane, and desert forms of chaparral. These are distinct communities that are restricted to this geographic region within Los Angeles County. Chamisal chaparral consists of pure stands of the chaparral indicator species chamise (Adenostoma fasciculatum). Montane chaparral occurs well above the altitudinal range of other chaparral communities, near the zone where forests are found. The community is characterized by low, dense shrubs covering dry, exposed slopes. Desert transition chaparral is restricted to the dry, rocky desert slopes of these mountains. It is often found in association with pinyon-juniper or Joshua tree woodlands, and is dominated by arid-adapted species.

Two communities of oak woodland are found in this region. They are the southern oak woodland which is widespread in the County, and foothill woodland which is more common in central California. However, the southern-most distribution of this community can be found in the interior transverse mountain ranges of Los Angeles County. Foothill woodland is transitional between grassland or chaparral and montane communities. Its species composition varies with elevation, available moisture, and soil. It is commonly found higher than southern oak woodland.

Grasslands are common in the broad valleys and foothills of the region. In addition to the common southern California grass-

land, the Great Central and Coast Ranges Valley grassland is found here. This community is much more common to the north, and only reaches the County on the eastern slopes of the Tehachapi Mountains in the extreme northeast corner of the County. Like other California grasslands, the perennial native bunch grasses in this community have been replaced by introduced European annuals.

The higher slopes of these mountains support a variety of Pacific and Sierran coniferous forests. This is the only region in Los Angeles County where these montane communities are found. The southern mixed evergreen forest represents the Pacific coniferous forests. It is found from 1500 to 5500 feet in moist canyons where it grades from moist riparian woodlands at lower elevations into chaparral and yellow pine forest where conditions are drier. Several Sierran coniferous forests are found in the region including lower and upper montane, and subalpine forests. Lower montane coniferous forest includes Coulter pine forest and yellow pine forest, both of which are found between 5000 and 8000 feet. The upper montane forest is found to 8500 feet, and includes the white fir-sugar pine forest community. Subalpine forest communities include lodgepole pine forest and limber pine forest. They are both very limited in distribution and occur only on the highest peaks.

Throughout the region where moisture is sufficient, there are mountain meadows. They often occur along streamcourses, and possess a rich flora of grasses, sedges, rushes, and herbs. This community is very uncommon in Los Angeles County.

On the drier desert slopes of the interior transverse ranges,

pinyon-juniper woodland and great basin sagebrush scrub are found between 4000 and 8000 feet. These xeric communities often overlap in distribution, forming a unique, unusually diverse association. Neither community is common in Los Angeles County.

Peninsular Mountain Ranges

Only the most northern tip of the Peninsular Mountain Ranges reach Los Angeles County. They are represented by the San Jose, Chino, and Puente Hills. The climate there consists of warm summers and mild winters. The region does not feel a strong marine influence, and is therefore relatively dry. Due to their low elevations, these hills do not support montane communities. However, many lowland and foothill communities are present. These include riparian woodland, inland sage scrub, southern California grassland, southern oak woodland, mixed chaparral and chamisal chaparral. Although the communities here are not out of the ordinary, they are the only good examples remaining in the southeastern portion of the county. These communities are currently under pressure for residential and landfill development. These types of developments have already resulted in a considerable loss of biotic resources in this region.

Antelope Valley and Mojave Desert

Very low relative humidities prevail for most of the year in this region; rainfall is minimal and there is a sharp seasonal difference in temperature. Summers are extremely hot and winters can be very cold. Snow is not unknown to the region in the winter, and often lightly covers the ground for several days. The Mojave Desert extends from the Tehachapi Mountains east to the Colorado

River. Los Angeles County contains only the westernmost portion of this desert. Nevertheless, the County possesses examples of most desert communities. These include great basin sagebrush scrub, Joshua tree woodland, creosote bush scrub, desert rock plant, riparian woodland, shadscale scrub, and alkali sink scrub. With the exception of great basin sagebrush scrub, these communities are restricted to the deserts of the southwestern United States.

A staggering amount of habitat loss has occurred in the Antelope Valley as a result of extensive agricultural development. Many of the remaining areas that support native vegetation are small and have become isolated. This has resulted in a considerable loss of biological resources.

Great basin sagebrush scrub is an open low scrub habitat dominated by great basin sagebrush (Artemisia tridentata). A variety of shrubs, perennial grasses and annuals are also found in this community. It occupies the deeper, sandy soils of arid slopes and valleys from 4000 to 8500 feet. This community is not common in Los Angeles County or southern California, and only occurs at isolated localities in the transverse and peninsular ranges of southern California.

Joshua tree woodland is found on well-drained desert slopes and alluvium between 2500 and 5000 feet. In the County it occurs at the base of the interior transverse mountain ranges and on most of the County's buttes. It is dominated by Joshua tree (Yucca brevifolia), which forms a woodland of branched, bayonet-leaved trees. Numerous shrubs, cacti, and annuals are associated with it. The community is often intermixed with pinyon-juniper

woodland, sagebrush scrub, and other desert scrub communities.

Most of the desert floor below 4000 feet is covered by a creosote bush scrub community. Although sometimes composed solely of evenly spaced creosote bush (Larrea tridentata), there are often a number of shrubs, yuccas, and cacti present. During years of favorable rainfall, many wildflower species can also be found in these areas.

On rocky outcrops and slopes in the desert, there are commonly open communities of shrubs and herbs that are called desert rock plant communities. They are commonly without specific dominant species. In Los Angeles County, these communities are found on buttes and the rockier desert slopes of the transverse mountain ranges.

A very uncommon community in its best form in the desert is riparian woodland. It consists of trees, including cottonwood (Populus fremontii) and willows (Salix sp.), and an often dense understory of shrubs and grasses. It may be found only in the largest desert washes and even then is restricted to a small number of localities.

Two communities of alkaline scrub are found in and around the dry lake beds in the northern portion of the County. These are shadscale scrub and alkali sink scrub. Shadscale scrub dominates heavy, alkaline soils that commonly have a shallow hardpan. It is a low shallow-rooted shrub community composed of species adapted to these edaphic conditions. Similarly, alkali sink scrub is a low, sparse community found in poorly-drained soils of most alkaline flats and dry lakebeds.

Los Angeles Basin and San Fernando Valley

Much of the Los Angeles Basin is under a moderate-to-strong coastal influence. The area has a mild climate and a long growing season. However, inner portions of the Basin and the San Fernando Valley are drier and experience slightly greater extremes in seasonal temperatures. The region has been intensively developed. Nevertheless, several important biotic communities can still be found here. Inland sage scrub, southern oak woodland, and southern California grassland occur in scattered undeveloped areas throughout the region. In addition, many lowland riparian areas can be found where stream courses remain unchannelized. However, the most unique communities that remain in the region are the freshwater aquatic communities including freshwater marsh, reservoir semi-aquatic, and lake, pond, and quiet stream aquatic. These are very uncommon communities and make significant contributions to the variety of biotic resources in the County.

Freshwater marsh is a community of emerged plants found in shallow, permanently inundated areas. It is dominated by a variety of tall reeds, rushes, grasses, and sedges. In Los Angeles County, good examples of this community may be found at Madrona Marsh and Harbor Lake Regional Park, on the shallow margins of several man-made lakes and reservoirs, and along quiet stream courses where the water table is above the surface.

The reservoir semi-aquatic community is found in reservoirs and flood control basins where the water level undergoes seasonal fluctuation. The species found here are adapted to alternate periods of flooding and emersion, and are therefore considered semi-aquatic.

Lake, pond, and quiet stream aquatic communities are found in permanent bodies of water, and support a tremendous variety of life forms. In Los Angeles County, most permanent bodies of water supporting this community are man-made and, due to seasonal fluctuations in water level, are not as diverse as comparable natural communities.

As can be seen from the preceding discussion, Los Angeles County possesses a high diversity of biological resources, perhaps more than any other county in the United States. However, urbanization has already destroyed a large portion of the resources that once occurred in the region, and is continuing to do so at the present time. Therefore, plans must be made now to preserve these precious resources. This is a rich heritage that few other local governments can attempt to preserve.

Objectives of the Study

The original Significant Ecological Area Report was prepared in 1972 by scientists from the University of California, Los Angeles, the Los Angeles County Museum of Natural History, and other local academic institutions. They were asked by the Los Angeles County Department of Regional Planning to identify "significant ecological areas" which, due to their high biological resource value, should receive special consideration during the formulation of the 1973 Los Angeles County General Plan. In the final report, eighty-one such areas were mapped, and brief descriptions of the value of each were given.

The 1976 Significant Ecological Area Report has come about

as a result of the court decision requiring the preparation of a revised general plan. The study area has been reduced by excluding the Channel Islands and the Angeles National Forest. However the objectives of the study have been expanded to include:

1. A review of the data and criteria used to establish the original significant ecological area list
2. An analysis of information that has become available subsequent to the original study
3. The development of a set of criteria to be used to select and prioritize significant ecological areas
4. Locating and mapping these areas
5. The development of a set of policies, criteria, and guidelines for preserving significant ecological areas.

To fulfill the requirements of this study, two major questions had to be answered: what prerequisites must an area meet in order to be designated ecologically significant; and where can areas that meet these requirements be found in Los Angeles County?

METHODOLOGY

Development of Criteria for Selecting and Classifying Significant Ecological Areas in Los Angeles County

To answer the question "what prerequisites must an area meet in order to be designated ecologically significant," it was necessary to determine the meaning of the phrase "significant ecological area" and to translate this definition into a set of criteria that could be used for selecting areas of ecological significance. The use of the word significant carries with it the implication that all else is insignificant. Most conscientious biologists would deem any area with undisturbed biotic communities to be ecologically significant. This principle was well stated by the California Department of Fish and Game in a letter to the consultant:

In the County of Los Angeles, there exists a wide variety of habitat types that provide for a uniquely diverse flora and fauna. All of the undeveloped areas within the County contribute to this diversity.

However, a document that states this obvious fact would be of no use in preparing a general plan. Development will take place, often at the expense of undisturbed biotic communities. Thus the term "significant ecological area" cannot be taken at its full meaning.

What was actually required was a report that identified "areas of special ecological significance". This is most easily interpreted to mean areas that possess biotic resources that are uncommon, rare, unique, or absolutely critical to the maintenance of wildlife. While these areas certainly should receive special consideration during the formulation of the general plan, the

more common resources should not be overlooked.

Most level areas in the county have been developed, and pressure for expansion is pressing into the remaining undeveloped hillsides and canyons along the urban fringe. If the diversity of these remaining communities is to be preserved, it must be planned now, while undisturbed examples of each habitat type still exist. The problem then becomes one of deciding how to preserve this diversity without designating all remaining undisturbed areas as significant.

An investigation was conducted to determine the methods, policies, and criteria used by other governmental agencies when dealing with the issue. Biologists and planners with the United States Forest Service, National Park Service, State Department of Parks and Recreation, Stanislaus Area Association of Governments, Bureau of Land Management, Association of Bay Area Governments, and The Nature Conservancy were interviewed. General plans from Marin, Orange, San Rafael, Stanislaus, Santa Cruz, and Santa Barbara counties were reviewed. In addition, an extensive review of available literature on the subject was conducted (Appendix A).

The result of the search for criteria, methods, and policies yielded very little. Most organizations realize the obvious need to conserve resources that are unique, rare, or absolutely critical to the maintenance of wildlife, but do not directly face the issue of preserving more common resources. The most enlightening documents on this subject were the Santa Barbara County General Plan, and a publication by The Nature Conservancy titled, "The Preservation of Natural Diversity, A Survey and Recommendations". Both of these reports discussed the reasons

for preserving natural diversity and recommendations on the manner in which to accomplish it. ure Conservancy publication discussed the problem: ications of a regional or national program, whereas the b. s in Santa Barbara County were more specific, and attempt to apply these principles on a county basis. Their solution to the problem of preserving natural diversity was to identify prime examples or remote, undisturbed patches of the more common biotic communities, as well as resources that were uncommon, rare, unique or absolutely critical to the maintenance of wildlife. A similar approach was adopted for the present significant ecological area study.

With the basic framework for the project established, a draft set of criteria to be used to select significant ecological areas was written. It was sent to academicians, conservationists, and professional biologists throughout the state. Most of the individuals that responded felt that the criteria were adequate for planning purposes, and that it was proper to put emphasis on rare, unique, and critical features due to limitations in available money and manpower. However, there was almost unanimous agreement that an effort should be made now to preserve samples of the more common communities, especially in an area as highly urbanized as Los Angeles County. Otherwise, these resources may have to become rare before action is taken. By then, the areas that remain may be so limited in distribution and so impacted by surrounding development that no large undisturbed examples may exist.

The comments and criticisms received from the mailing were used to modify and finalize the criteria. Each criterion

was designed to characterize a different level of resource availability and was arranged in a classification system reflecting this. The system should not be interpreted as a measure of the absolute value of the area, but as an index of how close a certain type of resource is to being lost.

Following are the criteria that were used to select significant ecological areas in Los Angeles County. They are presented in order of increasing availability. Each one is accompanied by a statement of its intent and the rationale behind it.

Criteria for Selecting and Classifying Significant Ecological Areas

CLASS 1 -- The habitat of rare, endangered, and threatened plant and animal species.

These areas are important for the maintenance of plant and animal species that are recognized as being either extremely low in numbers or having a very limited amount of habitat available. The terms rare, endangered and threatened have precise meanings defined in both state and federal law.

State of California

Rare - An animal of a species or subspecies of birds, mammals, fish, amphibia, or reptiles that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens.

Endangered - An animal of a species or subspecies of birds, mammals, fish, amphibia, or reptiles, the prospects of which are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

United States Government

Threatened - Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Endangered - Any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary (of the Interior) to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

Severe penalties can be imposed for destroying individual organisms or their habitat.

The California Department of Fish and Game, and the United State Fish and Wildlife Service publish official lists of rare, endangered, and threatened species. Both agencies recognize mammals, birds, reptiles, and amphibians, but only the Fish and Wildlife Service is empowered to recognize insects and plants.

The literature on rare, endangered, and threatened species is extensive, and increasing all the time. This information was used to identify existing habitat in Los Angeles County.

CLASS 2 -- Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution on a regional basis.

The purpose of this criteria is to identify biotic resources that are uncommon on a regional basis. The geographical region considered could be as small as the southern California coastal plains, the transverse mountain ranges, the Mojave Desert, the southern California coastline, etc; or they could be as large as southern California, the Pacific coast, all of California, the western United States, or even larger. The point being that the community, association, or habitat is either unique or restricted in distribution in an area larger than the political boundaries of Los Angeles County. Resources that are limited in distribution in the region being considered, but common elsewhere, are also included under this category.

CLASS 3 -- Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution in Los Angeles County.

The purpose of this criteria is to identify biotic resources that are uncommon within the political boundaries of Los Angeles County, regardless of their availability elsewhere. The County has a high diversity of biological components. It and San Diego County are the only counties in the United States that possess coastal, montane, and

desert communities within their boundaries. It is a rich heritage that few local governments can attempt to preserve.

Many of the communities that were once common in Los Angeles County have been severely reduced due to urban and agricultural development. This is especially true south of the San Gabriel Mountains, and among the agricultural fields of the north County. Other biotic features have never been common.

CLASS 4 -- Habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability.

Certain areas tend to concentrate a species or group of species at various points in their life cycles. These areas possess specialized characteristics that are essential to the maintenance of wildlife. This criteria is intended to identify those areas that are limited in distribution, and not the specialized habitat of a common species or group of species.

CLASS 5 -- Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or they represent an unusual variation in a population or community.

Oftentimes scientists learn the most about a biological phenomenon by studying it at an extreme in its distribution. This reveals what the extremes are under which it can survive.

In addition, isolated populations and communities are often relicts of what was present in an area at some previous time, and often show genetic traits not found elsewhere in the species. These characteristics may be useful in determining taxonomic relationships.

CLASS 6 -- Areas important as game species habitat or as fisheries.

This criteria was designed to identify areas that are critical to the maintenance of game and fish populations in Los Angeles County.

CLASS 7 -- Areas that would provide for the preservation of relatively undisturbed examples of the natural biotic communities in Los Angeles County.

The intent of this criteria was to identify examples of the more common biotic resources in Los Angeles County. As often as possible, the areas selected:

1. were completely or nearly undisturbed
2. had a diversity of habitats
3. were large enough to support a representative sample of the native fauna
4. were more or less isolated from outside impacts, such as a self-contained watershed or an isolated mountain peak.

Examples of each vegetation type were selected from the various geographical regions in the County in order to preserve geographic diversity.

CLASS B -- Special areas.

Certain areas that are worthy of inclusion, but that do not fit any of the above criteria, should be pointed out at this time. Each area has its own special characteristics that are discussed on the individual area description sheets.

Identification of Significant Ecological Areas in Los Angeles County

With the criteria for identifying significant ecological areas established, the remainder of the study dealt with the second major question that had to be answered: "where can areas with these requirements be found in Los Angeles County?" There were two basic approaches that could have been used to formulate a response. The most desirable method would have been a complete biotic survey of the County, and the development of a comprehensive wildlife and habitat management plan. Such a study has been proposed by the Wildlife Advisory Committee to the Los Angeles County Fish and Game Commission, but has never been financed. This level of effort would have required a staff of biologists and their assistants working full-time for several years, and was clearly beyond the scope of the present study.

The alternative approach, and the one that was used during this study, relied on an analysis of information available in the literature and from qualified individuals throughout the County. While this approach is not as comprehensive, it is relatively inexpensive and can be done on a shorter time frame. The limitations of this method can be overcome if new information is incorporated as it becomes available, and if the EIR process is used to analyze the biotic resources of a proposed project site before it is developed.

Data collection began with a thorough review of available literature. Publications by governmental agencies, conservation groups, and the County Department of Regional Planning. The scientific literature were examined. A complete listing of titles appears in Appendix B. The primary purpose of the literature review was to identify biotic resources and specific areas that had the potential to fulfill one or more of the criteria used to select significant ecological areas. The information gathered from this effort served as the primary data base for the project.

Simultaneously, a survey was conducted to gather unpublished information and recommendations from qualified and concerned citizens throughout the County. Questionnaires were distributed to government agencies, academic institutions, and conservation groups (Appendix C). Each person or organization contacted was asked to recommend areas they were familiar with that should be considered for inclusion as a significant ecological area. A request was made for specific information on locations, boundaries, resources, and similarities to other areas in the County (Appendix D). Individuals at the University of California at Los Angeles,

California Department of Fish and Game, California Coastal Zone Conservation Commission, U.S. Forest Service, Whittier Narrows Nature Center, Los Angeles County Museum of Natural History, and a limited number of persons associated with conservation groups were interviewed. The success of this survey/interview was above 40% (Table 3).

The original Significant Ecological Area Report prepared by the Environmental Resource Committee and members of the UCLA faculty was revised thoroughly. Every member of these committees that could be contacted was interviewed and asked to provide the information and rationale that were used when preparing the original list. The purpose of this effort was to obtain as much documentation as possible on the original areas, and to be certain that no potential information had been overlooked.

The data gathered from the literature, the survey questionnaires, interviews, and the review of the original 81 areas was then compiled, and used to generate a list of candidate significant ecological areas. Each one was reviewed and the available data analyzed to determine whether or not it met one of the selecting criteria. Areas not fulfilling one or more of these criteria and/or the overall goal of preserving biotic diversity in Los Angeles County were eliminated. Many of them had not been sufficiently surveyed. This problem could be rectified at some point in the future as more data is collected. Other areas did not possess resources of extraordinary value when examined on a regional or county-wide basis. In many cases, a number of sites in the same region and with similar resources were recommended. Those that were chosen were believed to be the best examples because

TABLE 3. Response to survey-questionnaire and interviews.

	Number of Responses/ Number Contacted	Percent Success
Government Agencies		
Agencies	17/18	94%
Individuals	33/39	85%
Academic Institutions		
Institutions	22/46	48%
Individuals	32/104	31%
Conservation Groups		
Organizations	24/52	46%
Individuals	35/84	42%
Others		
Individuals	5/6	83%
Total		
Groups	63/116	54%
Individuals	105/233	45%

they were large and relatively unimpacted, possessed defendable boundaries, and supported a diversity of communities. These areas were then mapped on 7½ minute USGS topographic maps using high altitude color infrared imagery (Aug. 1975 and Dec. 1972).

The boundaries chosen for each significant ecological area were based on the data that had been gathered, the recommendations made in the survey, and interpretation of aerial photographs. In general, the boundaries selected conformed to natural topographic features such as a ridgeline or the toe of a slope. Thus, the significant ecological areas would often be an isolated hill or a self-contained sub-watershed. These types of units are the least susceptible to impacts from outside sources, and were chosen for this reason. In other cases, the edges were defined by the presence of a cultural feature such as a freeway, dam, or, most commonly, urban and suburban development. In a few isolated cases, political boundaries were used, including the County line and USGS section lines. However, existing park boundaries were not used in this manner. The former case occurred in desert areas that were chosen as representative examples of the more common communities. In these cases, the flatness of the area made it difficult to select boundaries based on topographic features.

Buffer zones were mapped in areas adjacent to significant ecological areas when required. However, this did not occur often because the majority of significant ecological areas selected consisted of more or less self-contained units.

When possible, final mapping and resource descriptions were verified in the field. However, due to time and budgetary restrictions, only the areas in the highest priority groups were checked.

Study Limitations and Opportunities

The methodology used to identify significant ecological areas possesses inherent limitations. This is due to the fact that it relied on existing information, did not involve gathering original field data, and included very little time for field verification of resources and mapping. It was impossible to reach with a survey all persons who might have had pertinent information, and a portion of those contacted had neither the time nor inclination to respond.

While there is considerable information available in the literature, it is restricted in scope. A complete survey of the county has never been conducted, and much of the information on wildlife movement patterns, water sources, and other important features has never been collected. This type of data would be required to formulate a comprehensive wildlife and habitat management plan for the County.

With a finite amount of data available, it is probable that some significant ecological areas have not been identified. Thus the areas selected by this study are not a final listing, but are a fluid open-ended compilation based on currently accessible information. One of the strong points of the 1976 Significant Ecological Area study is the development of criteria for selecting and classifying significant ecological areas. As more data becomes available, the criteria can be used by qualified scientists to update the results of this study. This can be done by adding previously unknown areas and resources, replacing existing areas with better examples, reclassifying the resources of an

area, or eliminating unwarranted
come from governmental agencies,
groups, and environmental information

information can
literature, conservation

SIGNIFICANT ECOLOGICAL AREAS IN LOS ANGELES COUNTY

Over one hundred fifteen sites were identified or recommended for inclusion as significant ecological areas in Los Angeles County. Of these, sixty-two were selected for the final listing. A description of each area can be found in Appendix E.

During the final selection process, candidate areas within a geographical region were compared. For example, in the Santa Monica Mountain region, virtually every undisturbed canyon was recommended as a significant ecological area. Primary consideration was given to areas with unique, uncommon or scientifically interesting features. For this reason, Point Dume, Upper La Sierra Canyon, Malibu Canyon and Lagoon, Las Virgenes, Hepatic Gulch, and Cold Creek were chosen. Other areas were selected to provide good examples of the more common habitats and to ensure that the full range of the remaining biotic and geographical diversity in the region had been sampled. For these reasons, Zuma Canyon, Tuna Canyon, Temescal-Rustic-Sullivan Canyons, Palo Comado Canyon, and Encino Reservoir were selected. They were picked over other areas on parameters such as size, condition of habitat, the diversity of communities present, presence of water,

and information available. Similar selection procedures were followed in other regions of the County.

In addition to the sixty-two areas selected for inclusion, the riparian woodland community was identified as possessing significant biological resources. This community is described in Appendix E following the description of the sixty-two significant ecological areas.

A small amount of natural habitat has already been preserved in state and county parks, reserves, and sanctuaries. Portions of some of these areas have been included in significant ecological areas in Los Angeles County. However, this should not be interpreted to mean that the remainder of natural habitat in existing parks is unimportant to the preservation of floral and faunal resources in the County.

Although the Angeles National Forest was not included in the study area, a limited amount of information on its resources was acquired during the course of the investigation. This data is also summarized in Appendix E.

The correlation between this study and the 1972 significant ecological area study is summarized in Appendix F. Of the original 81 areas, 16 did not have the potential to be included in the 1976 selection process. Two areas were repeated in the original list; and three areas were not mapped and could not be identified. Eleven more areas were either completely within the National Forest or on the Channel Islands and therefore out of the 1976 study area. Of the remaining 65 areas, 49 were included in this report. The 16 not

selected were excluded primarily because there was insufficient evidence to determine whether or not they met the selection criteria, or else they have been more heavily impacted by man's activities than other areas possessing similar resources.

RECOMMENDATIONS

Compatible Uses

The sixty-two significant ecological areas selected were chosen in an effort to identify areas in Los Angeles County that possess uncommon, unique or rare biological resources, and areas that are prime examples of the more common habitats and communities. Thus the goal of the project was to establish a set of areas that would illustrate the full range of biological diversity in Los Angeles County, and remain as undisturbed relicts of what was once found throughout the region. However, to fulfill this function, all sixty-two significant ecological areas must be preserved in as near a pristine condition as possible.

Any intrusion by man into a natural community causes changes. Occasionally these can be beneficial, but most are not. Negative impacts generally result from the direct or indirect destruction of vegetation and wildlife. If the biotic resources of significant ecological areas are to be protected, and preserved in a pristine state, they must be left undisturbed. Thus the number of potential compatible uses is limited. Residential, agricultural, industrial, and commercial developments necessitate the removal of large areas of natural vegetation and are clearly incompatible uses.

Recreational uses can be compatible with a significant ecological area. However, the type of use and level of intensity will

depend on the characteristics of each area. Communities such as chaparral are resilient and can withstand a moderate amount of use. Others such as coastal dunes are highly susceptible to disturbance and are easily destroyed. The level of recreational use will also depend on the size of the area and its topography. Larger areas can support a limited amount of more intensive uses if they are localized and situated away from sensitive floral and faunal resources. This would be much more difficult to do in smaller areas and would necessitate a lighter amount of use.

The potential types of uses compatible with significant ecological area resources are described below. Each level of increasing intensity includes the uses described in the preceding categories. The level of use appropriate to a individual significant ecological area is designated on the corresponding description sheet in Appendix E.

1. Regulated Scientific Study
2. Very Low Intensity Recreational Use - This category is intended for passive, recreational uses such as nature study, wildlife observation, photography, painting, sketching, and general outdoor experiences. The average visit to the area will probably be $\frac{1}{2}$ - 2 hours. A minimal number of trails should be provided for access only and should not be developed into a network for general hiking purposes. In marine environments, non-consumptive uses such as skin and scuba diving should be permitted. In all cases, efforts should be made to locate access trails away from riparian and oak woodland habitat, unique resources, and other sensitive areas. Intentional and unintentional destruction of the resources should be prevented, and collection of plant or animal specimens by the public should not be allowed. A limited number of interpretive and educational displays would be appropriate, but should not include major facilities.
3. Low Intensity Recreational Uses - The uses permitted under this category are identical to those under the previous heading, but can be more intense, with the visitor spending the better part of a day in the area. A

network of trails could be established for day hikes, with designated, unimproved areas to be used for eating meals. Major interpretive facilities could be established, and educational programs encouraged. A small number of picnic sites could be established in conjunction with this, but should be restricted to the number needed by groups that would be using the center. Cooking facilities should not be provided. Care must be taken to locate all structures and trails at a safe distance from riparian and oak woodland habitat, unique resources, and other sensitive areas.

4. Medium Intensity Recreational Use - This category permits overnight use of the area. A limited number of campsites could be established in each of these significant ecological areas if an appropriate location can be found away from all riparian and oak woodland habitat, unique resources, and other sensitive areas. The number, density and location of campsites must be determined on a site-specific basis. A detailed study of a significant ecological area must be conducted before these decisions are made. Picnic grounds should be permitted but must follow the same placement guidelines as campsites. Cooking facilities for campgrounds and picnic areas should not be permitted unless they burn gas, and no fire rings or open fires should be allowed. Equestrian use is permissible on a day-use basis only. Animals should be supplied with feed and water, and should not be allowed to browse on native vegetation or interfere with any existing surface water.

In all cases, facilities should be concentrated into one or two areas, with as little destruction of natural vegetation and wildlife as possible. Proper care should be taken to ensure that visitor use does not destroy or degrade the resources. Even very low intensity recreational use can be destructive if not restricted to appropriate areas. It must be remembered that the primary function of the significant ecological area is as a habitat reserve, and not as a recreational area.

Certain areas and uses cannot be categorized as above, and require individual consideration. Coastal areas and lakes have special restrictions. Other areas are valuable but are in poor condition, and will require restoration. Hunting is a use that

presently is compatible in some of the larger areas. However, this may have to be curtailed at some point in the future if the significant ecological area becomes surrounded by development. These areas should be managed in conjunction with the California Department of Fish and Game. Each of these special cases and others are treated on the individual area description sheets in Appendix E.

Development has already taken place in a small number of significant ecological areas. In all cases, restrictions should be placed on the owners to ensure that additional destruction of vegetation and wildlife does not occur. Developments such as gravel pits or oil and gas extraction sites should be reclaimed and rehabilitated when abandoned.

Riparian woodland habitat outside the designated significant ecological areas should also be preserved. No developments should take place which would alter the flow of water into or through the area. In addition, a 75 - 100 foot buffer of natural vegetation should be maintained around the riparian community. This is necessary because many of the organisms which nest or roost in the riparian habitat forage in adjacent areas.

Buffer Zones

Biotic communities are generally influenced by an area much larger than their own boundaries. For example, a riparian woodland community is affected by its entire watershed. In most cases, this has been taken into consideration and the boundaries of significant ecological areas have been drawn to include self-contained units. However, in a few instances it was necessary

to designate as buffer zones, adjacent areas that were integral parts of the biotic communities in the significant ecological areas.

Development of buffer zones must be limited to prevent adverse affects on the adjacent valuable resources. As a rule, any of the uses permitted in a significant ecological area should also be allowed in an associated buffer zone. Additional uses depend on the topography and vegetation of the buffer zone and the resources being protected.

The buffer zones of Malibu Canyon, San Francisquito Canyon, and Zuma Canyon include important watershed areas, the use of which will directly influence valuable riparian habitat in these canyons. In addition, San Francisquito Canyon includes an endangered fish species; Malibu Canyon supports the last remaining steelhead run and saltwater lagoon in the County; and Zuma Canyon possesses a perennial stream that is extremely valuable to wildlife. The survival of all of these resources depends on proper watershed management. Any development that takes place must be done in a manner that will not alter natural drainage patterns, runoff velocities, runoff volumes, or siltation rates. In all cases, removal of natural vegetation should be limited to that absolutely required to protect structures from fire and to construct roads. Use of these buffers may include limited residential development. However, this type of development brings with it many disturbances to the natural environment. In addition to habitat removal for the construction of residential dwellings, habitat destruction and degradation also occurs through cut and fill activities for roads and utility lines, vegetation removal for fire safety, and the introduction

of pets, non-native pest species, noise, and litter. The magnitude of these impacts depends on several factors. Cut and fill activities are greater on steeper slopes and destroy an equally greater amount of habitat. In addition, erosion problems are created by vegetation removal on steeper slopes. The extent to which man, pets, and non-native pests will degrade the habitat will depend on its accessibility. Steep slopes and dense vegetation will be less accessible and will be disturbed less than flatter areas with open vegetation. In all cases, these types of adverse impacts will cause the disruption and breakdown of ecological balances important to ecosystems. For this reason, only extremely low intensity residential development should be allowed in these buffer zones. Only in this manner can they provide an adequate buffer to protect valuable canyon resources as they are intended to do. Utility rights-of-way may also be placed in these buffer zones. However, all routes should use the same corridor and access roads. Access roads to utility lines should remain locked to prevent uncontrolled access to the area. ORV use in these areas should be prohibited.

The buffer zones on the Palos Verdes Peninsula are areas of coastal bluff-tops adjacent to ecologically significant cliffs and rocky intertidal habitats. Proper management of these areas is essential to the control of erosion and access which might otherwise lead to tidepool siltation, and to the disruption of cliff vegetation and important bird roosting areas. In addition, they provide feeding habitat for migrating and wintering birds. The areas should either continue to be used for light agriculture or they should be allowed to return to their natural state. In order to protect remaining habitat, access to the cliffs should be re-

stricted to designated pedestrian trails. Residential, industrial, and commercial use should not be permitted because they will result in encroachment upon and consequent degradation of valuable habitat.

Transition Zones

Assuming that development is likely to occur up to the boundaries of most significant ecological areas, it is necessary to surround them with a transition zone of low intensity use. However, these zones are not intended to be part of the significant ecological areas and do not have to contain natural habitat.

Medium and high intensity development would bring a tremendous increase in the presence of humans, pets, and non-native pest species, as well as increased noise and litter in the adjacent significant ecological areas. These adverse impacts would seriously disrupt populations and degrade habitat in the natural communities. Transition zones are intended to prevent medium and high intensity development adjacent to significant ecological areas, to control access to the significant ecological areas, and to absorb adverse impacts from nearby non-compatible uses.

Only very low intensity development should be allowed to take place in transition zones. The depth of the zone is not a biological consideration but will depend upon the surrounding land uses. It will vary in each case according to the intensity of nearby non-compatible developments, and to the land uses proposed for the transition zone. For example, a city park 500 yards wide between high density residential area and a significant ecological area

will not in itself control access and provide protection. A fence or a wider area would be required. However, fenced-off private land holdings only 100 yards wide will function as an adequate transition zone. In each case, the surrounding cultural conditions must be examined and a transition zone of appropriate width maintained. This should be done by a qualified individual as development adjacent to significant ecological areas takes place.

Implementation Recommendations

The list of sixty-two significant ecological areas is not one from which further eliminations can be made. Each and every one should be preserved. Each of the areas was chosen from a much larger group of candidate areas, and was selected on the basis of its ecological significance. It is impossible to develop a meaningful biological rating scheme to prioritize the areas. Ratings could be attempted on the bases of parameters such as productivity, diversity, rarity, or other biological measurements, but in each case priorities would vary considerably, and the selection of one parameter over another would be arbitrary.

All of the areas should be preserved through a management program that uses as its framework the availability of the resources in Los Angeles County. Those areas most limited in their availability should receive attention first. However, if a more common area suddenly becomes threatened by development, efforts should be redirected to ensure its preservation. Such a program would inevitably require acquisition of areas by Los Angeles County, but should also work in conjunction with groups such as The Nature Conservancy, the University of California Natural Land

and Water Reserve System, the Dept. of Fish and Game, U.S. Fish and Wildlife Service, and conservation groups.

Realizing that at times there will be an alternative but to choose one area over another, a Significant Ecological Area Technical Advisory Committee should be set up to assist the County in these decisions. This committee should consist of professional scientists who are familiar with the County's biological resources. If an area is lost in this manner, the committee should select a replacement area possessing similar resources in the same geographic area. In some cases this may not be possible. The committee should also be used to assimilate and interpret additional data on Los Angeles County biological resources as it becomes available, and to maintain close contact with the recovery teams for rare or endangered species occurring in the County. These duties will aid them in the selection of additional or replacement significant ecological areas in the future. The usefulness of the committee could be maximized if an ecologist were on the Dept. of Regional Planning staff. This individual could act as a liaison with the committee, the Dept. of Fish and Game, and conservation groups, collect new data as it becomes available, and provide expert review of environmental impact reports.

WHY PRESERVE BIOTIC DIVERSITY?

Why preserve biotic diversity? This is a question that is often asked by developers who must satisfy a myriad of environmental constraints before obtaining a building permit, by land owners who may be asked to sell their land for a new park or natural area, and by tax-payers who must pay the bill. Die-hard environmentalists often respond that man has a moral commitment to preserve these resources; that they have their own inherent right to survive, regardless of their apparent degree of usefulness to man. The belief that biotic resources should be preserved for their own sake has been transformed into an official policy by the California State Legislature in the Fish and Game Code:

The Legislature finds and declares.....that it is the policy of this state.....to perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to man.

Although this argument has its merits, it is not convincing to the type of people that raise the question. However, there are reasons for preserving biological diversity that are based on current scientific evidence, and should be of utmost concern to the public and its representatives.

Biological diversity must be preserved to maintain natural ecosystems, many of which are of direct benefit to man. Natural vegetation slows runoff velocities during heavy storms, preventing severe erosion problems and flooding. Slower moving water can infiltrate the soil more easily, thus increasing groundwater recharge. This is a direct economic benefit of natural ecosystems. Another direct benefit is the production of game and fish species.

laboratories that can be used by man to better understand the world around him. They can be used as environmental monitoring stations to detect the impacts that man is having on his environment, and may even serve as models for man-made ecosystems if population growth and resulting expansion should upset critical environmental forces. Which communities and which species have the potential to provide us with valuable information cannot be predicted. This is often used as an excuse to avoid the question of preserving diversity by those who do not understand its values. Instead, it should be the grounds for a policy of attempting to preserve as much diversity as possible.

Every situation that is destroyed and every species that is lost is information that cannot be regained. This is part of the reason for concern over the fate of rare and endangered species. In order to see the need for preserving species and communities, regardless of their currently recognized value, we should ask ourselves these questions. Would it have been possible to foresee the future value of the common bread mold, Penicillin, fifty years ago? Without knowing this, would it have been possible to save it if it had been a rare or endangered species? Can we predict the potential value of any species or ecosystem? And finally, shouldn't biotic diversity be preserved? Whether the final answer is based on moral commitment, scientific interest, ecological principles, or sound economic sense, the answer is yes.

The preservation of biotic diversity must be done on local, regional, national and international levels. While samples of large biomes such as tundra, desert, tropical rainforest, and taiga must be saved, it should be recognized that all tropical

APPENDIX B

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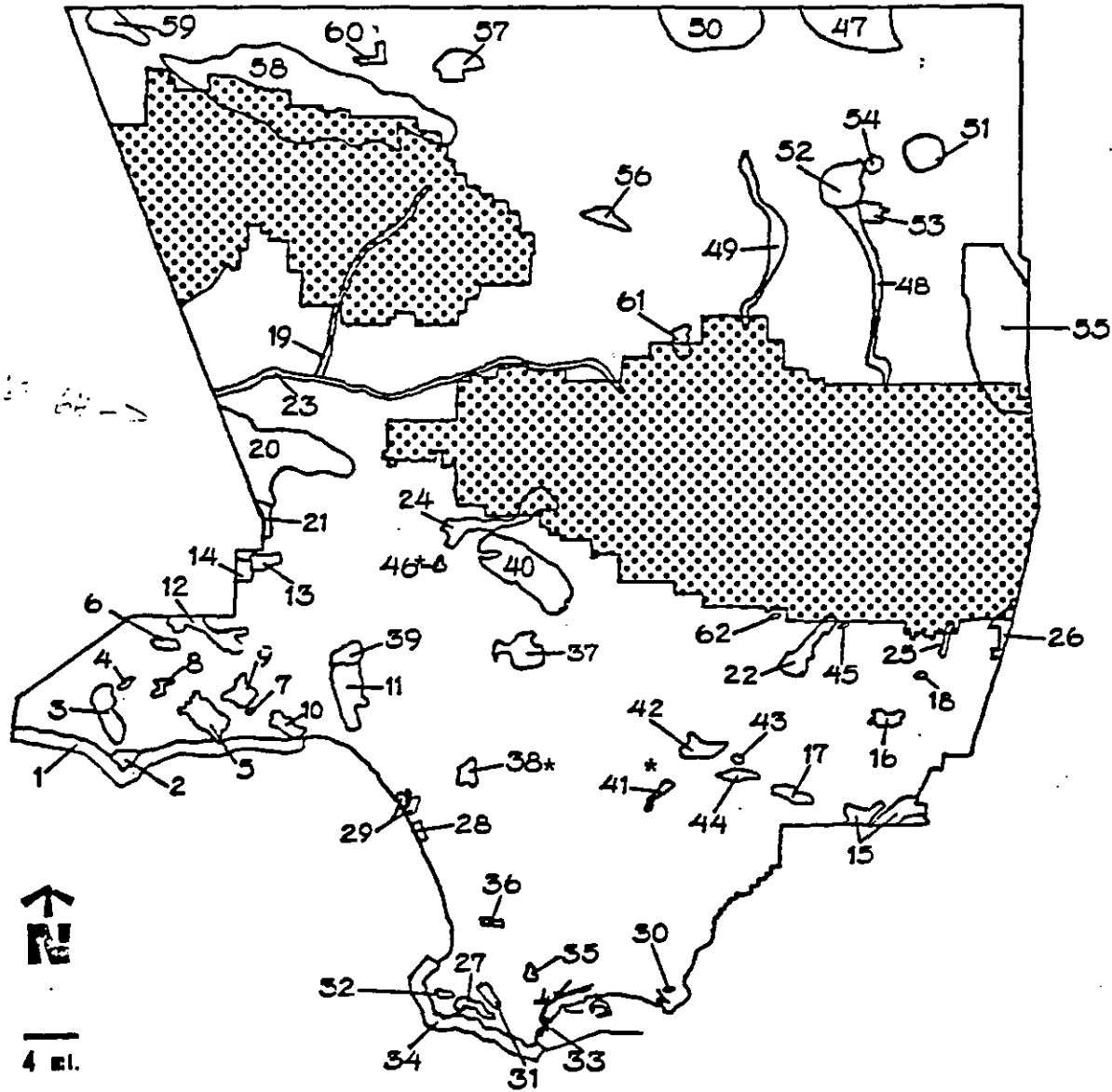
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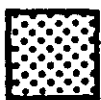
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SIGNIFICANT ECOLOGICAL AREAS IN LOS ANGELES COUNTY

RECOMMENDED BY ENGLAND AND NELSON



significant ecological area



national forest

* Potential significant ecological areas (Possibility to open space)

APPENDIX E

SIGNIFICANT ECOLOGICAL AREAS IN LOS ANGELES COUNTY

Following are sheets describing each of the areas in Los Angeles County that were found to meet the criteria outlined above.

Each sheet includes the following information:

- * Area # - This is an identification number assigned to each area and coded to the ITUM maps;
- * Name - This is the name of the resource. It may be the name of the biological feature, a geographic area containing the resource, or a nearby landmark.
- * Quadrangle(s) - This refers to the ITUM maps showing the location of each area.
- * Priority Group - this item refers to the criteria that the area meets. One or more numbers may be used depending on how many criteria the area fits. The first number indicates the priority of the area. Additional numbers following in parentheses refer to other criteria the area fulfills.
- * Resource Description - This is a brief description of the area's resources and significance.
- * Information Source(s) - This indicates the general source of the information. The types of sources used were the literature search (Literature), the survey questionnaire and interviews (Survey/Interview), the Environmental Resource Committee and UCLA committee reports (ERC/UCLA), and reports by the California Natural Area Coordinating Council and the California Native Plant Society (CNACC/CNPS).
- * Nature of Information - This is a brief description of the limitations and reliability of the information available.
- * Buffer Zone Requirement - This item describes any buffer zones and restrictions on surrounding land uses that are necessary to preserve the resource. Additional information on buffer zones can be found on page 36.
- * Compatible Uses - Under this heading, uses compatible with the preservation of the resource are described. Definitions of the terms regulated scientific study, very low, low, and medium intensity recreational uses can be found on page 33. In addition, non-compatible uses that are expected to threaten the area are often brought out.

Area # 1

Name: Malibu Coastline

Quadrangle(s): Triunfo Pass, Point Dume, Malibu Beach, Topanga
Class 2 (3,4,5,6,7)

Resource Description: This is a relatively undisturbed coastal region where upwelling of nutrient-rich waters and a variety of habitats support highly productive and extremely diverse marine communities. The area possesses some of the best kelp bed habitat south of Santa Barbara, and the only remaining natural kelp beds on the mainland coast of Los Angeles County. These areas may be 100 times more productive than adjacent sand bottom communities, and provide refuge, food, and nursery grounds for thousands of species.

Rocky outcrops alternate with sandy stretches along this coastline, and are found to a depth of 600 feet. The stability of the substrate and the variety of exposures provide microhabitats for a great number of organisms. Characteristically, rocky shorelines from the lower intertidal zone to about 100 foot depth can be the most biologically active areas in the world. Point Dume is the only place rocky intertidal habitat occurs between Palos Verdes Peninsula and well into Ventura County.

This coastline also possesses the only complete, undisturbed sandy beaches remaining in Los Angeles County. Although very dynamic in physical stability and therefore unfavorable for the development of a diverse biological community, these areas do offer habitat for a number of organisms. An important microcommunity of decomposers is present. Sandy beaches provide feeding areas for many bird species. In addition, the soft substrate offers a repository for eggs and nursery grounds for many species.

Status: This shoreline remains in essentially a native state as a remnant of what once was typical of rocky and sandy shoreline in southern California. Artificial modifications have been limited to small local areas. West of Point Dume some minor pollution does occur but the kelp is healthy. East of Point Dume there is minor to moderate pollution and kelp does not grow below 35 feet.

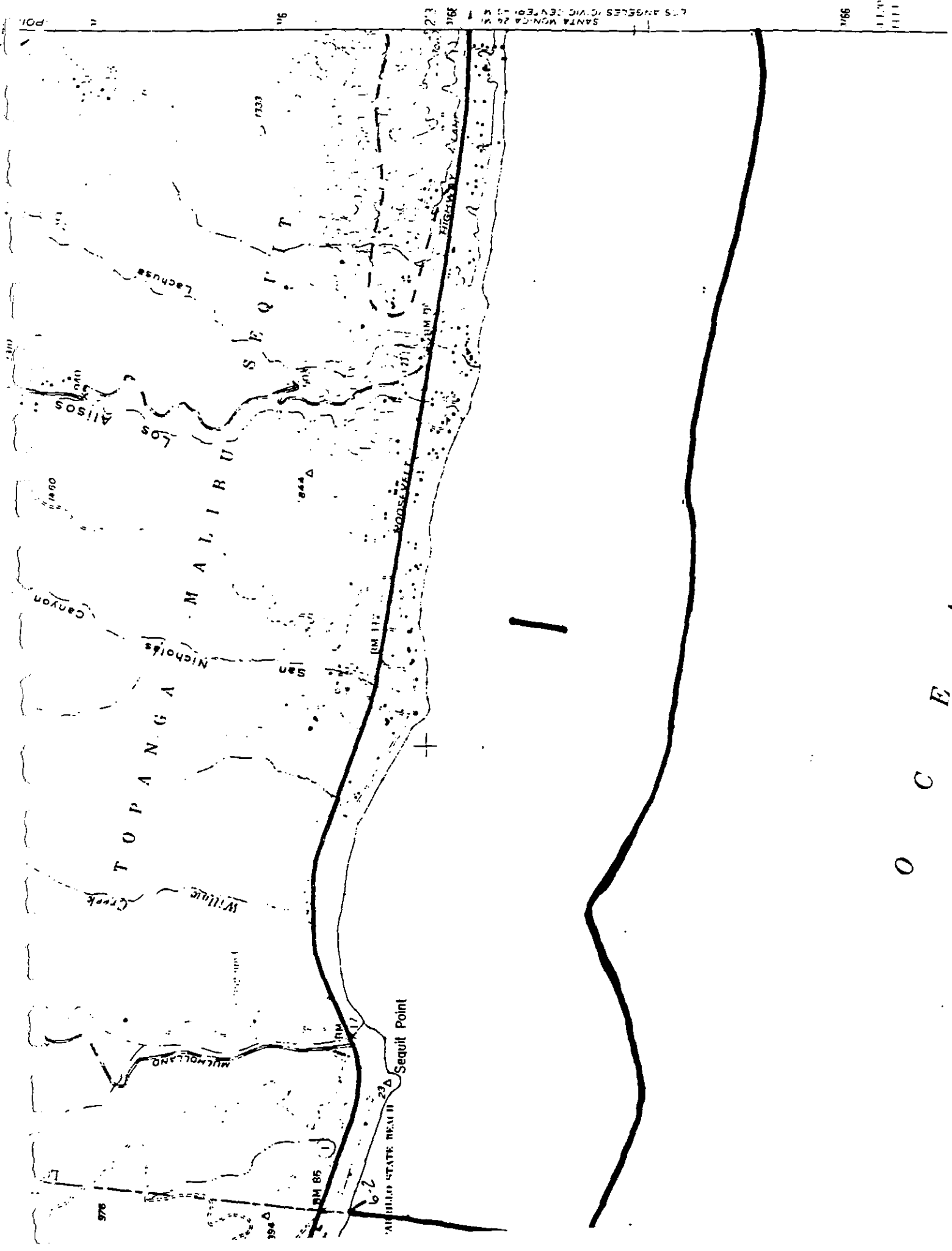
Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: Recent interest in statewide coastal resources by the California Coastal Zone Conservation Commission and the California Natural Areas Coordinating Council has stimulated detailed surveys of the area by several competent marine biologists.

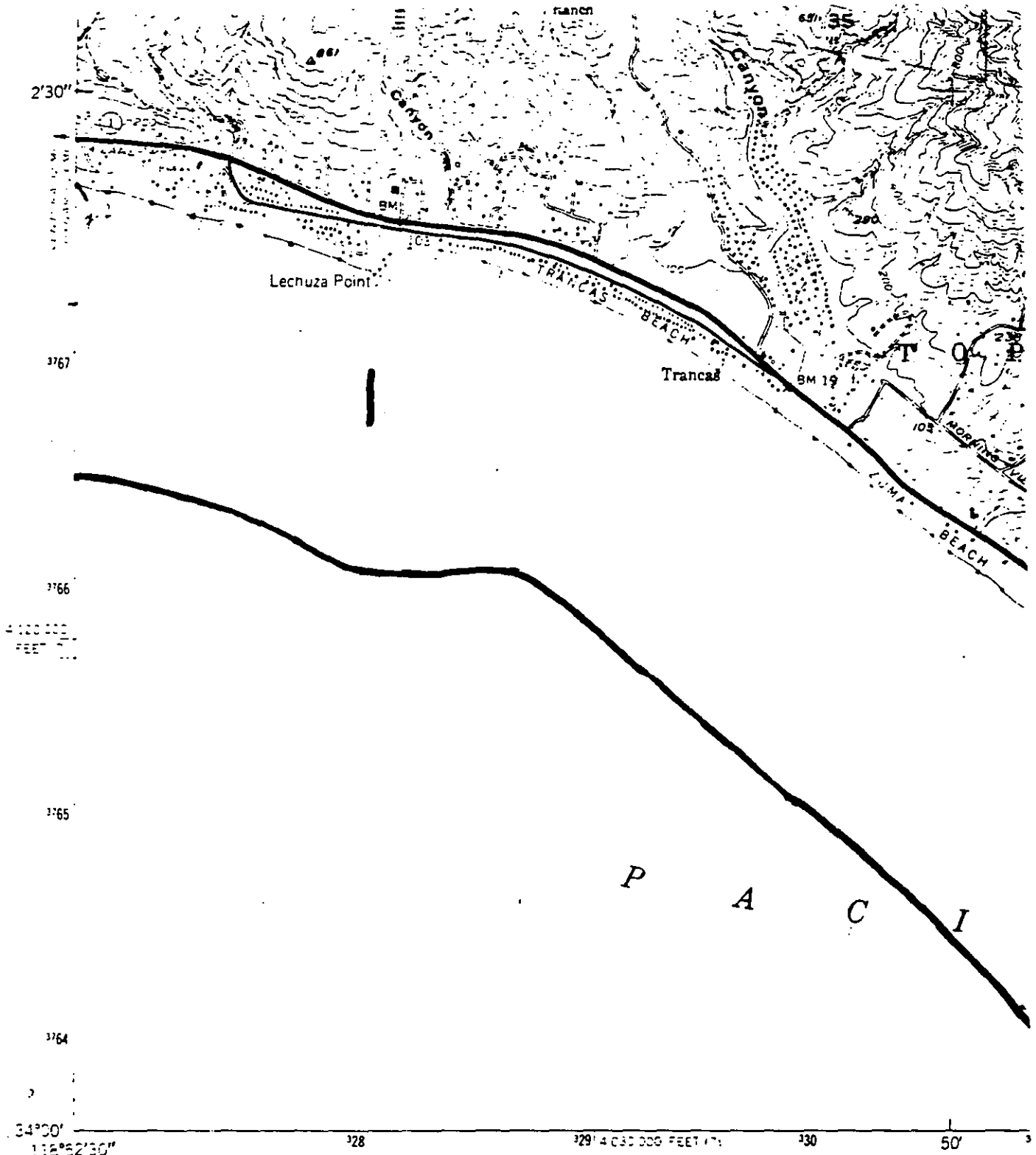
Buffer Zone Requirement: None required, except protection from the adverse effects of coastal erosion and the excessive input of septic tank wastes.

Area #1 continued

Compatible Uses: In general, low intensity recreational uses are compatible with the resources present. However, rocky intertidal habitat should be used for regulated scientific study, and very low intensity recreational activities. Collection of tide pool organisms should be prohibited and strictly enforced. Sportfishing near offshore rocks and kelp beds has endured, and through proper management should be able to continue.



O C E A



Mapped, edited, and published by the Geological Survey

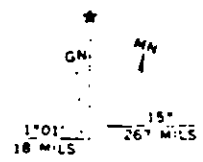
Control by USGS, USC&GS, and Los Angeles Co

Topography by photogrammetric methods from aerial photographs taken 1947. Field checked 1950

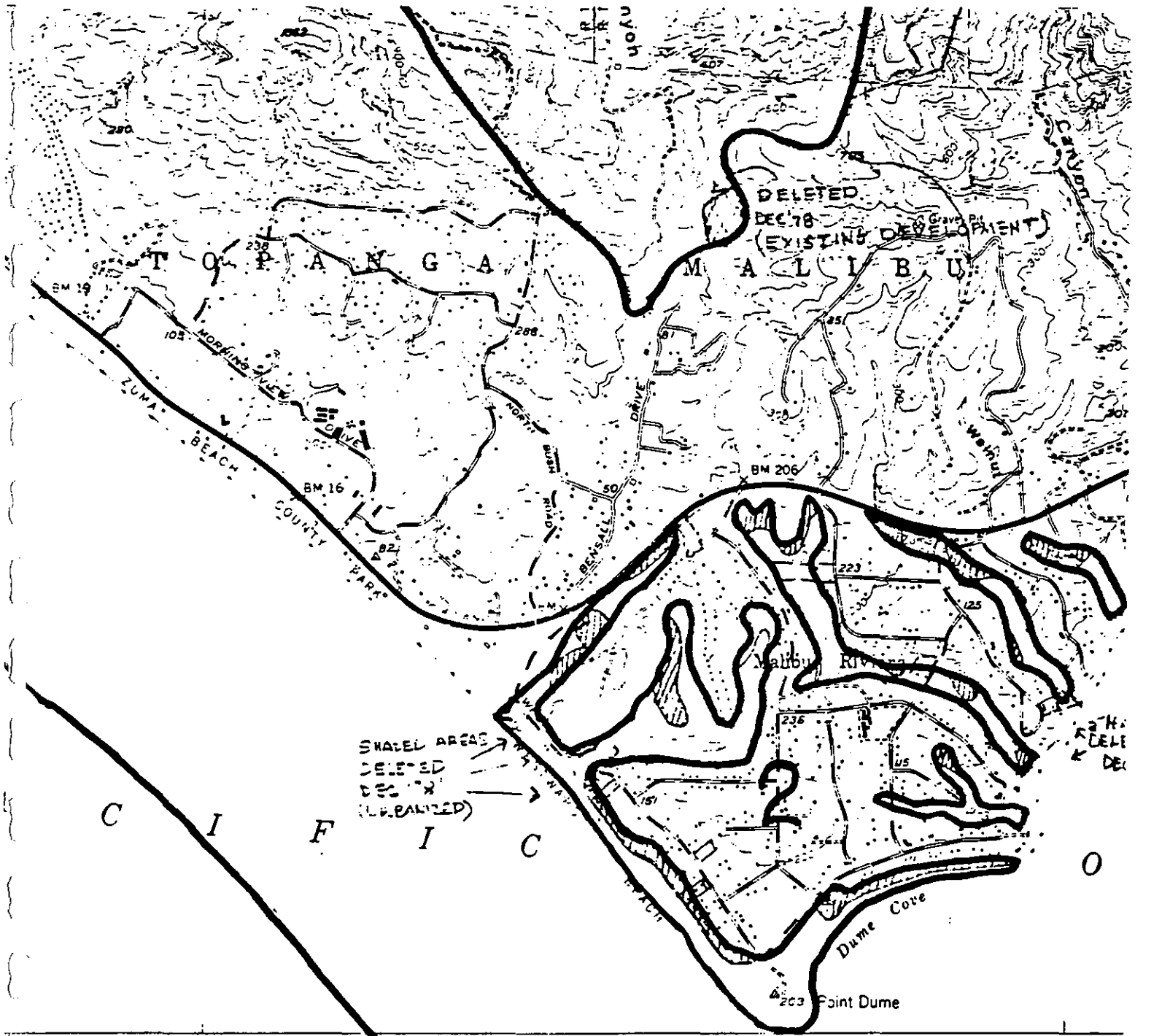
Polyconic projection 1927 North American datum
 10,000-foot grids based on California coordinate system, zones 5 and 7
 1000-metre Universal Transverse Mercator grid ticks, zone 11, shown in blue

Dotted land lines were established by private survey

Data shown in purple compiled from aerial photographs taken 1967. This information not part of the map

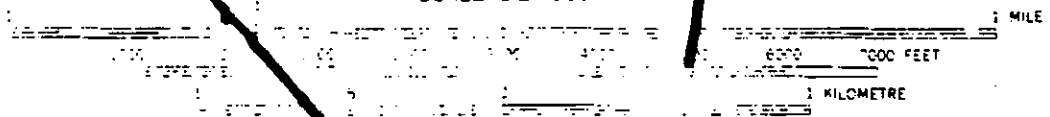


UTM GRID AND 1967 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



330 50' 331 332 333 334 47°30'

SCALE 1:24,000

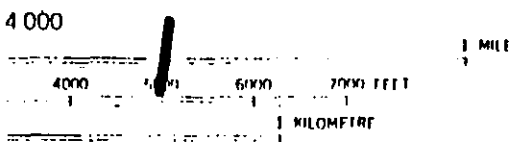
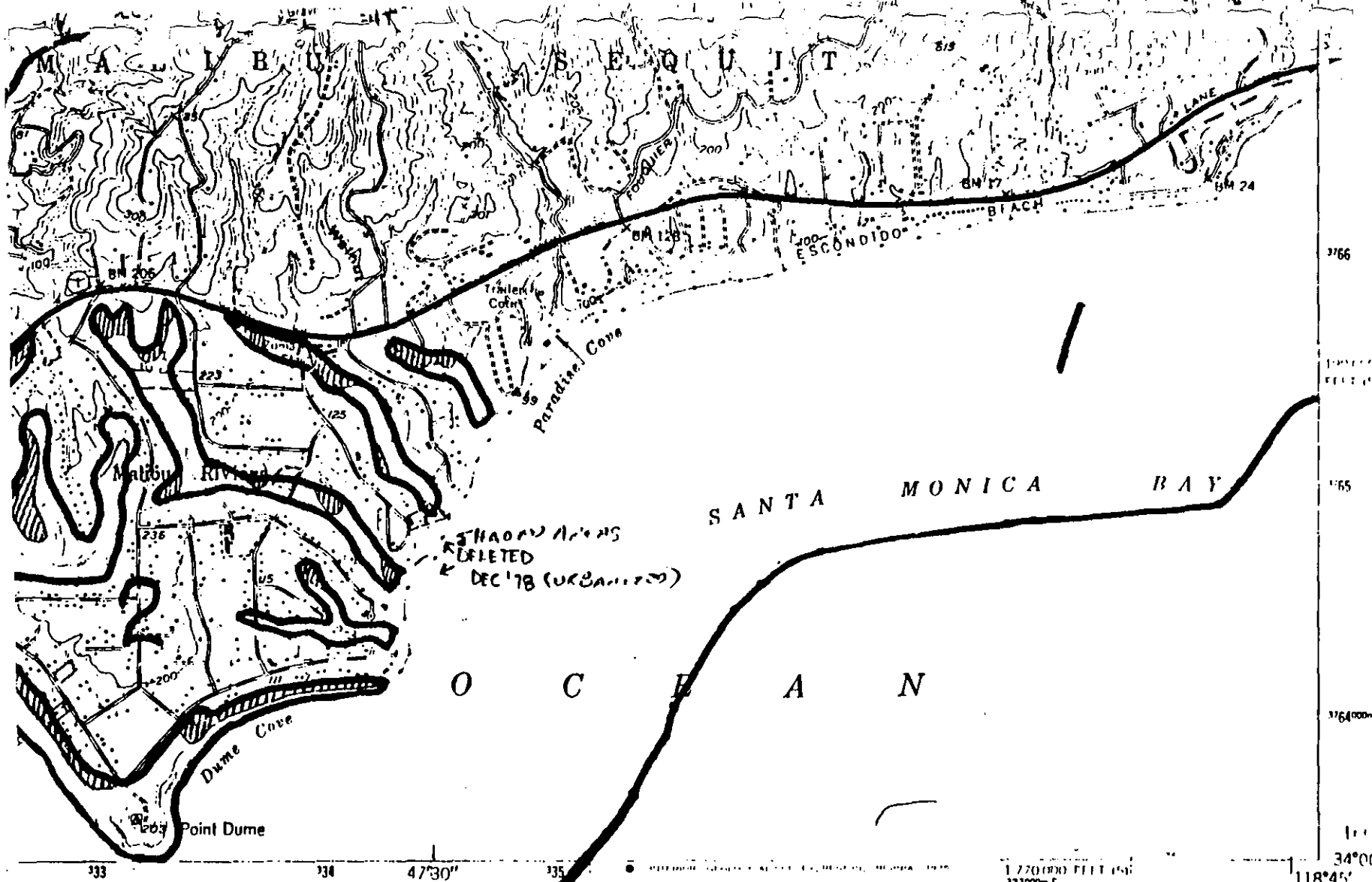


CONTOUR INTERVAL 25 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

AND 1967 MAGNETIC NORTH
IN CENTER OF SHEET

SHORELINE SHOWN REPRESENTS THE STATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF THE

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



VERTICAL DATUM OF 1929

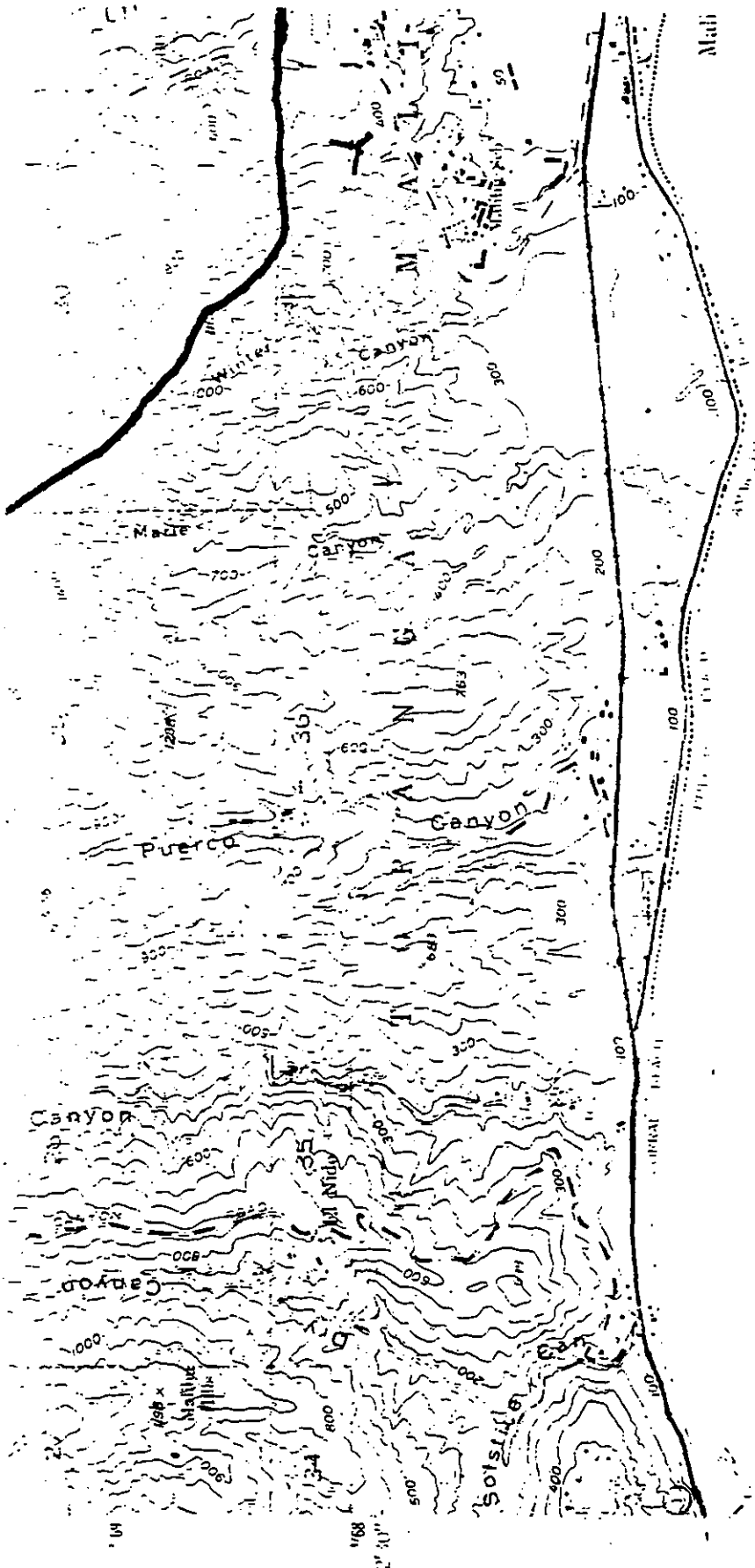
CLIMATE LINE OF MEAN HIGH WATER
APPROXIMATELY 4 FEET
MAP ACCURACY: 1:25,000



ROAD CLASSIFICATION

Heavy duty	—————	Light-duty	-----
Medium-duty	-----	Unimproved dirt
	—————	State Route	———

POINT DUME, CALIF.



S A N T A F E M O

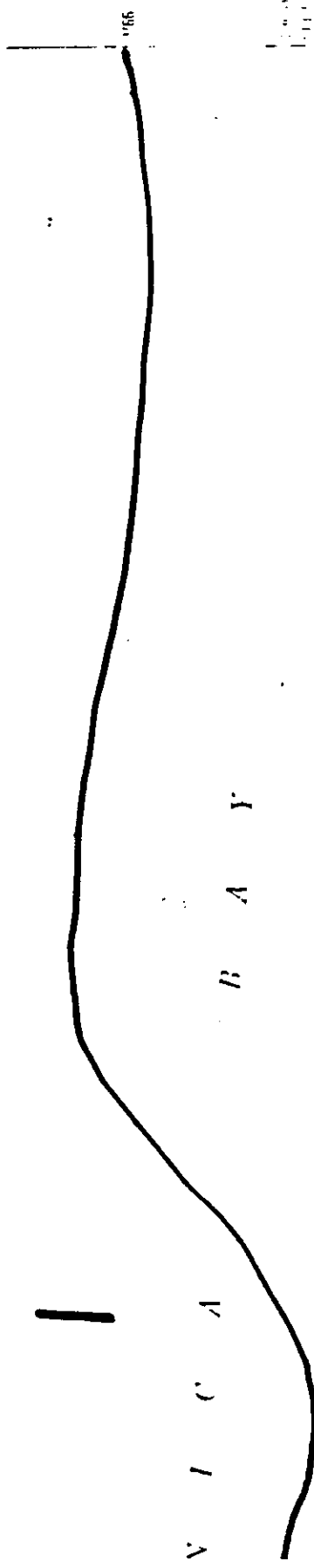
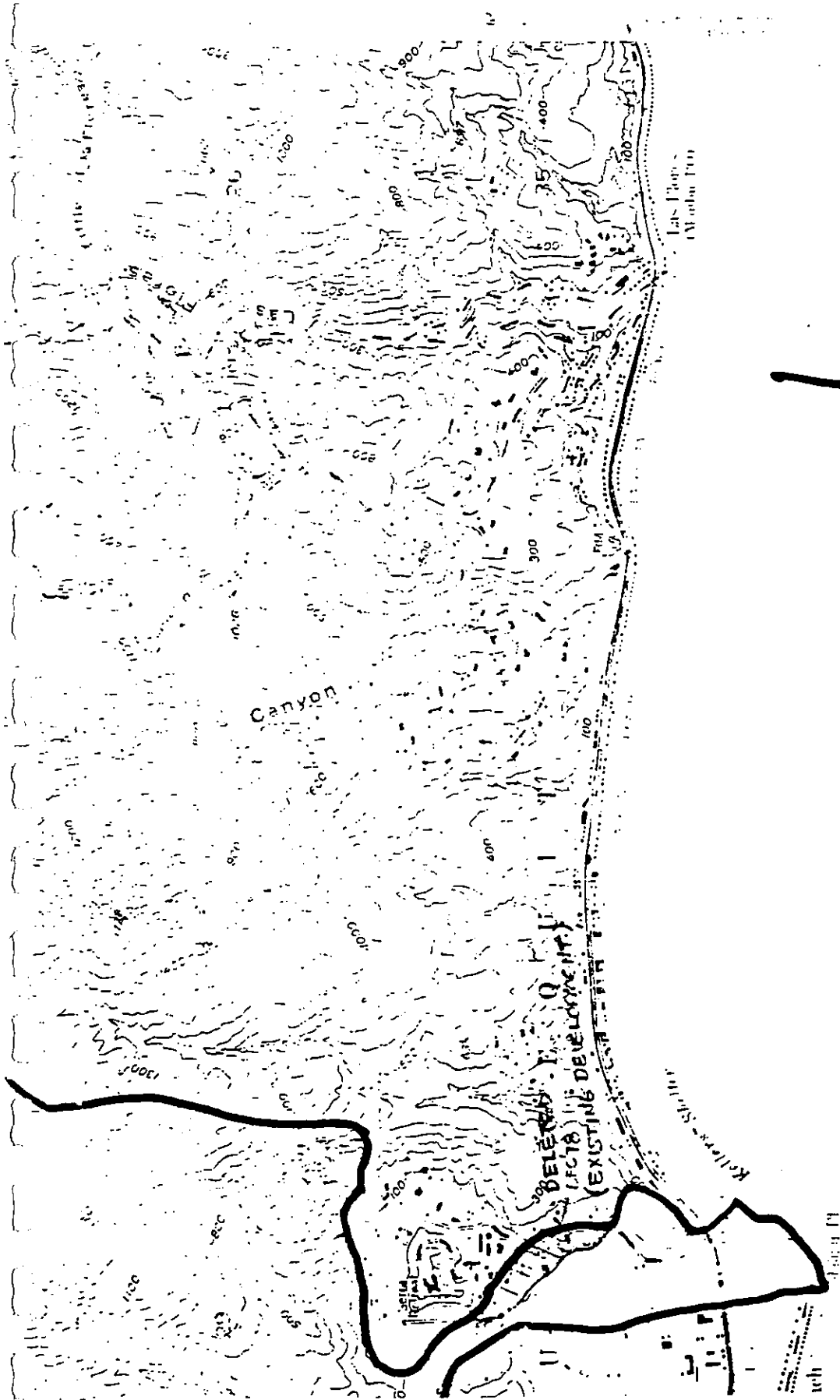
S A N T A F E M O

1

m

16

16





P A C I F I C

3164

3163

2'30"

OXNARD 29 MI.
MALIBU BEACH 4 MI.

3166

4 120 000
FEET (7)

3165

Area # 2

Name: Point Dume

Quadrangle(s): Point Dume

Class 3 (4,5,7)

Resource Description: Point Dume is one of two remaining areas in Los Angeles County where a diverse and healthy mixture of terrestrial and marine habitats can be found in close opposition. Marine habitats consist of an unprotected rocky shore with outlying reefs, rocks, and kelp beds, sandy pocket beaches, and numerous small caves. Due to strong upwellings along the coast which bring in nutrient--rich waters, it possesses highly diverse and productive marine communities. This relative healthiness is also due to limited public access, which has protected the fragile marine ecosystems.

Coastal strand vegetation is found on sandy beaches below bluffs rising 100 to 200 feet above the coast. Coreopsis gigantea and Dudleya caespitosa are found at the southern limit of their range in these communities. Several small drainages supporting coastal sage scrub cut through the bluffs, and extend up to a mile inland. The value of these communities is increased by the unique geographic position of Point Dume. This headland extends into Santa Monica Bay more than a mile beyond the rest of the Malibu coast, and is located in the Pacific Flyway. As a result, it is an important resting and jumping--off point for migratory birds. Without the remaining terrestrial habitats, this refuge would be lost.

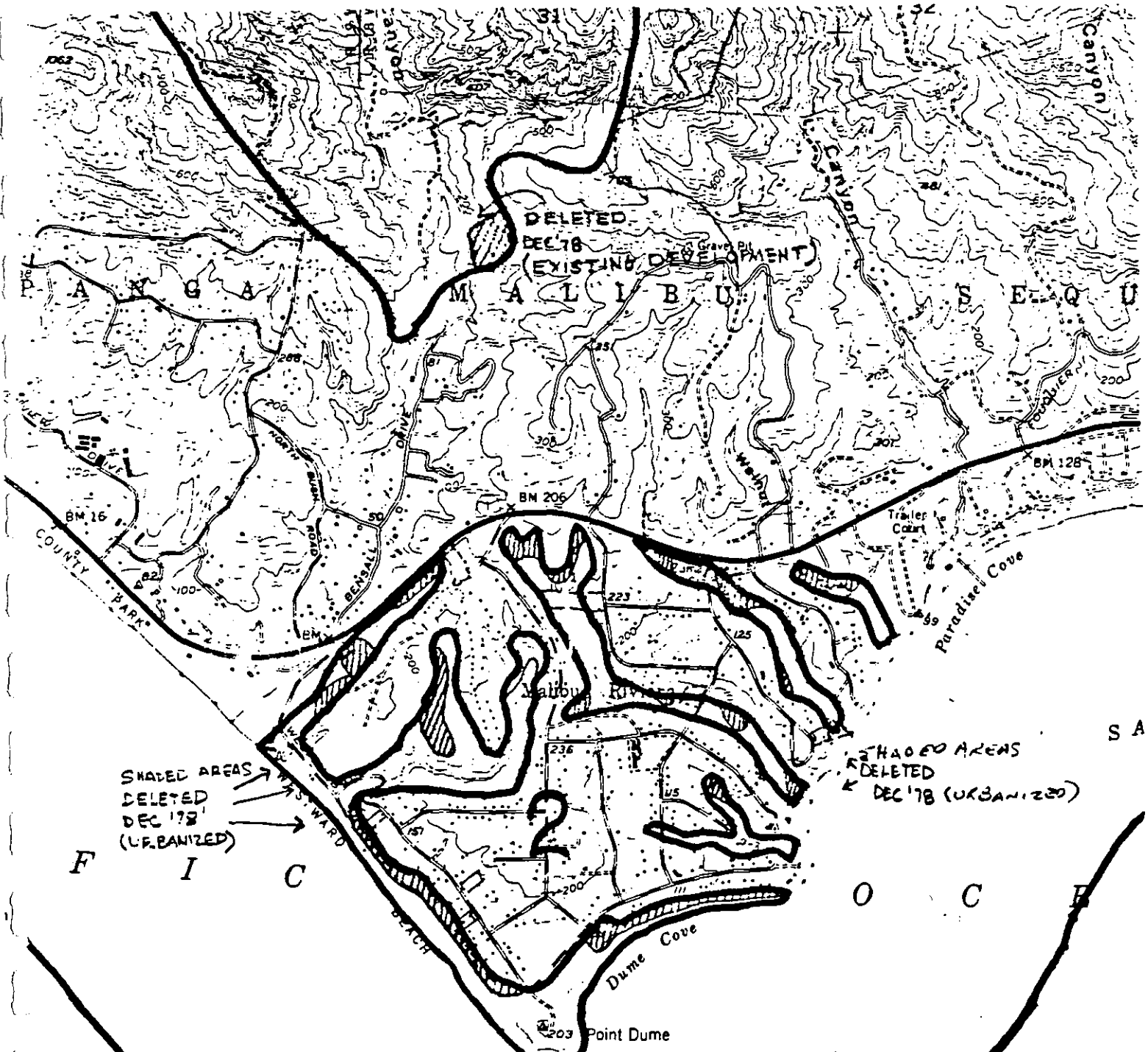
Status: Residential development has taken place above the bluffs and ravines. Increased run--off and human usage have to some extent degraded the coastal sage scrub community in the inland ravines. However, relative to other coastal areas, the terrestrial communities are in good condition. Marine flora and fauna are in excellent condition, partially as a result of limited public access.

Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: Due to the interest in coastal resources generated by the California Coastal Zone Conservation Commission and the California Natural Areas Coordinating Council project, the area has been surveyed by several competent terrestrial and marine biologists.

Buffer Zone Requirement: None, except to prevent potential disturbances from residential developments above the bluffs.

Compatible Uses: Very low intensity recreational uses are compatible with the resources in the area. Collection of tide pool organisms should be prohibited and strictly enforced.

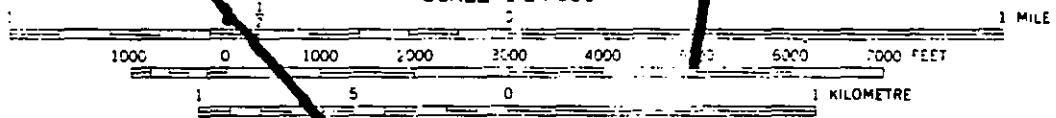


SHADED AREAS
DELETED
DEC '78
(URBANIZED)

SHADED AREAS
DELETED
DEC '78 (URBANIZED)

331 332 333 334 47°30' 335

SCALE 1:24,000



CONTOUR INTERVAL 25 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 4 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



Area # 3

Name: Zuma Canyon

Quadrangle(s): Point Dume

Class 3¹(4,7)

Resource Description: Zuma Canyon is one of the last major drainages in the Santa Monica Mountains that have a year--round stream, and remain in an undeveloped, unroaded condition. The upper ridges are dry, and support coastal sage scrub. This blends into chaparral on the lower, steeper, shaded slopes. The canyon bottom has a rich riparian community that is more extensive and in better condition than neighboring canyons. This is due in part to the difficulty of public access, but primarily to the presence of a perennial stream. The stream supports abundant wildlife populations, including amphibians and birds that are dependent on surface moisture, a very limited resource in all of southern California. Deer and other large mammals utilize this as a water source, and mountain lions have been sighted in the canyon.

The officially endangered plant Pentachaeta lyonii occurs in the area.

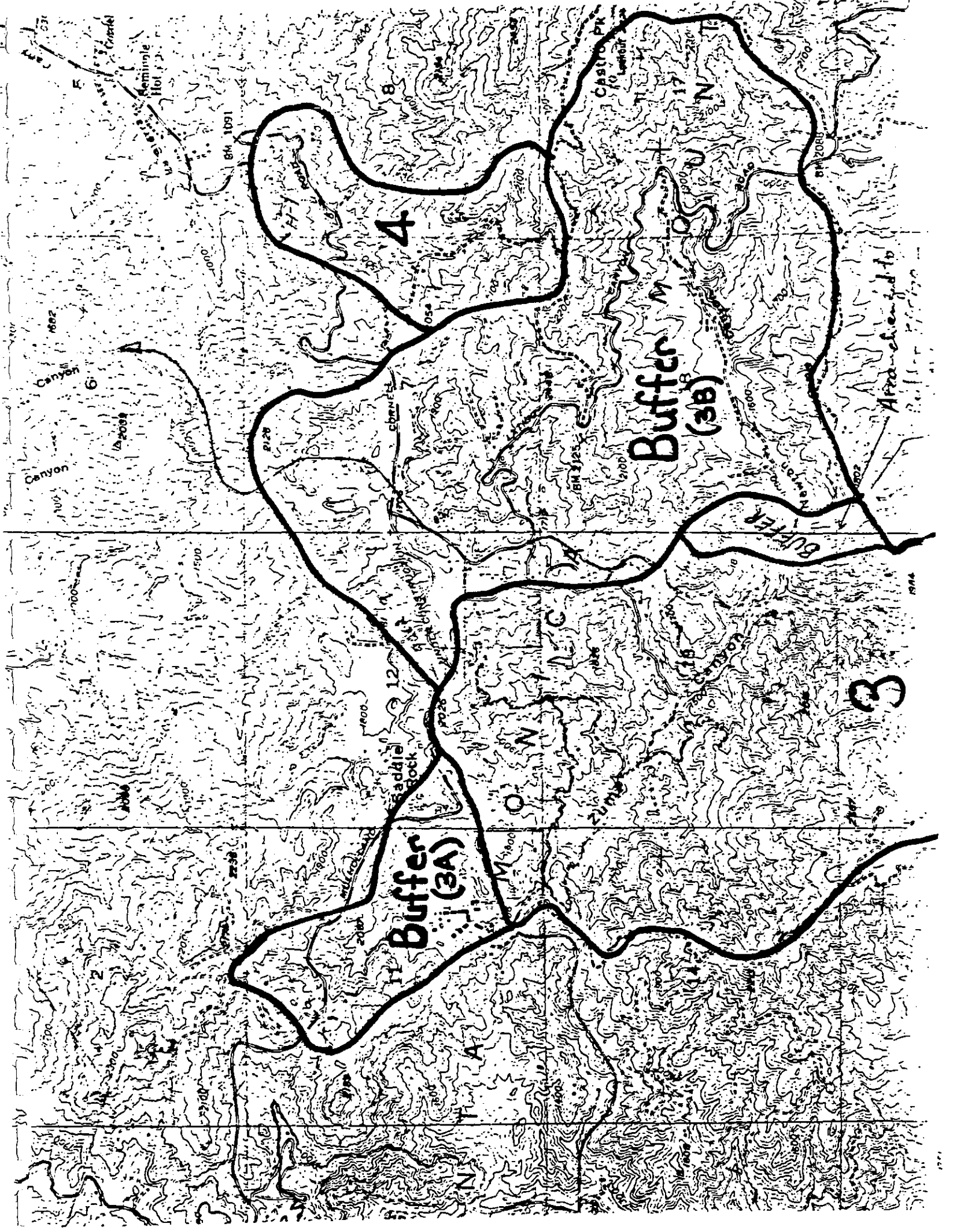
Status: The main canyon is in very good condition. Slight encroachment is taking place in the form of roads and development in the upper reaches of the watershed.

Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: Due to the interest in the Santa Monica Mountains and the California coast generated by the California Coastal Zone Conservation Commission, the California Natural Area Coordinating Council project, and the Bureau of Outdoor Recreation report, the area has been surveyed by several competent biologists.

Buffer Zone Requirement: The more developed, up--stream portions of the watershed should be developed at a very low intensity. This is to insure that natural drainage through the watershed will not be disrupted. Heavy run--off and siltation could destroy the riparian community downstream.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area.



4

Buffer (3B)

Buffer (3A)

3

Area changed to

Canyon

12

Saddle Rock

W. Hill

Zumb

Castro Pk

17

Buffer

1944

1971

Butter M
(38)

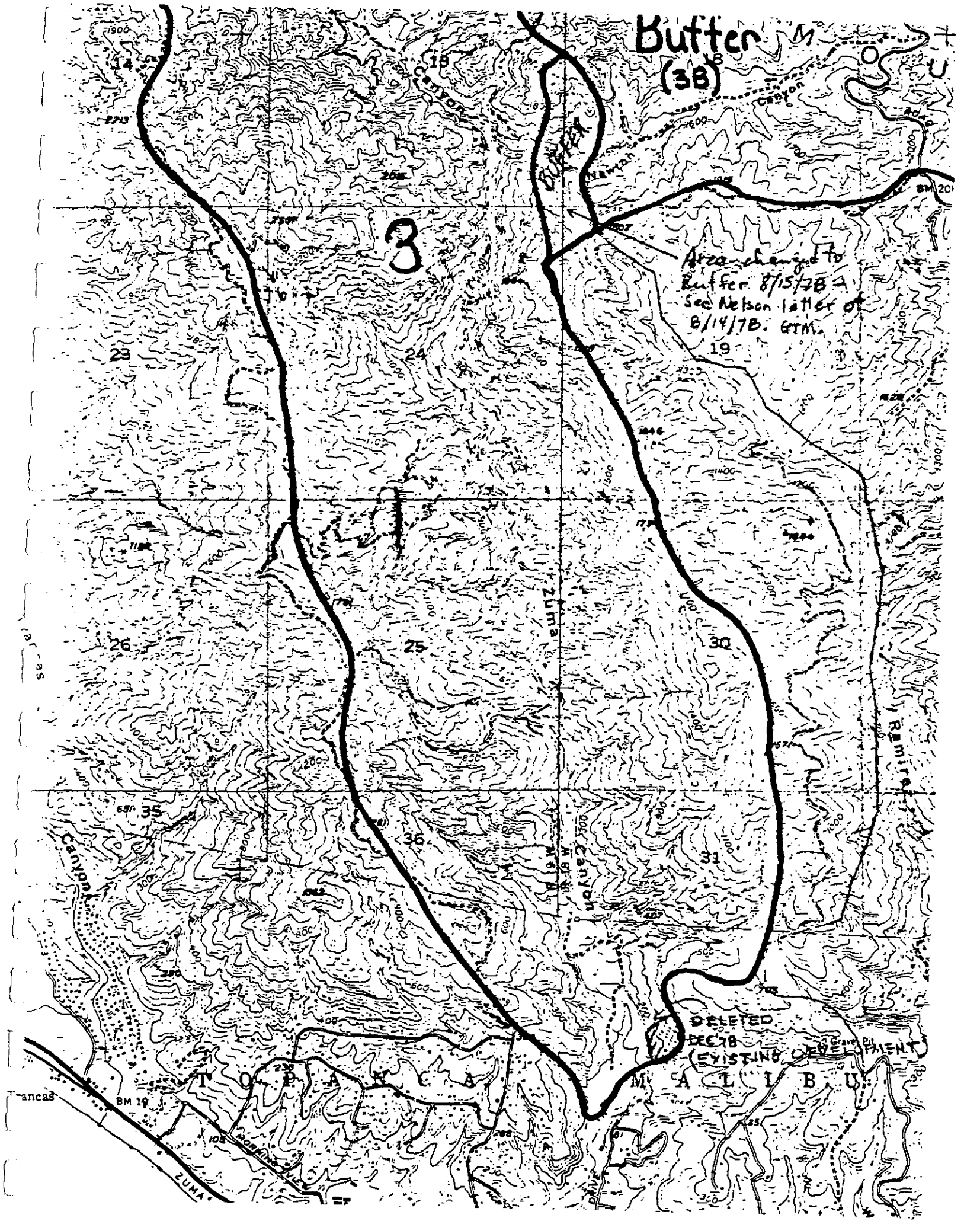
3

Area changed to
Buffer 8/15/78
See Nelson letter of
8/14/78. GTM.

19

DELETED
DEC 78
(EXISTING DEVELOPMENT)

M A L I B U



Area # 4

Name: Upper La Sierra Canyon

Quadrangle(s): Point Dume

Class 1 (2,3,5,7)

Resource Description: Upper La Sierra Canyon contains an unusually rich and diverse stand of canyon flora including the Santa Monica Mountain Live--forever (Dudleya cymosa marcesens), an officially endangered plant species. The Creek Dogwood (Cornus glabrata) which is only found at one other site in the county, is abundant. The Giant Chain Fern (Woodwardia fimbriata), which normally reaches heights of 5½ to 6½ feet, is 8 to nine feet tall at this locality. This species is only found at four other localities in the Santa Monica Mountains, but nowhere else is it as easily accessible. The Humbolt Lily (Lilium humboltii) also reaches heights of nine feet at this locality. Accompanying this unusual stand of canyon vegetation is a healthy woodland community. Big--leaf Maple (Acer macrophyllum) reach heights of 60 feet, surrounded by dense stands of Coast Live Oak (Quercus agrifolia) and California--laurel (Umbellularia californica). This dense aggregation of uncommon species makes the area genuinely unique.

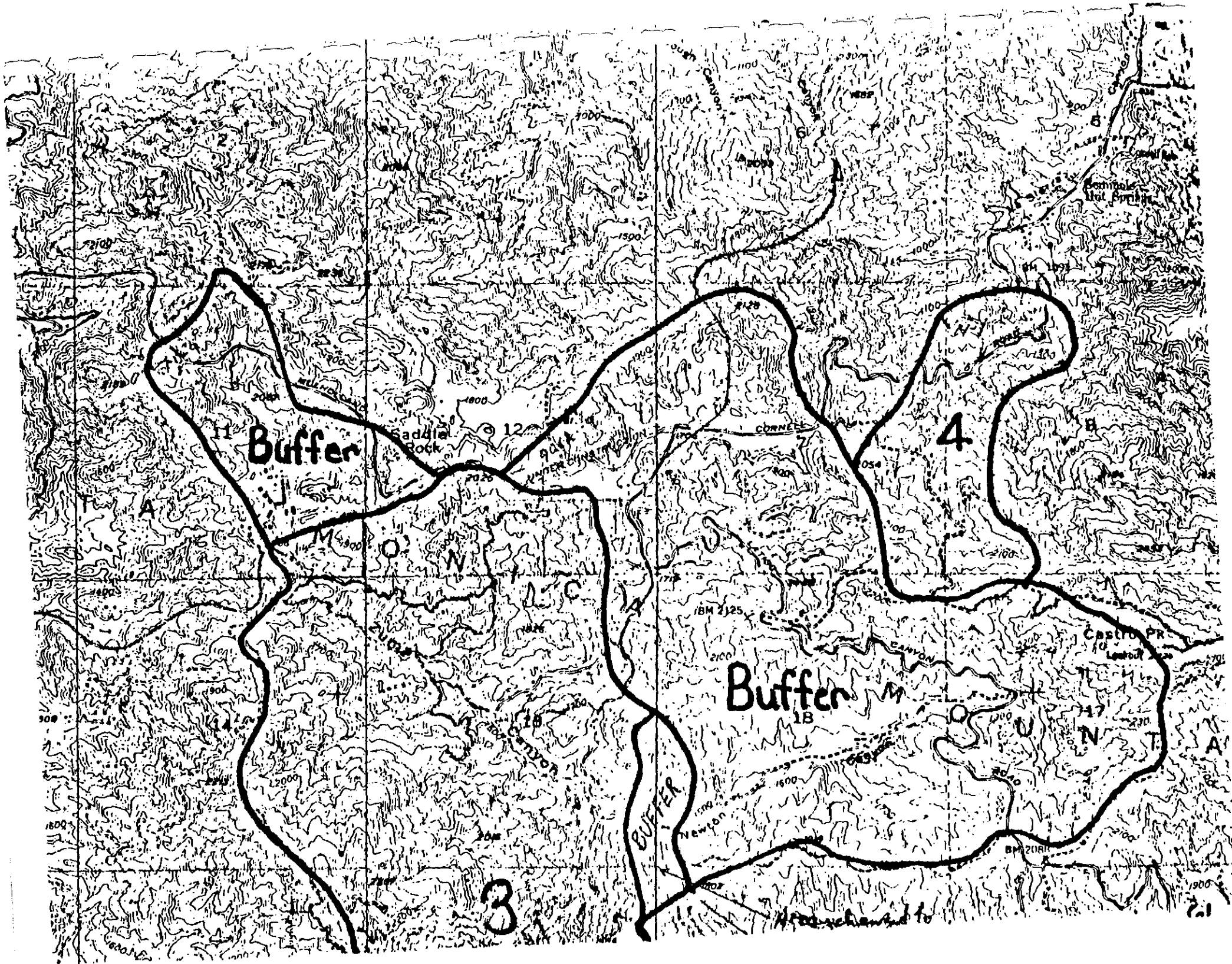
Status: Cornell Road crosses the north end of the property, and a small dirt road crosses the upper end of the canyon. Several small buildings are scattered along the roads. However, the vegetation is in excellent condition.

Information Source(s): Survey/Interview, CNACC/CNPS.

Nature of Information: The Santa Monica Mountain Live--forever population is on record with the U.S. Fish and Wildlife Service and the California Native Plant Society. The unusual canyon vegetation was discovered in 1975, and has since been verified by several competent botanists.

Buffer Zone Requirement: None. Recommended boundaries are sufficient to protect the resource.

Compatible Uses: Very low intensity recreational uses are compatible with the resources in the area.



Area # 5

Name: Malibu Canyon and Lagoon

Quadrangle(s): Malibu Beach

Class 2 (3,4,5,6,7)

Resource Description: This area contains the only lagoon in Los Angeles County, and it is the only one between Point Mugu in Ventura County and Anaheim Bay in Orange County. The presence of a perennial stream, and its sharp relief between the interior valleys and the coast are unique to the Santa Monicas, and allow for the most unique and diverse biota in the region.

The lagoon is brackish and supports two major plant communities, coastal salt marsh and coastal strand. The lagoon area is an important bird refuge where seasonal migrants can rest and feed. Over 200 species of birds have been observed here. The salt marsh vegetation is dominated by two species of pickleweed, Salicornia virginica and S. subterminalis which serve as valuable non--breeding habitat for Belding's savannah sparrow (Passerculus sandwichensis beldingi). This species is classified as endangered by the California Department of Fish and Game.

The perennial stream in Malibu Canyon supports outstanding oak and riparian woodland with an unusual variety of tree species. Black cottonwood (Populus trichocarpa) and Leather-leaf ash (Fraxinus velutina var. coriacea) are found here. Neither species is common in this region. There is also an abundance of woodland shrubs, native wildflowers, and other herbaceous growth.

Malibu Canyon bisects the Santa Monica range. As a result, species normally restricted to the drier interior valleys extend their range down the canyon and grow in association with coastal forms. This has created a very unique flora in the canyon.

Despite declining wildlife populations over much of the Santa Monica Mountain region, Malibu Canyon continues to support many unique and uncommon wildlife species including mountain lion and golden eagles. The rich riparian vegetation offers an excellent resting and feeding area for birds migrating along the coast. In addition, Malibu Creek is the only watercourse in southern California where steelhead continue to run and spawn.

Status: The lagoon is readily accessible and has received heavy human use. As a result, many of the organisms that previously inhabited the lagoon have disappeared or are greatly reduced in numbers. Its value as a waterfowl refuge has also decreased. At present, it is heavily polluted and continues to decline. The canyon is also accessible from Malibu Canyon Road. However, the heaviest human use is restricted to the canyon bottom. Malibu Reservoir Dam prevents steelhead from using the upper regions of the watershed. Development has been restricted to the canyon mouth, but remains a threat.

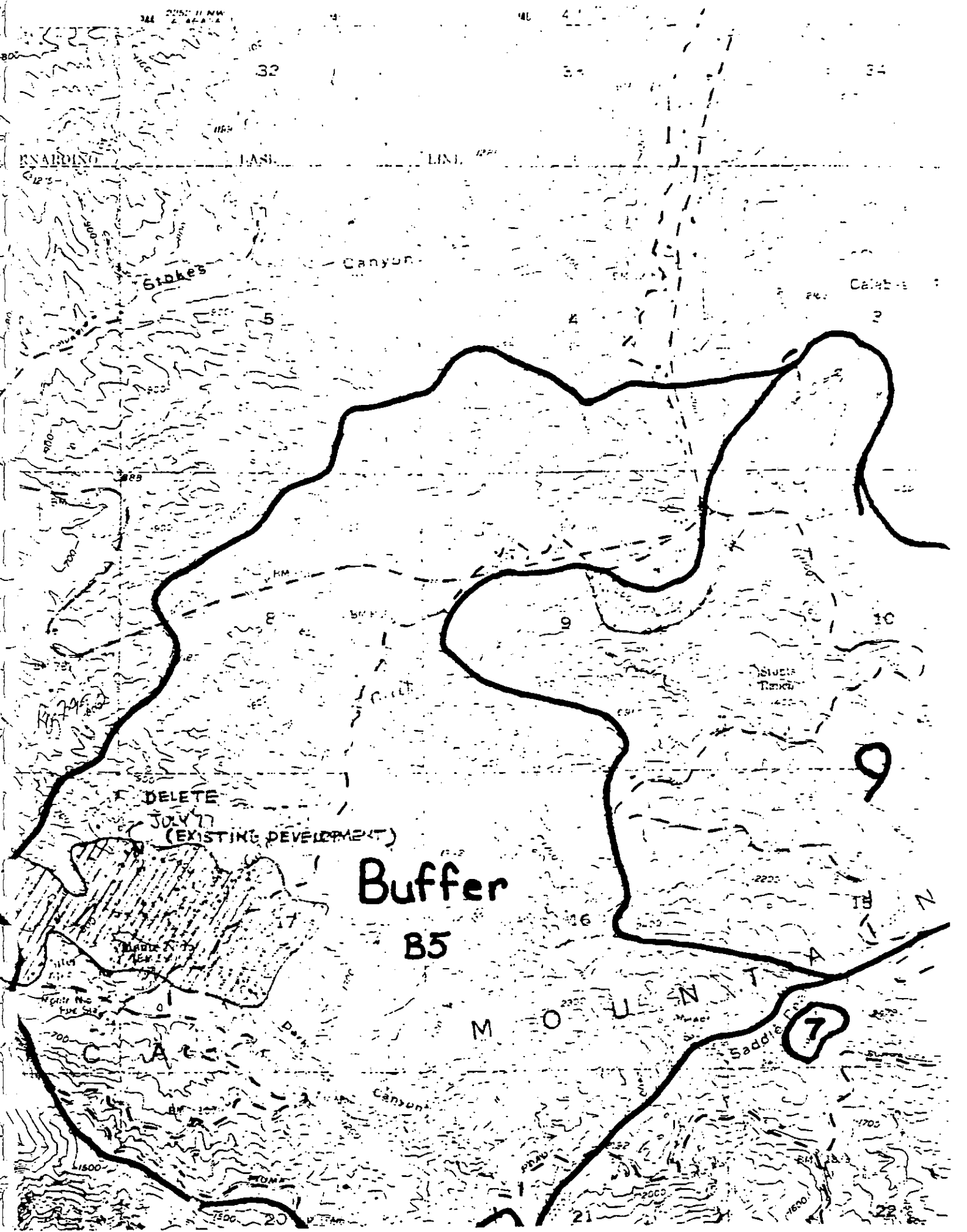
Area # 5 continued

Information Source(s): Survey/Interview, literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: The Canyon and lagoon have stood out as unique floral and faunal areas and have received much attention from naturalists, wildlife observers, botanists, and conservationists. As a result, the area has been adequately surveyed by numerous qualified biologists. This has generally been in association with the Bureau of Outdoor Recreation, California Department of Fish and Game, and the California Coastal Zone Conservation Commission, due to their interest in the area as valuable wildlife habitat and its high potential as a unique parkland.

Buffer Zone Requirements: Due to the fragile and complex ecological balances of the canyon and lagoon, large areas of the watershed should not be heavily developed. This is especially critical immediately upstream from the area. A buffer area is required northeast of the area including the Cold Creek drainage and watershed. Malibu Creek State Park and its buffers to the northwest along Malibu Creek should be a sufficient buffer in that region. Miscellaneous buffer zones will not sustain heavy development, watercourse alteration, channelization, pollution, or increased erosion potential without degrading the resources downstream.

Compatible Uses: Medium intensity recreational uses are compatible with the resources of the canyon. However, freshwater marsh, salt water marsh, and lagoon areas should be restricted to very low intensity recreational uses. At the present time, these areas have been severely impacted by human use, and should be completely closed until a restoration and management program can be implemented. Fishing for steelhead should be permitted as regulated by state law.



Stokes Canyon

Calebs

DELETE
JULY 17
(EXISTING DEVELOPMENT)

Buffer
B5

MOUNTAIN
Saddle Pkwy

32

5

9

10

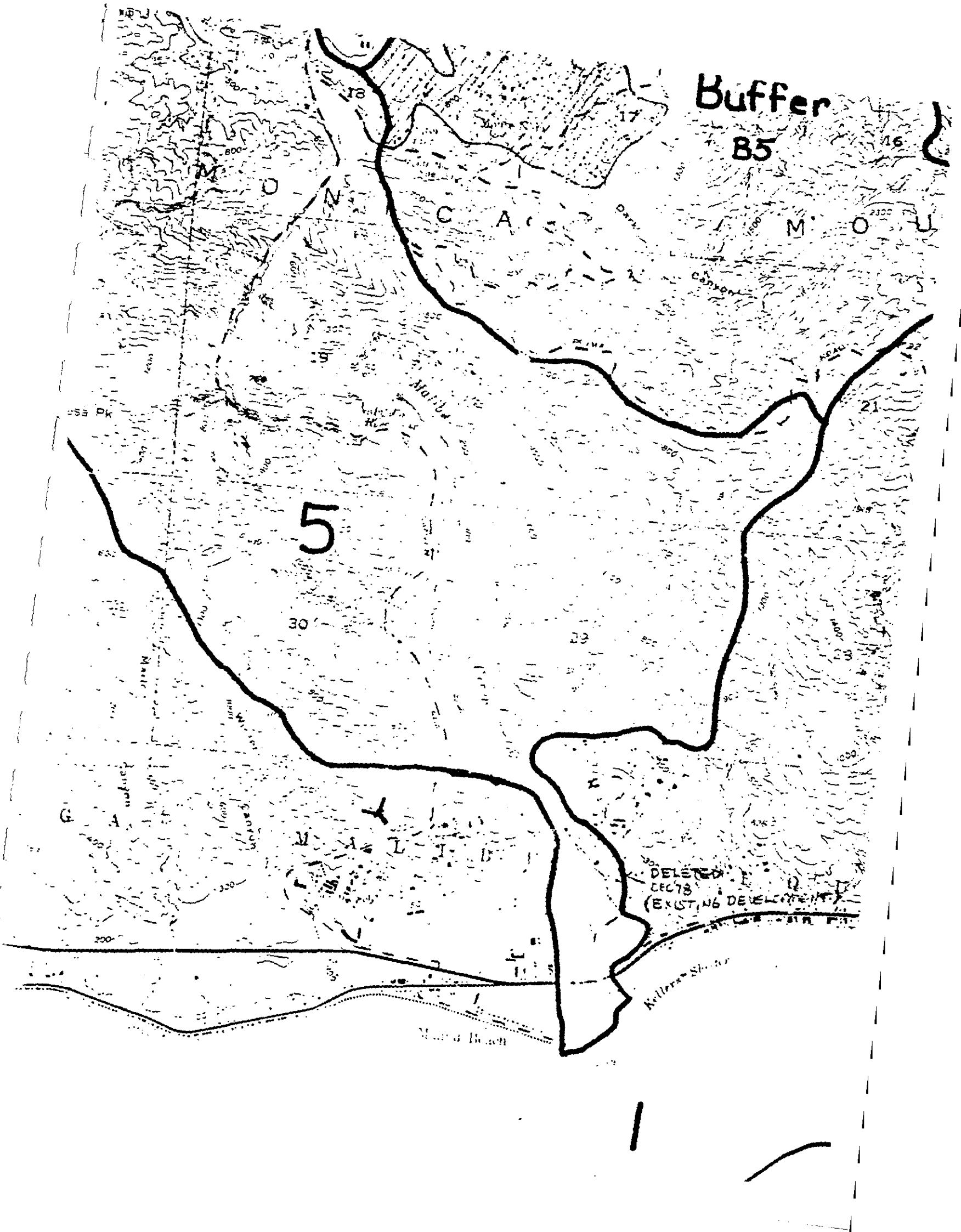
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7

20

21

Buffer
B5

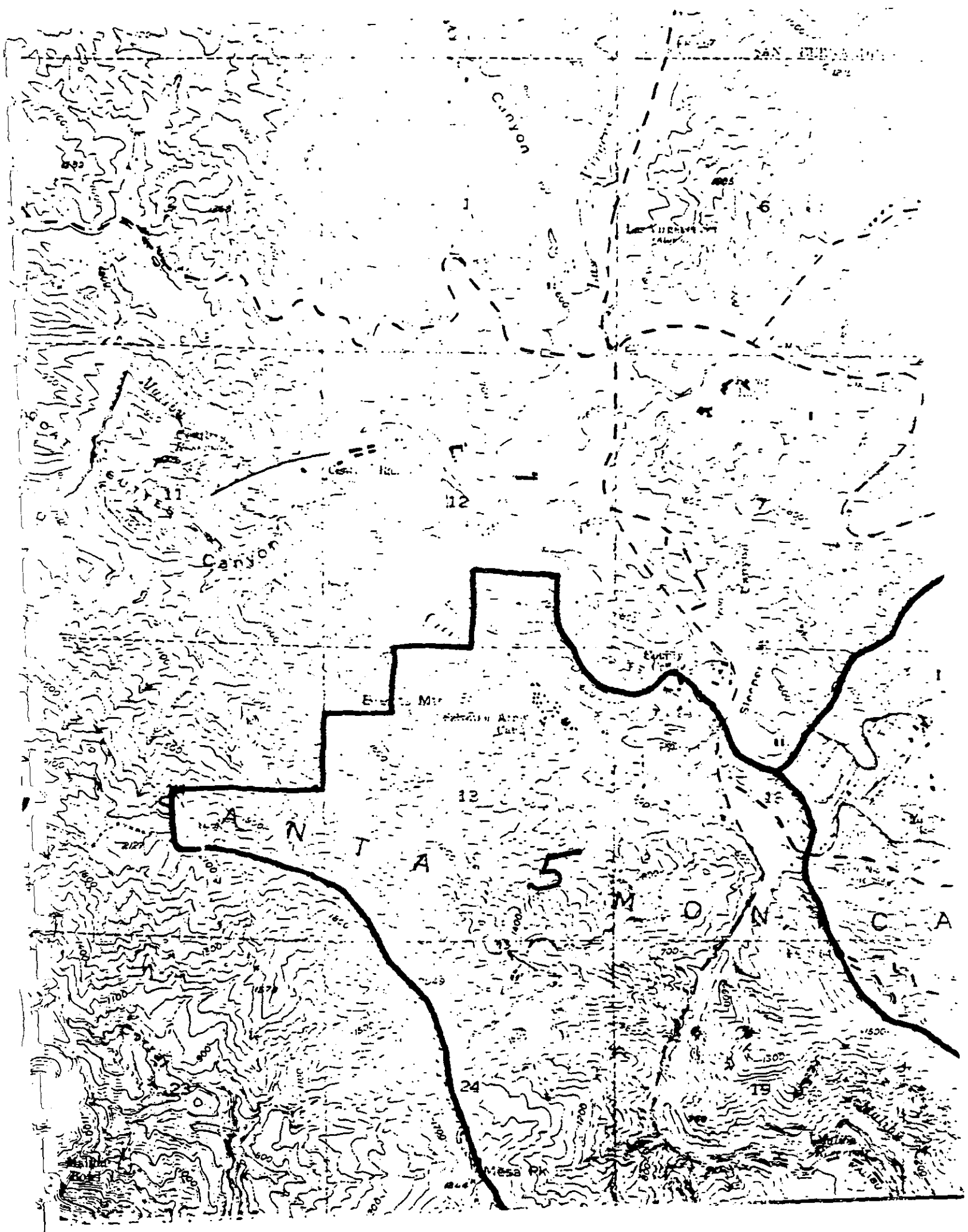


5

DELETED
EXISTING DEVELOPMENT

Killer's Shelter

Main Branch



Area # 6

Name: Las Virgenes

Quadrangle(s): Thousand Oaks, Calabasas

Class 5 (7)

Resource Description: This area contains a number of plants common to the interior areas of southern California, but found nowhere else in the Santa Monica Mountain region. The most conspicuous of these is Juniperus californica, the California Juniper. Also common on the hillside, but found nowhere else in the Santa Monica Mountains is Happlopappus linearifolius, a characteristic shrub of the interior hillsides and desert ranges. Calochortus venustus, a species of the interior coast ranges of central California is only found at two other localities, and is here at its southern limit. In addition, this is the only locality in the Santa Monica Mountains where Dudleya cymosa grows in full sun. All other populations are found on steep north-facing rocky cliffs. Surrounding vegetation consists of coastal sage scrub and chaparral.

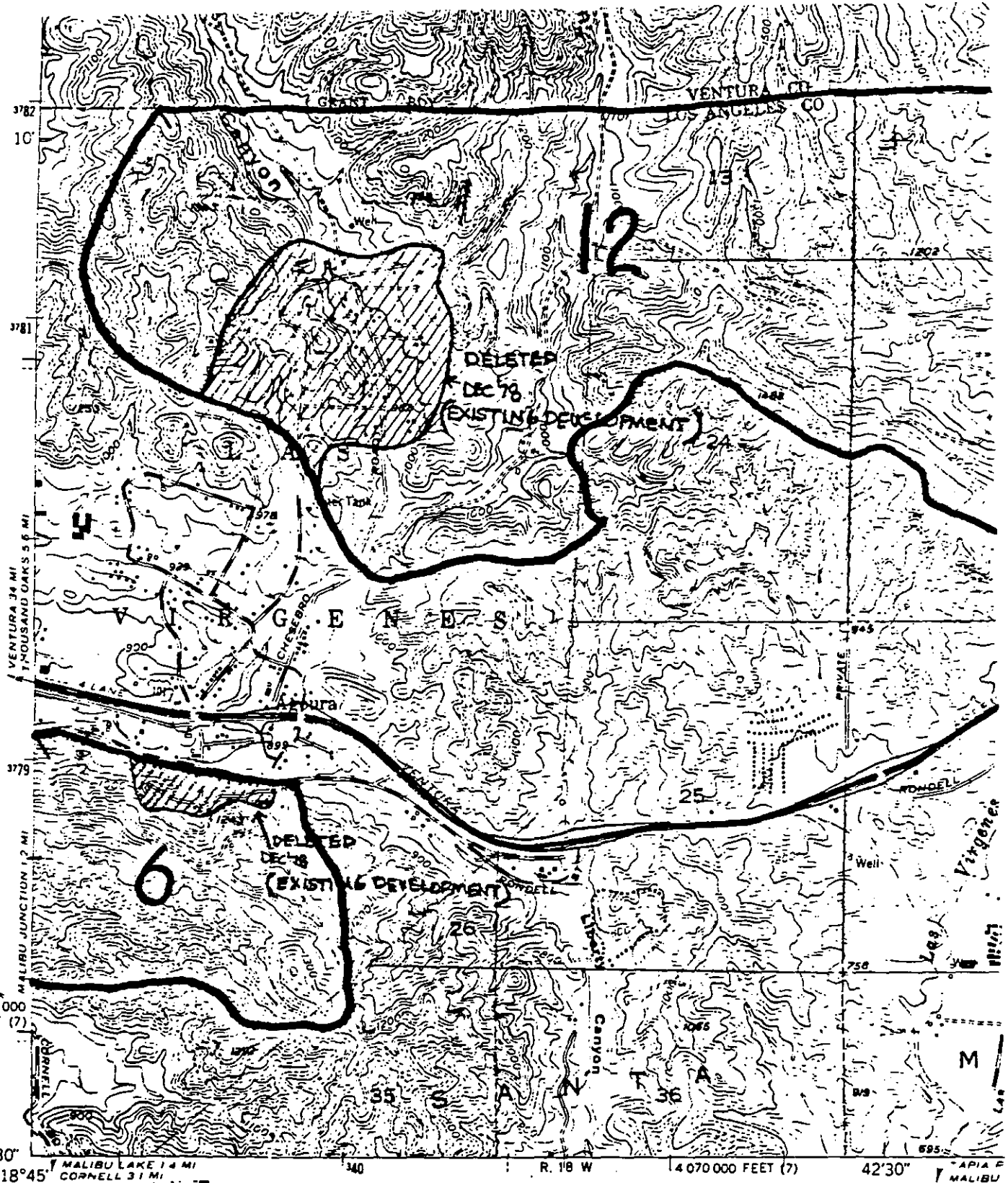
Status: The area is relatively undisturbed. No significant development has taken place. A dirt road does exist in the area.

Information Source(s): Survey/Interview, ERC/UCLA.

Nature of Information: The area has been visited by several competent botanists.

Buffer Zone Requirement: None. Resources will be adequately protected by recommended boundaries.

Compatible Uses: Very low intensity recreational uses are compatible with the resources of the area. However, precautions should be taken to prevent soil compaction around the base of the California junipers by visitors. This type of impact could lead to their loss.



Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and Los Angeles Co.

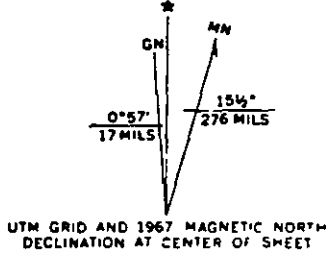
Topography from aerial photographs by multiplex methods
Aerial photographs taken 1947. Field check 1952

Polyconic projection. 1927 North American datum
10,000-foot grid based on California coordinate system, zones 5 and 7

Dashed land lines indicate approximate locations
Dotted land lines were established by private survey

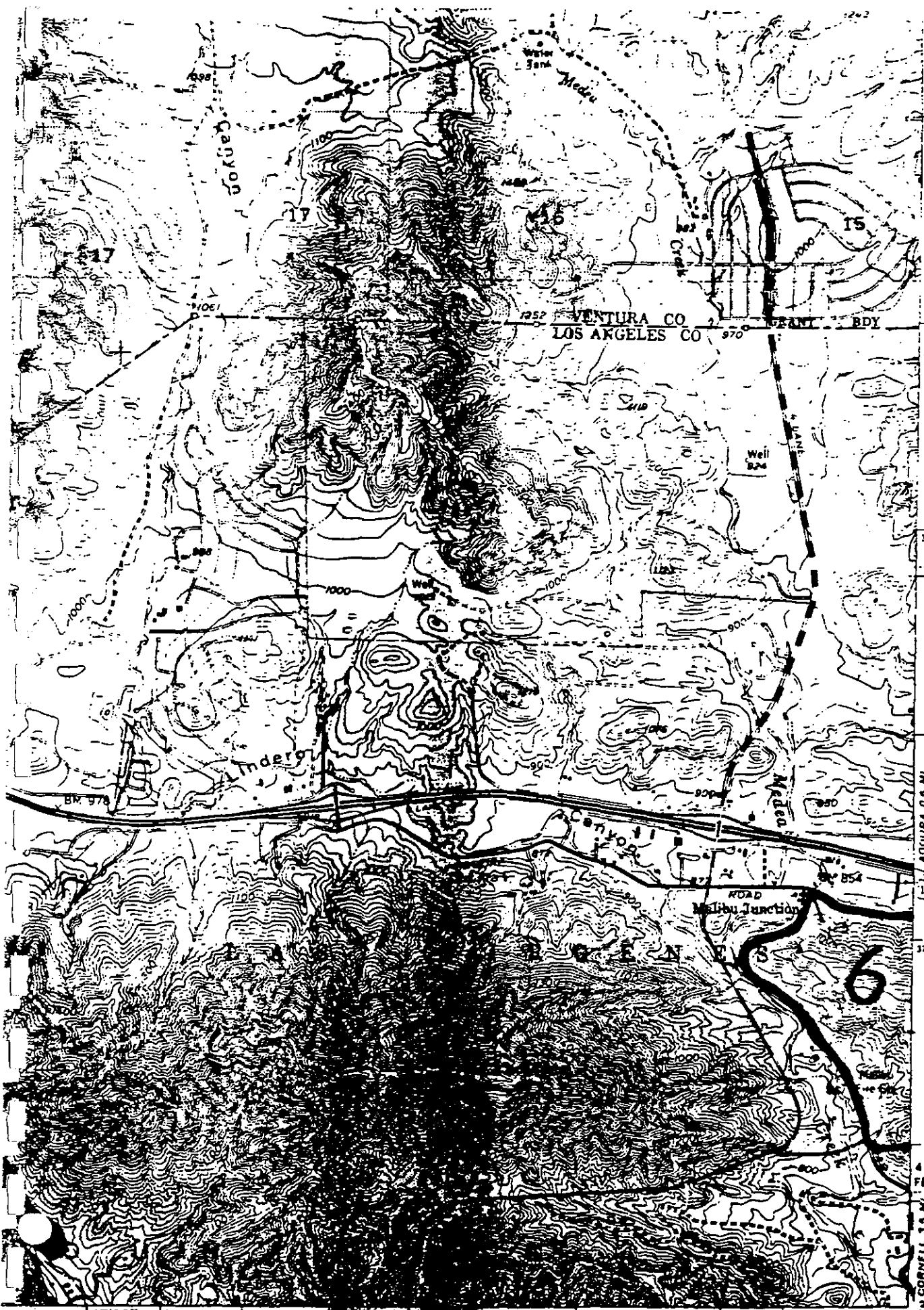
1000-meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue

Data shown in purple compiled from aerial photographs
taken 1967. This information not field checked



UTM GRID AND 1967 MAGNETIC NORTH-DECLINATION AT CENTER OF SHEET

POINT DUMEJ
2252 III SE



3783
3782
10'
3781
3780
3779000-N
4 160 000
FEET (7)
CORNELL 38 M
34°07'30"
118°45'

ROAD CLASSIFICATION

Area # 7

Name: Hepatic Gulch

Quadrangle(s): Malibu Beach

Class 3 (5,7)

Resource Description: This area possesses a vegetative association with many uncommon species and unique ecological relationships. Constant micro--slumping of the developing soil creates a variety of micro--habitats in close proximity to one another. As a result, moisture dependent ferns and mosses grow next to xerophytic Yucca sp. and Dudleya sp. In addition, there is an amazing variety of uncommon and fragile liverworts and hornworts.

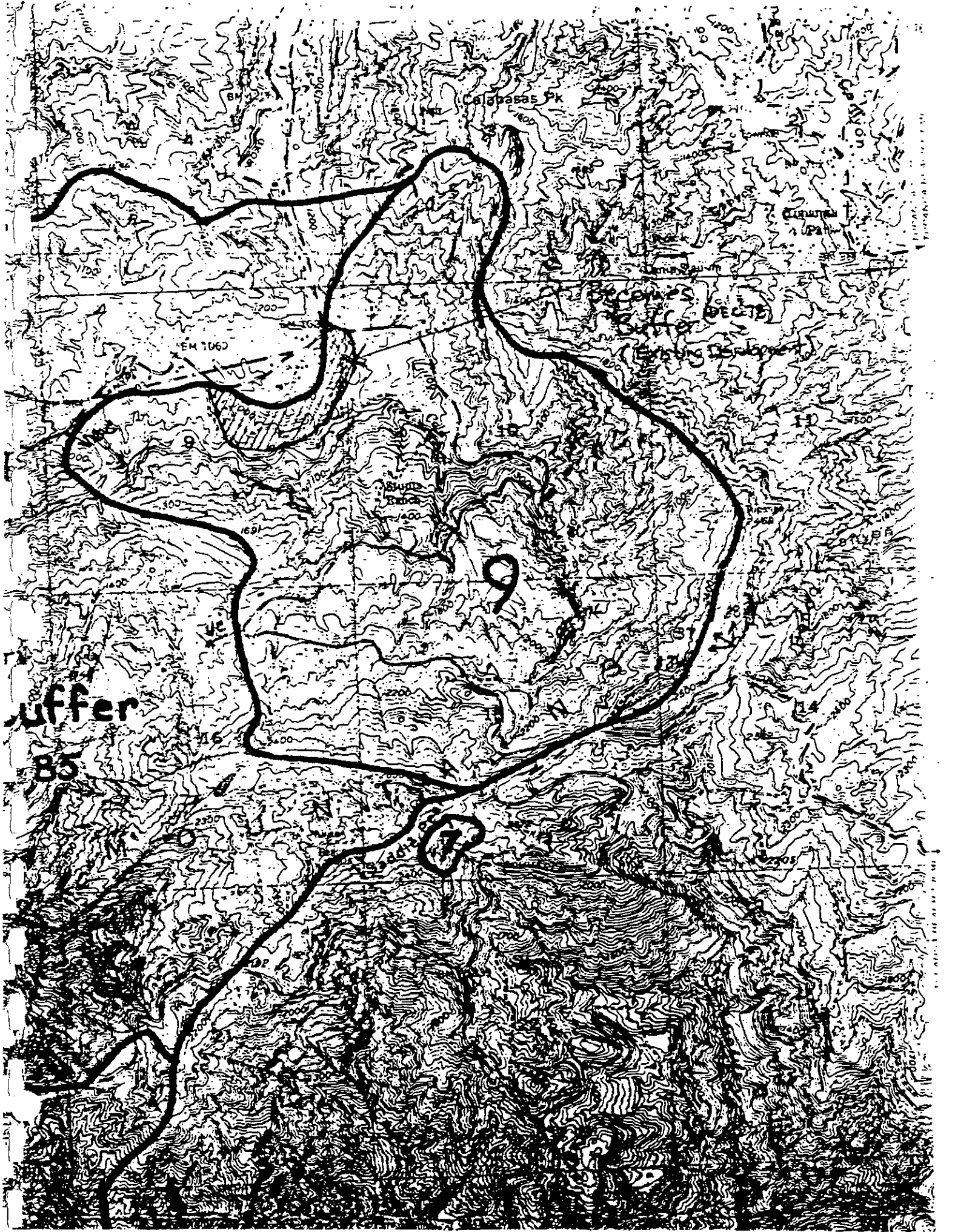
Status: A dirt road does enter the area. However, there do not appear to be any other disturbances.

Information Source(s): CNACC/CNPS.

Nature of Information: The area is recognized by the CNACC and has been surveyed by qualified botanists.

Buffer Zone Requirement: None.

Compatible Uses: Very low intensity recreational uses are compatible with the resources of the area.



Area # 8

Name: Malibu Creek State Park Buffer Area

Quadrangle(s): Malibu Beach, Point Dume

Class 8

Resource Description: These buffer areas contain watershed critical to the preservation of important biological resources within Malibu Creek State Park. The park possesses several areas with rare and fragile flora including Fern Canyon, Mendenhall Canyon, and Lost Canyon. These buffers are portions of watersheds which lie outside the park. Their preservation is necessary to maintain these fragile canyon environments.

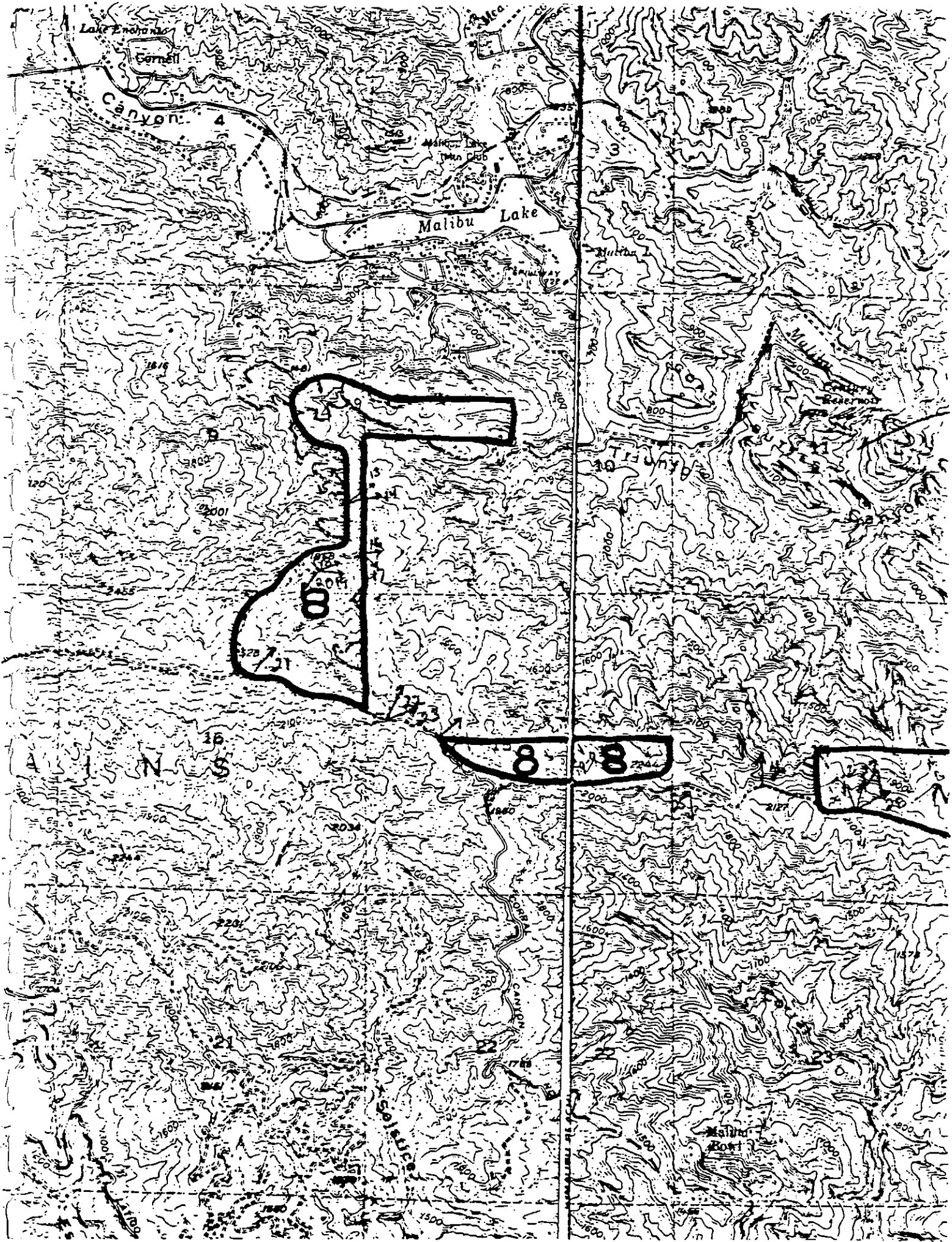
Status: In general these buffer areas have remained in a relatively undisturbed state. Very localized, isolated development has occurred, but this has not reduced the importance of these areas.

Information Source(s): Survey/Interview

Nature of Information: The significance of the park's resources have been documented by the state and members of the scientific community who have studied the area.

Buffer Zone Requirement: None.

Compatible Uses: The uses in these buffer areas should be the same as in adjacent park land, as long as biotic resources are preserved.



Lake Endorhaia

Cornell

Canyon 4

Malibu Lake

Malibu

Malibu Canyon

8

8

8

Malibu Row

16 N S

Malibu Canyon

Area # 9

Name: Cold Creek

Quadrangle(s): Malibu Beach

Class 3 (5,7)

Resource Description: This is a relatively undisturbed natural sandstone basin. The floor of the valley is steep, with springs and a perennial stream, Cold Creek. The year--round surface water, which is uncommon in southern California, supports an unusually diverse flora. The extreme range in physical conditions, from wet streambed to dry rocky ridges, makes the area a show-place for native vegetation. Pristine stands of chaparral, southern oak woodland, coastal sage scrub, and riparian woodland are all found in the area. Several plant species that are uncommon to the general region are found here. Those include stream orchis (Epipachis gigantea), red mimulus (Mimulus cardinalis), Humboldt lily (Lilium humboldtii var. ocellatum), big-leaf maple (Acer macrophyllum) and red shank (Adenostema sparsifolium). In addition, the presence of several tree--sized flowering ash (Fraxinus dipetala), reaching 40 feet in height, is a unique botanical oddity. This shrub species has a normal maximum height of 15 to 20 feet.

Due to its many outstanding botanical features, the area serves an integral role as part of the instructional program for many academic institutions as well as a site for nature study and scientific research.

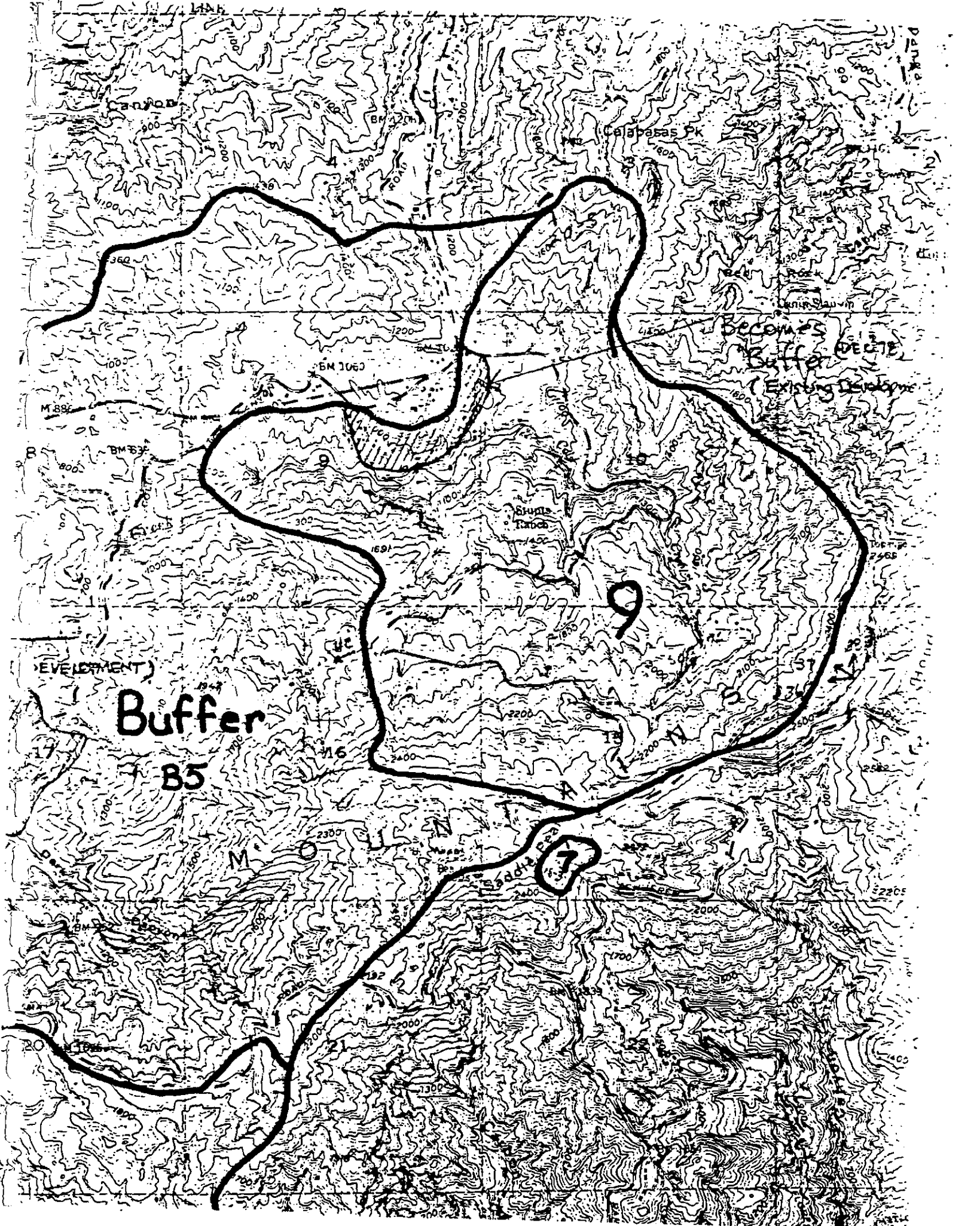
Status: The area is bisected by a paved road with several dirt access roads leading to the valley floor. Otherwise, the area has remained relatively undisturbed. There is some evidence that amphibian populations have been reduced by collectors.

Information Source: Survey/Interviews, Literature, CNACC/CNPS.

Nature of Information: The Nature Conservancy and Occidental College have holdings in the area that are used for education and research purposes. As a result it is frequently visited by qualified biologists. A complete herbarium collection and an insect collection are housed in the Biology Department at Pierce College in Woodland Hills.

Buffer Zone Requirements: None. The area includes enough land to buffer its most important resources.

Compatible Uses: Low intensity recreational uses are compatible with the resources in the area. However, special precautions should be taken to protect the unique botanical features of the area.



Buffer
B5

BECOMES
Buffer (DECTE)
Existing Developme

9

7

DEVELOPMENT)

PANCA

San Joaquin

Calabasas Pk

BM 1063

BM 537

Shasta Table

BM 7968

M O

20

1400

1474

Area # 10

Name: Tuna Canyon

Quadrangle(s): Topanga

Class 3 (4,7)

Resource Description: Tuna and Pena Canyons are the last drainages in the central and eastern Santa Monica Mountains that have not sustained development either in the watershed, or between the canyon mouth and the coast. A year--round stream is present in Tuna Canyon. This resource in itself is limited in distribution in the Santa Monica Mountains, and most of southern California. Due to this feature and its coastal exposure, the riparian woodland in the canyon bottom is in excellent health, and supports healthy wildlife populations. Animals utilize the stream as a water source, and forage in the chaparral and coastal sage scrub on adjacent hillsides.

The combined qualities of healthy vegetation, riparian woodland, surface moisture, no development, and an unobstructed opening to the coast are unique in the western Santa Monica Mountains and have caused the canyons to become an important area to migratory bird species. In addition to migratory songbirds, waterfowl have been seen in the canyon during migration.

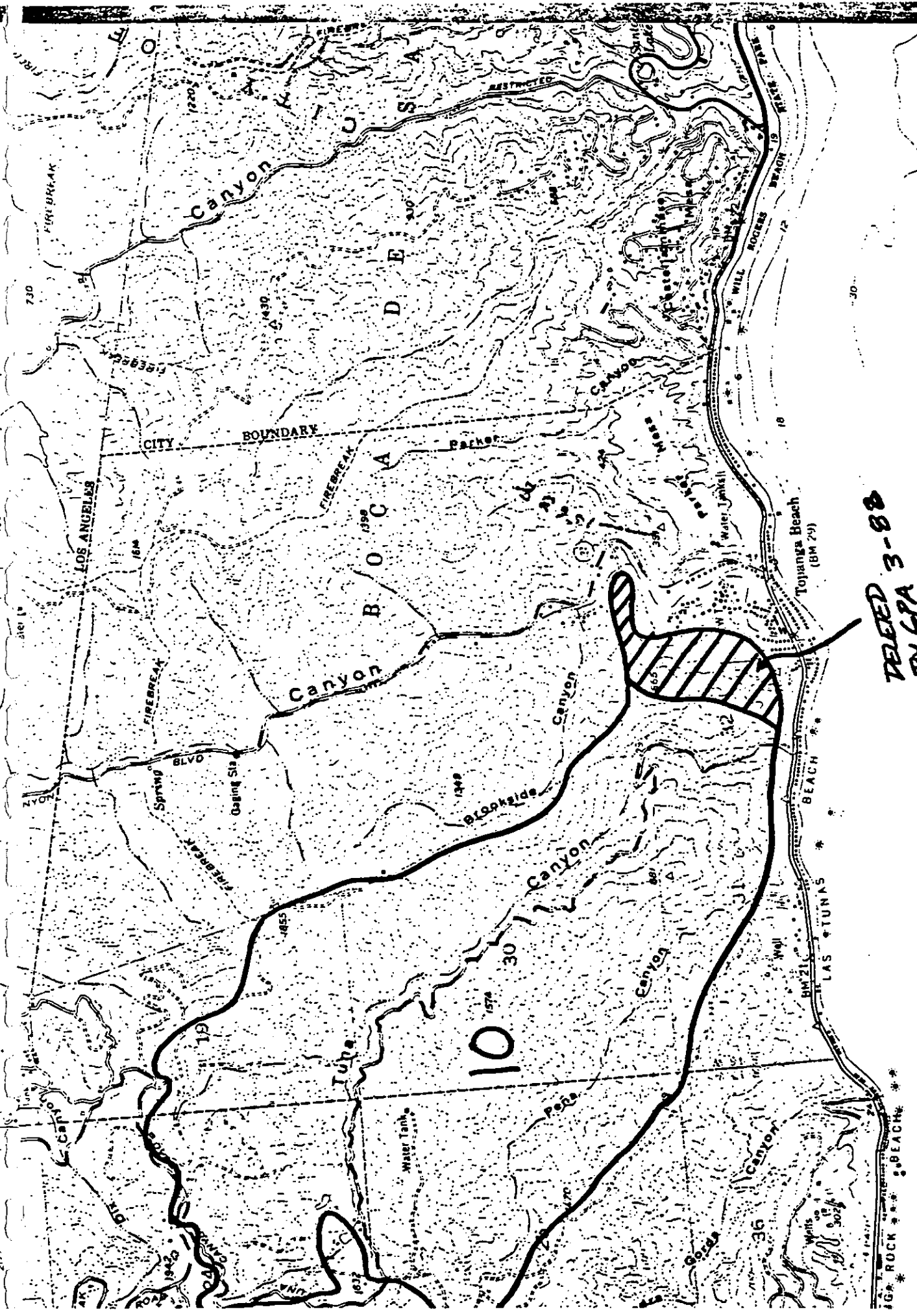
Status: The vegetation in Tuna and Pena Canyons is in good condition. Tuna Canyon Road is the only major development in either canyon. Further encroachment has been inhibited by the steep, rocky terrain.

Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: Due to the interest in the resources of the Santa Monica Mountains, and the California coast generated by the California Coastal Zone Conservation Commission, the California Natural Area Coordinating Council project, and the Bureau of Outdoor Recreation study, the resources of the canyons have been surveyed by several competent biologists.

Buffer Zone Requirement: None. Suggested boundaries will be sufficient to protect the resources of these self--contained watersheds.

Compatible Uses: Low intensity recreational uses are compatible with the resources in the area.



TELEED 3-88
BY GPR

Area # 11

Name: Temescal--Rustic--Sullivan Canyons

Quadrangle(s): Topanga, Canoga Park

Class 7

Resource Description: These canyons are representative samples of the dry chaparral and coastal sage scrub plant communities found in the interior canyons of the Santa Monica Mountains. The riparian communities in the canyon bottoms are more open, and do not support a dense understory growth. Wildlife in these canyons is typical of that found in these communities throughout the coastal ranges of southern California. Deer, coyote, mountain lion, hawks, eagles, and owls are the larger species that comprise this type of fauna.

These canyons were chosen for Priority Group 7 because they are contiguous, self--contained watersheds that are large enough in size to support representative samples of native flora and fauna. They are relatively undisturbed, and are the last major pieces of habitat in the Santa Monica Mountains before reaching the dense urban development to the east. This area would serve as a corridor for any gene flow and species movement that may take place between the Santa Monica and San Gabriel Mountains via the Hollywood Hills, Griffith Park and the Verdugo Mountains.

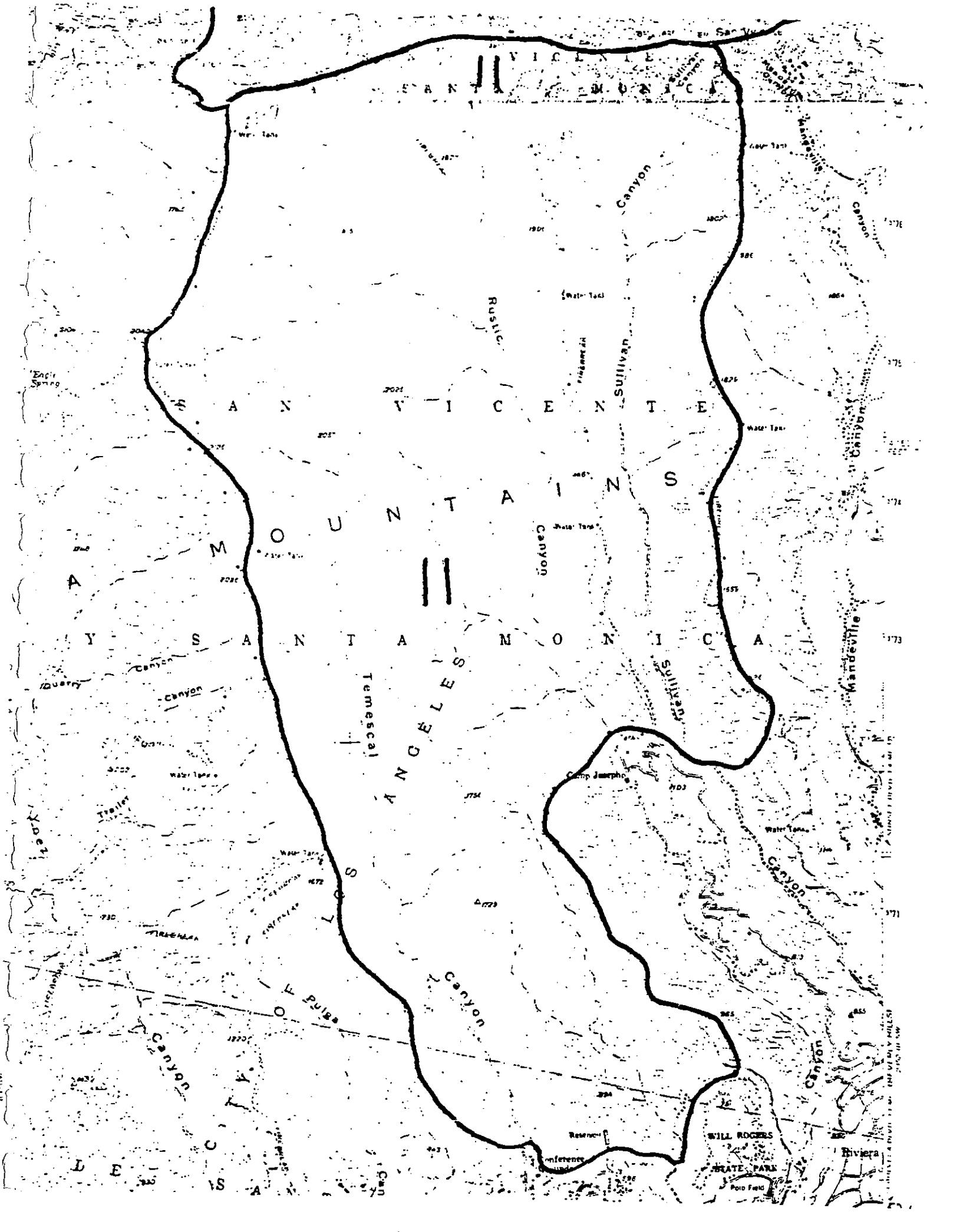
Status: The area is currently undeveloped with the exception of firebreaks and dirt roads. The biotic communities are in a healthy condition. Portions of the area are currently owned by Topanga State Park and the Natural Land and Water Reserve System of the University of California.

Information Source(s): Survey/Interview, Literature, ERC/UCLA.

Nature of Information: Due to the interest in the Santa Monica Mountains, and the California coast generated by the California Coastal Zone Conservation Commission, several competent biologists have made cursory surveys in the area.

Buffer Zone Requirement: None. The boundaries recommended are sufficient to protect the resource.

Compatible Uses: Medium intensity recreational uses are compatible with the resources of the area.



Area # 12

Name: Palo Comado Canyon

Quadrangle(s): Calabasas

Class 3 (7)

Resource Description: This area is one of the last examples of southern oak woodland savannah of any significant size in Los Angeles County. Other localities in the area support southern oak woodland on steep hillsides. However, the savannah type which is found in the Palo Comado Canyon area is on gentle rolling ground, and has an open grassy understory. Once widely distributed, this habitat has been widely utilized for agriculture and urban development.

The few remaining areas have been heavily impacted by grazing. Most native grasses and forbs have been replaced by Eurasian species. In many cases, grazing cattle consume oak seedlings and are preventing recruitment of new trees as older individuals die. Nevertheless, the trees support an abundant population of raptorial birds and woodpeckers. Large mammals and quail often utilize the watering troughs and saltlicks provided for cattle. The western gray squirrel is also found in these trees. The understory vegetation is utilized by grassland bird species, especially by migratory and wintering populations.

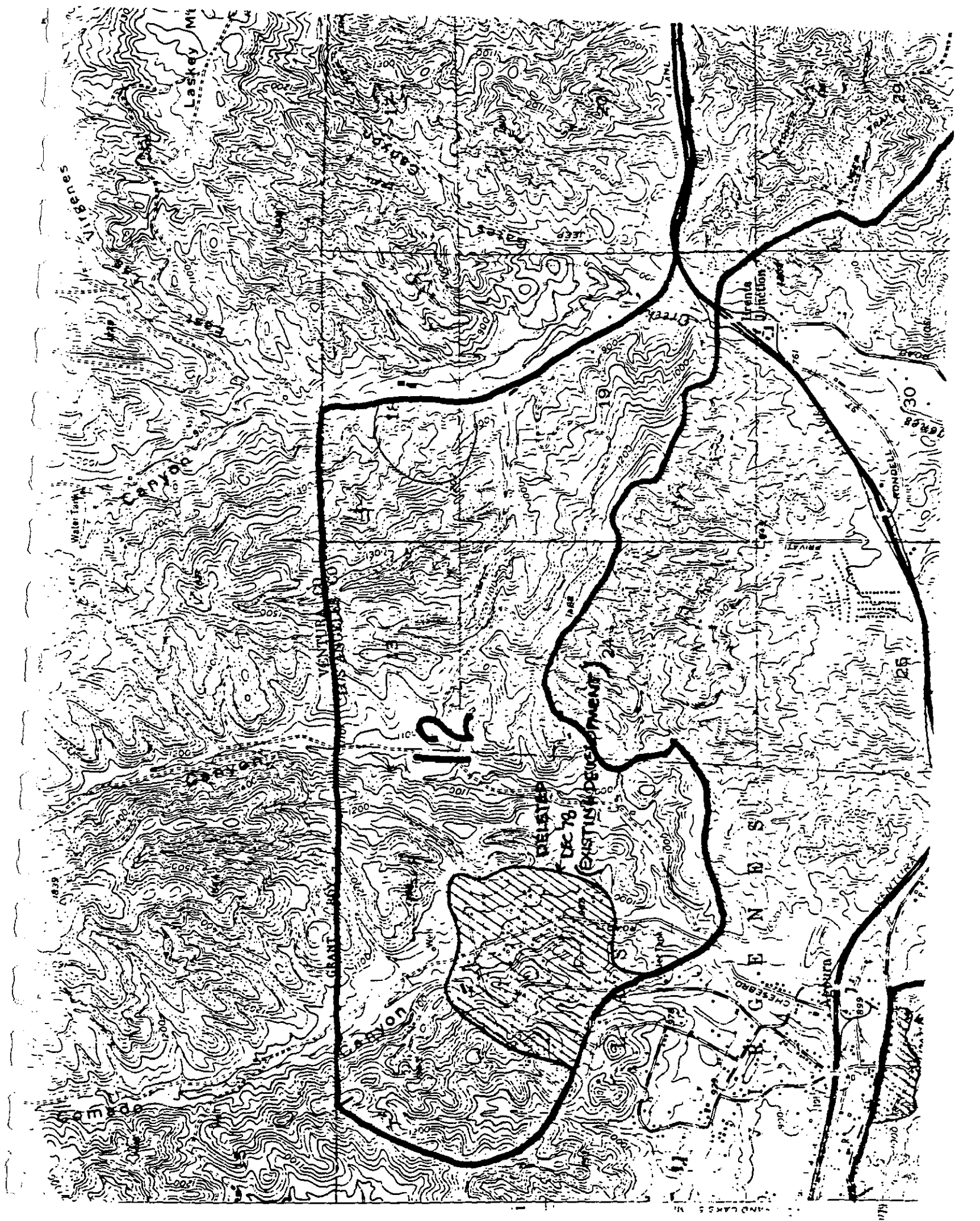
Status: The area is currently being overgrazed by cattle. The vegetation is in poor condition, and there is widespread destruction of oak seedlings. This area is at the edge of urban growth and is therefore under the threat of development.

Information Source(s): ERC/UCLA.

Nature of Information: Cursory overview by original members of the environmental resources committee.

Buffer Zone Requirement: None. Resources will be protected by recommended boundaries.

Compatible Uses: Medium intensity recreational uses are compatible with the resources here. Grazing should be discontinued, or at the minimum, a rest rotation management program should be implemented to aid in the recruitment of young trees.



12

DELETED
DEC 78
(EXISTING DISPOSITION)

FRENDS

VENTURA

GRANT

CHERRYBROOK

LASKEY MOUNTAIN

VIRGENS

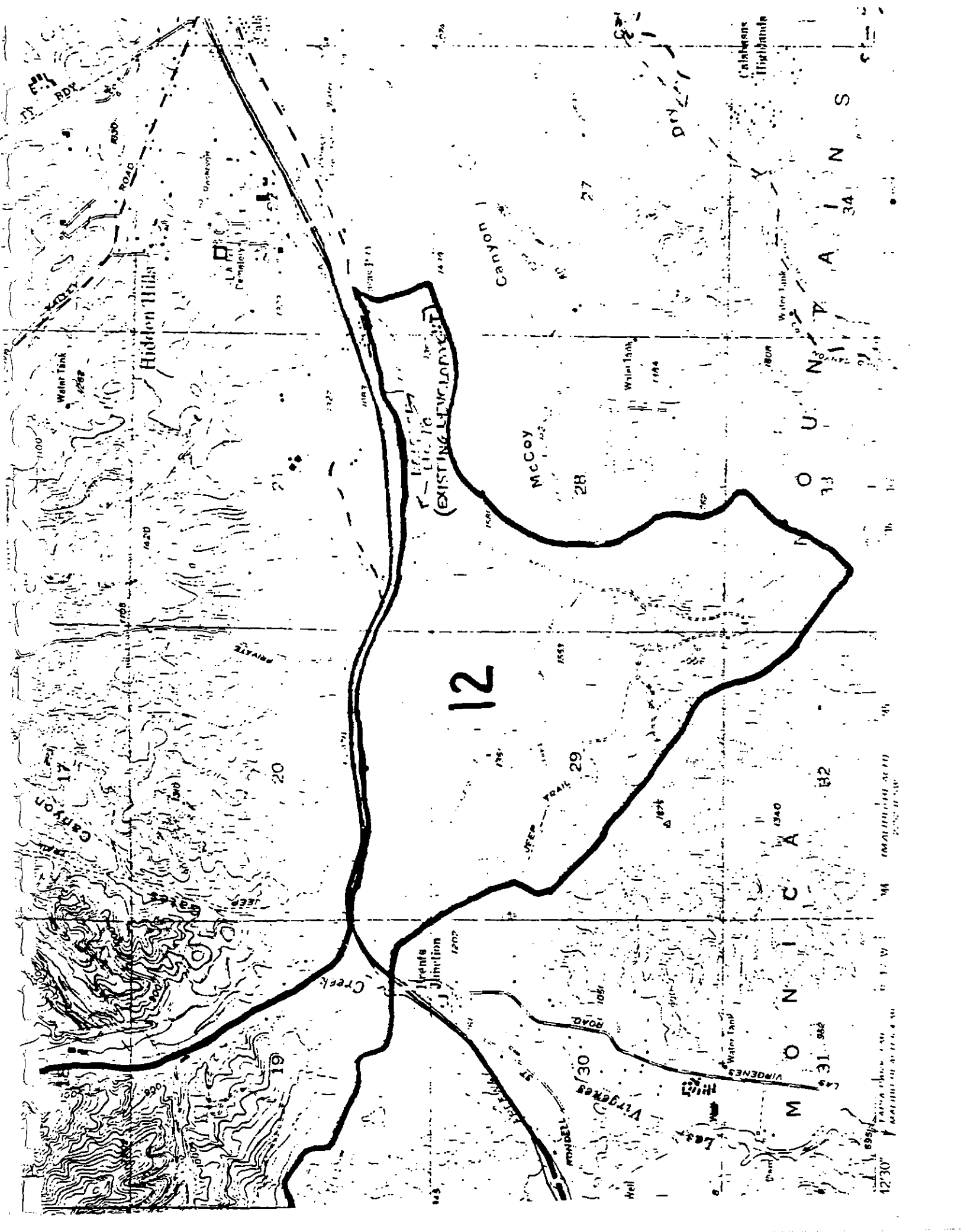
Irene's Junction

Water Turbine

Creek

KONDELL

SAND CREEK



12

EXISTING LEV. CONTROL

Hidden Hills

McCoy Canyon

Calabazas Highlands

Virginia Hill

Virginia Junction

Creek

Trail 30

Trail 29

Trail 28

Water Tank

Water Tank

Water Tank

Water Tank

1.0 mile (1.6 km)

32° 30' N

33° 00' N

33° 30' N

107° 30' W

108° 00' W

108° 30' W

Area # 13

Name: Chatsworth Reservoir

Quadrangle(s): Calabasas, Canoga Park

Class 2 (3,7)

Resource Description: The concentration of a variety of habitats, and the presence of a large body of freshwater closed to the public, offer important wintering and breeding ground for many songbirds and waterfowl. These features are rapidly disappearing in Los Angeles County and are critical to the remaining diversity of wildlife resources.

The habitat types found include freshwater marsh. This is very scarce in Los Angeles County and is the habitat of many uncommon bird species. The feature of an undisturbed body of fresh water adjacent to grasslands and oak savannah offers prime wintering habitat to geese, an uncommon wildlife resource over much of southern California.

The presence of several protected avian communities make the area valuable for bird study by students, researchers, and naturalists.

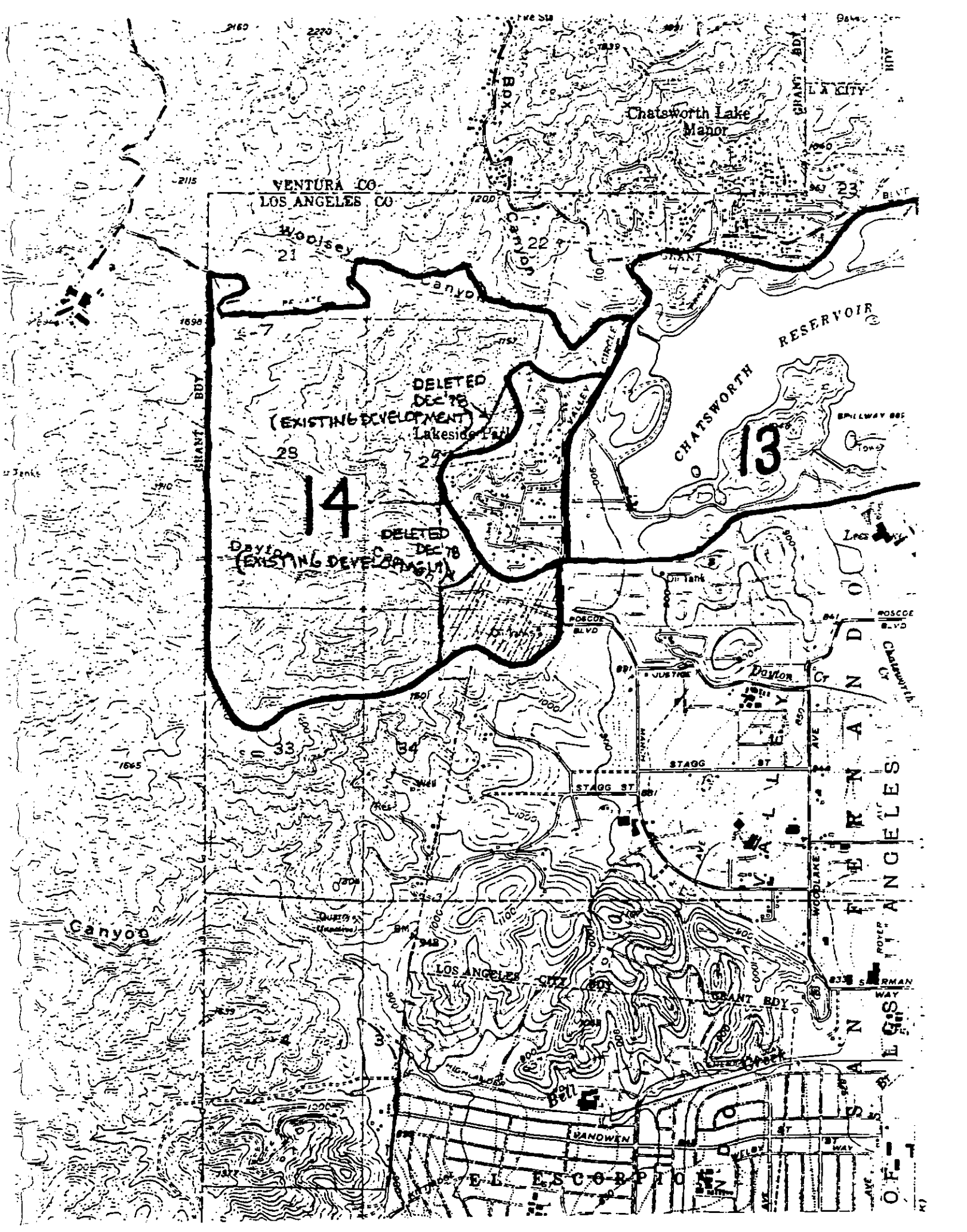
Status: Much of the area immediately surrounding the reservoir has been graded at one time. However, large patches of native vegetation and stands of oaks are present. Light to moderate development abuts much of the area.

Information Source(s): ERC/UCLA.

Nature of Information: The area has been used by professors and classes for years.

Buffer Zone Requirement: The area designated, in conjunction with the adjacent Simi Hills significant ecological area should be sufficient to protect the resource. However, if the Simi Hills area is allowed to be developed, populations of resident species will decline.

Compatible Uses: Very low intensity recreational uses are compatible with the resources of the area. In addition, the reservoir may be used for non-motorized boating and fishing during the summer, but should be closed the remainder of the year to provide habitat for wintering and migratory waterfowl.



VENTURA CO.
LOS ANGELES CO.

Chatsworth Lake
Manor

CHATSWORTH RESERVOIR

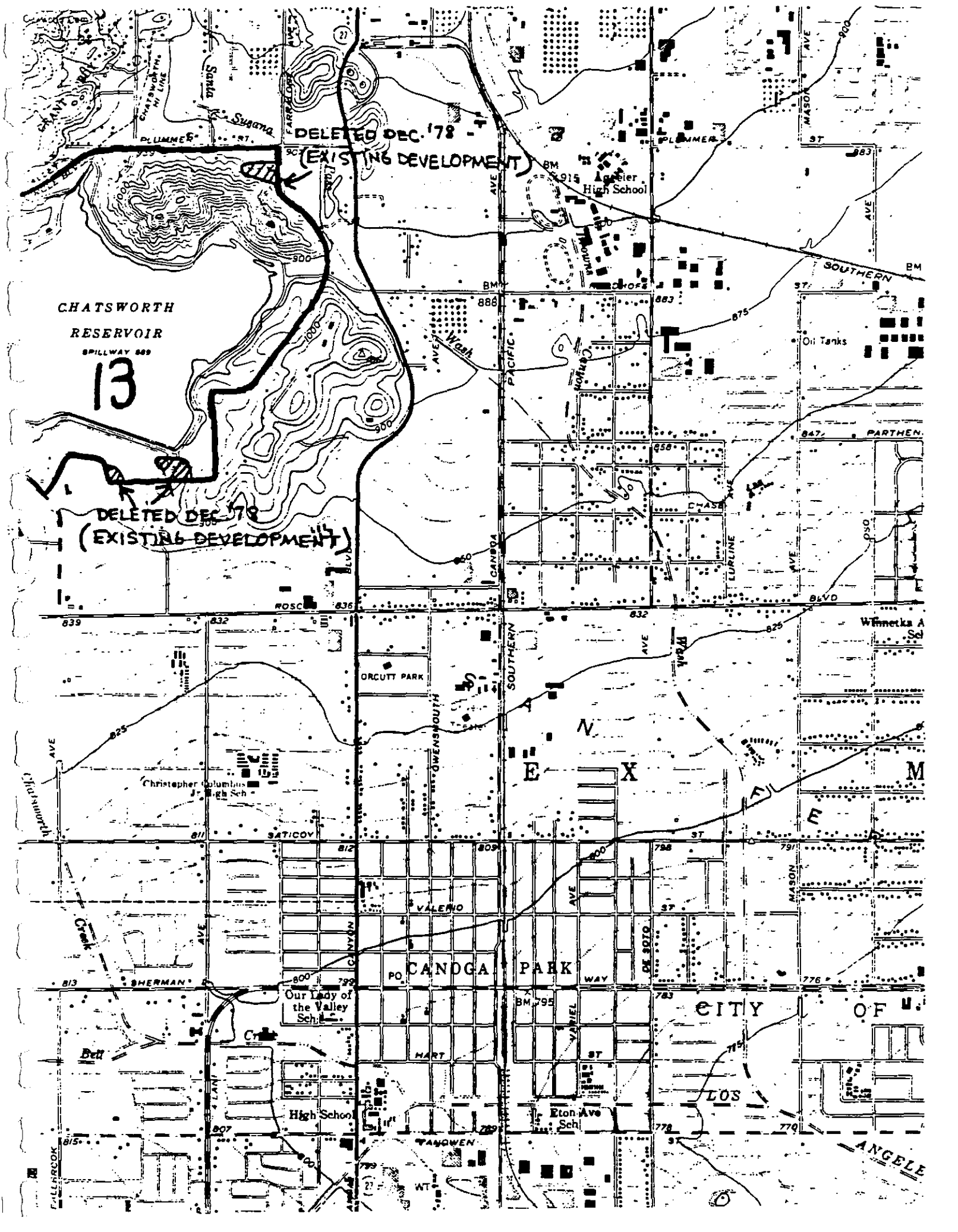
DELETED
DEC 78
(EXISTING DEVELOPMENT)
Lakeside Park

DELETED
DEC 78
(EXISTING DEVELOPMENT)
Dayton

LOS ANGELES
CITY BOUNDARY

LOS ANGELES CITY BOUNDARY

LOS ANGELES
CITY BOUNDARY



DELETED DEC. '78
(EXISTING DEVELOPMENT)

CHATSWORTH
RESERVOIR

SPILLWAY 889

13

DELETED DEC. '78
(EXISTING DEVELOPMENT)

Aggeler
High School

Christopher Columbus
Jr. High Sch.

ORCUTT PARK

Our Lady of
the Valley
Sch.

Eton Ave
Sch.

CITY OF

LOS

ANGELES

Area # 14

Name: Simi Hills

Quadrangle(s): Calabasas

Class 7

Resource Description: This area contains relatively undisturbed representative examples of most of the biotic communities found in the Simi Hills. Habitats include chaparral, coastal sage scrub, southern oak woodland and riparian woodland. While all of these are relatively common in Los Angeles County, this is one of two areas which include the cismontane associations of these communities in the western edge of the county.

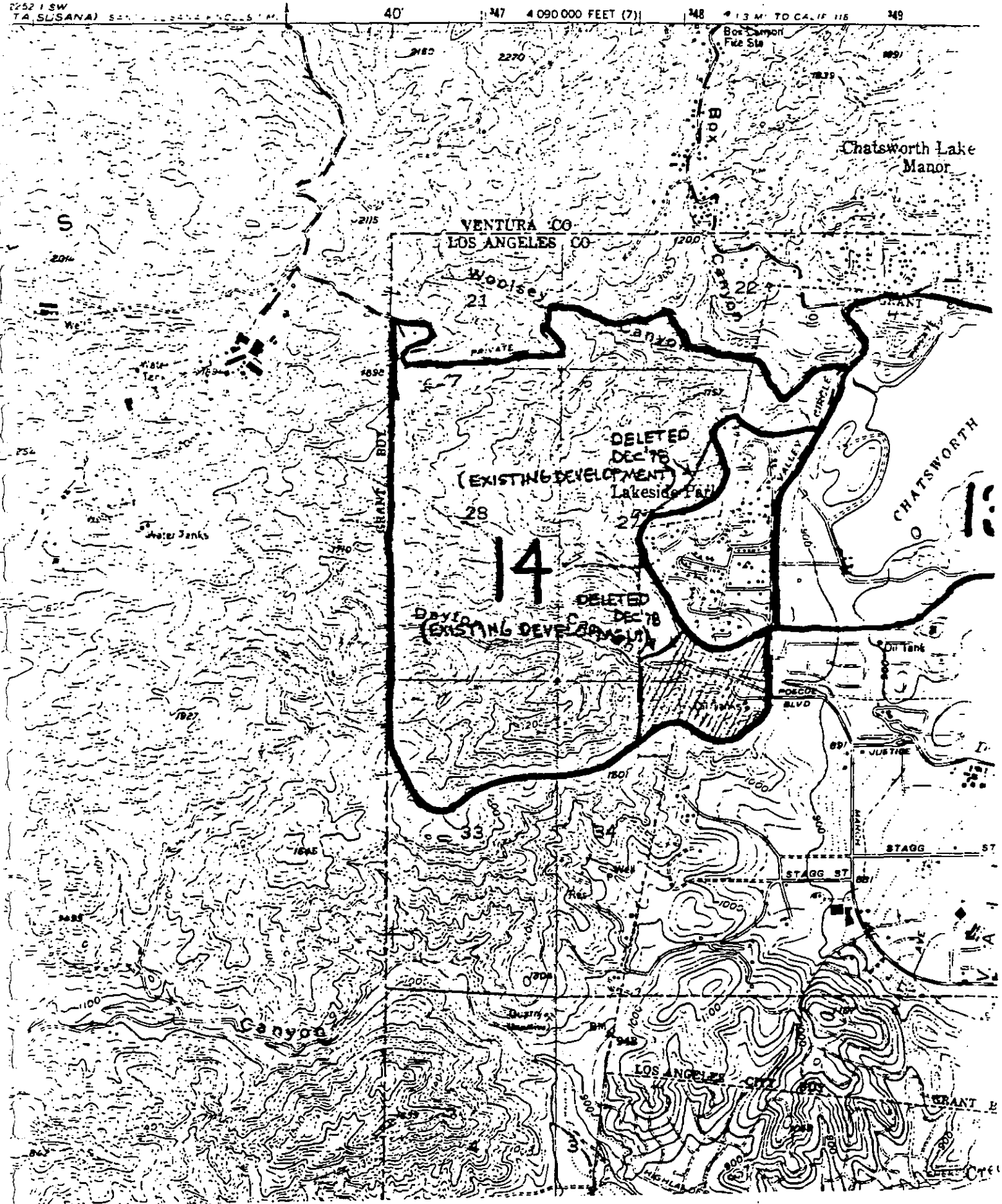
The area also serves as a buffer and wildlife corridor to move between the reservoir and the undeveloped portions of the Simi Hills in Ventura County. Genetic exchange and replenishment of native populations in the Chatsworth Reservoir area are important considerations here.

Status: Generally in good condition. The area has been lightly to moderately disturbed. A paved road runs through Dayton Canyon but does not appear to have greatly disturbed the riparian woodland there. A few dirt roads exist in the area. Scattered houses are found in the Lakeside Park development adjacent to Chatsworth Reservoir.

Information Source(s): Interest in the Simi Hills by the Bureau of Outdoor Recreation and use of the general area by competent non-professionals in local organizations has generated some information.

Buffer Zone Requirement: The Lakeside Park and surrounding residential area should not be heavily developed because this would create a barrier between the Simi Hills area and Chatsworth Reservoir.

Compatible Uses: Low intensity recreational uses are compatible with the resources in the area.



Area # 15

Name: Tonner Canyon/Chino Hills

Quadrangle(s): Yorba Linda, La Habra

Class 7

Resource Description: Tonner Canyon is one of three areas in the hilly region of eastern Los Angeles County that still support a relatively undisturbed stand of southern oak woodland, chaparral, coastal sage scrub, riparian woodland complex that was once common there. The remainder of this vegetative type has been converted to agricultural and urban uses. This is true throughout the entire southern California region, making it one of the most rapidly disappearing habitat types. These three areas were chosen to serve as representative samples of this once widespread community.

The vegetation in Tonner Canyon is in good condition, and supports heavily forested areas of California walnut. This species is uncommon outside Los Angeles and Ventura Counties, and has one of its major populations in this portion of Los Angeles County. Tonner Canyon is of sufficient size and is in close enough proximity to the other recommended areas in this region, that it should be able to continue to support relatively healthy animal populations if preserved. This probability is increased by the presence of a riparian woodland and an intermittent stream in the canyon bottom.

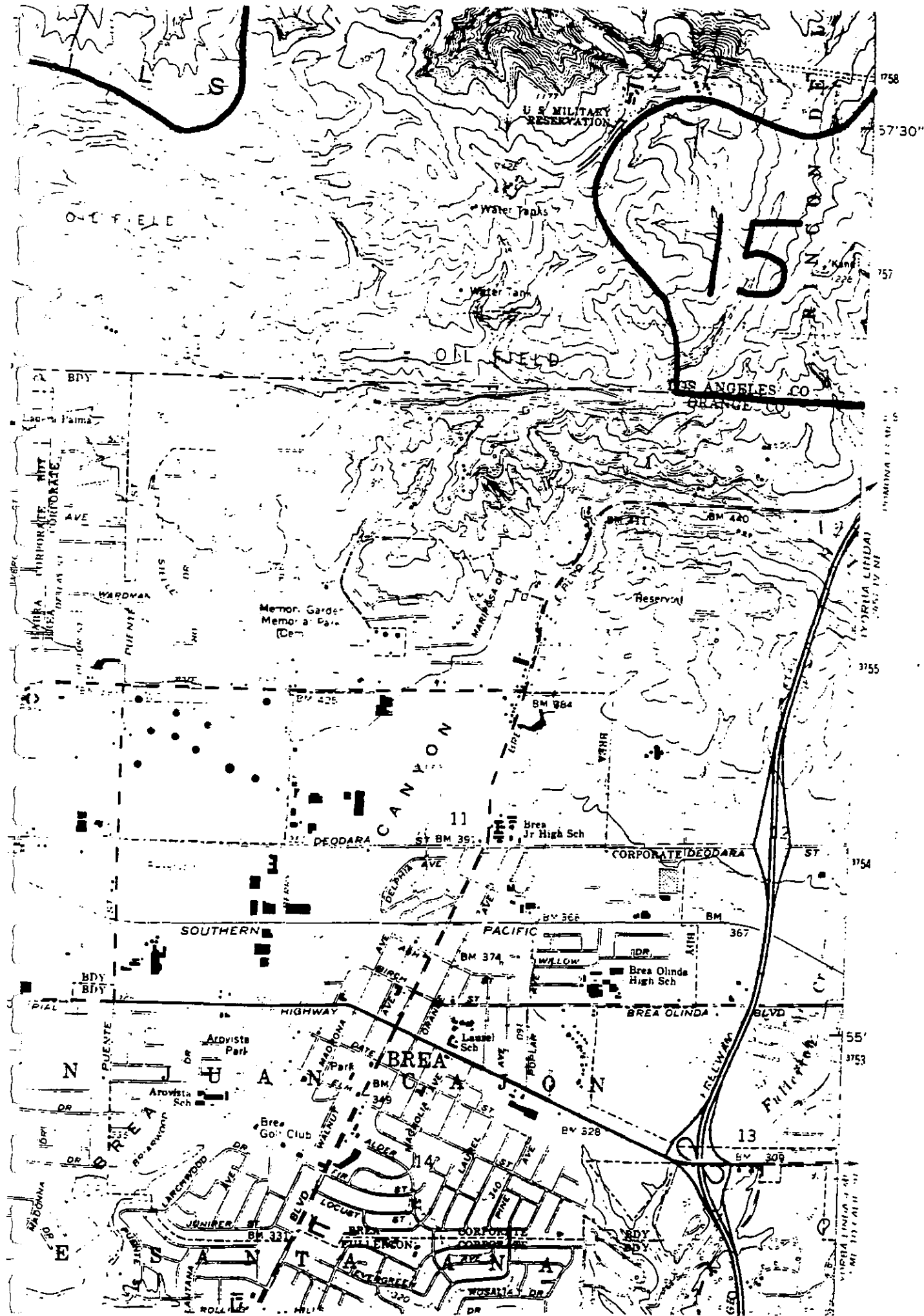
Status: The area lies south of Diamond Bar and straddles Brea and Tonner Canyons. Two roads occur on the property, Highway 57 and Tonner Canyon Road. A portion of Tonner Canyon is known as the Firestone Scout Reservation, and used as a Boy Scout camp.

Information Source(s): Survey/Interview, ERC/UCLA, CNACC/CNPS.

Nature of Information: Due to the California Natural Area Coordinating Council project, and the efforts of the Environmental Resources Committee report, competent biologists have made surveys of the area.

Buffer Zone Requirement: None within the county. However, efforts should be made to cooperate with the County of San Bernardino to prevent disruptive impacts that will arise in the upstream area.

Compatible Uses: Medium intensity recreational uses are compatible with the resources of the area.



15

LOS ANGELES CO
ORANGE CO

CANYON

BREA

13

758
57'30"

757

755

754

55'
375

Dec 19
(EXISTING DEVELOPMENT)

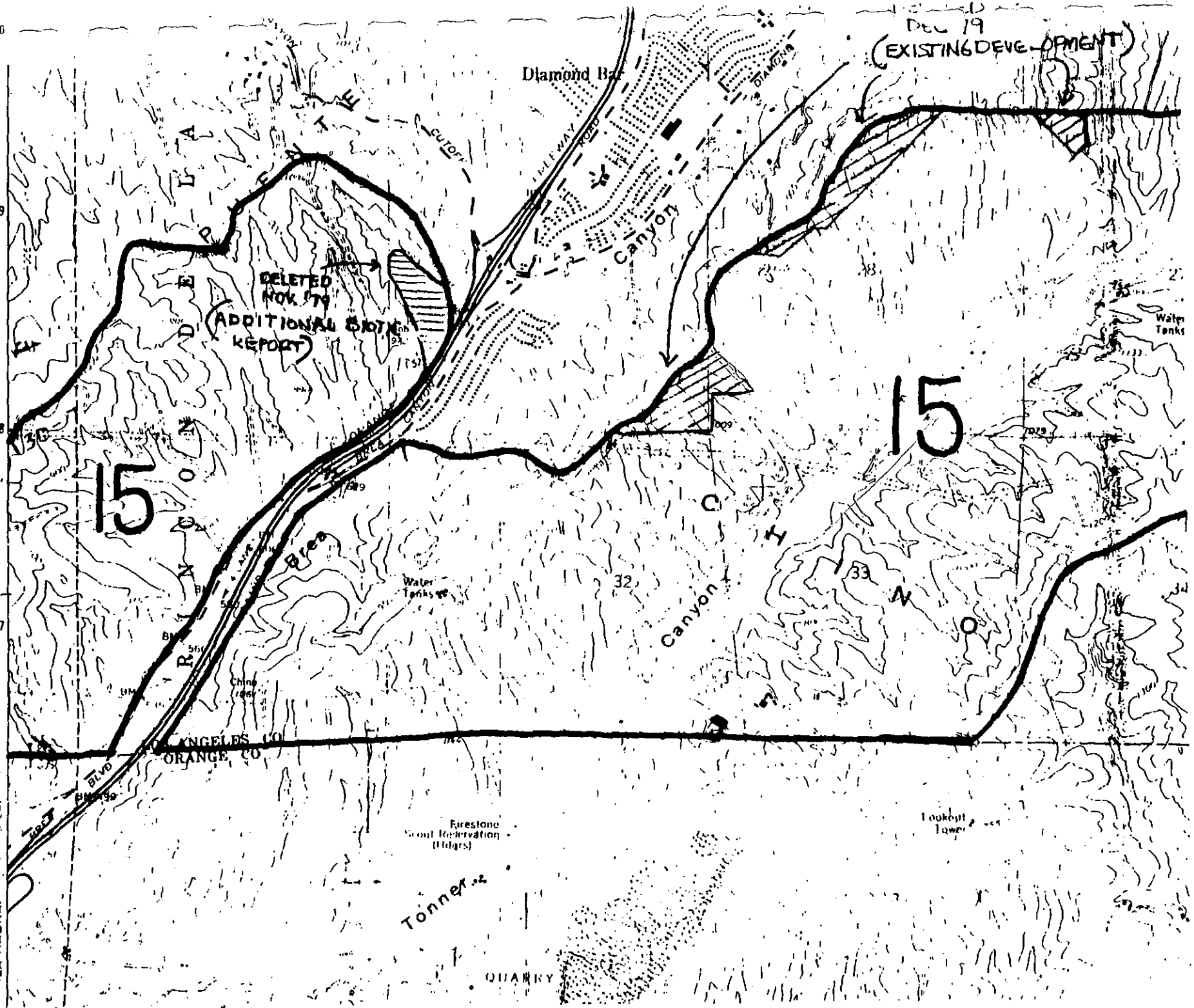
Diamond Bar

DELETED
NOV 79
(ADDITIONAL SITE
REPORT)

15

15

1'60
3759
3758
57'30"
3757
33
34
35
2451 IV NW
(LA HABRA)



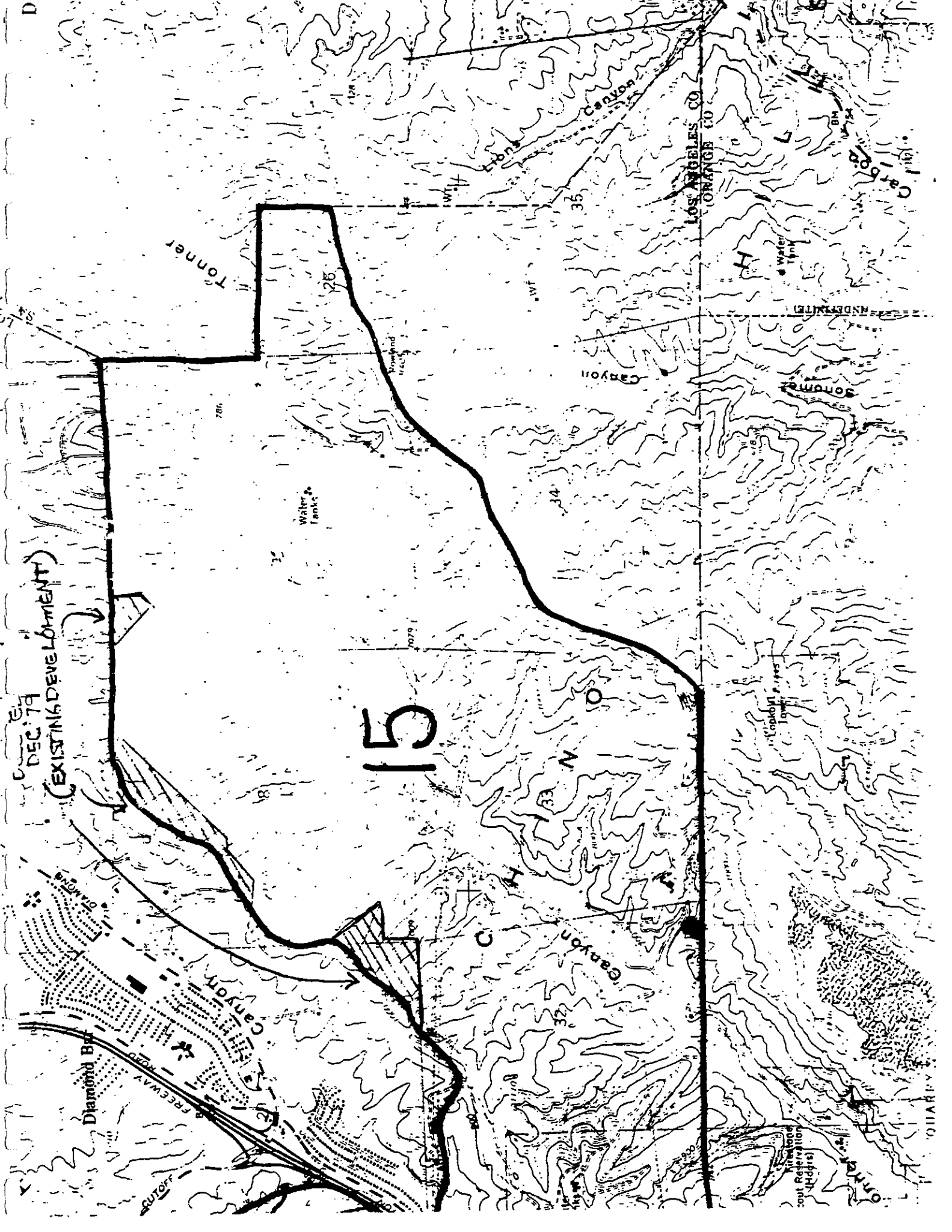
ANGELES CO
ORANGE CO

Firestone
Scout Reservation
(Hdgrs)

Tonnet #2

QUARRY

Lookout
Tower



D

DEC 79
(EXISTING DEVELOPMENT)

15

LOS ANGELES CO
ORANGE CO

Diamond Blvd

FREWAY
CUTOFF

Sondra

Water Tank

Canyon

Canyon

Water Tank

Sondra

DIARY

Area # 16

Name: Buzzard Peak/San Jose Hills

Quadrangle(s): San Dimas

Class 7

Resource Description: Buzzard Peak is one of three areas in the hilly region of eastern Los Angeles County that still supports a relatively undisturbed stand of the southern oak woodland, chaparral, coastal sage scrub, riparian woodland complex that was once common there. The remainder of this vegetation type has been converted to agricultural and urban uses. This is true throughout the entire southern California region, making it one of the most rapidly disappearing habitat types. These three areas were chosen to serve as representative samples of this once widespread community.

The vegetation and wildlife on Buzzard Peak are in relatively good condition. This is due in part to the buffering provided by the California State Polytechnic University at Pomona, Mt. San Antonio Junior College, and Forest Lawn Memorial Park. It is also a result of the area being a peak, thus isolating it from disturbances that could arise from an upstream or up-slope source. The area adjacent to Cal Poly supports dense groves of California walnut. This species is uncommon outside Los Angeles and Ventura Counties, and has one of its major populations in this hilly region. Buzzard Peak is of sufficient size and in close enough proximity to the other recommended areas in this region, that it should be able to continue to support relatively healthy animal populations if preserved.

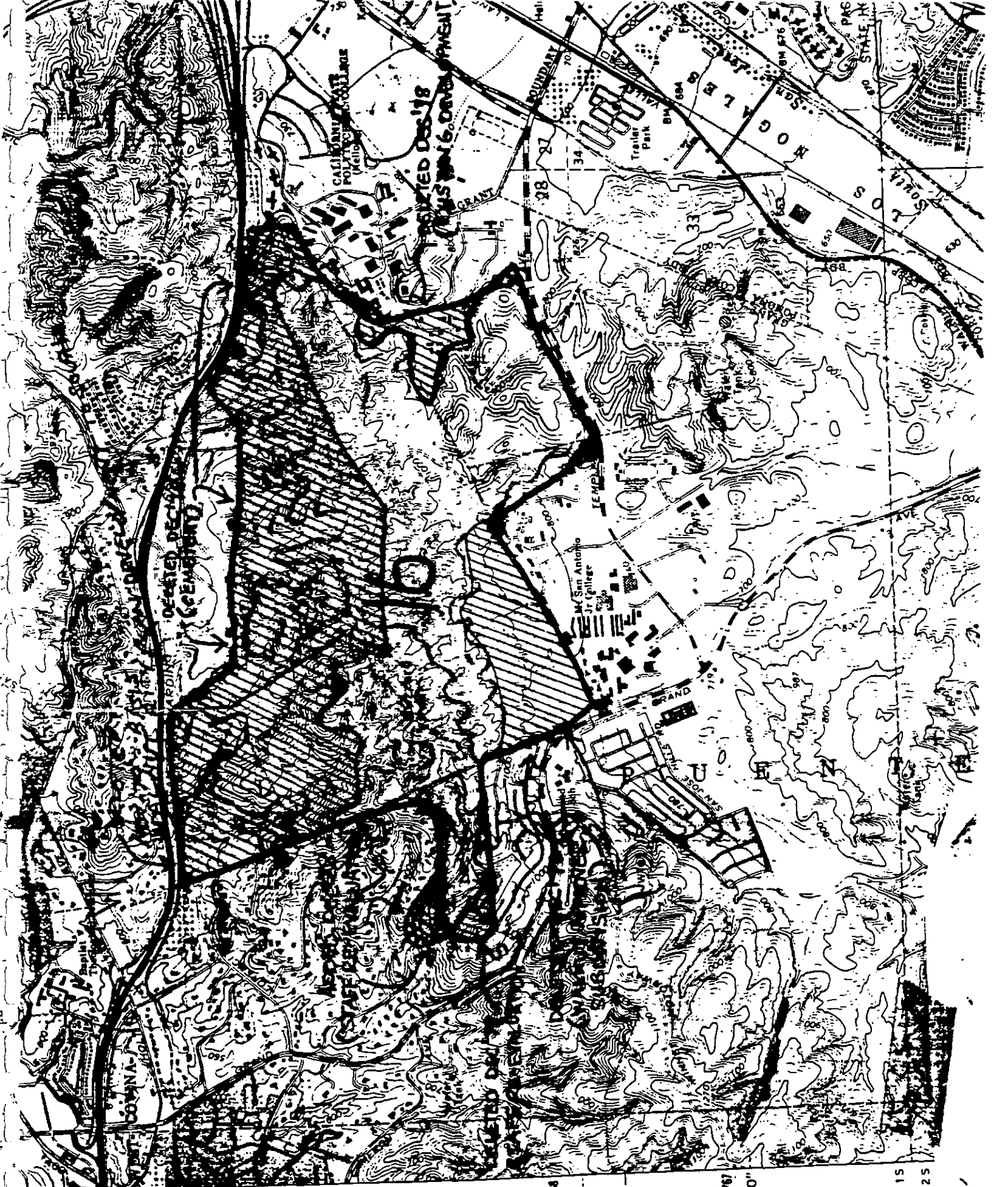
Status: Buzzard Peak is undeveloped and unroaded. It is protected on the north by Forest Lawn Memorial Park, on the east by California State Polytechnic University, and on the south by Mt. San Antonio Junior College. Urban encroachment is occurring on the west end.

Information Source(s): Survey/Interview, ERC/UCLA, CNACC/CNPS.

Nature of Information: Due to the California Natural Area Coordinating Council project, and the efforts of the Environmental Resources Committee, competent biologists have made surveys of the area.

Buffer Zone Requirement: None. Resources will be protected by recommended boundaries.

Compatible Uses: Low intensity recreational uses are compatible with the resources of the area.



100 ANGLE
BALDWIN P
2452 III SW
BALDWIN PARK
1167
2130"
T 15
1 25

Area # 17

Name: Powder Canyon/Puente Hills

Quadrangle(s): La Habra

Class 7

Resource Description: Powder Canyon is one of three areas in the hilly region of eastern Los Angeles County that still supports a relatively undisturbed stand of the southern oak woodland, coastal sage scrub, riparian woodland complex that was once common there. The remainder of this vegetation has been converted to agricultural and urban uses. This is true throughout the entire southern California region, making it one of the most rapidly disappearing habitat types. These three areas were chosen to save as representative samples of this once widespread community.

Powder Canyon is the only recommended area that contains an undisturbed portion of self-contained watershed. As a result of this, the vegetation is in good condition. Preservation of this type of an area will eliminate the potential of disturbance from upstream sources. If preserved, Powder Canyon is of sufficient size and in close enough proximity to the other recommended areas in the region that it should be able to continue to support relatively healthy animal populations. The diversity of wildlife is greatly enhanced by the presence of riparian woodland habitat in the canyon bottom.

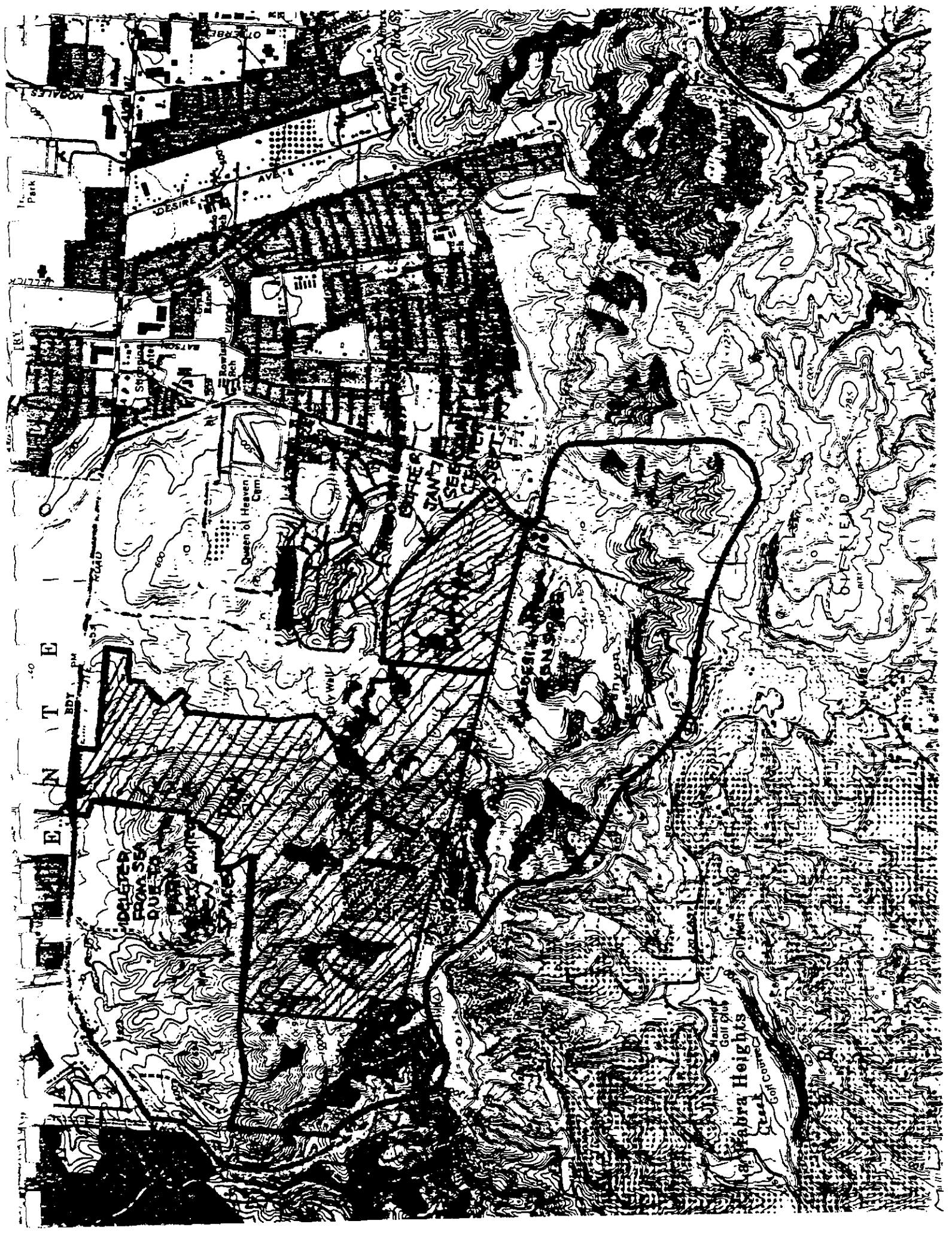
Status: The Powder Canyon area is nearly surrounded by urban development. The property is crossed by several roads and a powerline, but remains in good condition. Portions of the property are currently owned by the Los Angeles County Department of Parks and Recreation.

Information Source(s): Survey/Interview, Literature.

Nature of Information: Due to the interest in the area by the Los Angeles County Department of Parks and Recreation and concerned citizens, the site has been visited by competent biologists.

Buffer Zone Requirement: None. Resource will be protected by recommended boundaries.

Compatible Uses: Low intensity recreational uses are compatible with the resources of the area.



EAST RD

DELETED FROM SEA FROM SEA QUEEN'S COLLEGE

Queen of Heaven Cemetery

QUEEN'S COLLEGE

SABRA HEIGHTS

SABRA HEIGHTS GOLF COURSE

1785

DESIRE AVENUE

Park

RD

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Area # 18

Name: Way Hill

Quadrangle(s): San Dimas

Class 1 (2,3,4,5,7)

Resource Description: Way Hill supports a population of Dudleya multicaulis, the many--stemmed dudleya. This plant species is recognized as endangered by the U.S. Fish and Wildlife Service, and as such is protected by federal law. It is restricted to dry stony places below 2000 feet in the coastal sage scrub and chaparral communities of Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties.

Status: The area is privately owned, and has a mixture of homes and natural vegetation.

Information Source(s): Literature, CNACC/CNPS.

Nature of Information: The population has been identified and located since 1945.

Buffer Zone Requirement: None. Recommended boundaries are sufficient to protect the resources of the area.

Compatible Uses: Regulated scientific study is a use that is compatible with the resources in the area.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

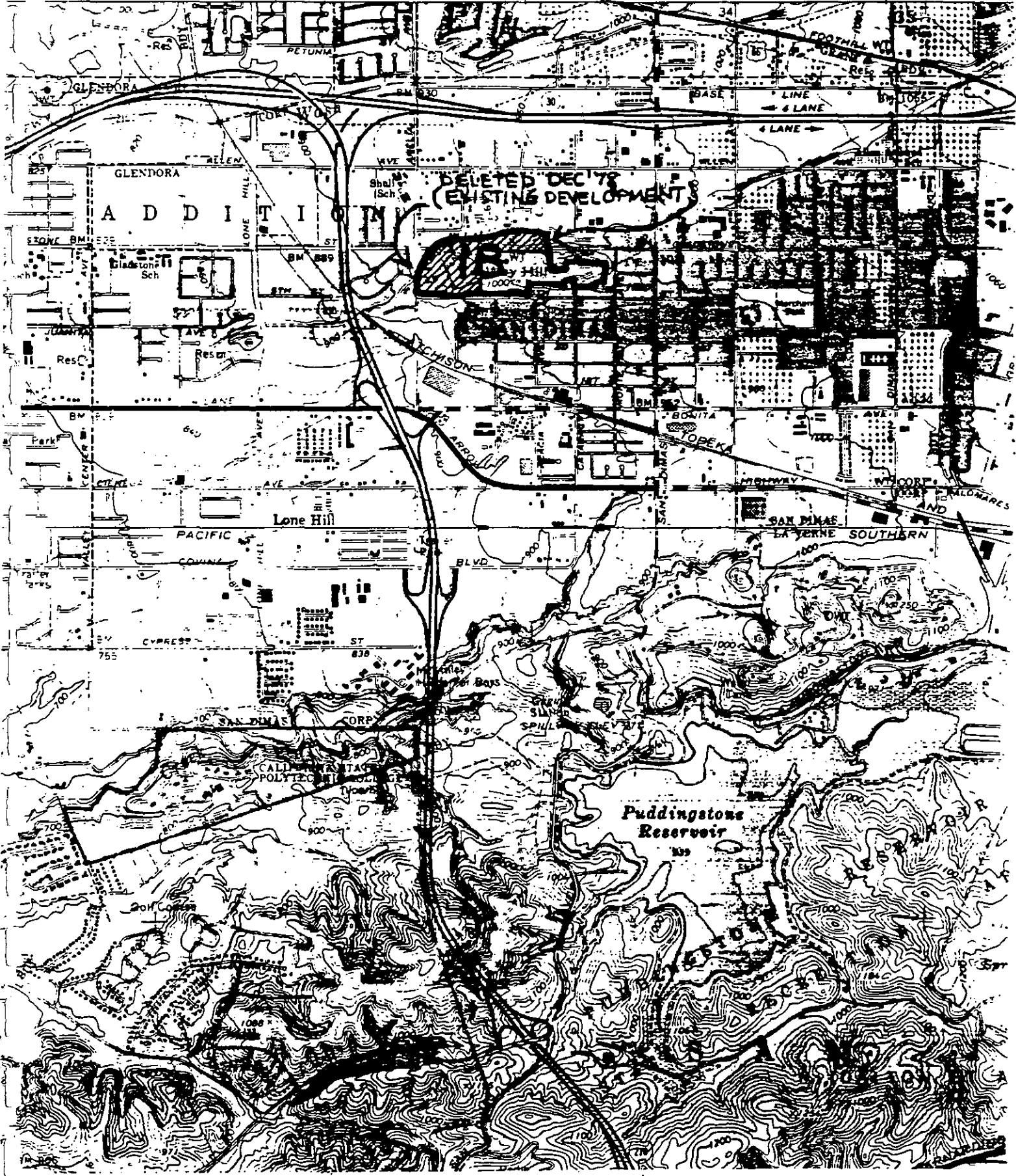
423 50'

424

BASE III NE
(GLENORA)

PASADENA 17 MI
AZUSA 6 MI

47'30"



Area # 19

Name: San Francisquito Canyon

Quadrangle(s): Newhall, Warm Springs Mountain, Green Valley, Sleepy Valley, Lake Hughes, Del Sur.

Class 1 (2,3,4,5,6,7)

Resource Description: San Francisquito Canyon possesses two populations of the unarmored threespine stickleback (Gasterosteus aculeatus williamsoni). This species was formerly found in the Los Angeles, San Gabriel, and Santa Ana Rivers, but is now restricted to the Santa Clara River and San Francisquito Canyon. For this reason, it has been placed on the state and federal endangered species lists. In San Francisquito Canyon, it is confined to permanent streams and pools below Drinkwater Reservoir, and above Baird Canyon. The lower population is dependent on the legally mandated release of water from Drinkwater Reservoir.

The watershed that supplies San Francisquito Canyon is relatively undisturbed. The hillsides support a dense coastal sage scrub and chaparral cover. The streamcourse is natural and has a good riparian woodland community. The health of this drainage is apparent by the fact that, in addition to supporting the unarmored threespine stickleback, the creek has been classified as an active trout fishing stream by the National Forest Service and the California Department of Fish and Game.

The primary concern for the survival of the unarmored threespine stickleback is that its habitat be maintained. It requires clean, free-flowing perennial streams and ponds surrounded by natural vegetation. Intermittent areas connecting perennial streams are also important during the wet season where surface water is present. The natural vegetation along the intermittent portion of the stream slows heavy runoff during the rainy season, decreases destruction and siltation of habitat in downstream areas, and provides habitat for migration between populations.

The unarmored threespine stickleback populations in San Francisquito Canyon are the only ones for which the possibility exists to plan and control development in the majority of the watershed. This is certainly not true for populations in the Santa Clara River valley.

Status: The majority of San Francisquito Canyon lies within the Angeles National Forest. However, much of the land is privately owned. The only major developments in the canyon have been the L. A. Aqueduct, a road in the canyon bottom, and the community of Green Valley.

Information Source(s): Literature, ERC/UCLA.

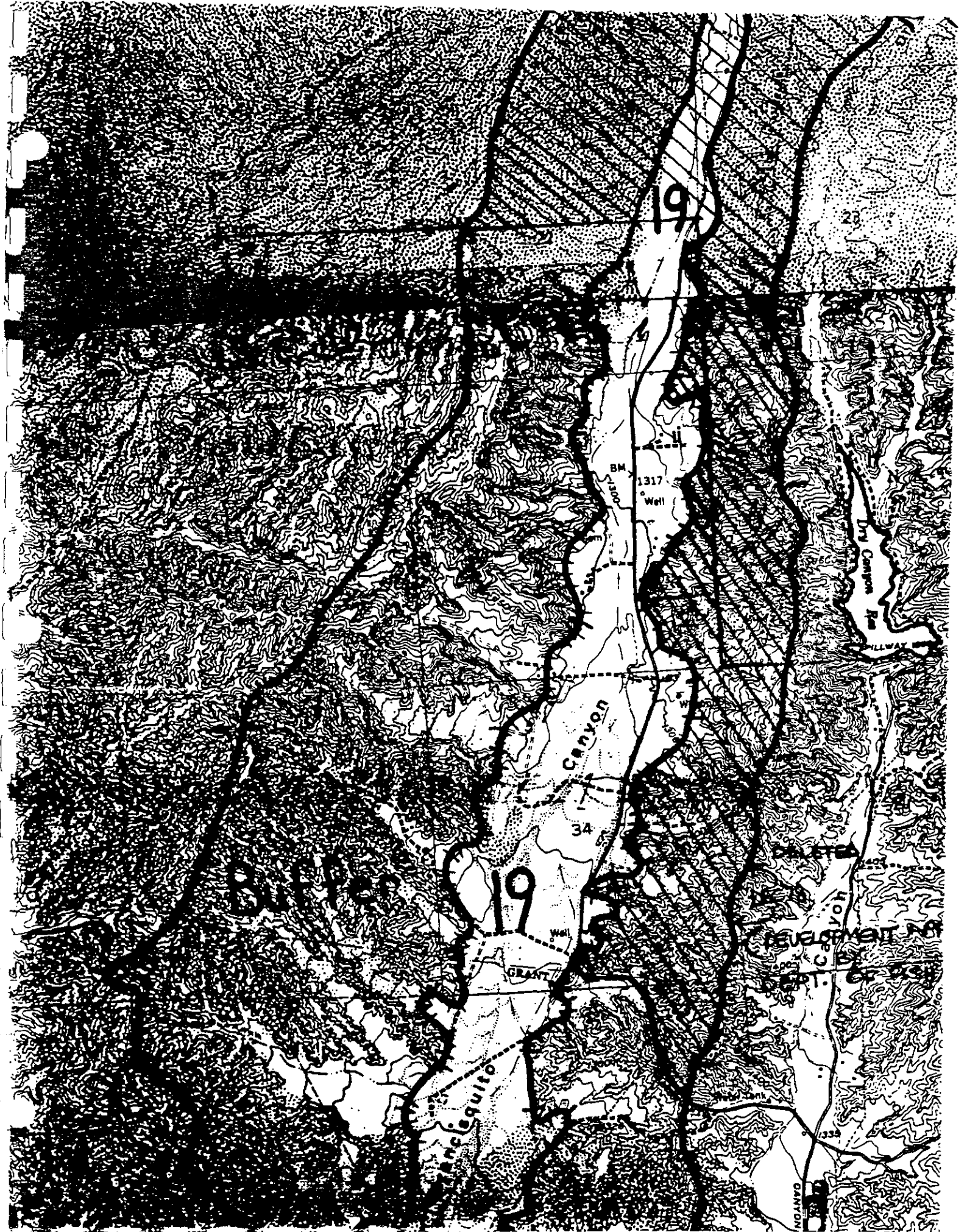
Area # 19 continued

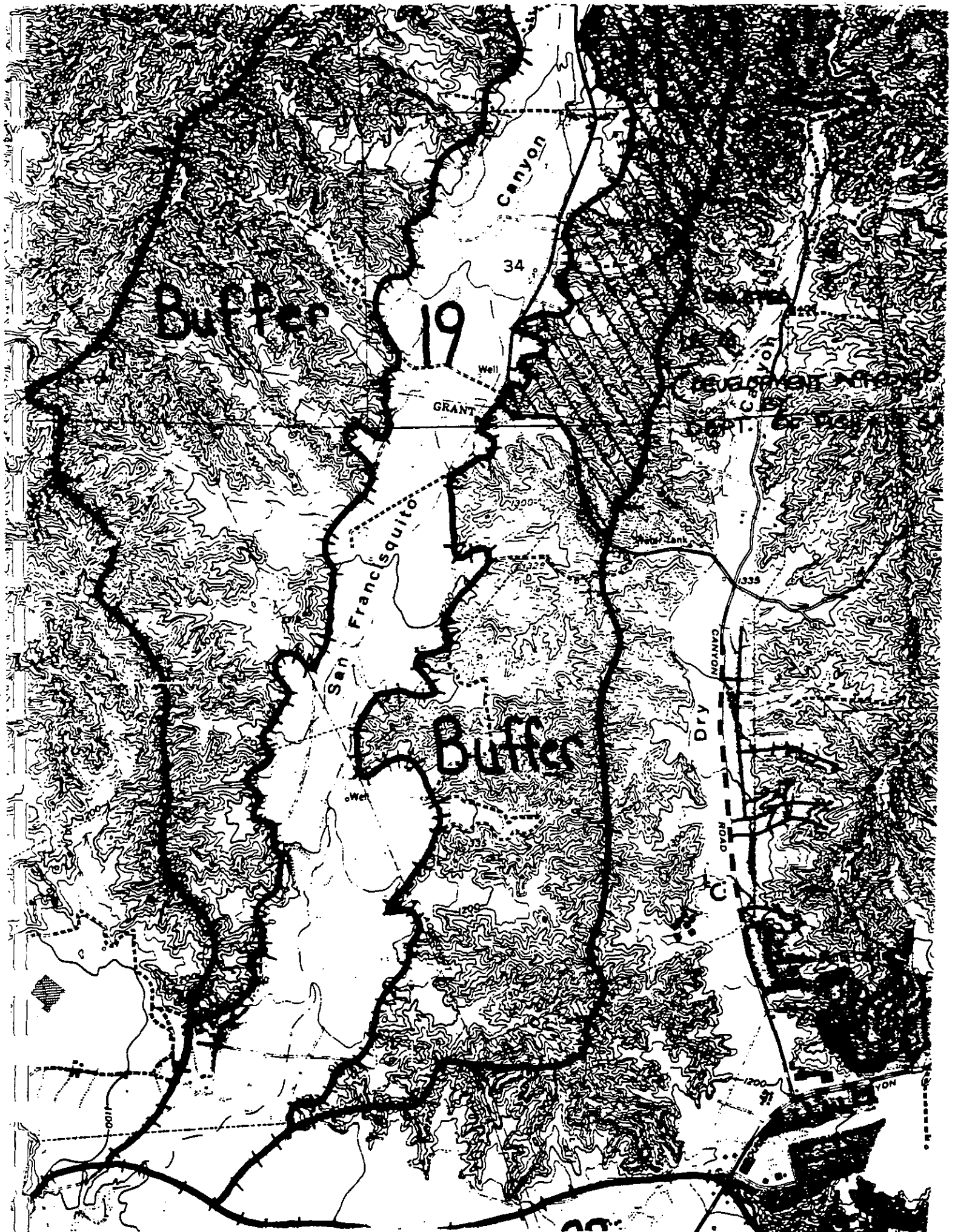
Nature of Information: Due to its status as an endangered species, the habitat of the unarmored threespine stickleback has been extensively analyzed.

Buffer Zone Requirement: Development in the watershed feeding San Francisquito Creek must not be allowed to change natural drainage patterns, or to increase runoff and water pollution. Hillside development should be limited and tightly controlled. Impacts must be analyzed by their cumulative, not piecemeal, effects on the habitat.

Compatible Uses: Very low intensity recreational uses are compatible with most of the resources in the area. Fishing is compatible throughout most of the canyon, and should be conducted according to the rules and regulations of the California Department of Fish and Game and the National Forest Service. However, use of the pools below Drinkwater Reservoir and above Baird Canyon, which contain populations of the endangered unarmored threespine stickleback, should be restricted to regulated scientific study.

It is desirable that contact be made with the unarmored threespine stickleback recovery team to keep abreast of current programs and changes in the status of the species.





Buffer

19

San Francisco

Buffer

CANYON

GRANT

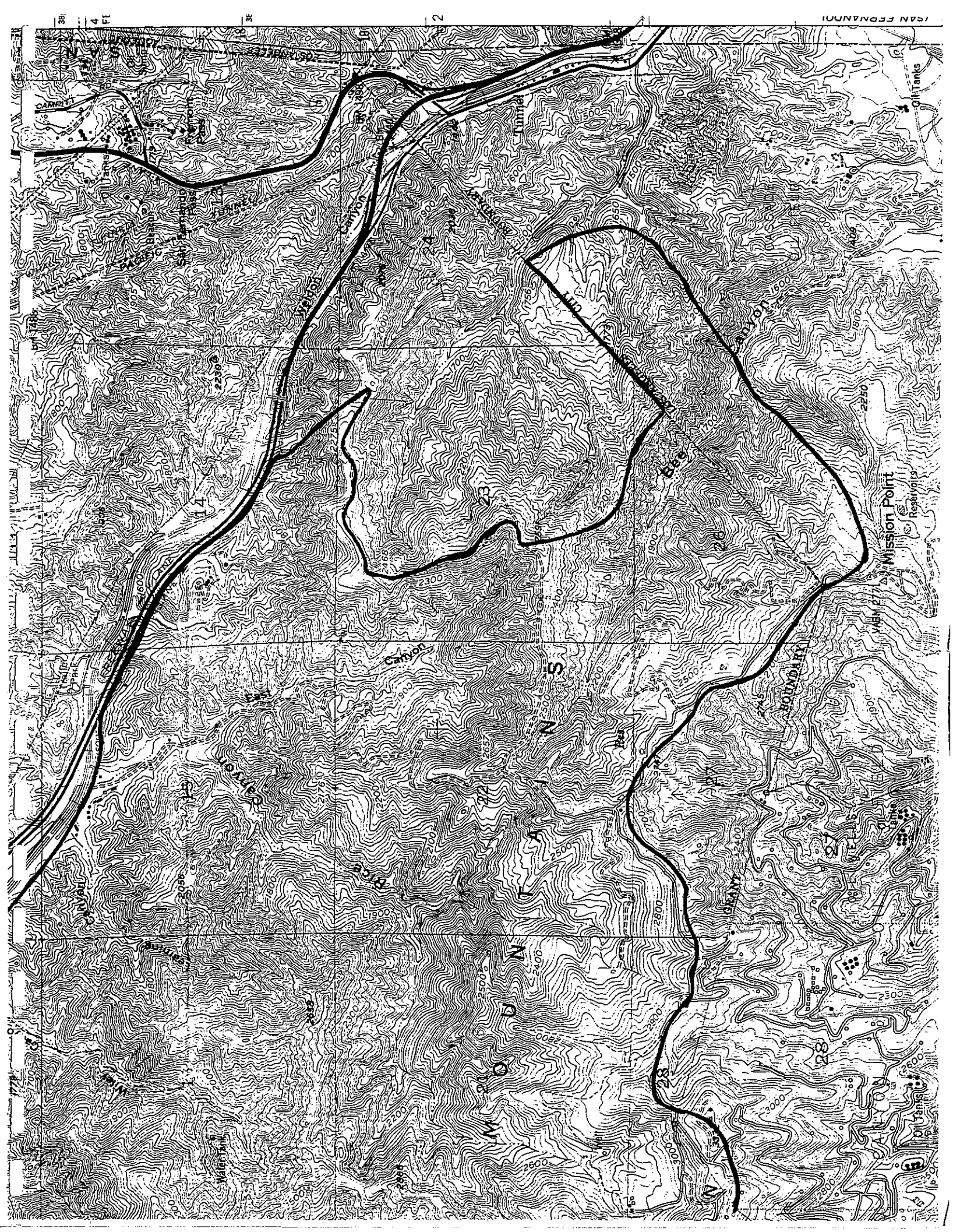
Well

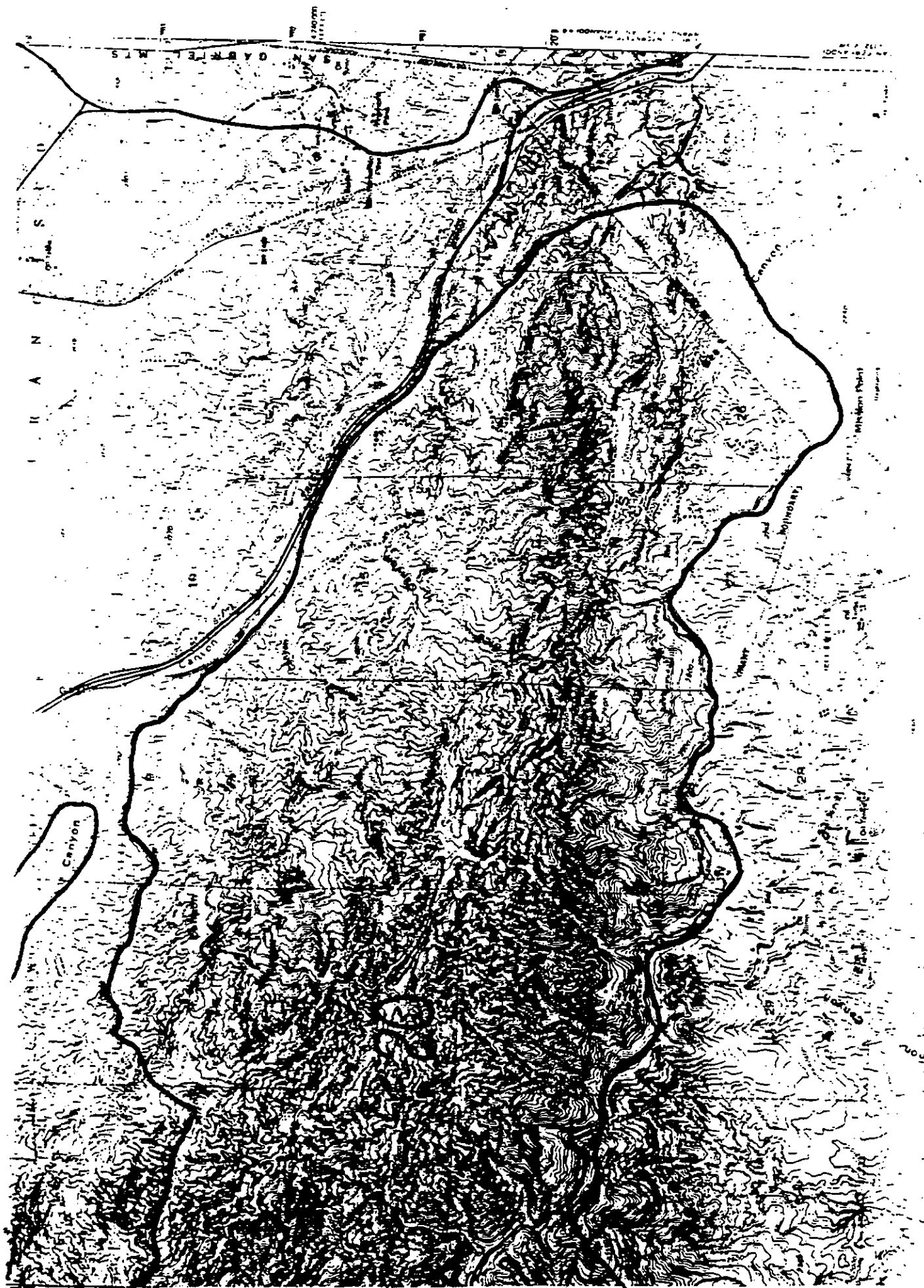
DRY CANYON

1000

1200

VON

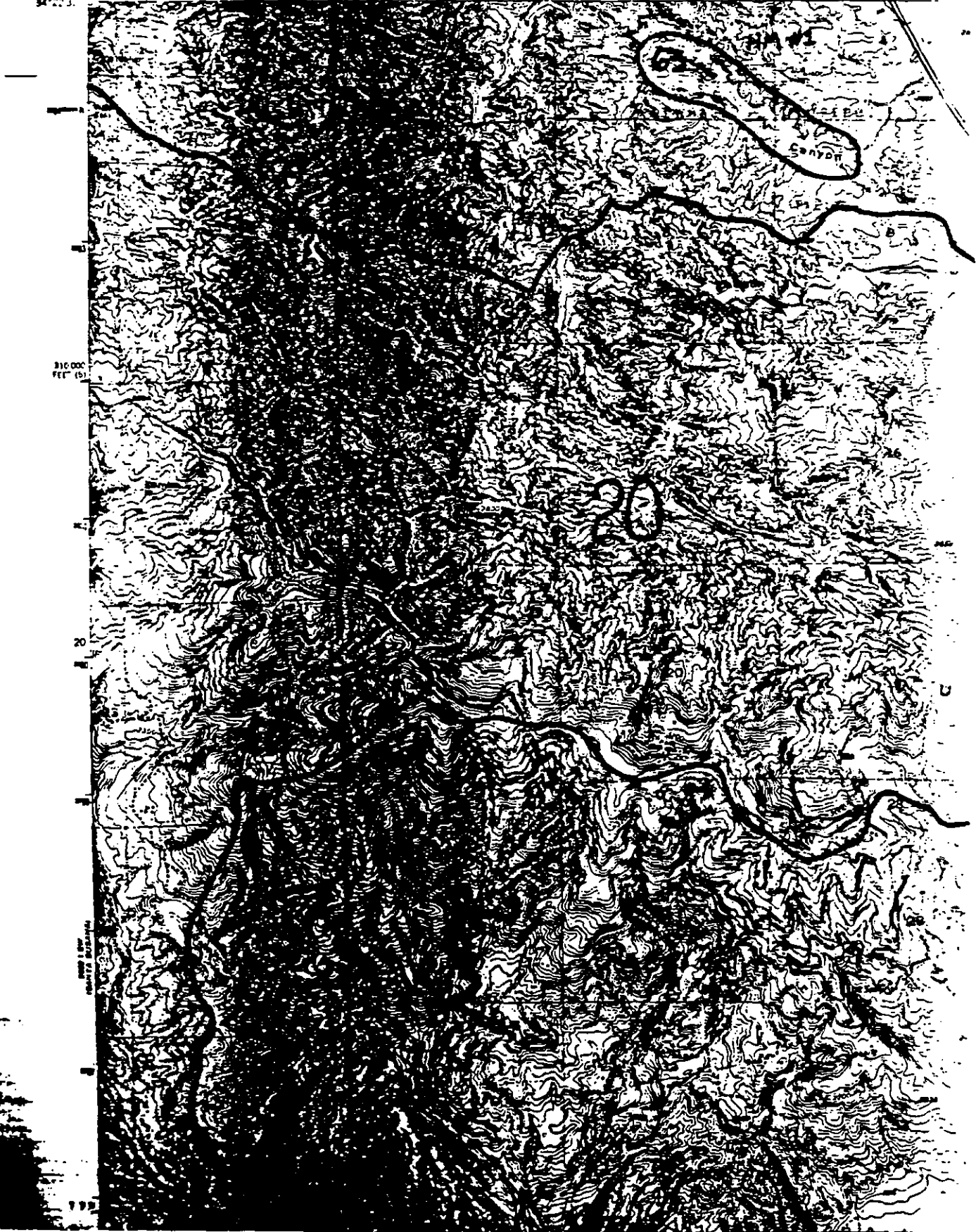


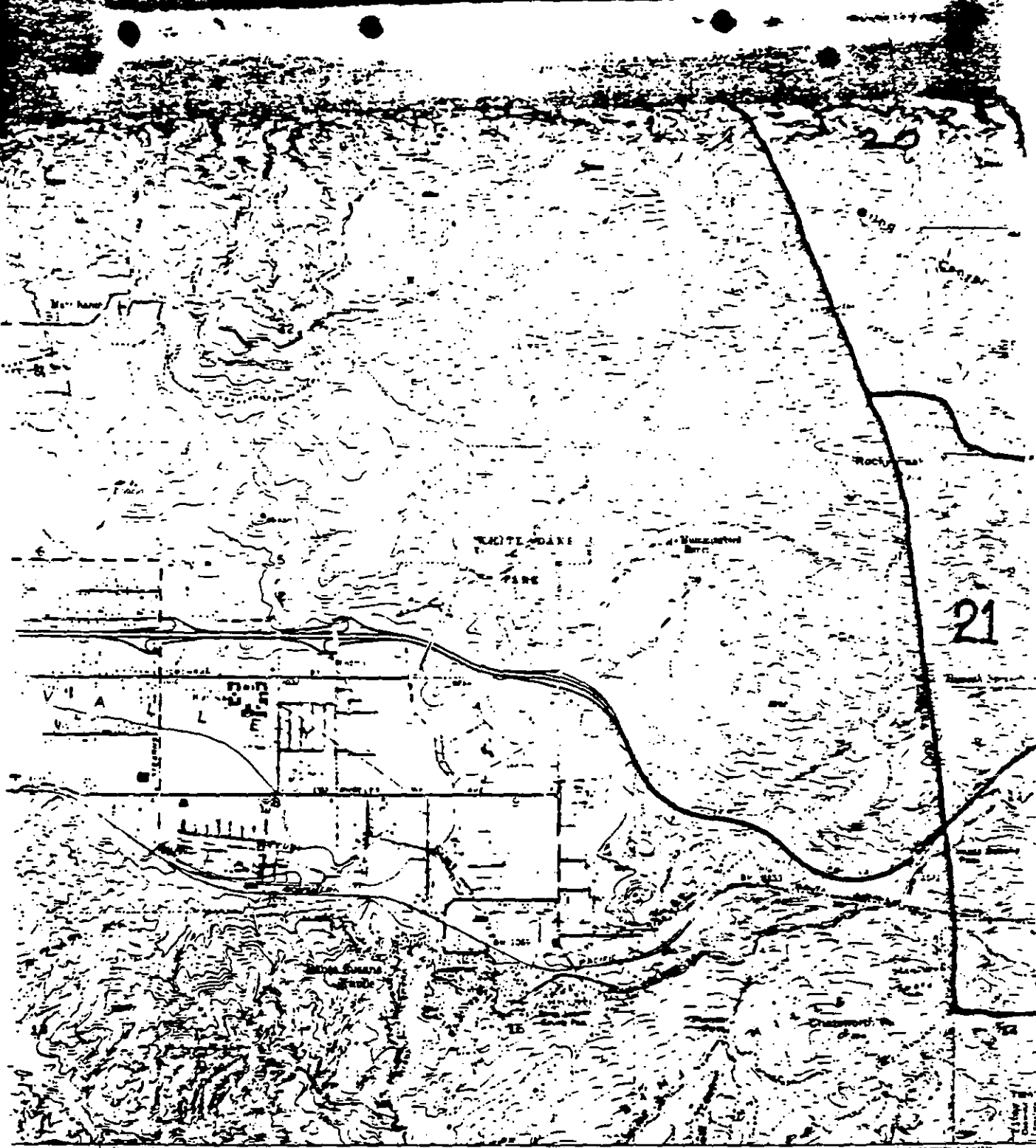


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
REPRESENTED BY THE
DIRECTOR OF PUBLIC WORKS

34722 J. 116° 30' 00" W. 35° 00' 00" N. 1925 - 1926
INCHES





100 200 300 400 500 600 700 800 900 1000

SCALE 1:24,000



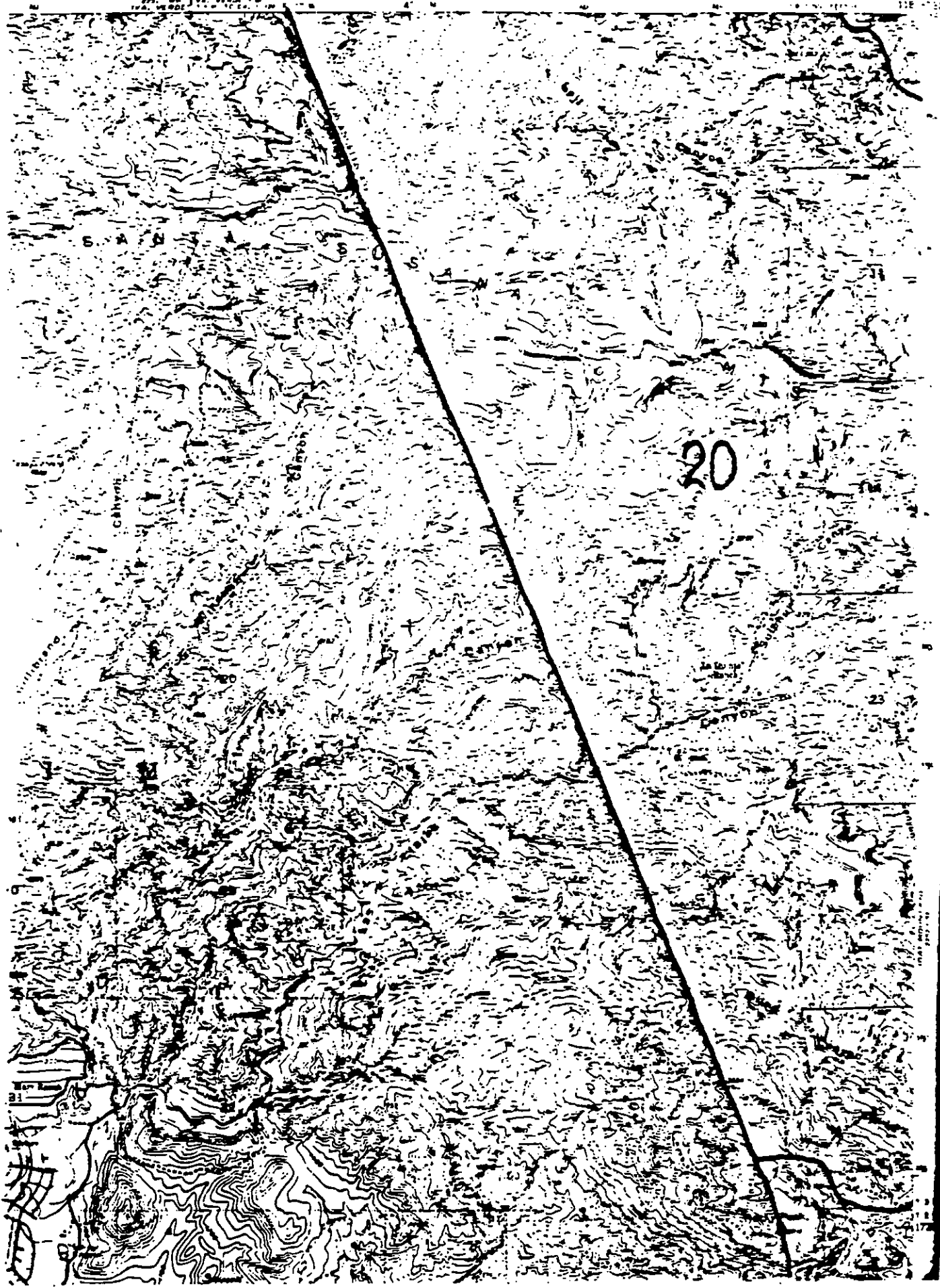
CONTOUR INTERVAL 25 FEET
 DOTTED LINES REPRESENT 5 FOOT CONTOURS
 DATUM IS MEAN SEA LEVEL

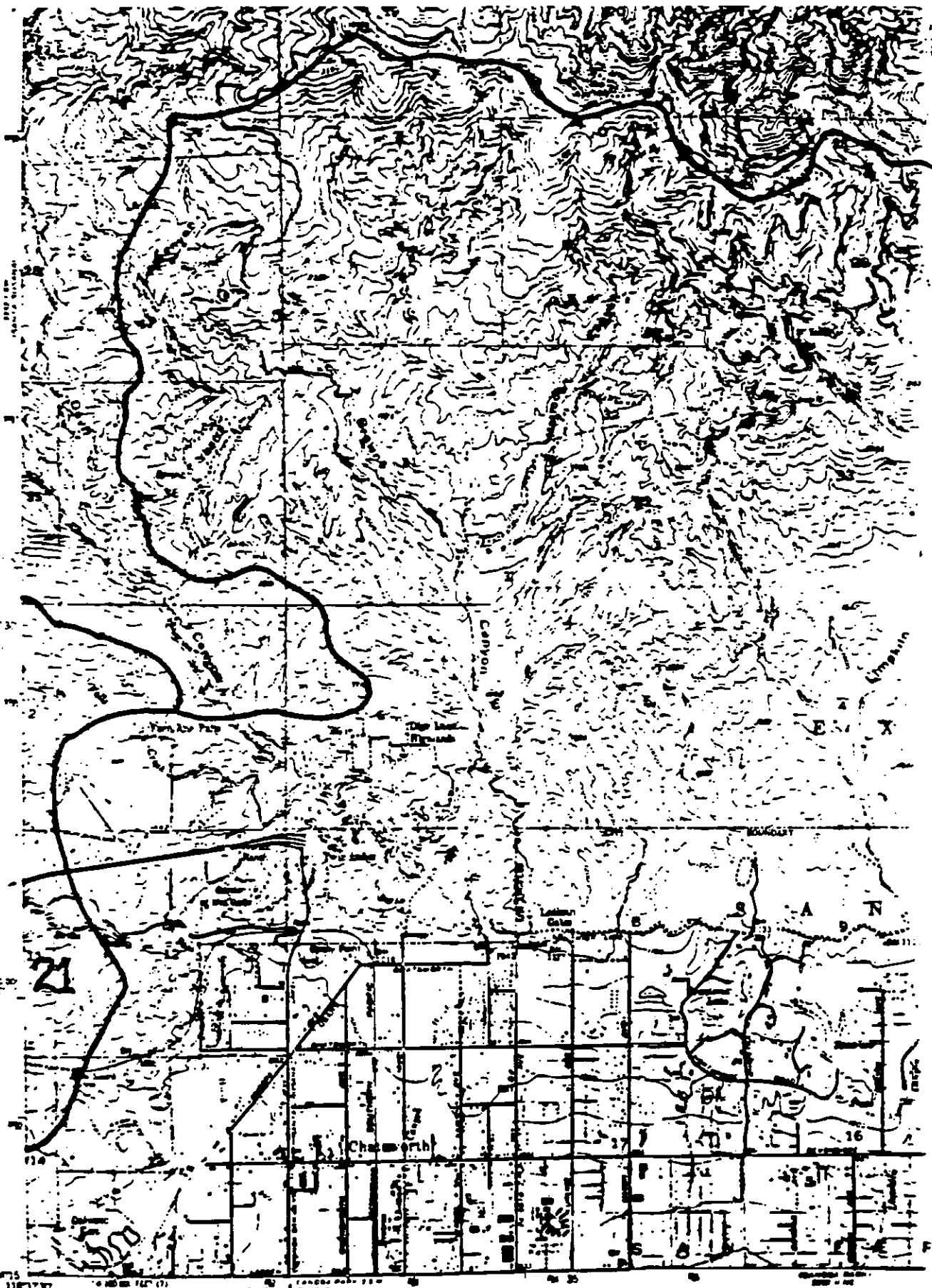
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 U.S. GEOLOGICAL SURVEY DENVER COLORADO 80275 OR WASHINGTON D.C. 20540

ROAD CLASSIFICATION **41**

Highway Light
 Impaved Unimpaved
 State Road

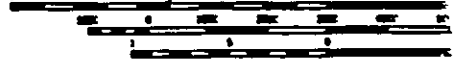
SANTA SUSANA CALIF
 SW 1/4 SANTA SUSANA 12 QUADRANGLE
 N3412-W11875-12





Map made and published by the Geological Survey
 Control by USGS USCAGS Los Angeles Co and Los Angeles City
 Topography from aerial photographs by photogrammetric methods and
 by plane table surveys 1924-1926 Aerial photographs taken 1947
 Field work 1952
 Polyconic projection 1927 North American datum
 10 000 feet grid based on California coordinate system, zones 5 and 7
 Dotted and thin lines indicate approximate locations
 Dotted and thin lines established by private survey
 Uncolored elevations are shown in brown

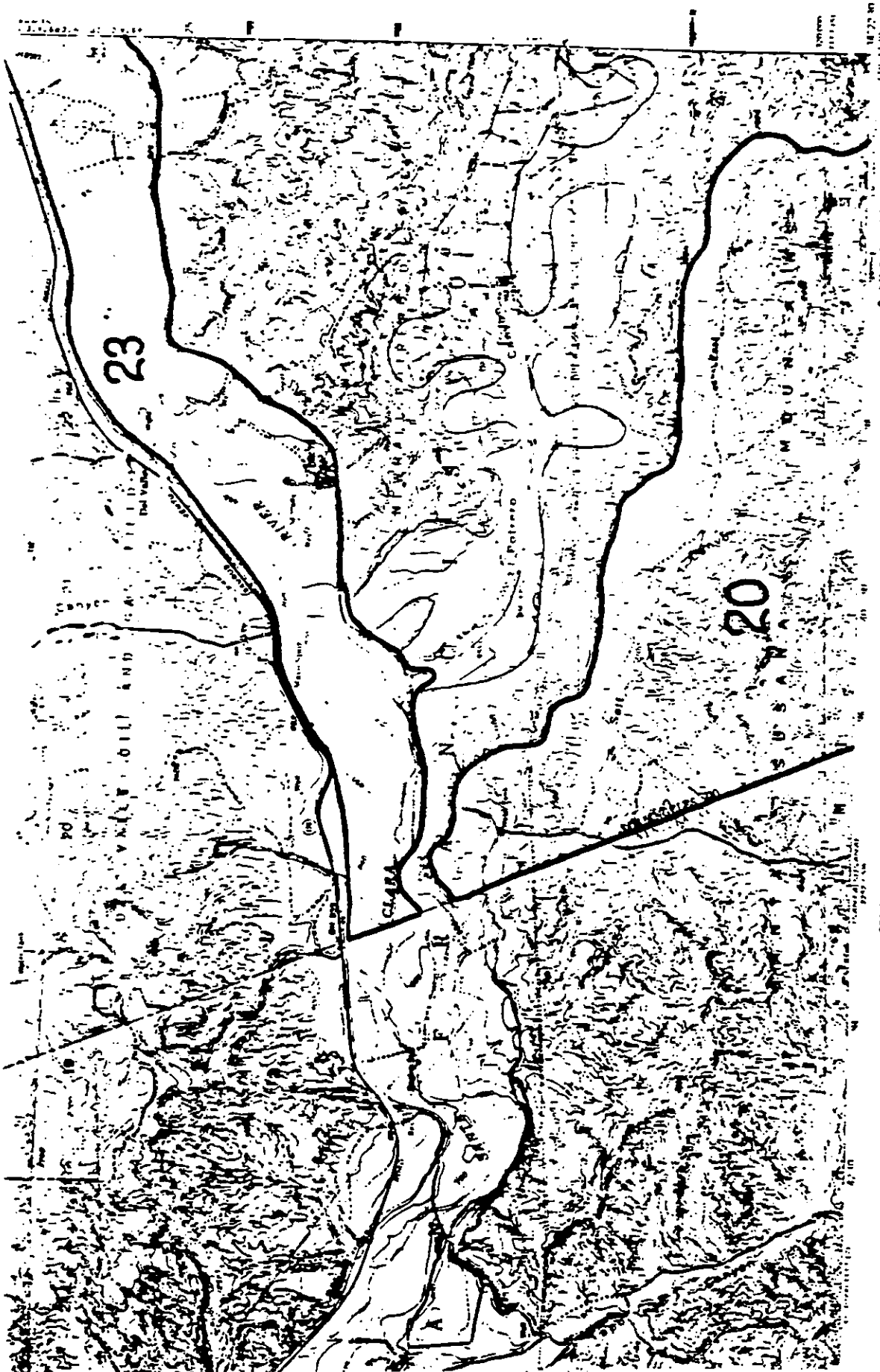
SCALE 1:24 000



CONTOUR INTERVAL 25 FEET
 DOTTED LINES REPRESENT 5 FOOT CONTOURS
 DATUM IS MEAN SEA LEVEL

THIS MAP COMPLETES THE NATIONAL MAP ACTUAL

42



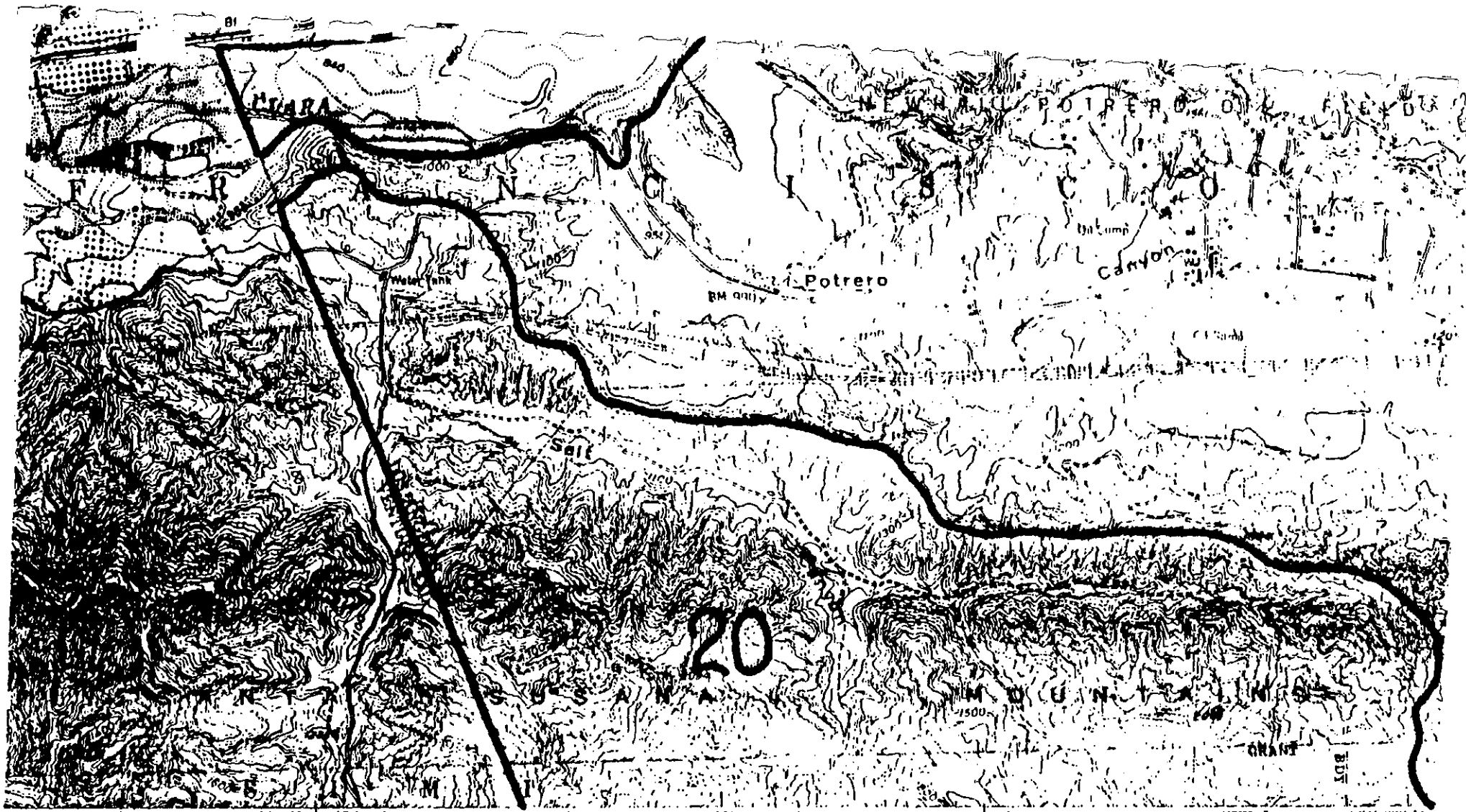
ROAD CLASSIFICATION
 Heavy duty ——— Light duty ———
 Medium duty ——— Unimproved dirt ———
 () Inter-lake Route

SCALE 1:24,000
 0 100 200 300 400 500 600 700 800 900 1000
 FEET

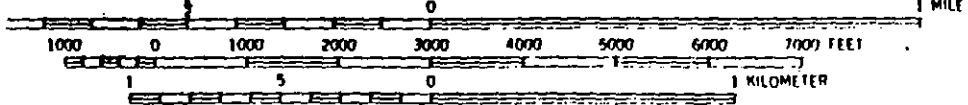
CONTOUR INTERVAL 25 FEET
 UNITED STATES GEOLOGICAL SURVEY
 DISTRICT OFFICE, DENVER, COLORADO 80225

THIS MAP COMPARES WITH NATIONAL MAP ACTUALLY STAMPEDED
 FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D.C. 20549
 A FURTHER INFORMATION CONSPIRACY MAP...

VAL VERDE, CALIF.
 1:24,000, N 1101-1-77



SCALE 1:24000



CONTOUR INTERVAL 25 FEET
 DOTTED LINES REPRESENT 5 FOOT CONTOURS
 DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D. C. 20242
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

- Heavy duty. Light.
- Medium duty. Unim.
- Interstate Route State



QUADRANGLE LOCATION

VAL VERE
 NW/4 SANTA SUSAN
 N3422.5-W

19
 PHOTOREY
 AMS 2292 I NW

Area # 21

Name: Santa Susana Pass

Quadrangles: Santa Susana, Oat Mountain

Class 1 (2,3,4,5,7)

Resource Description: Hemizonia minthornii, the Santa Susana tarweed, is known only from the Santa Susana Pass. For this reason it has been placed on the federal endangered species list. Six populations have been recorded on these rocky chaparral covered hillsides, four of them in Los Angeles County.

In addition to supporting this endangered species, the Santa Susana Pass is an important wildlife migration route. As urbanization continues in the San Fernando and Simi Valleys, the Simi Hills and Santa Susana Mountains are becoming isolated from each other. The pass however, remains in a relatively natural state and serves as a corridor for gene flow and species movement.

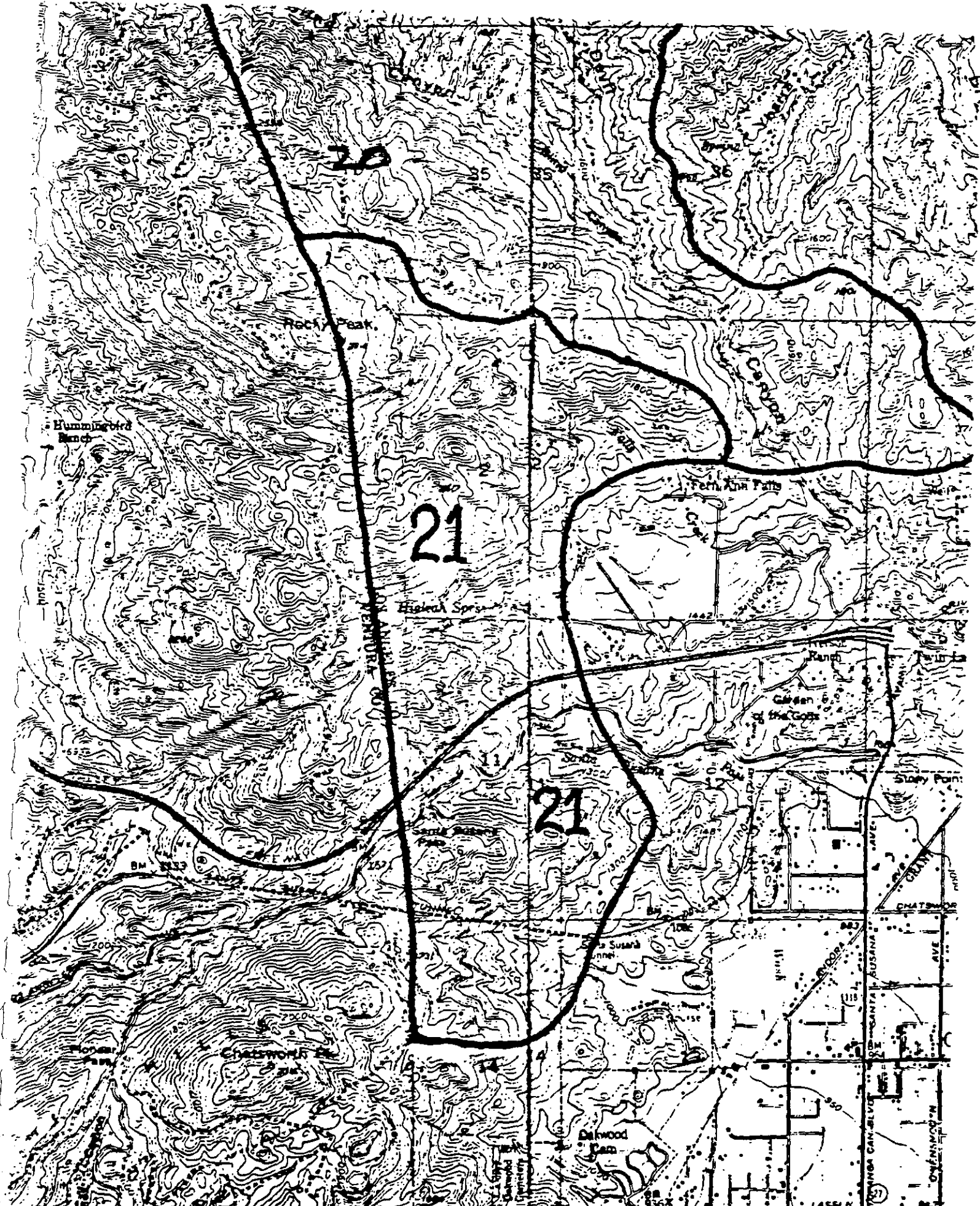
Status: Santa Susana Pass is in relatively good condition, the only major modifications being Highway 118, Los Angeles Ave., and the Santa Susana Tunnel of the Southern Pacific Railroad.

Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: Due to the presence of Hemizonia minthornii and the efforts of the California Natural Areas Coordinating Council project, several competent biologists have surveyed the area.

Buffer Zone Requirement: None, in the County of Los Angeles. Efforts should be made to protect the western side of the pass in Ventura County.

Compatible Uses: Very low intensity recreational uses are compatible with the resources of the area.



(7) 1282 INTERIOR-GEOLOGICAL SURVEY WASHINGTON D.C. - 1918 118° 30' 14 100,000 FEET (7) 352 CAROGA PARK
 LAKESIDE PARK 2.2 MI. 249 3500000 E. R. 17 W R. 42
 by the Geological Survey

Area # 22

Name: Santa Fe Dam Floodplain

Quadrangle(s): Azusa, Baldwin Park

Class 3 (5,7)

Resource Description: The floodplain behind Santa Fe Dam supports one of the last examples of a vegetative type that was once commonly found on the numerous river outwashes of the Los Angeles Basin. The arroyo community found here is composed of scattered shrubs that have become adapted to the rugged shifting substrate. The community has suffered heavy losses through flood control projects and urbanization, making this area increasingly important as a specimen of a once common community. Due to its geographical situation, the value of this area is even greater than might otherwise be expected. It has an undeveloped, unobstructed corridor of natural vegetation connecting it to the San Gabriel Mountains. This allows wildlife to migrate between the areas. As a result, wildlife communities are in good condition, and represent a full complement of species characteristic of this community type. This includes golden eagle and white-tailed kite, both of which are fully protected by the California Department of Fish and Game. Many of these species are becoming increasingly difficult to find near the Los Angeles metropolitan area.

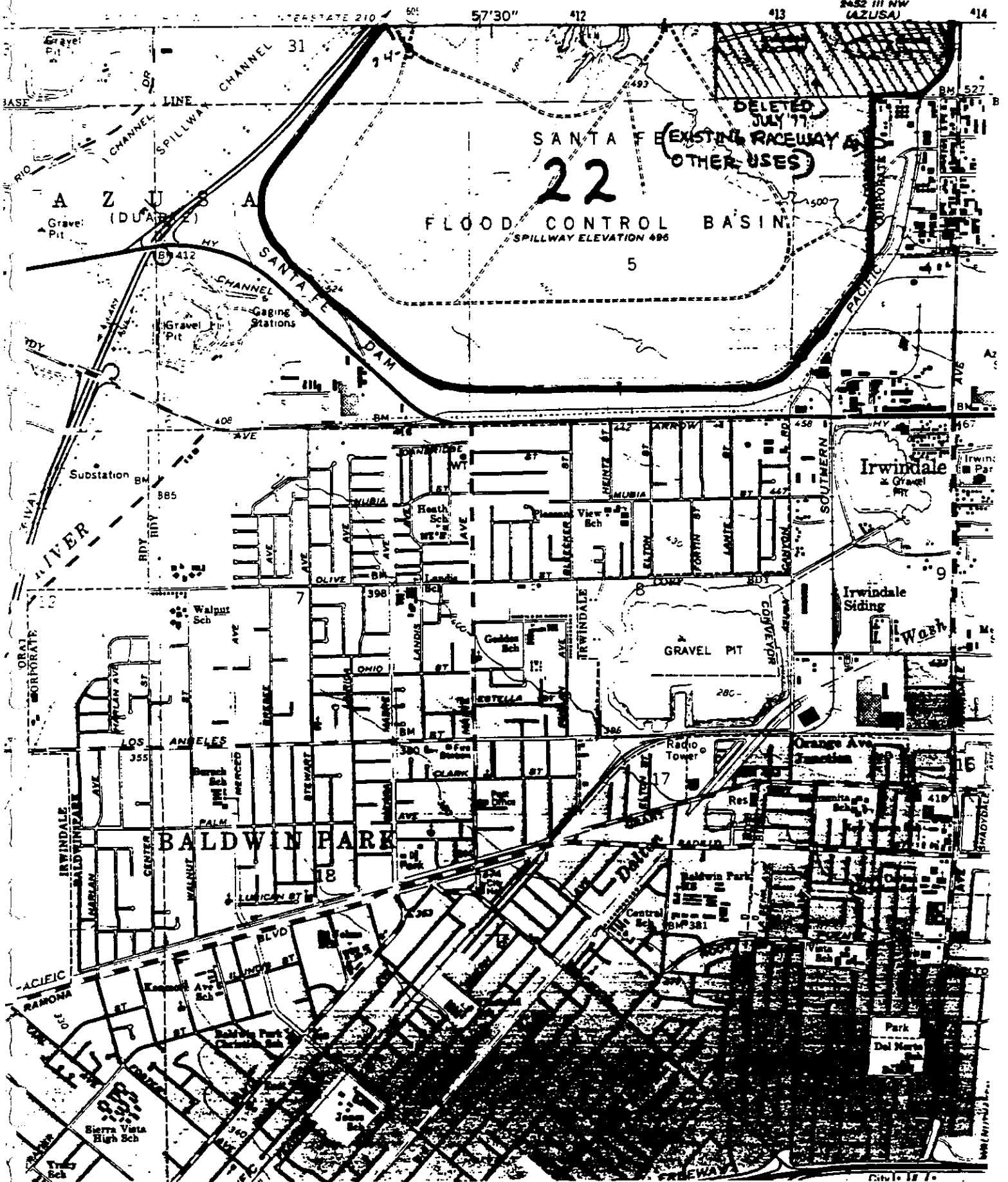
Status: The area is primarily owned by the Los Angeles County Flood Control District. Portions of the area are currently being used as a quarry site and a raceway. It is crossed by several major roads. The remaining natural vegetation is in good condition.

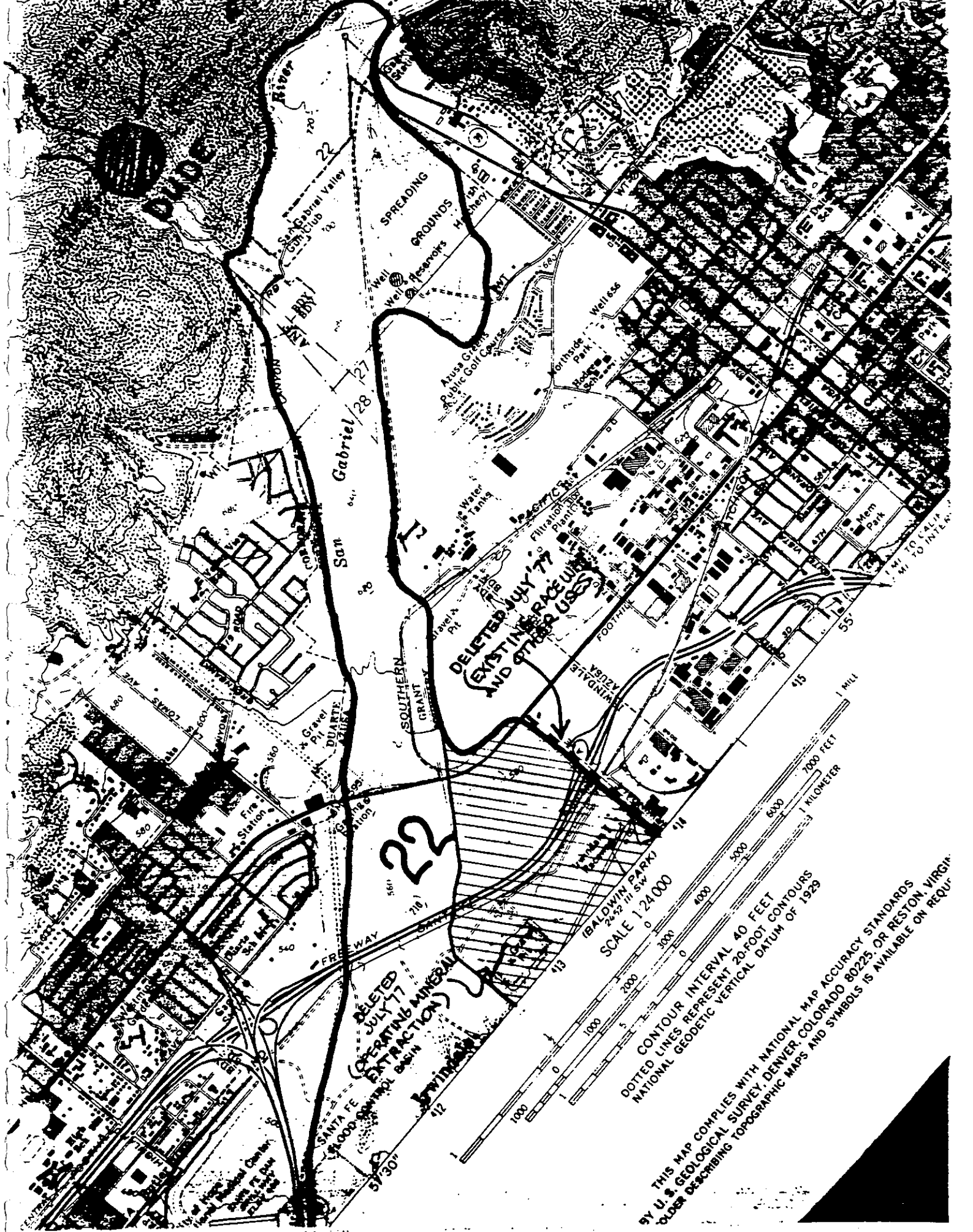
Information Source(s): Survey/Interview, CNACC/CNPS.

Nature of Information: Due to the efforts of the California Natural Area Coordinating Council project members, and the preparation of the Army Corps of Engineers' Master Plan for the Santa Fe Dam Recreational Area, several competent biologists have visited the area.

Buffer Zone Requirement: None. Recommended boundaries will protect the resource.

Compatible Uses: In areas which still support natural vegetation, low intensity recreational uses are compatible with the resources present.





Area # 23

Name: Santa Clara River

Quadrangle(s): Val Verde, Newhall, Acton, Agua Dulce, Mint Canyon.

Class 1 (2,3,4,5,7)

Resource Description: Soledad Canyon possesses several populations of the unarmored threespine stickleback (Gasterosteus aculeatus williamsoni). This species was formerly found in the Los Angeles, San Gabriel, and Santa Ana Rivers, but is now restricted to the Santa Clara River and San Francisquito Canyon. For these reasons and due to threats to its habitat, it has been placed on the state and federal endangered species lists. In the Santa Clara River, the unarmored threespine stickleback is limited to permanent streams and pools from the mouth of San Francisquito Canyon to the Ventura--Los Angeles County line and Lang to Arrastre Canyon.

The reason the unarmored threespine stickleback has been able to survive in the Santa Clara River is that its habitat has not been disturbed. Thus the Santa Clara River is also unique in being the only major river draining the San Gabriel Mountains that has not been channelized. The vegetation consists of fresh water marsh, coastal sage scrub, oak woodland, and riparian woodland communities. This broad wash association is unlike that found in steeper mountain canyons, and is exceedingly difficult to find in the Los Angeles basin. The trees serve as habitat for many raptorial bird species. The red--shouldered hawk is restricted to this community, and is becoming increasingly uncommon in southern California due to habitat destruction. The National Audubon Society and others have expressed concern for its welfare.

The primary concern for the survival of the unarmored threespine stickleback is the loss of suitable habitat. It requires clean, free--flowing perennial streams and ponds surrounded by native vegetation. Intermittent areas connecting perennial streams are also important during the wet season when surface water is present. The natural stream course and vegetation slow heavy run--off during the rainy season, decrease destruction and siltation of habitat in downstream areas, and provide habitat for migration between populations.

Status: The majority of the Santa Clara River bottom is outside the Angeles National Forest. Flood control measures in the streambed have been minimal. However, much of the watershed has been developed, portions of it quite heavily.

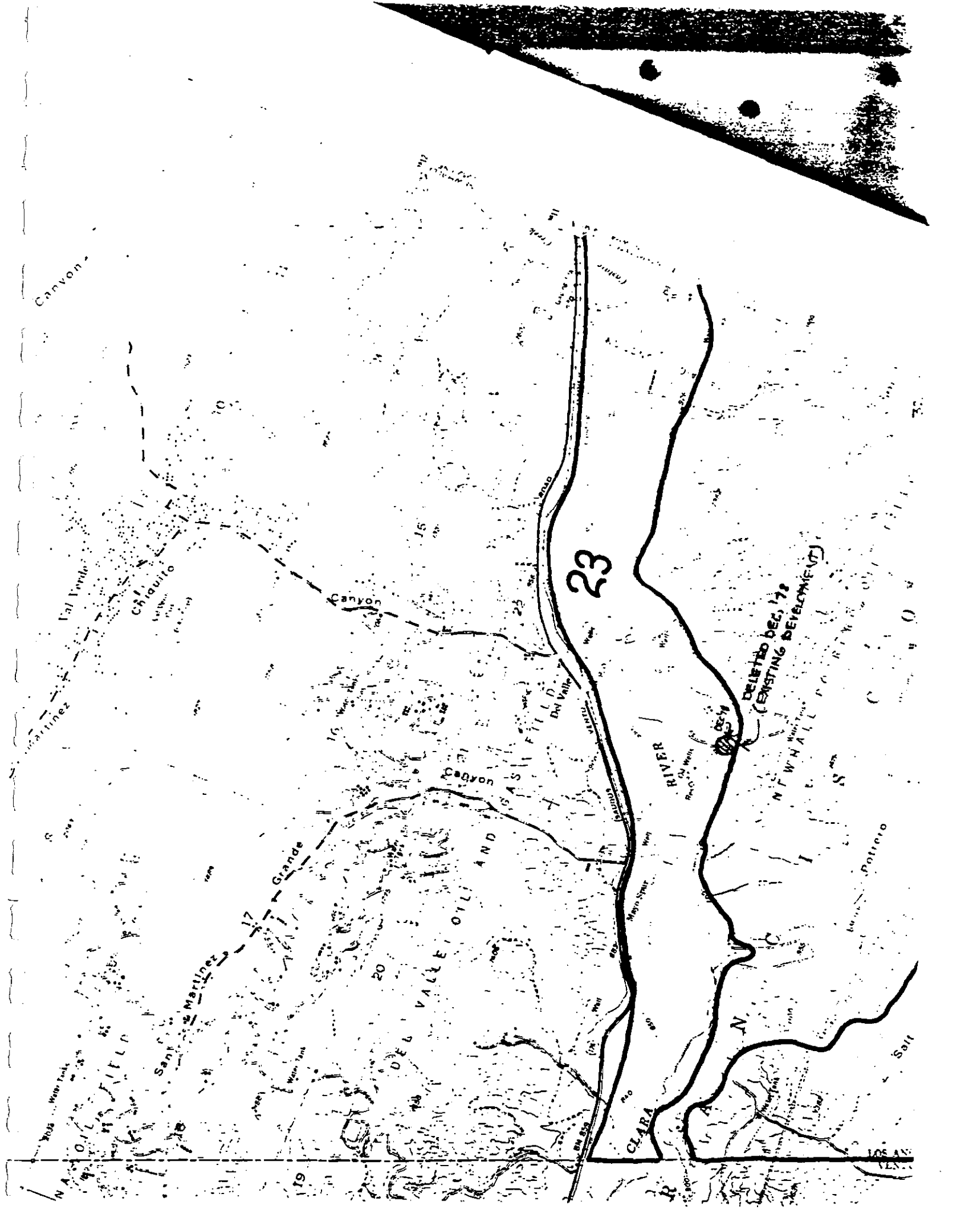
Information Source(s): Survey/Interview, Literature, ERC/UCLA.

Area # 23 continued

Nature of Information: Due to its status as an endangered species and the uniqueness of the Santa Clara River vegetation, the habitat has been extensively analyzed.

Buffer Zone Requirement: The entire watershed of the Santa Clara River should be considered in planning as a buffer zone potentially affecting the Santa Clara River, its vegetation, and the unarmored threespine stickleback. No developments should be allowed that will change natural drainage patterns or increase run-off and water pollution. The impacts of development must be analyzed by their cumulative, not small piecemeal, effects on the habitat.

Compatible Uses: Very low intensity recreational uses are compatible with the resources over much of the area. However, use of the areas between the mouth of San Francisquito Canyon and the county line, and east of Lang support populations of the endangered unarmored threespine stickleback, and should be limited to regulated scientific study. It is desirable that contact be made with this species' recovery team to keep abreast of current programs and changes in its status.



CANYON

Chiquito

CANYON

23

DELETED DEC. 1982
(EXISTING DEVELOPMENT)

CANYON

GRANDE

SANTO MARTINEZ

DEL VALLE OIL AND GAS FIELD

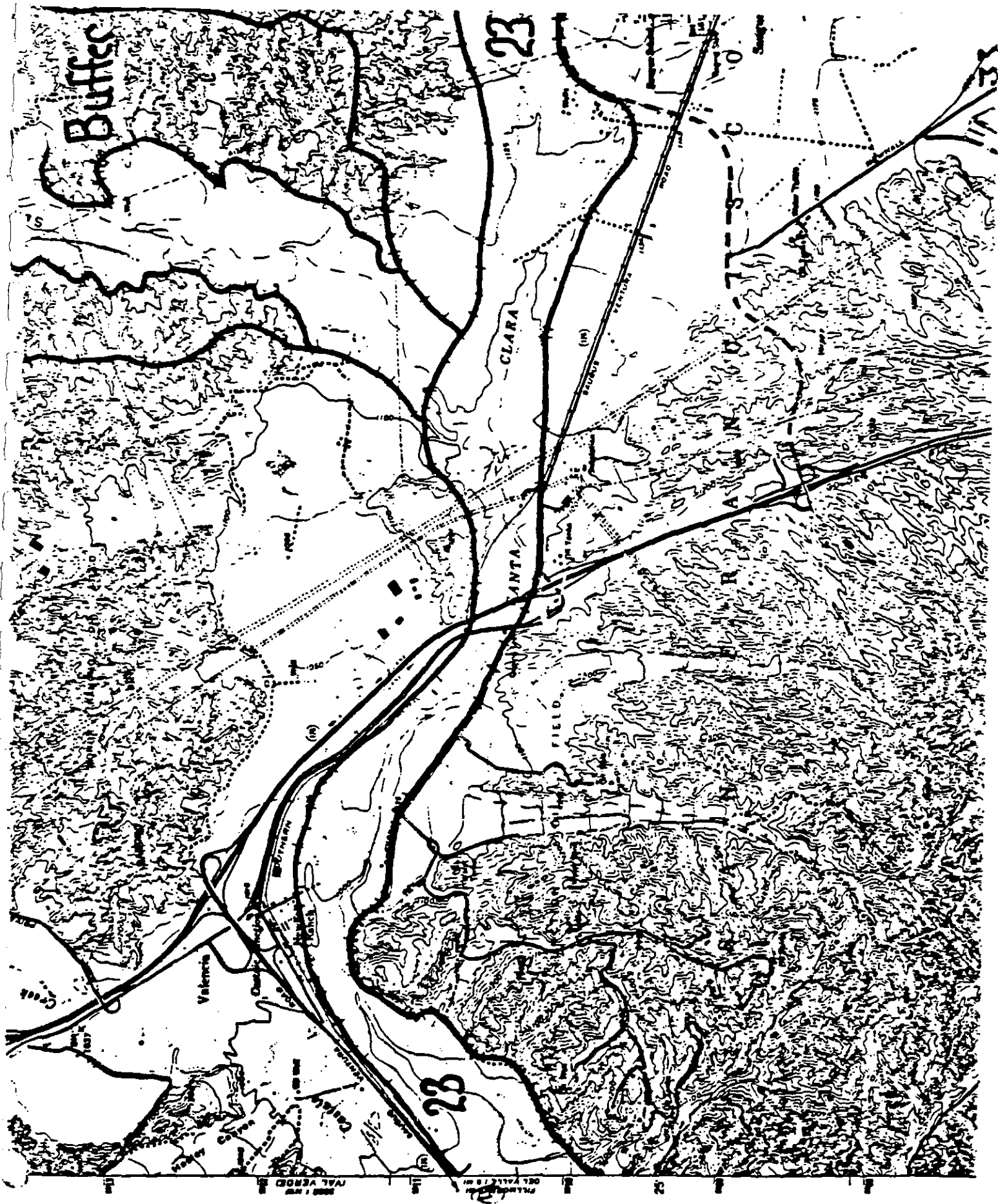
CLARA

RIVER

POTRERO

SALT

LOS ANGELES



Buffet

23

CLARA

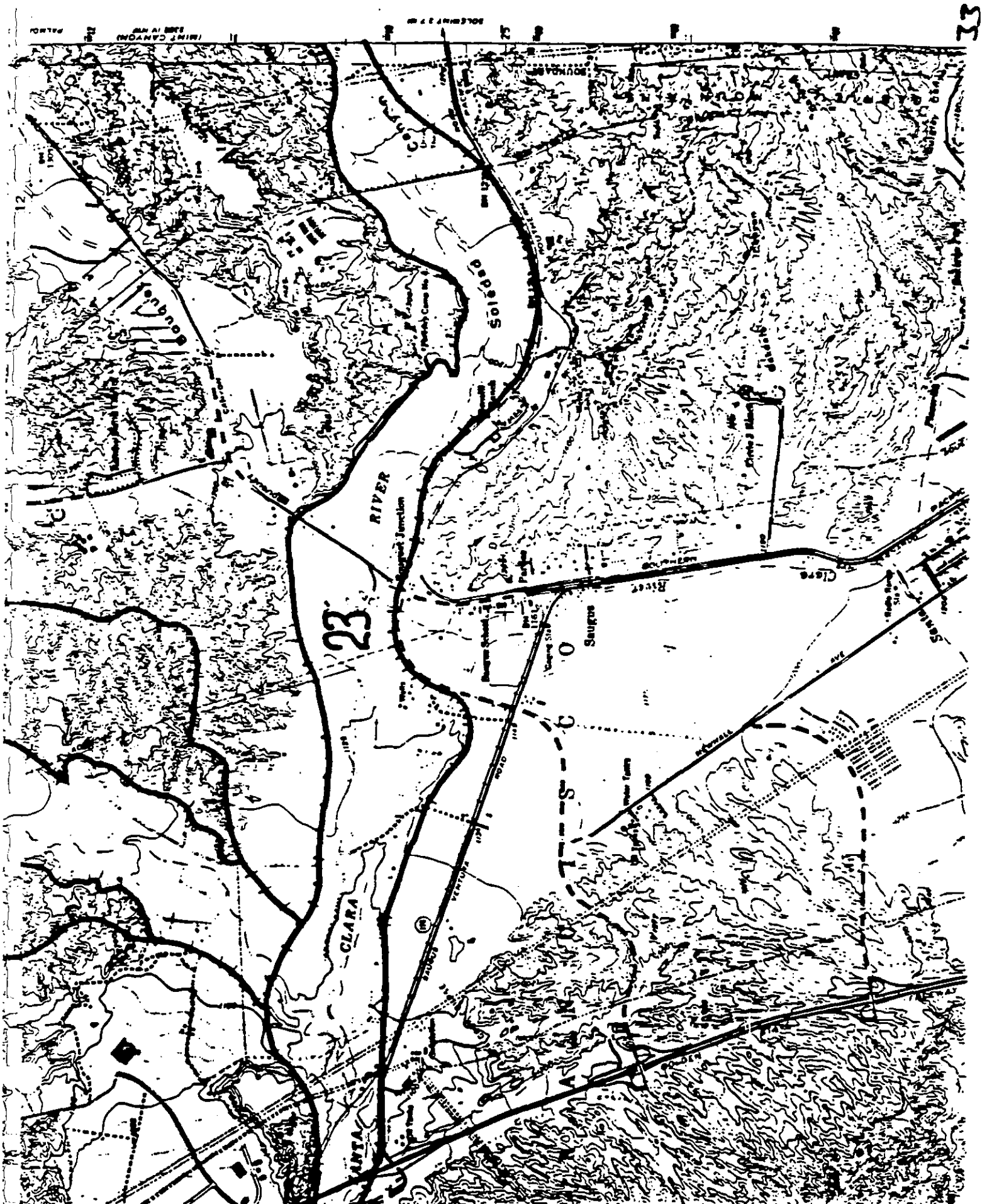
SANTA ANA

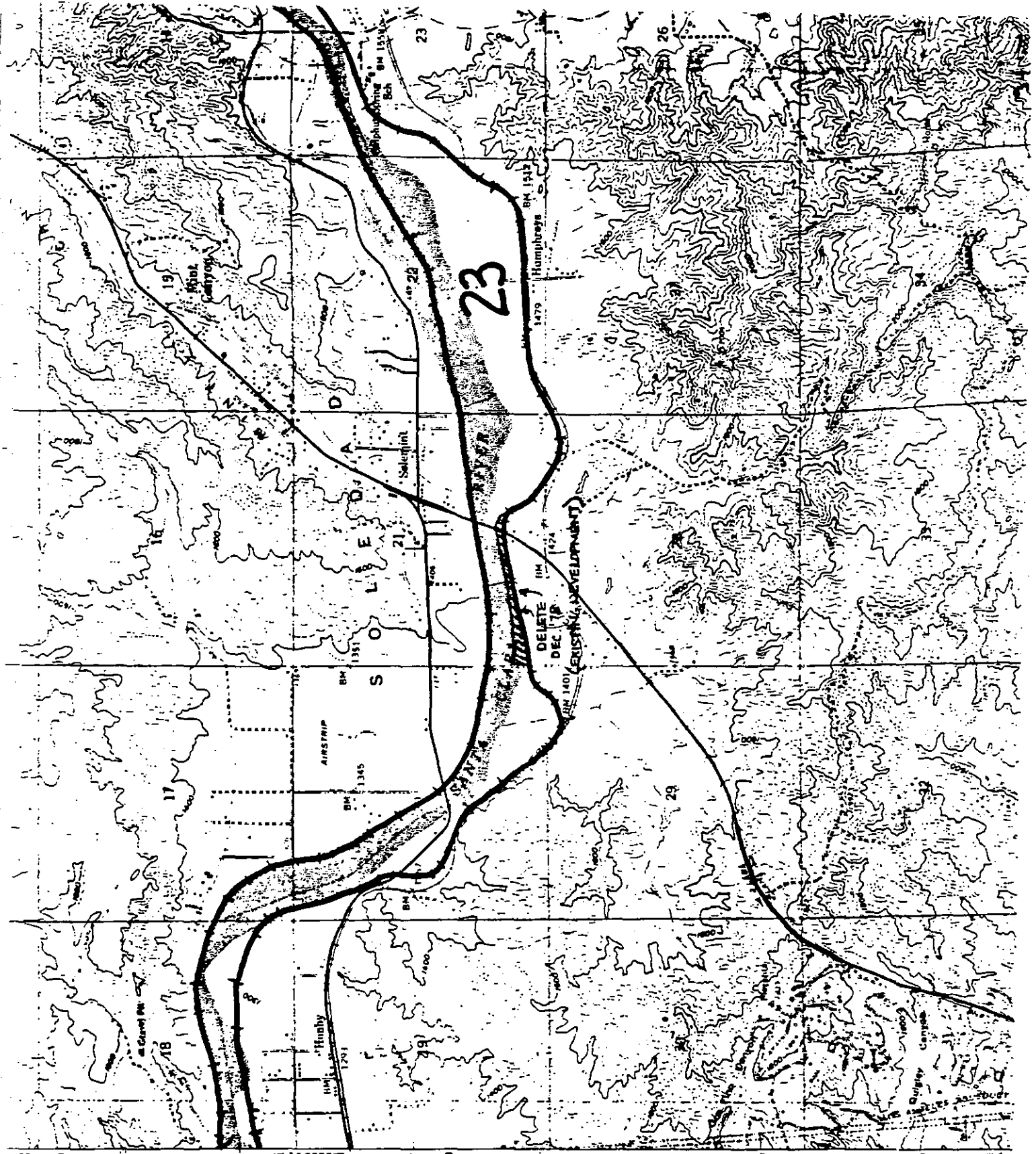
FIELD

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PRADO DEL VALLE 10 MI. VAL VERDE

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AIRSTRIP

BM 1345

Hinby

BM 1291

DELETED
DEC 1978
(EXISTING DEVELOPMENT)

BM 1400

BM 1424

Humbreys

BM 1412

BM 1479

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SALGUS 0.5 MI

0.5

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3

MI

NE WALL 0.5 MI

SALGUS 0.5 MI

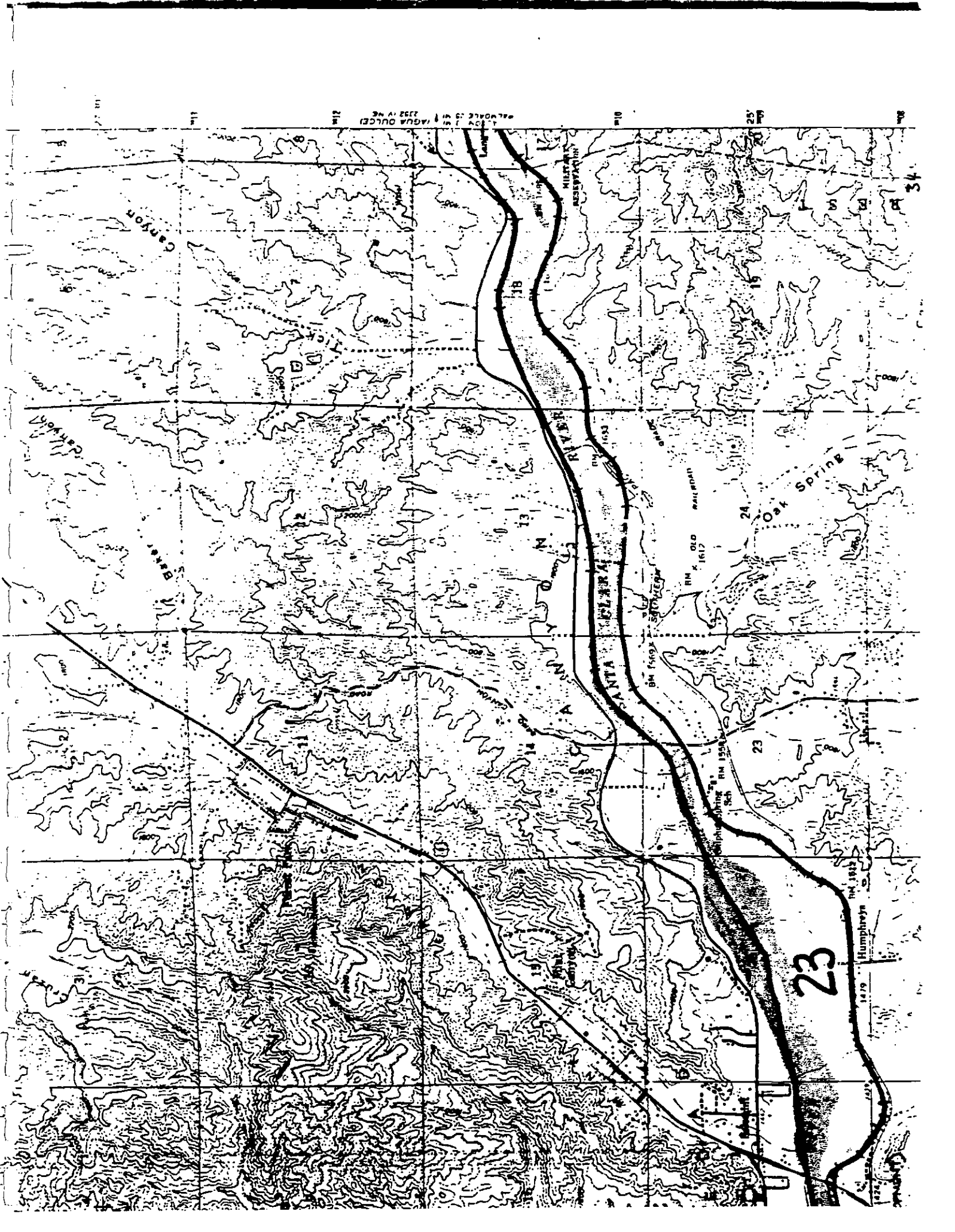
0.5

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MI



1:50,000 1:50,000 1:50,000

23

Humboldt

Oak Spring

SANTA ANA RIVER

SANTA ANA ISLAND

SANTA ANA CANYON

SANTA ANA CANYON

SANTA ANA CANYON

SANTA ANA CANYON

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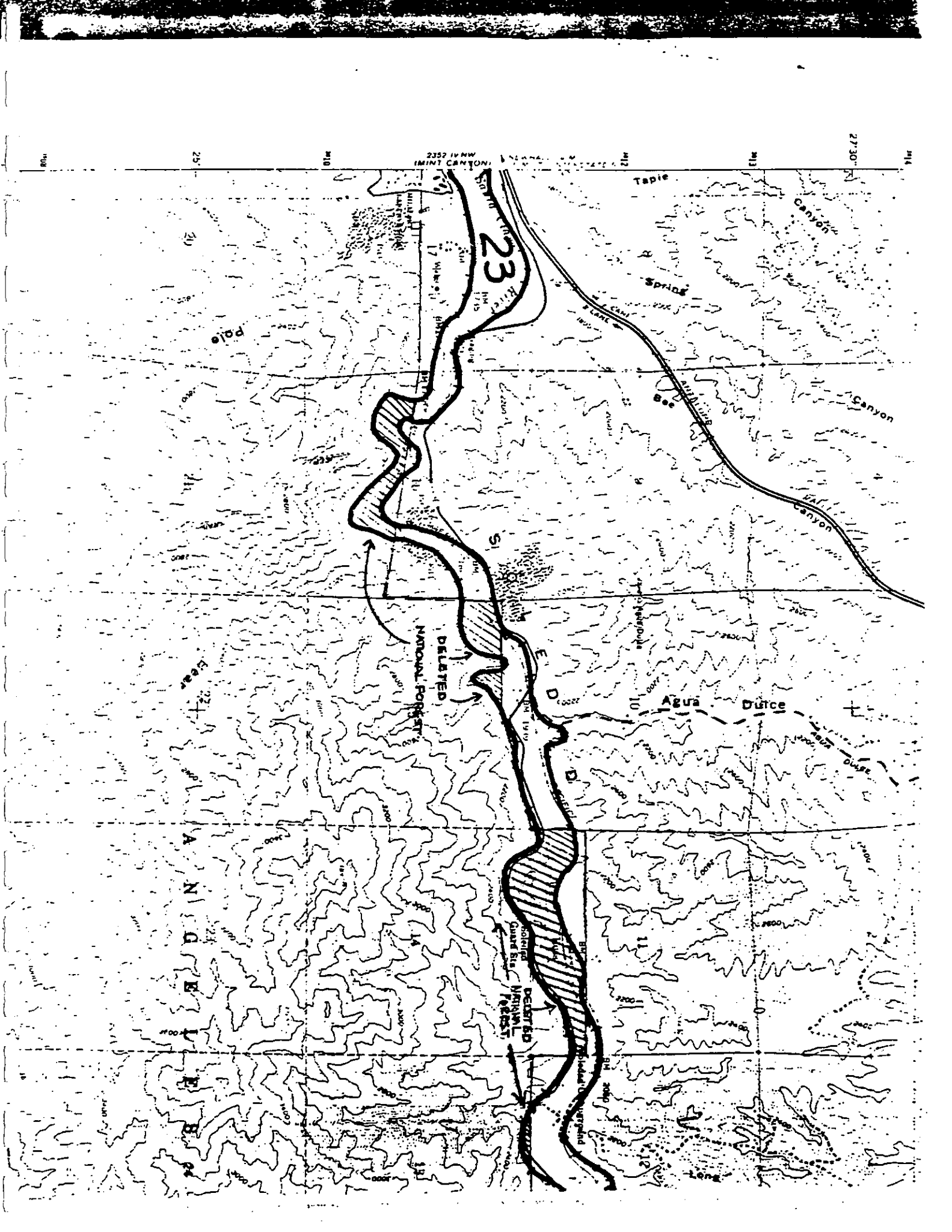
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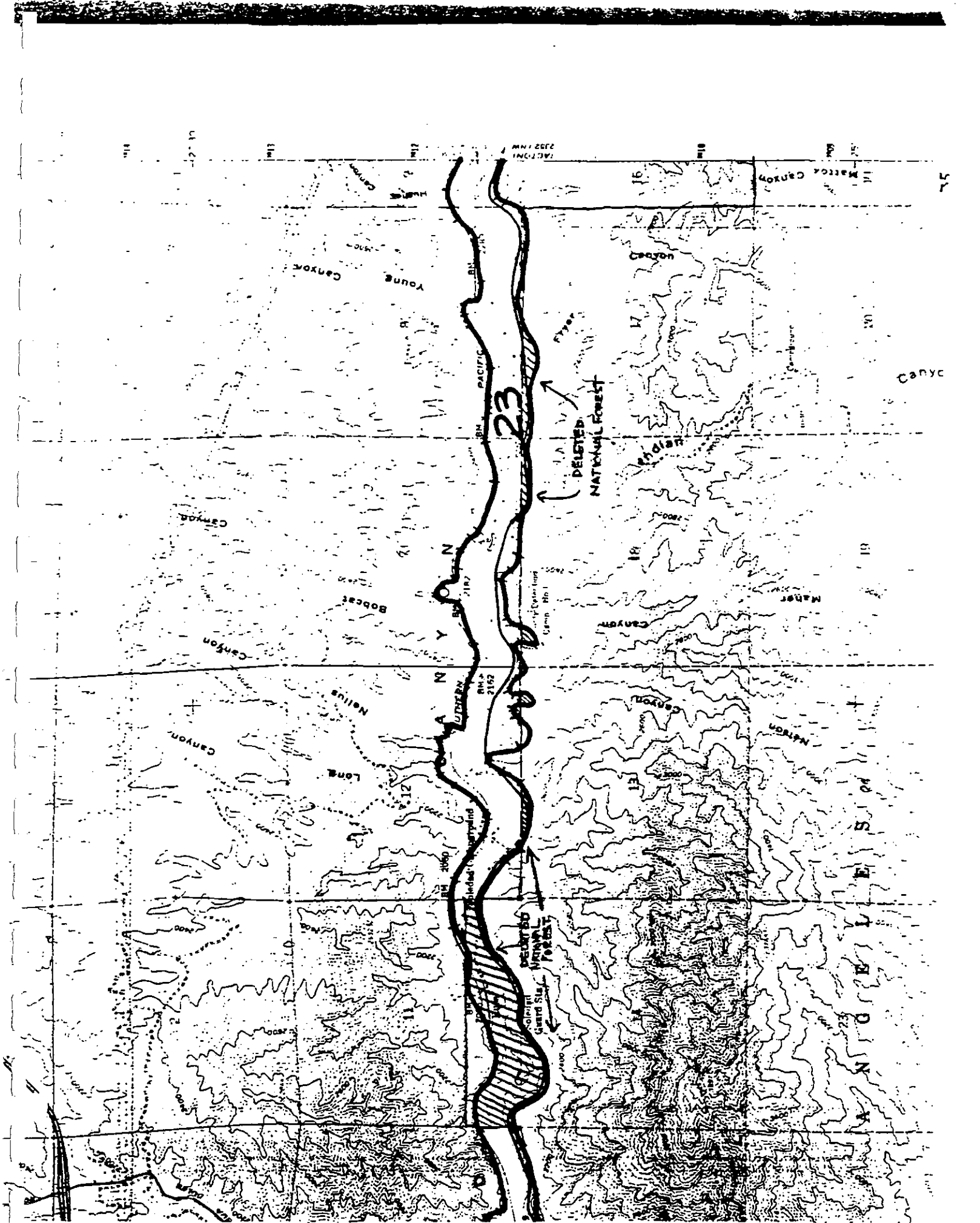
CANYON

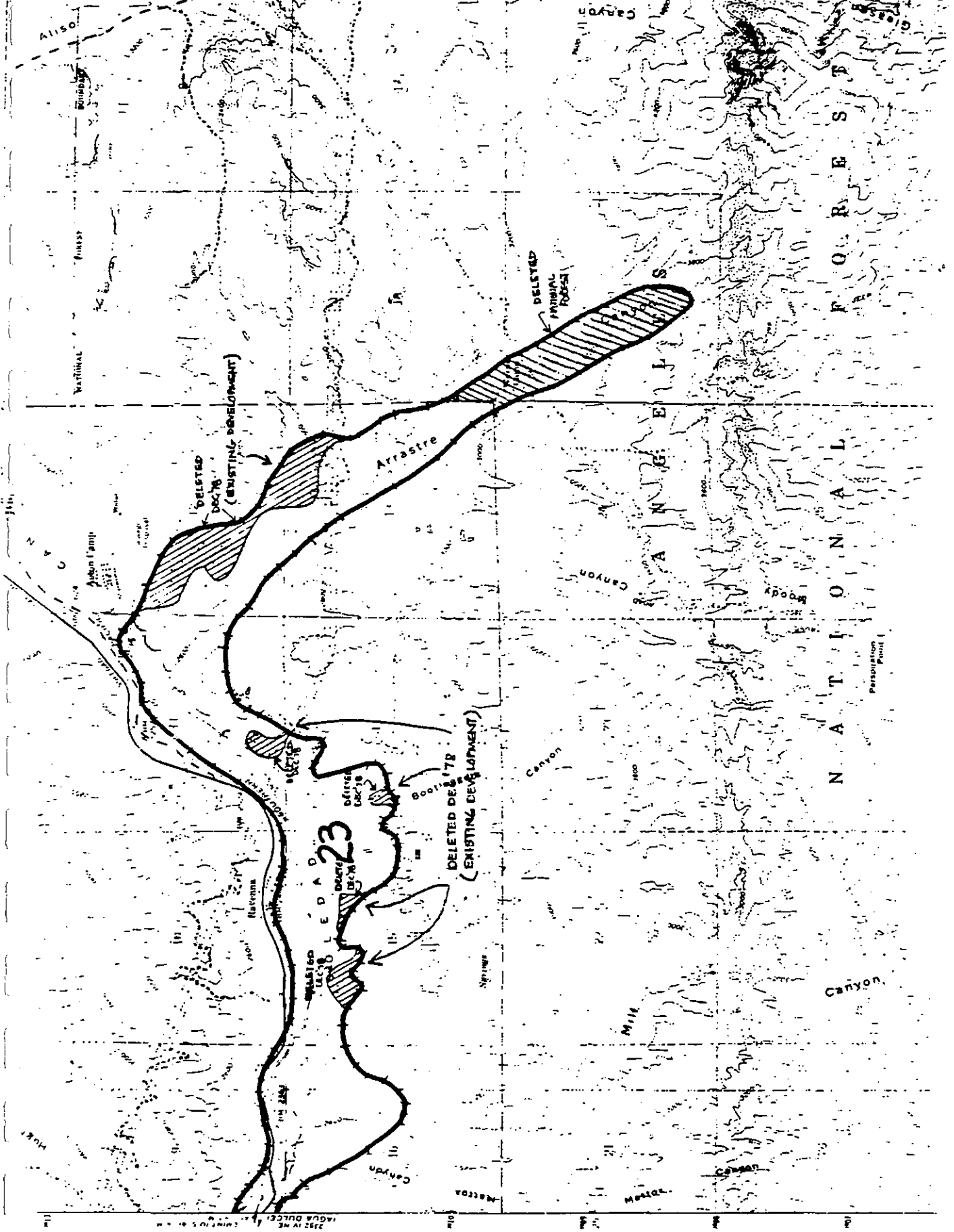
CANYON

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CANYON







Area # 24

Name: Tujunga Valley/Hansen Dam

Quadrangle(s): Van Nuys, San Fernando, Sunland

Class 1 (3,5,7)

Resource Description: The Tujunga Canyon/ Hansen Dam area possesses several important features. The floodplain behind the dam supports one of the last examples of the open coastal sage scrub vegetation that was once found in the numerous arroyos of the Los Angeles basin. Portions of the river bottom have surface moisture, and support small pockets of fresh water marsh, another limited resource in Los Angeles County. The remainder of the arroyo and surrounding hillsides are dry, and support several species of plants that are otherwise found only on the desert slopes of the San Gabriel Mountains. Populations of Nevin's barberry (Berberis nevinii), and slender--horned chorizanthe (Chorizanthe leptoceras) have been found in the wash. Both species are extremely limited in distribution and have been placed on the federal rare and endangered species list.

The area southwest of the dam is used as a spreading ground. This has created several fresh water marsh areas that are used by marsh birds, migratory waterfowl, and shore birds. The area is also valuable as a wildlife corridor. The vegetation in the Tujunga Valley runs nearly uninterrupted from the foot of the Verdugo Mountains well up into the San Gabriel Mountains.

Status: The area is controlled by the Los Angeles County Flood Control District, the Angeles National Forest, and numerous private owners. The arroyo behind the dam is crossed by several roads with one going up Big Tugunga Canyon. Commercial and residential developments abut the wash. The immediate watershed in the San Gabriel Mountains is under the jurisdiction of the National Forest Service, and is in good condition.

Information Source(s): Survey/Interview, Literature, ERC/UCLA.

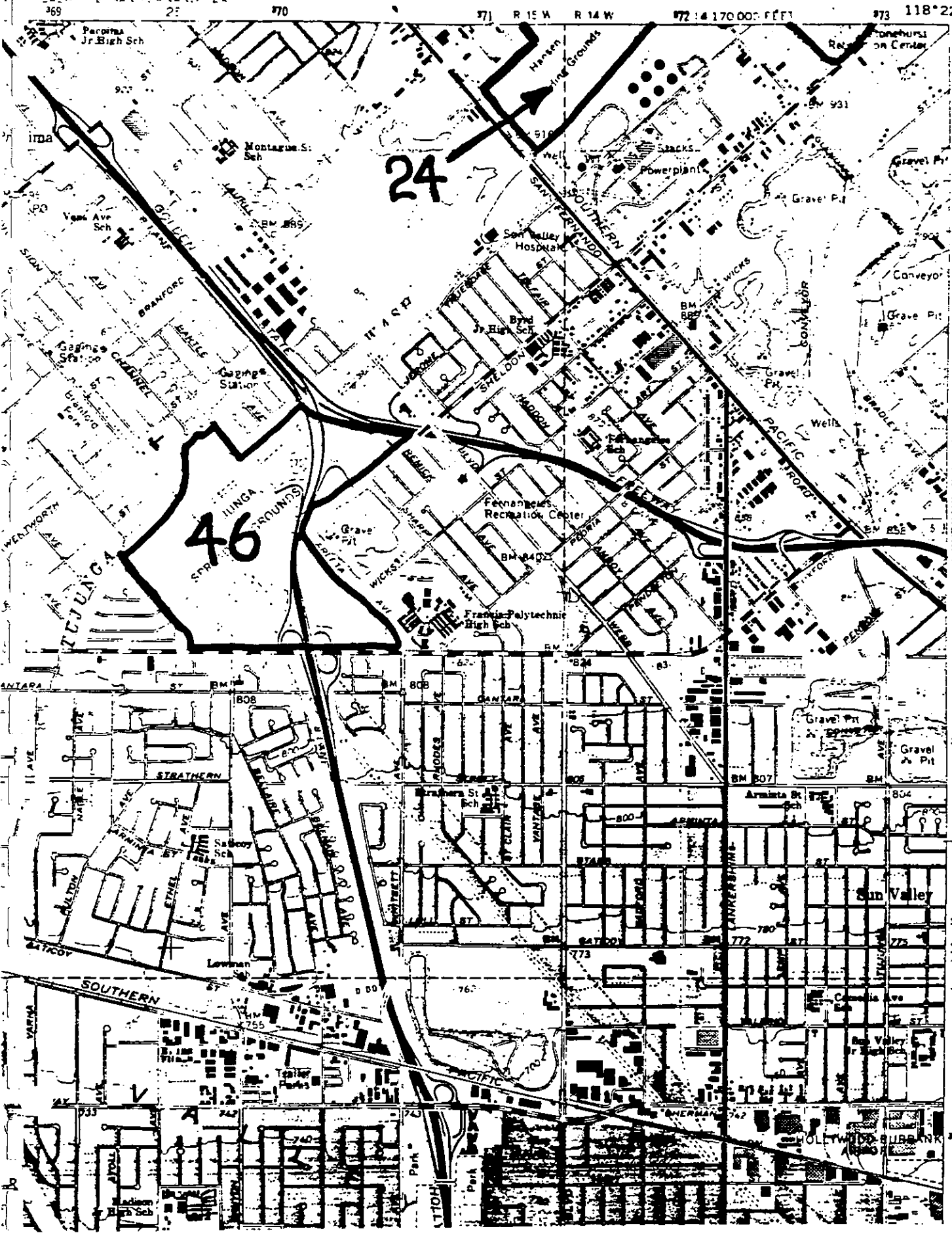
Nature of Information: The area has been recognized for its importance, and is used by the Audubon Society and local universities and colleges as a sample of a rapidly disappearing habitat type. As a result, the resources of the area are well known.

Buffer Zone Requirement: Development should not occur in the Tujunga Canyon watershed that will disrupt the flow of water which supports the arroyo and fresh water marsh vegetation.

Compatible Uses: Low intensity recreational uses are compatible with the remaining natural habitat in the area. Development along the stream banks and in the upper watershed must be analyzed for their cumulative effects on erosion and water pollution, and not as each small individual project is proposed.

VAN NUYS QUADRANGLE
CALIFORNIA-LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

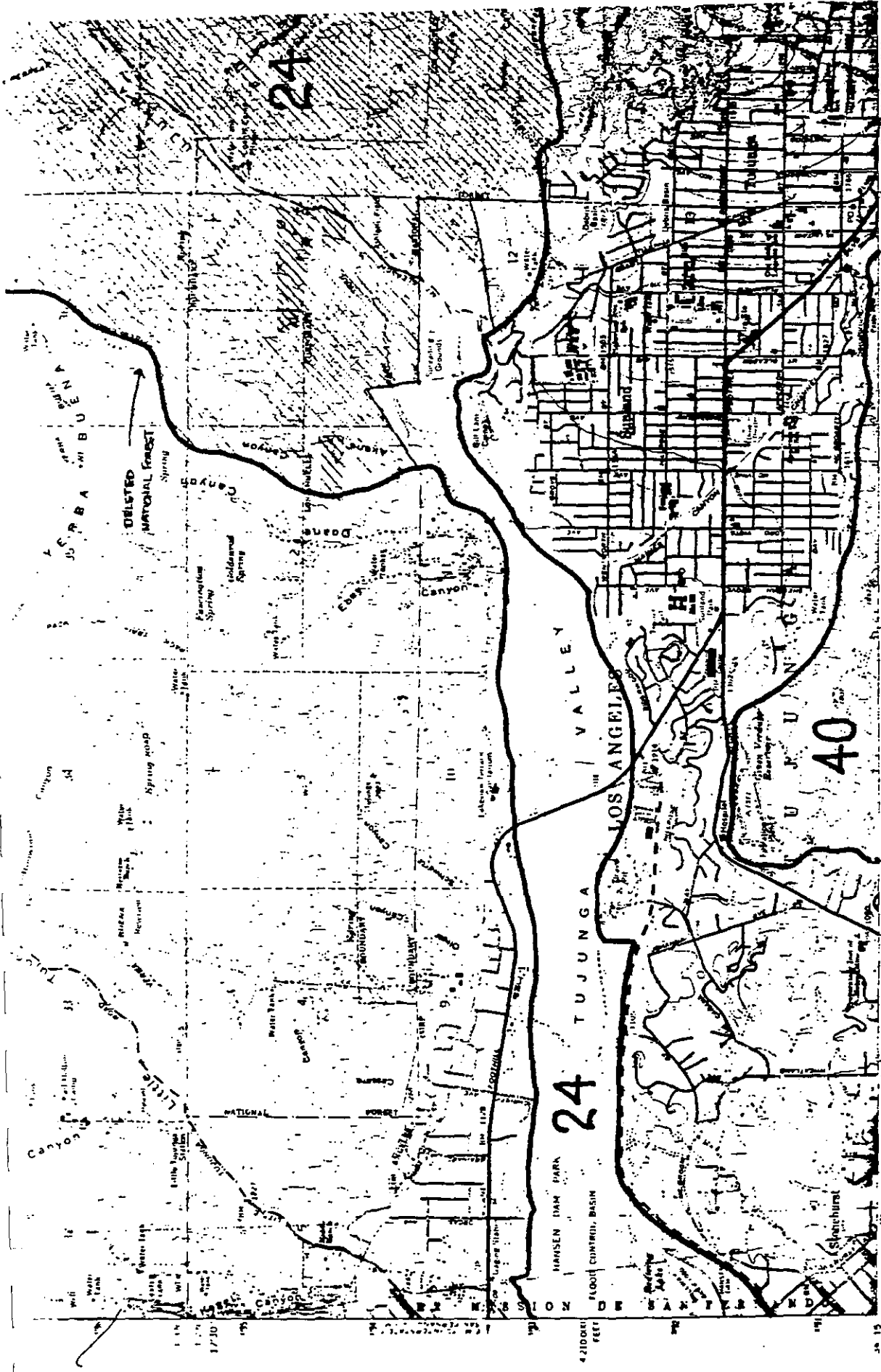
2319 IV
SUN, CA



VERTICAL SCALE 1:24,000
HORIZONTAL SCALE 1:24,000

12'30" T.2 N
T.1 N

3785



Mapped, edited, and published by the Geological Survey
 Control by 1945: USC 405 and Los Angeles, City and County
 Topography by photogrammetric methods from aerial
 photographs taken 1944. Field checked 1942.
 Superimposed map surveyed 1925-35, revised 1944.
 Population 1945: 1,027,000. National datum
 1911-1913 used and based on California coordinate system. Zone 1
 (and metric Universal Transverse Mercator grid).

SCALE 1:50,000



1:50,000
 1:50,000
 1:50,000

Area # 25

Name: San Dimas Canyon

Quadrangle(s): Glendora

Class 3 (4,5,7)

Resource Description: The wash at the mouth of San Dimas Canyon supports a good example of a lowland riparian community. This type of vegetation was once found along the smaller streams draining the San Gabriel Mountains and crossing the Los Angeles basin. Most of the remaining riparian communities in Los Angeles County are of the type found in the canyons of the San Gabriel Mountains, and surrounding hilly regions. The San Dimas wash is one of the last remaining areas that support the more open flatland riparian woodland habitat.

Riparian communities are extremely valuable wildlife habitats. Many birds require the trees or shrubs as nesting and perching sites. Large mammals use it as a migration corridor, and rest area, often using the shade to escape the sun. The habitat is moist and supports a large number of amphibians and invertebrate species. These species add greatly to the diversity and productivity of an area, but would not be able to survive there without the riparian community.

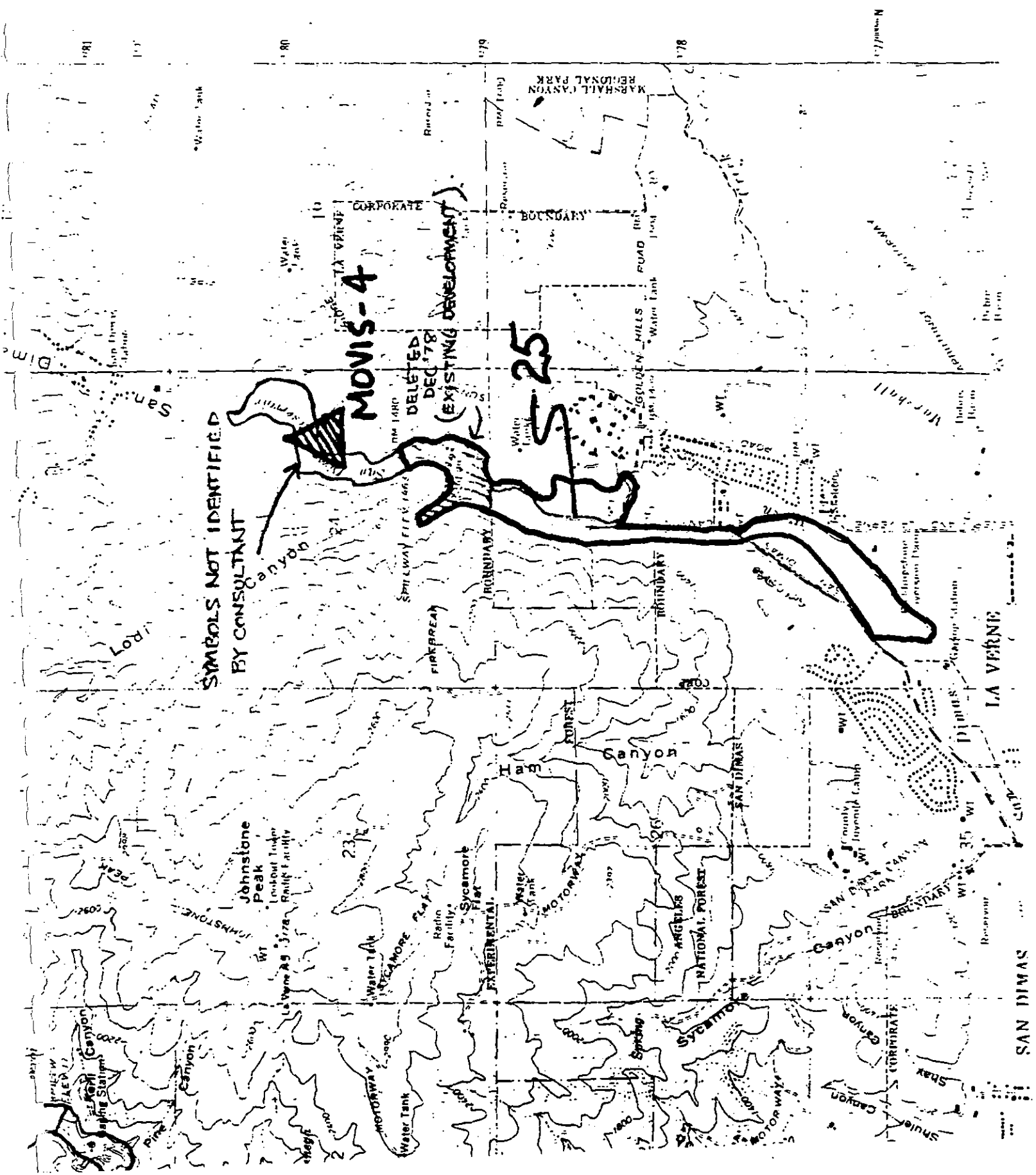
Status: The remaining vegetation in the wash is in good condition, although some impacts have been caused by human disturbances. Portions have been destroyed in the recent past in the course of grading by the Los Angeles County Flood Control District.

Information Source(s): Survey/Interview.

Nature of Information: The area is used for educational purposes by Pomona College, and for bird watching by the Audubon Society.

Buffer Zone Requirement: None. Resources will be protected by proposed boundaries.

Compatible Uses: Very low intensity recreational uses are compatible with the resources in the area.



SYMBOLS NOT IDENTIFIED BY CONSULTANT

MOVIS-4

S 25

DELETED DEC. 78 (EXISTING DEVELOPMENT)

CORPORATE BOUNDARY

BOUNDARY

LA VERNE

LA VERNE

SAN DIMAS

Johnstone Peak

Sycamore Flat

NATIONAL FOREST

SAN DIMAS

SAN DIMAS

SAN DIMAS

Johnstone Peak

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Area # 26

Name: San Antonio Canyon Mouth

Quadrangle(s): Mt. Baldy, Ontario

Class 3 (5,7)

Resource Description: The vegetation found at the mouth of San Antonio Canyon is the best example of arroyo or wash vegetation remaining in Los Angeles County. This area lies downstream from San Antonio Dam and has not been disturbed by flood control measures as have similar areas behind Hansen and Santa Fe Dams. The area is also different from the other two in that it is not confined to an arroyo or a wash, but is also found on the adjacent alluvial fan. This is the last area in Los Angeles County where this community has not been channelized and the surrounding fan developed.

The vegetation is a dry form of coastal sage scrub that has become adapted to a coarse substrate that often shifts during times of peak run-off. Many of the plants found here are desert forms that otherwise do not occur in the Los Angeles Basin. The vegetation is much denser and more stable on this alluvial fan and is a distinct situation from that found in the arroyos behind Santa Fe and Hansen Dams.

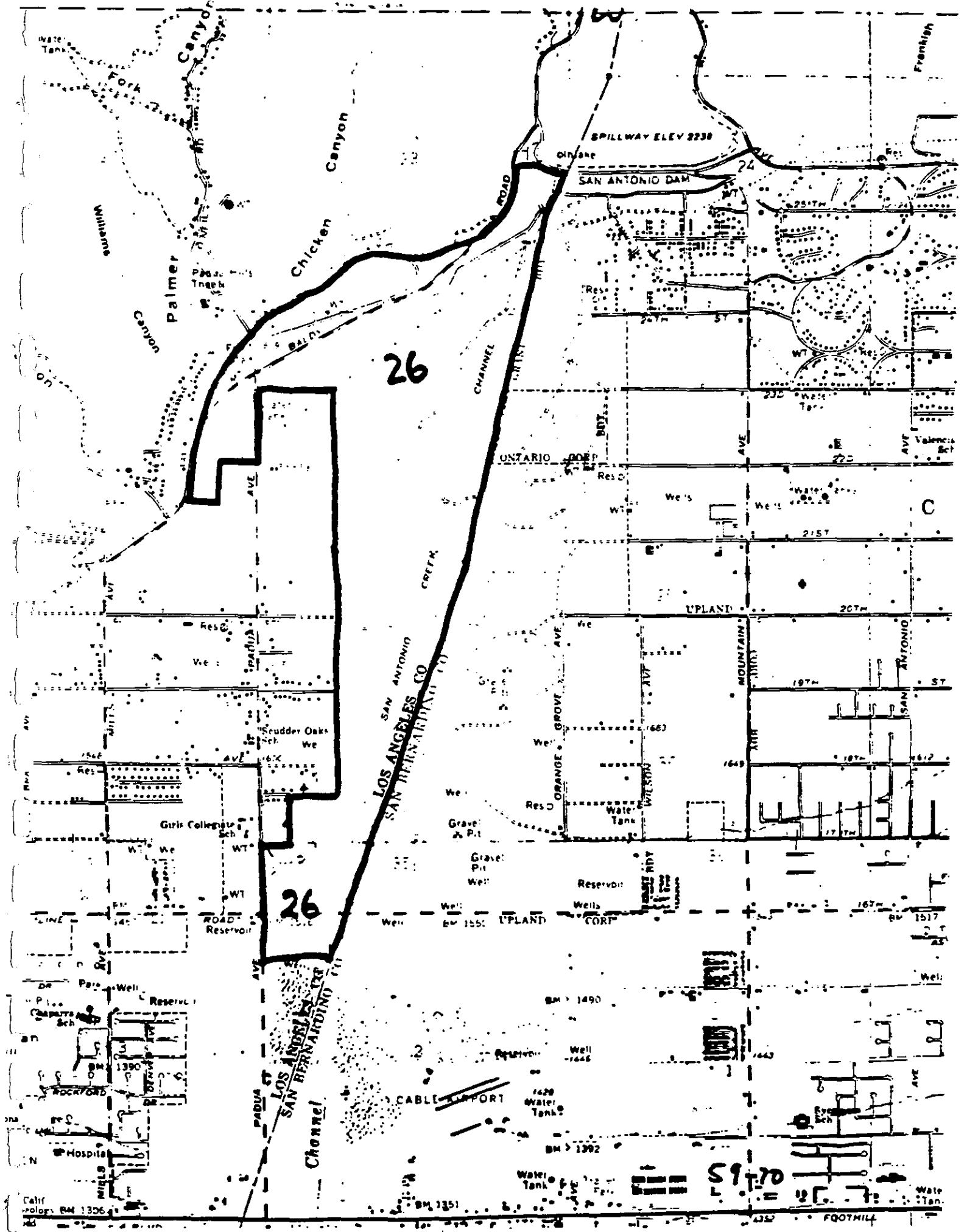
Status: The area is relatively undisturbed and supports a healthy stand of native vegetation. Development has been limited to Mt. Baldy Rd., a dirt road, and the San Antonio Creek Channel. Off--road vehicle use has caused some damage. The area abuts the San Gabriel Foothills, and is bordered on three sides by agricultural fields. A portion of the alluvial fan lies in San Bernardino County.

Information Source(s): Survey/Interview, ERC/UCLA.

Nature of Information: cursory surveys of the area were made during the original work of the Environmental Resource Committee. Additional interpretation has been made with the use of air photos.

Buffer Zone Requirement: None in Los Angeles County. Attempts should be made to prevent negative impacts on the area that may arise from the San Bernardino County portion of the alluvial fan.

Compatible Uses: Very low intensity recreational uses are compatible with the resources found in the area.



26

26

S9-70

Area # 27

Name: Portuguese Bend Landslide

Quadrangle(s): Redondo Beach, Torrance, San Pedro.

Class 3 (4,5,7)

Resource Description: The Portuguese Bend Landslide is the largest area of natural vegetation remaining on the Palos Verdes Peninsula. The geographical location and geological history of the peninsula make remaining habitat extremely valuable for ecological and scientific reasons. The peninsula, which was an island in recent geological time, has close floral and faunal similarities to the Channel Islands. This feature makes the Portuguese Bend Landslide area a natural research laboratory for the study of island biogeography and evolutionary ecology.

The vegetation found in the area is coastal sage scrub. This plant community supports a surprising number and variety of species. There are at least three races of birds resident on the peninsula that are found nowhere else except the Channel Islands. These are the insular forms of the orange--crowned warbler, western flycatcher, and Allen's hummingbird. The same phenomena has been documented for plant species. A species of live--forever, Dudleya virens, which is endemic to the Channel Islands and the Palos Verdes Peninsula, is found near Point Vicente.

The area also serves as habitat to many migrating birds moving through the region in fall and spring. The Peninsula is a headland that juts into the Pacific several miles further than the surrounding coastline. Migrating terrestrial and shore birds flying over the open ocean on their north--south migration along the Pacific Flyway, spot this headland and stop to rest and feed. Many of these birds will stay and spend the winter in the area. Thus, the geographic position makes this habitat much more important than might otherwise be expected.

Status: In general, the area has been lightly disturbed, and much natural vegetation remains. Intense disturbances, in the form of heavy off--road vehicle and pedestrian use, have been limited. Grazing has also taken place at one time.

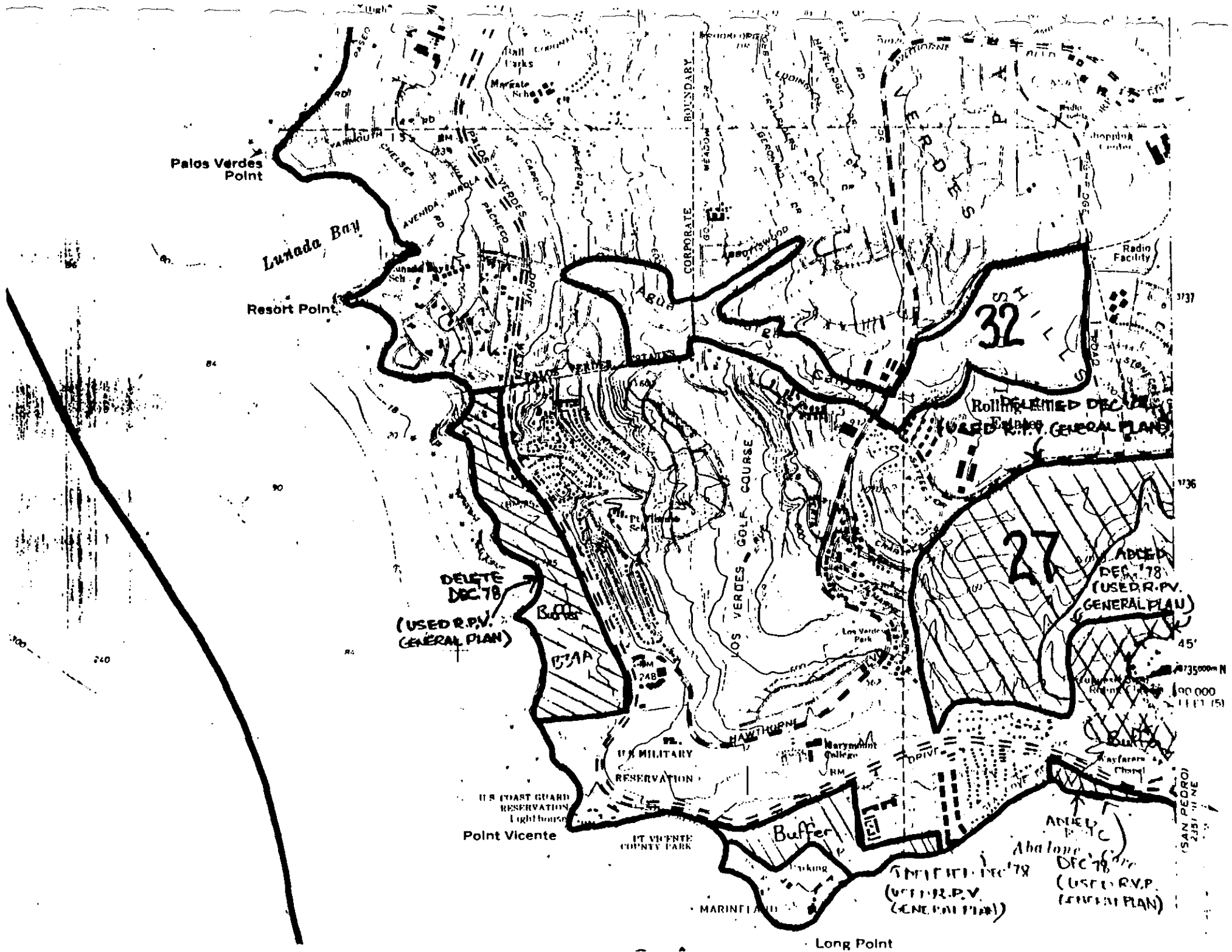
Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: Interest in coastal resources by the California Coastal Zone Conservation Commission and other competent biologists and naturalists, has provided reliable information about the area. The uniqueness of the flora and fauna of the peninsula has been documented in the scientific literature

Buffer Zone Requirement: None.

Area # 27 continued

Compatible Uses: Low intensity recreational uses are compatible with the resources found in the area.



Palos Verdes Point

Lunada Bay

Resort Point

DELETE
DEC 78
(USED R.P.V.
GENERAL PLAN)

U.S. COAST GUARD
RESERVATION
Lighthouse
Point Vicente

U.S. MILITARY
RESERVATION
Point Vicente
COUNTY PARK

MARINA

Long Point

32

Rollback DEC 78
(USED R.P.V. GENERAL PLAN)

27

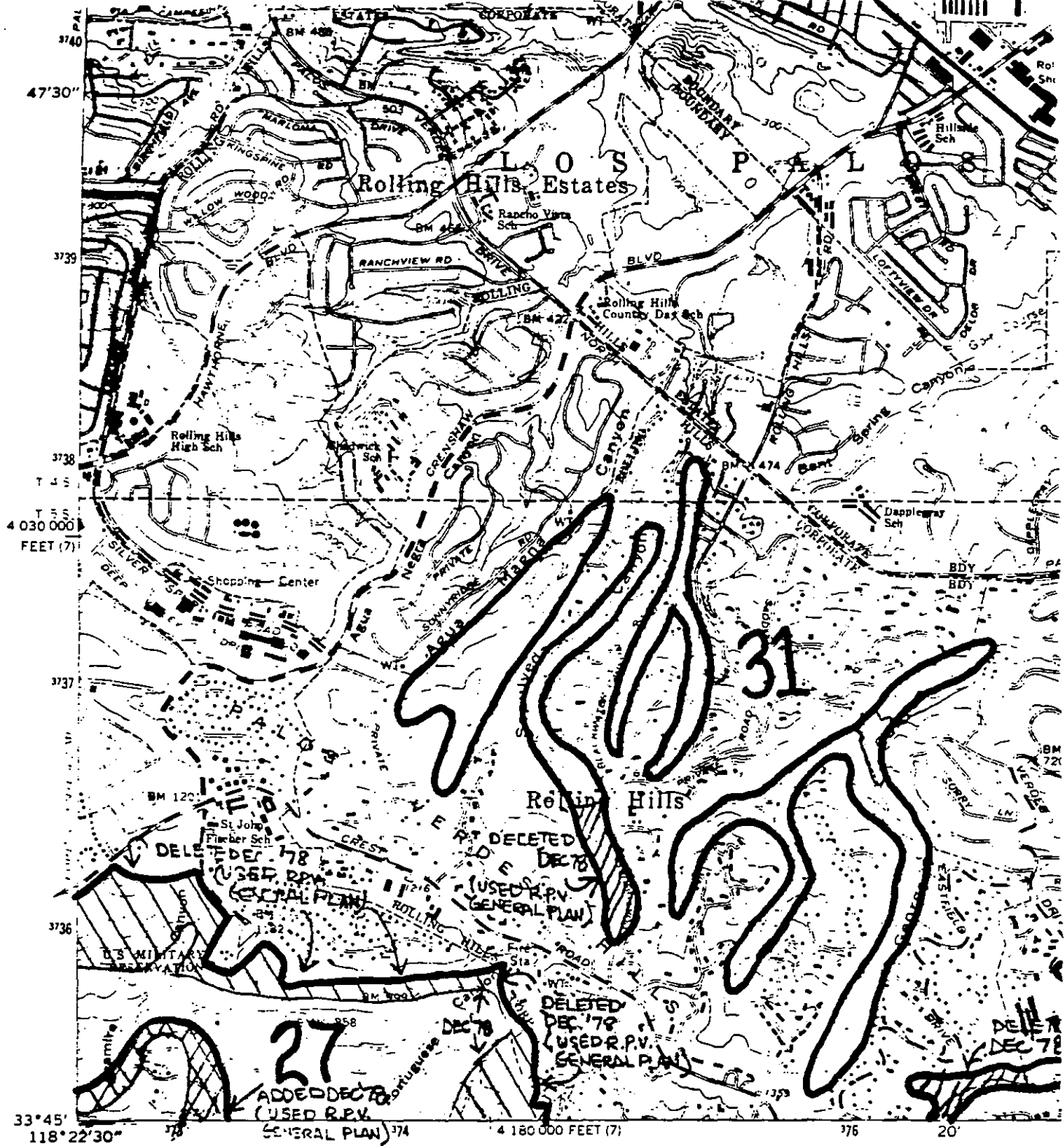
Rollback
DEC 78
(USED R.P.V.
GENERAL PLAN)

Rollback DEC 78
(USED R.P.V.
GENERAL PLAN)

Rollback
DEC 78
(USED R.P.V.
GENERAL PLAN)

(SAN PEDRO)
231' 11" NE

735000 N
100 000
1117 (5)



Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and Los Angeles County

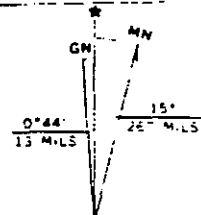
Topography by photogrammetric methods from aerial photographs taken 1963 and by planetable surveys 1964.

Selected hydrographic data compiled from USC&GS Chart 5147 (1963)
This information is not intended for navigational purposes

Polyconic projection. 1927 North American datum
10,000-foot grids based on California coordinate system, zones 7 and 5
1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue

Red tint indicates areas in which only landmark buildings are shown.

A portion of the east half of this map lies within a subsidence area
Vertical control based on latest available adjustment

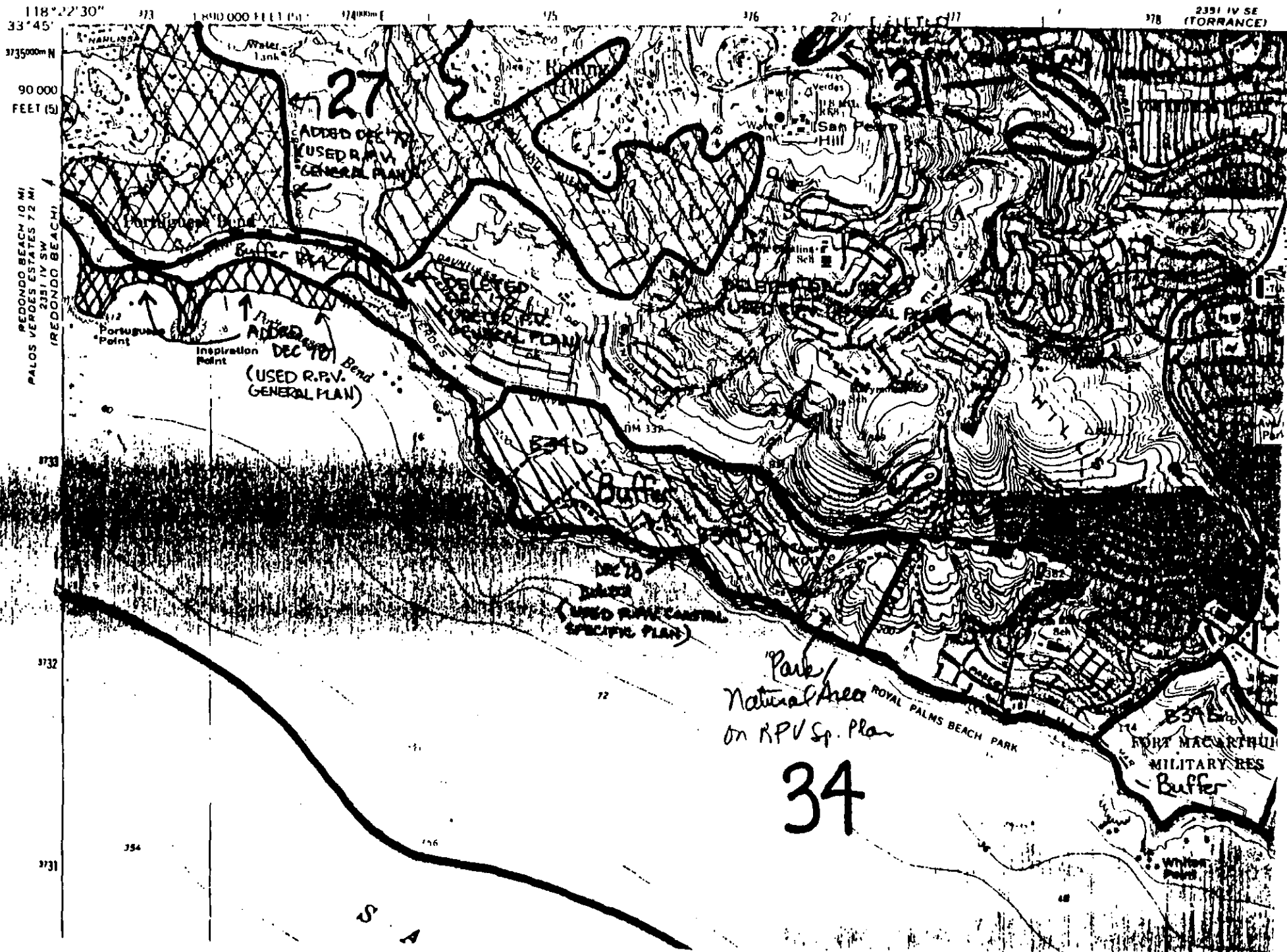


UTM GRID AND 1972 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

N SW
400 BEACH

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER



Area # 28

Name: El Segundo Dunes

Quadrangle(s): Venice

Class 1 (2,3,4,5,7)

Resource Description: The El Segundo Dunes at the west end of the Los Angeles Airport are the last remnants of a coastal dune system that at one time stretched for several miles in each direction. The vegetation found here cannot be found anywhere else in the county, and is uncommon throughout southern California. It is called coastal dune scrub, and is adapted to sandy, well-drained, sometimes shifting conditions. The vegetation shows a zonation, gradually changing as one moves inland away from the immediate coastal influences, eventually grading into coastal sage scrub. Many plants and invertebrates are restricted to this situation and cannot be found elsewhere. One of these is the El Segundo Blue (Shiimiaeoides battoides allyni), a butterfly. Not only is it restricted to the coastal dune scrub plant community; its world-wide distribution is the El Segundo Dunes. For this reason, it has been officially recognized as an endangered species by the U.S. Fish and Wildlife Service. This small piece of dune habitat is extremely valuable as an example of a community that was once more common along the Los Angeles County and southern California Coastline than it now is.

Status: Portions of the remaining area have been disturbed. Scattered developments on the site include radio towers, roads, a reservoir, and oil extraction equipment. Much of the remaining vegetation has been impacted by human use, but can be restored.

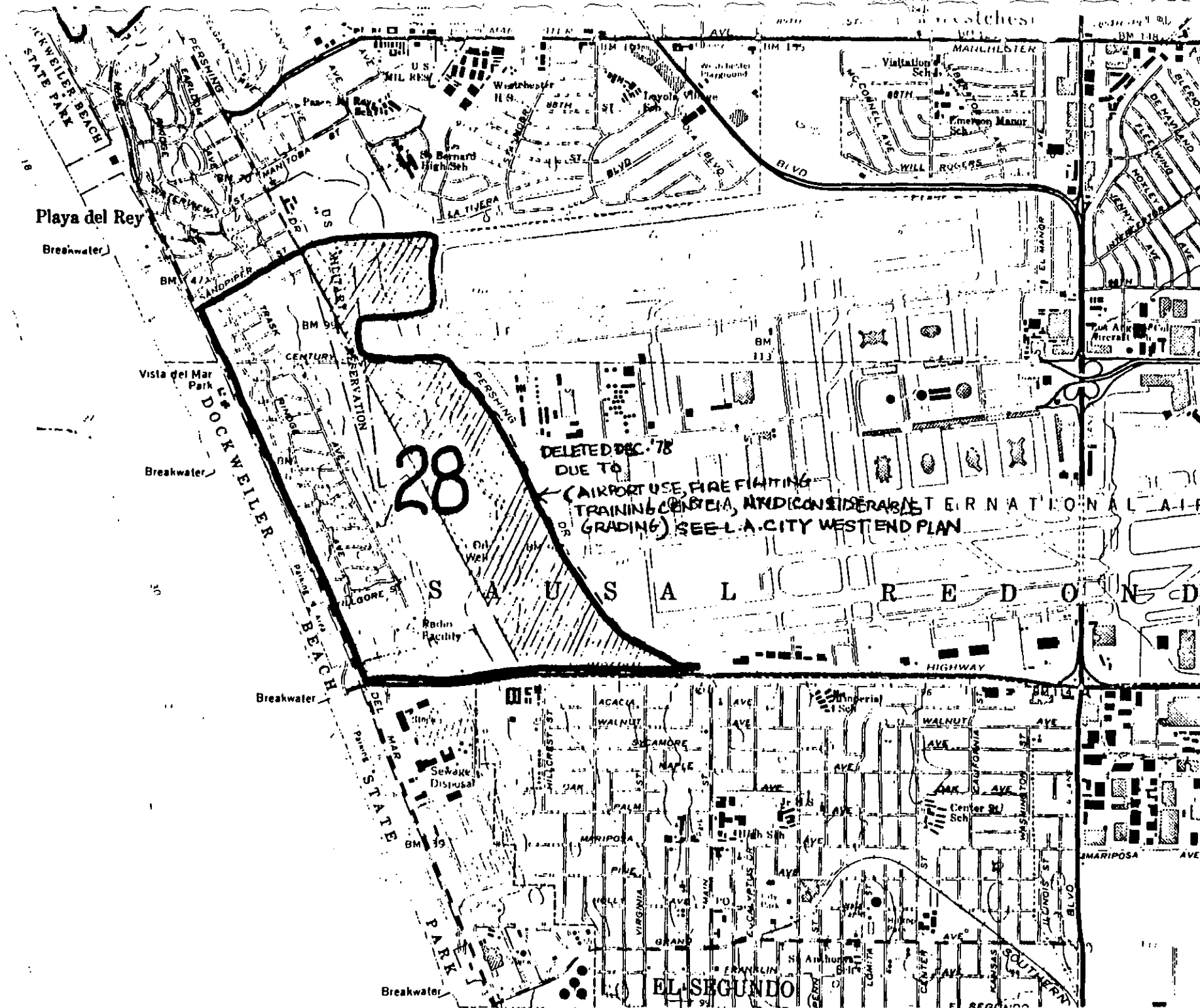
Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS.

Nature of Information: Due to the rarity of this community, and the specializations of the organisms found here, the dunes have been closely scrutinized by biologists of many disciplines.

Buffer Zone Requirement: None. Resources will be protected by recommended boundaries.

Compatible Uses: In general, very low intensity recreational uses are compatible with the resources of the area. However, before such uses can begin, a program to rehabilitate the dunes should be established. Initial guidance in this program can be obtained through the California Native Plant Society.

LIGHT
36
35
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A



Playa del Rey

Breakwater

Vista del Mar Park

Breakwater

Breakwater

Breakwater

28

DELETED DEC. '78
DUE TO
(AIRPORT USE, FIRE FIGHTING
TRAINING CONCERN, AND CONSIDERABLE INTERNATIONAL AIR
GRADING) SEE L.A. CITY WEST END PLAN

EL SEGUNDO

SOUTHERN

Area # 29

Name: Ballona Creek

Quadrangle(s): Venice

Class 1 (2,3,4,5,7)

Resource Description: Ballona Creek is one of two remaining remnants of salt marsh between Ventura County and the Los Angeles-Orange County line. This type of habitat is one of the most productive in the world, and is used as a breeding ground by many marine and terrestrial organisms. Belding's savannah sparrow, a state recognized endangered species, occurs in the pickleweed flats on the south side of the creek. The California least tern breeds in the sandy areas around Ballona Lagoon, and is recognized as an endangered species by the state and federal governments.

The salt marsh, Ballona Creek Channel, Ballona Lagoon, and Del Rey Lagoon form an important complex of habitats that are heavily used by migratory birds. The area is recognized by ornithologists and bird watchers throughout the area for its rich birdlife during the spring and fall migrations, and during the winter season. This type of heavy use is common in salt marsh habitat, but has been artificially increased here by the loss of habitat in Marina Del Rey, and throughout most of southern California. This forces these birds to concentrate in the few remaining areas. Loss of this habitat type has led to reductions in the numbers of these birds present along our coast.

The salt marsh and lagoon at Ballona Creek are heavily used by academic institutions and conservation groups for educational field trips. This area serves as a type specimen of salt marsh habitat, and is the only accessible example in Los Angeles County.

Status: Portions of the area are owned by the State of California, and private owners including the Hughes Suma Corporation. The area is crossed by several large roads, and is surrounded by intense urban development. Ballona Lagoon is an active oil field. The vegetation in the area has been heavily impacted by human use, including off-road vehicles. Dogs and cats from neighboring residential areas disturb native species.

Information Source(s): Survey/Interview, Literature, ERC/UCLA.

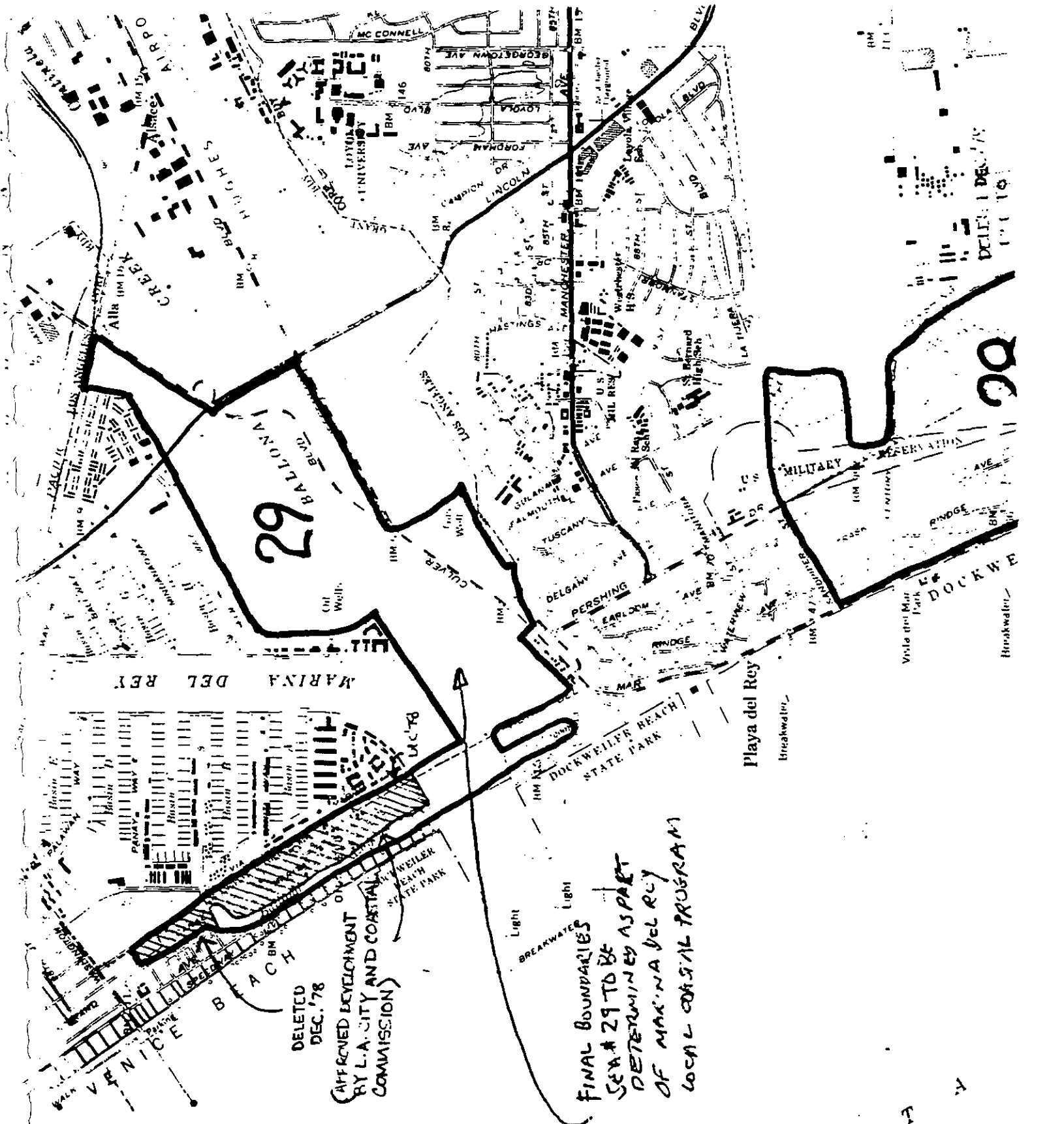
Nature of Information: Through the use of the area by educators, and due to concern over the welfare of the California least tern and Belding's savannah sparrow by the the Department of Fish and Game, the resources of the area have been well documented.

Buffer Zone Requirement: None. Resources will be protected by recommended boundaries.

Compatible Uses: Very low intensity recreational uses are compatible with the resources in most of the area. However, breeding areas for the California least tern and the Belding's savan-

Area # 29 continued

nah sparrow should be closed to all uses except regulated scientific study. The Los Angeles County Department of Regional Planning should establish contact with the recovery teams for these species through the California Department of Fish and Game. At the present time, the entire area has been severely impacted by human use and should be completely closed until a restoration and management program can be implemented.



29

DELETED
DEC. '78

(APPROVED DEVELOPMENT
BY L.A. CITY AND COASTAL
COMMISSION)

FINAL BOUNDARIES
SEA # 29 TO BE
DETERMINED AS PART
OF MARINA DEL REY
LOCAL COASTAL PROGRAM

S
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G
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Area # 30

Name: Alamitos Bay

Quadrangle(s): Los Alamitos

Class 1 (2,3,4,5,7)

Resource Description: This area is one of two remaining examples of salt marsh found in Los Angeles County, and the last remnant of the extensive salt marshes once found in Los Alamitos Bay. The majority of this vegetation type has been lost to urbanization, flood control projects, harbors, and marinas. It is one of the most productive types of ecological communities that exists and is extremely important as a breeding ground for both terrestrial and marine organisms, including the majority of commercial fish. This is due in part to the fact that estuaries and salt marshes are the interface between the terrestrial and marine worlds, and are important nutrient cycling centers for marine ecosystems. It is probable that the Belding's savannah sparrow occurs here. This species is restricted to salt marsh habitat, and has been placed on the state endangered species list. This type of habitat is also important as a wintering ground for migratory birds.

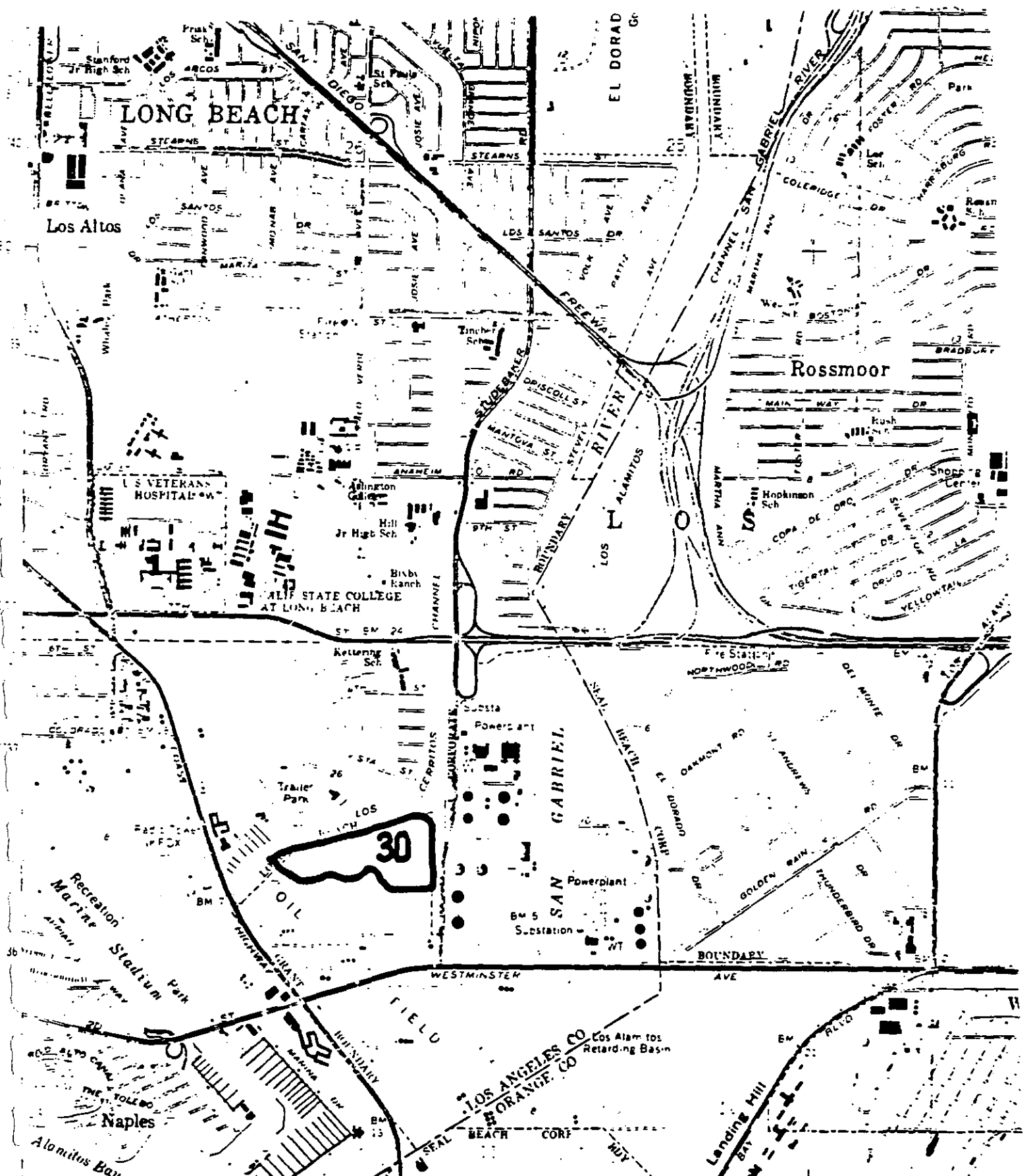
Status: Public access to the area is restricted, and no development has taken place on the property. As a result, the community is in relatively good condition. It is surrounded by oil and power operations, and has been impacted by pollutants.

Information Source(s): Survey/Interview, Literature.

Nature of Information: Due to the inaccessibility of the area, very little information is available.

Buffer Zone Requirement: None. Resource will be protected by recommended boundaries.

Compatible Uses: Very low intensity recreational uses are compatible with the resources of the area. If collection of information on the area points to a need for restorative efforts, public use should be eliminated until they are completed.



73C 196

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80

Control by USGS, USC&GS, Los Angeles County, and Orange County

Planimetry by photogrammetric methods from aerial photographs taken 1963. Topography by planetable surveys 1964

Selected hydrographic data compiled from USC&GS Chart 5148 (1965)

This information is not intended for navigational purposes

Cylindrical projection. 1927 North American datum

0°35' 15' 267 MILS

Area # 31

Name: Rolling Hills Canyons

Quadrangle(s): Torrance, San Pedro

Class 3 (4,5,7)

Resource Description: The Rolling Hills Canyons are one of the last remaining areas of natural vegetation on the Palos Verdes Peninsula. The geographical location and geological history of the peninsula make remaining habitat extremely valuable for ecological and scientific studies. The peninsula, which was an island in recent geological time, has close floral and faunal similarities to the channel islands. This feature makes all remaining native communities on the peninsula a natural research laboratory for the study of island biogeography and evolutionary ecology.

The vegetation in these canyons is a complex of coastal sage scrub, chaparral, and riparian communities. This association is very diverse, and supports a good complement of native species. Among these are at least three races of bird species that are resident on the peninsula, and found nowhere else except the Channel Islands. These are the insular forms of the orange-crowned warbler, western flycatcher, and Allen's hummingbird. The same phenomenon has been documented for plant species.

These small fingers of vegetation are also exceedingly important as an area for migratory birds. The peninsula is a headland that juts into the Pacific several miles further than the surrounding coastline. Migrating terrestrial and marine birds flying over the open ocean on their north-south migration along the Pacific Flyway, spot this headland and stop to rest and feed. Many of these birds will stay, and spend the winter in the area. Thus, the geographic position of these small canyons make them much more important than might otherwise be expected.

Status: The canyons are privately owned, and surrounded by residential development. Vegetation has had moderate adverse impacts due to usage by local residents and their pets.

Information Source(s): Literature, ERC/UCLA

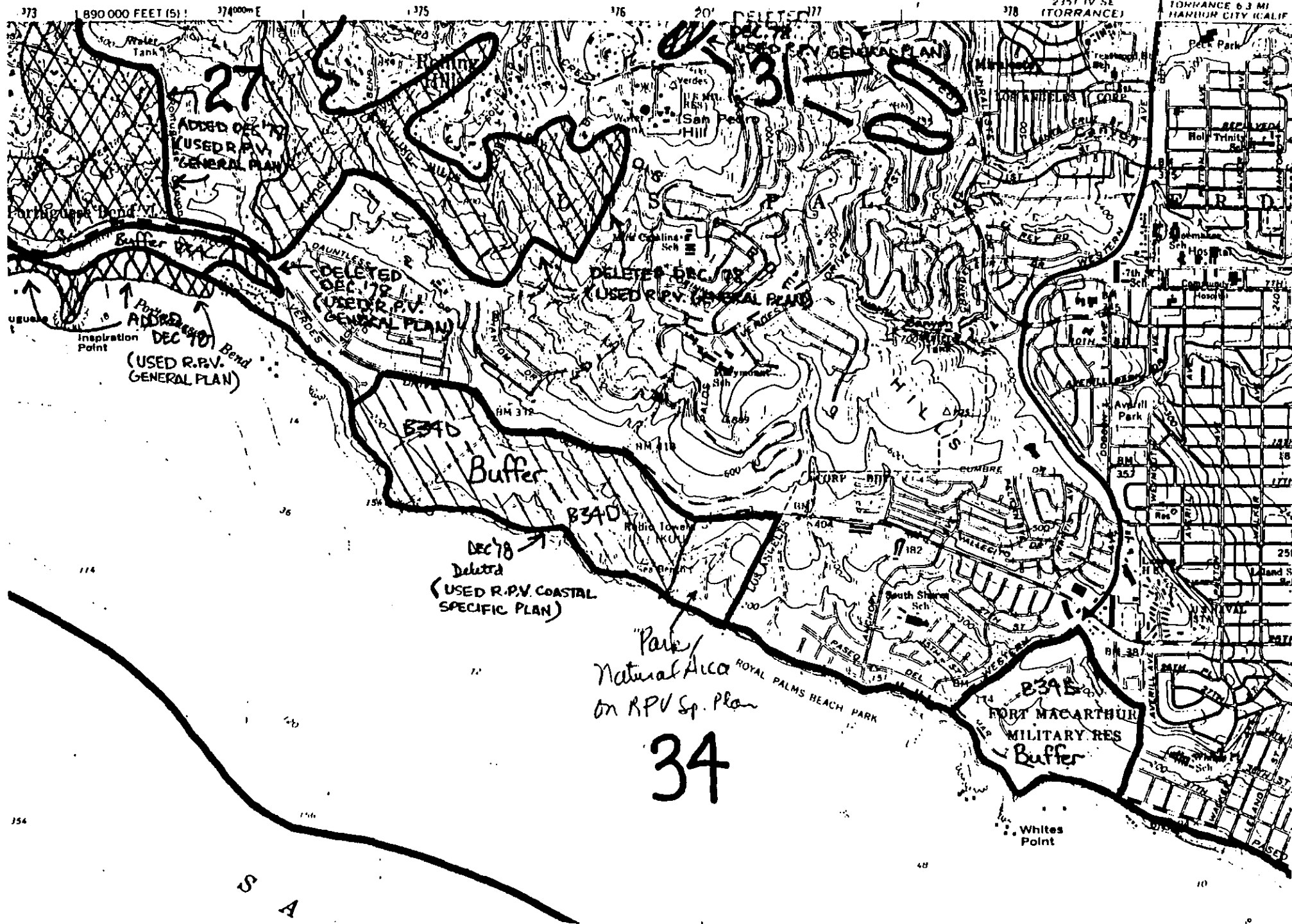
Nature of Information: Due to the interest in the biota of the peninsula by the scientific community, the vegetation and wildlife have been surveyed. The uniqueness of the flora and fauna on the peninsula has been documented in the scientific literature.

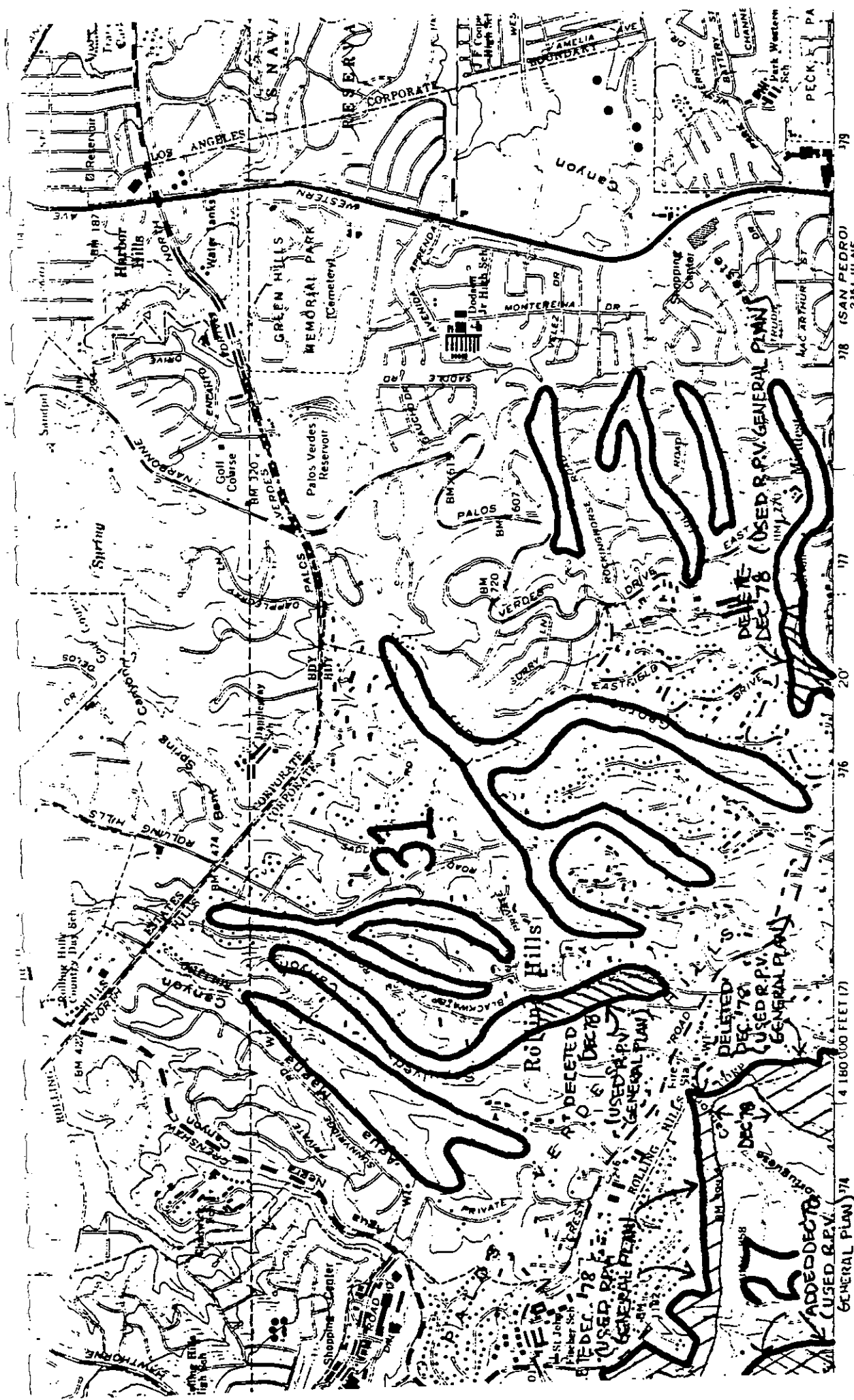
Buffer Zone Requirement: Precautions should be taken to protect the integrity of the boundaries, and prevent erosion from upstream sources.

Compatible Uses: Very low intensity recreational uses are compatible with the resources of the area. It might be possible to inter-connect the canyons with hiking and nature trails, but their

Area # 31 continued

boundaries and positions relative to each other may make it impractical. The best use of the land may be to let it remain in private ownership, and place restrictions on disturbing vegetation and developing the drainages.





d, and published by the Geological Survey

5. USC&GS, and Los Angeles County
 photogrammetric methods from aerial
 en 1963 and by plane-table surveys 1964.

aphic data compiled from USC&GS Chart 5147 (1963)
 is not intended for navigational purposes

tion. 1927 North American datum
 s based on California coordinate system, zones 7 and 5
 ersal Transverse Mercator grid ticks,
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UTM GRID AND 1972 MAGNETIC NORTH
 DECLINATION AT CENTER OF SHEET

0° 44' 1.3 MILS
 15° 26.7 MILS

1000 0 1000 2000 3000 4000 5000 6000 7000
 METERS
 1 KILOMETER

SCALE 1:24,000

CONTOUR INTERVAL 20 FEET
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 NATIONAL GEODETIC VERTICAL DATUM OF 1929
 DIPLOM CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOWER LOW WATER
 SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 4 FEET

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GENERAL PLAN 374
 4 180,000 FEET (1:171)

376 377 378 (SAN PEDRO)
 235° 11' NE

Area # 32

Name: Agua Amarga Canyon

Quadrangle(s): Redondo Beach

Class 3 (4,5,7)

Resource Description: Agua Amarga Canyon is the last remaining relatively undisturbed drainage on the coastal side of the Palos Verdes Peninsula. The geographical location and geological history of the peninsula make remaining habitat extremely valuable for ecological and scientific studies. The peninsula, which was an island in recent geological time, has close floral and faunal similarities to the Channel Islands. This feature makes all remaining natural habitat on the peninsula a natural research laboratory for the study of island biogeography and evolutionary ecology.

The vegetation in Agua Amarga Canyon is a complex of coastal sage scrub, chaparral, and riparian communities. This association is very diverse, and supports a good complement of native species. Among these are at least three races of birds resident on the peninsula, that are found nowhere else except the channel islands. These are the insular form of the orange-crowned warbler, western flycatcher, and Allen's hummingbird. The same phenomenon has been documented for plant species.

The canyon is also exceedingly important as an area for migratory birds. The peninsula is a headland that juts into the Pacific several miles further than the surrounding coastline. Migrating terrestrial and marine birds flying over the open ocean on their north-south migration along the Pacific Flyway, spot this headland and stop to rest and feed. Many of these birds will stay and spend the winter in the area. Thus, the geographic position of the canyon makes it much more important than might otherwise be expected.

Status: The canyon is in the cities of Palos Verdes Estates, Rancho Palos Verdes, and Rolling Hills Estates. Little development has taken place in the canyon bottom, but the habitat has been impacted by usage from local residents.

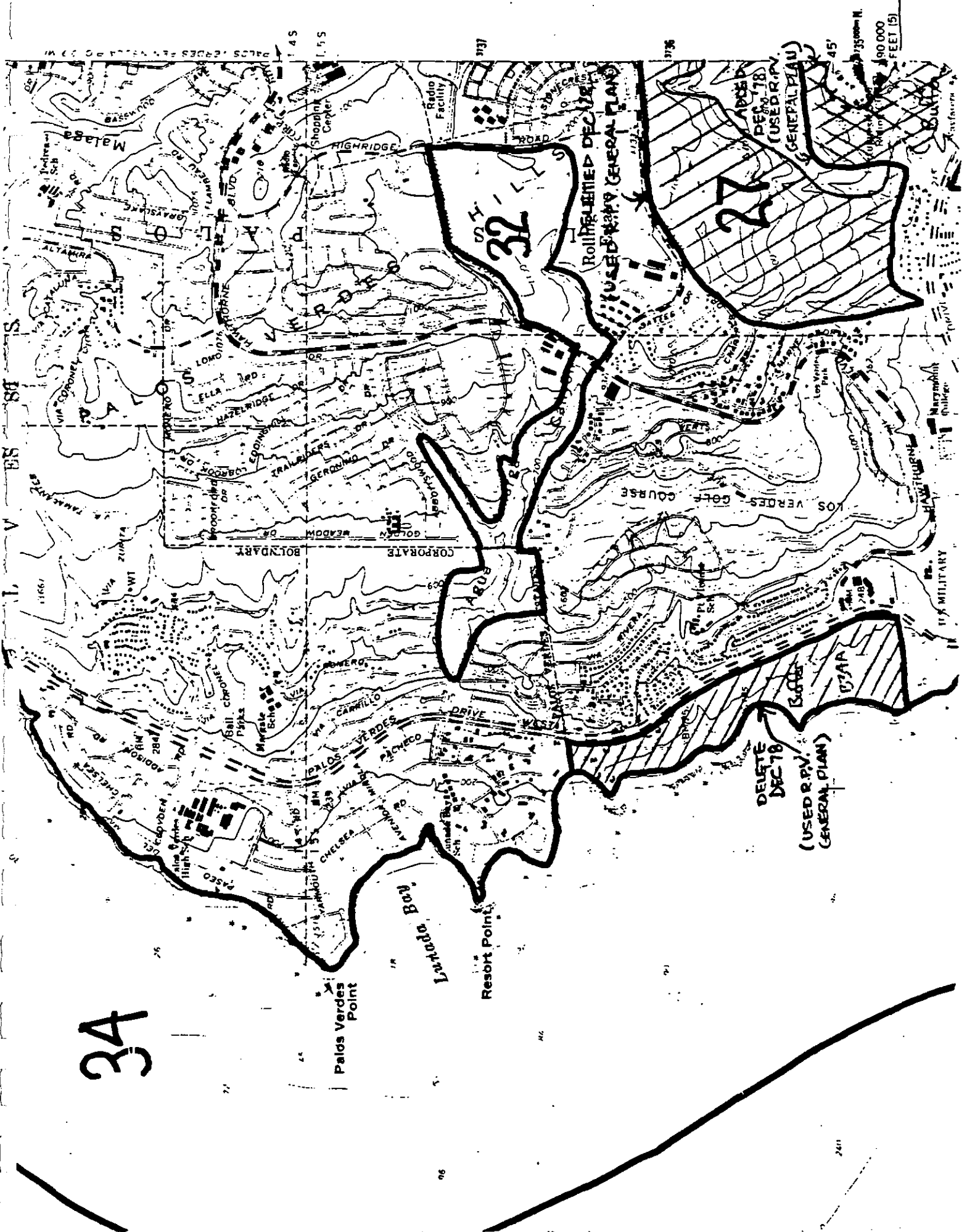
Information Source(s): Literature, ERC/UCLA, CNACC/CNPS

Nature of Information: Due to interest in the area by the scientific community, the Environmental Resources Committee, and the California Coastal Zone Conservation Commission, competent biologists have surveyed the area. The uniqueness of the flora and fauna is documented in the scientific literature.

Buffer Zone Requirement: Precautions should be taken to preserve the integrity of the canyon, and protect it from erosion caused at upstream sources.

Compatible Uses: Very low intensity recreational uses are compatible with the resources of the area.

34



1745

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90,000
FEET (5)

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DELETE
DEC 18
(USED R.P.V.
GENERAL PLAN)

Rolling Hills DEC 18
(USED R.P.V.
GENERAL PLAN)

APPEAL
DEC 18
(USED R.P.V.
GENERAL PLAN)

32

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Palos Verdes
Point

Lantana Bay

Resort Point

CORPORATE
BOUNDARY

LOS VERDES GOLF COURSE

Radio
Facility

Shopping
Center

HIGHRIDGE

MALAGA

ELLA

HAZELRIDGE

TRAILBLAZERS

GERONIMO

WINDMILLS

FOOTSTEPS

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Area # 33

Name: Terminal Island

Quadrangle(s): San Pedro

Class 1 (2,3,4,5,7)

Resource Description: The California least tern (Sterna albifrons brownii) nests at this locality. This species is found along the southern California coast from April to September, and breeds in flat sandy areas lacking vegetation. It must be free from disturbances, and near an estuary with a good supply of small fish. This type of habitat was once common along the coast of southern California, but has nearly disappeared as estuaries have been filled and channelized, and sandy beaches have become a favorite southern California recreation area. For these reasons this species has been placed on the state and federal endangered species list. Nesting populations are found from San Francisco Bay south, with the majority being found in Orange and San Diego counties. In Los Angeles County, nesting colonies have been found irregularly at scattered localities with populations breeding regularly on Terminal Island and at Ballona Creek.

Status: At the present time, the land is undeveloped, but is nearly surrounded by urban and commercial development.

Information Source(s): Survey/Interview, Literature.

Nature of Information: The status of the population is surveyed yearly by the California least tern recovery team.

Buffer Zone Requirement: None. Recommended boundaries are sufficient to protect the resource.

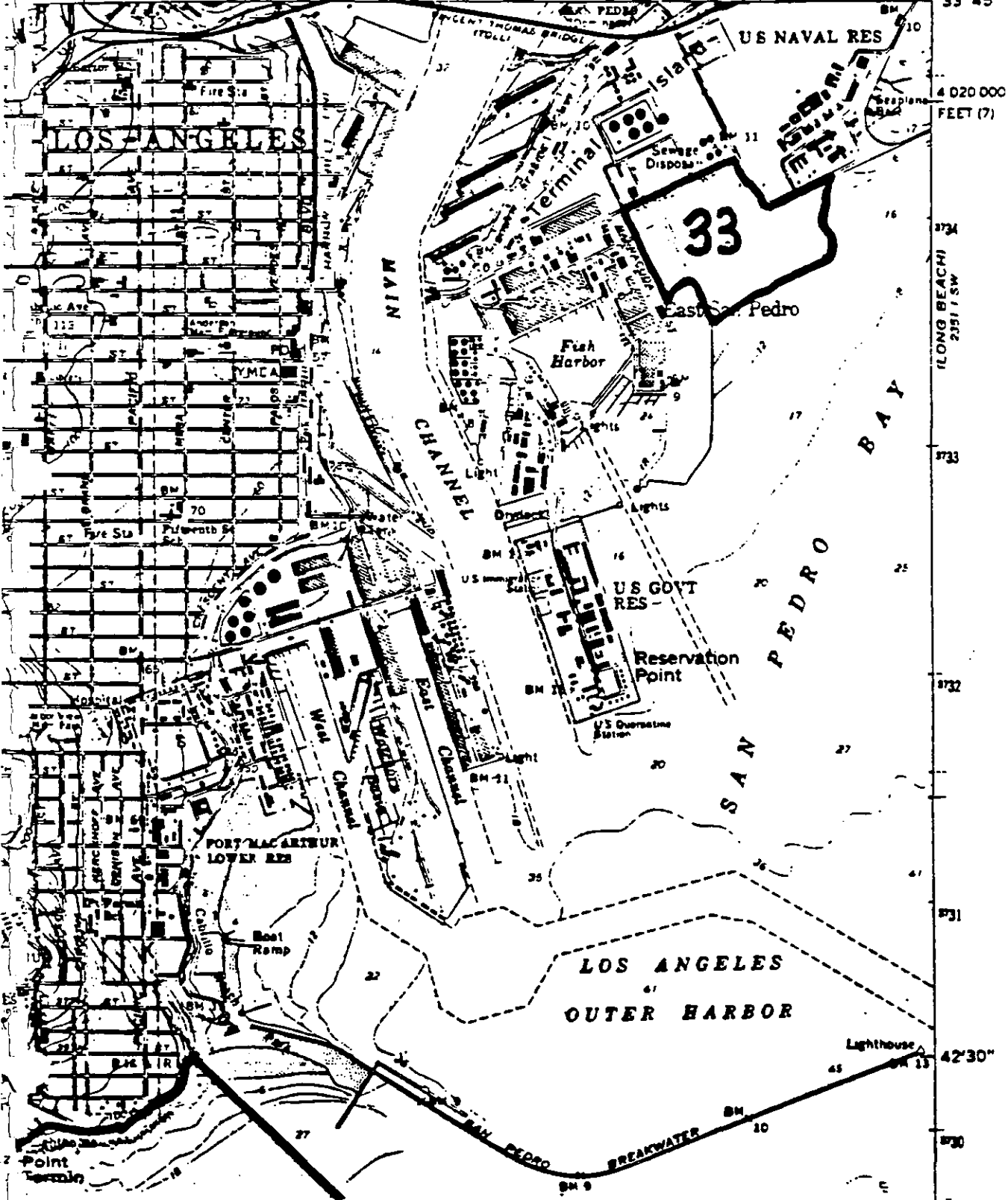
Compatible Uses: Due to the limited number of breeding sites remaining in southern California, and the animals' susceptibility to disturbance, the area should be closed to all uses except regulated scientific study. The Los Angeles County Department of Regional planning should establish contact with the California least tern recovery team through the California Department of Fish and Game.

SAN PEDRO QUADRANGLE
 CALIFORNIA—LOS ANGELES CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)

2351 1 SW
 (LONG BEACH)

LOS ANGELES CITY HALL 22 MI
 TO INTERSTATE 405
 30" R 14 W R 13 W

LONG BEACH CITY HALL 4.6 MI
 4 210 000
 FEET (7) 118° 15'
 33° 45'



Area # 34

Name: Palos Verdes Peninsula Coastline

Quadrangle(s): Redondo Beach, San Pedro

Class 2 (3,4,5,6,7)

Resource Description: Unparalleled headlands, rocky shoreline, and the land-sea interface provide for a tremendous variety of biotic resources in this area. It is one of the most biologically diverse and productive regions in Los Angeles County, and contains several biotic communities including rocky intertidal, kelp bed, coastal strand, and coastal sage scrub. One small sandy beach is periodically present on an ephemeral basis at Portuguese Bend. This ten mile stretch of coastline, between Point Fermin and Bluff Cove, is the only sizeable rocky intertidal area in the county.

Rocky shores support a great number of species. This is primarily due to the highly diverse, oxygen and food-rich environment offered by this habitat. These features are provided by the stability and variety of substrates present, the aeration of water through wave splash, and the upwelling of nutrient-rich waters along the southern California coast.

Kelp beds dominated by giant kelp (Macrocystis pyrifera), are found in some locations in the area. These have tremendous value to the biota of inshore areas. Where they occur they may locally account for 90% of the biomass. They provide food and habitat for hundreds of species. Many of the species this habitat supports are the basic component of the food chains of inshore fishes. Kelp beds are also important because they reduce wave shock to shorelines. This protection helps maintain the abundance and complexity of marine life found there.

Kelp beds were originally common off the southern California coast wherever rocks were present at shallow depths. However, due to man-made and natural phenomena, this habitat has been severely diminished in the region, and is now rare in Los Angeles County. A kelp bed habitat restoration program has begun in the area, and kelp has been reestablished at Abalone Cove and Halfway Point. Smaller colonies are now reestablishing elsewhere.

The coastal cliffs found in the area range in elevation from 100 to 300 feet and support coastal sage scrub and coastal strand. These and offshore rocks offer ideal roosting and feeding sites for numerous shorebirds, gulls, and other seabirds, including the endangered brown pelican. The area is an important stop for migrating birds as they fly along the coast or across the Santa Monica Bay. In addition, the bluff tops which are now abandoned agricultural fields, are utilized by many species as wintering feeding grounds. One endangered species, the peregrine falcon, and one very uncommon species, the prairie falcon, have been known to winter here in recent years.

Area # 34 continued

Status: The bluff tops and cliffs have been disturbed by pedestrian use, residential development, and agriculture. Only very small, isolated ravines remain in a natural state. The health of the marine environment is relatively poor. The shoreline suffers major biological impairment. This is commonly blamed on over collection by humans, and intense pollution.

Information Source(s): Survey/Interview, Literature, ERC/UCLA, CNACC/CNPS

Nature of Information: Much scientific and educational work has been done on the coastline by many qualified biologists. In addition, recent interest in the area by the California Coastal Zone Conservation Commission, the University of California, California Department of Fish and Game, Los Angeles County Department of Parks and Recreation, Los Angeles County Beach Advisory Committee, and the State Water Resource Control Board has generated a great deal of information about the area.

Buffer Zone Requirement: The bluff tops should either be left in agriculture or allowed to regenerate native communities in order to prevent erosion problems and to reduce disruption of cliff vegetation and roosting areas .

Compatible Uses: In general, low intensity recreational uses are compatible with the resources present. However, rocky intertidal habitat has been heavily disturbed and should be used for regulated scientific study until a restorative program is implemented. At that time, very low intensity uses would be appropriate. Collection of tide pool organisms by the public should be prohibited and strictly enforced. Swimming and beach use would be compatible if confined to appropriate areas. Sport fishing near offshore rocks and kelp beds should be able to continue, if properly managed. Kelp bed restorative efforts should continue.

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Lunada Bay

Palos Verdes Point

Flat Rock Point
Flat Rock
Bluff Rock

Bluff Cove

PALOS VERDES ESTATES

Malaga Cove

Malaga Cove Park
Sch.

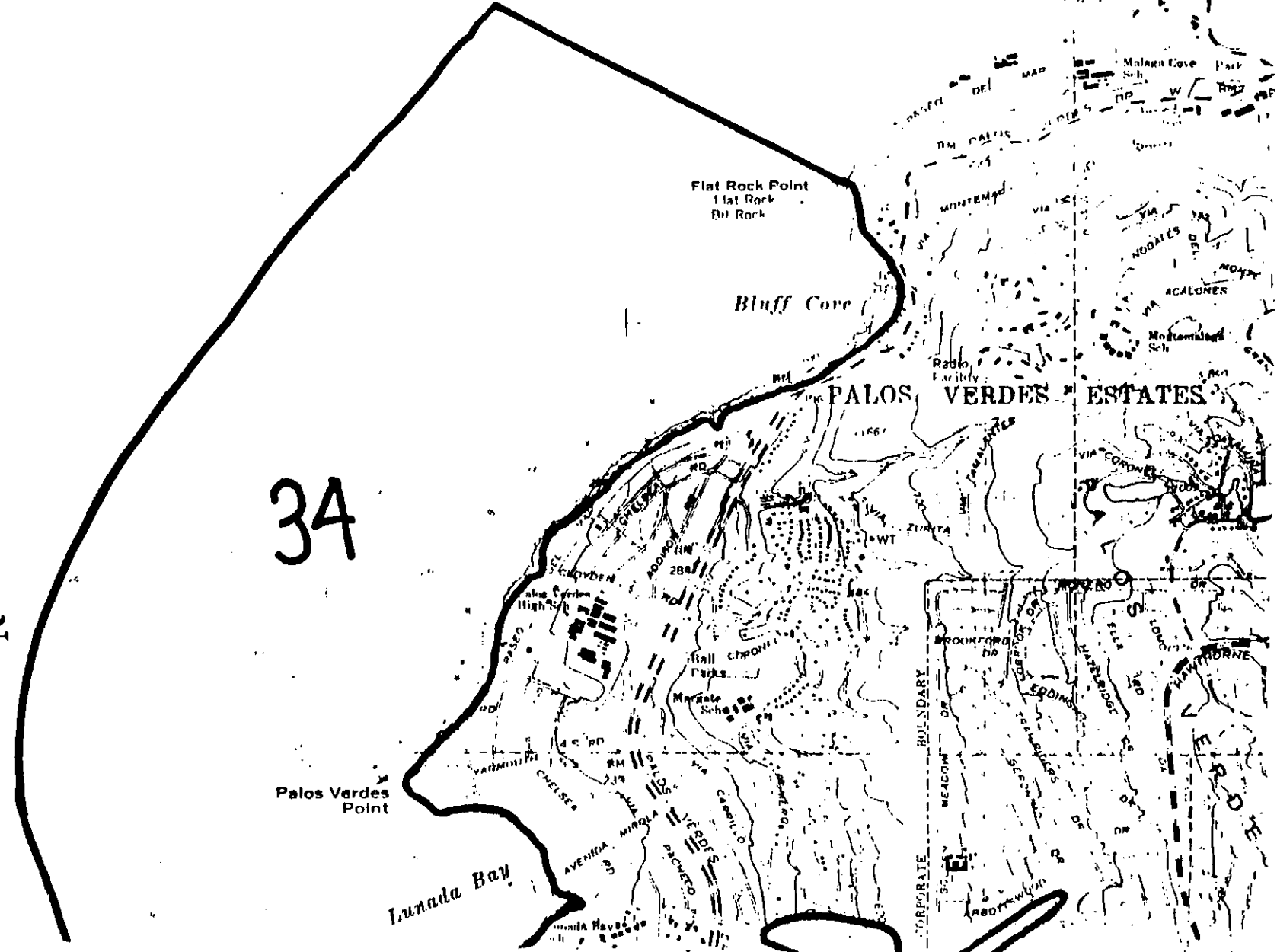
ACALONES

CORPORATE BOUNDARY

VERDE

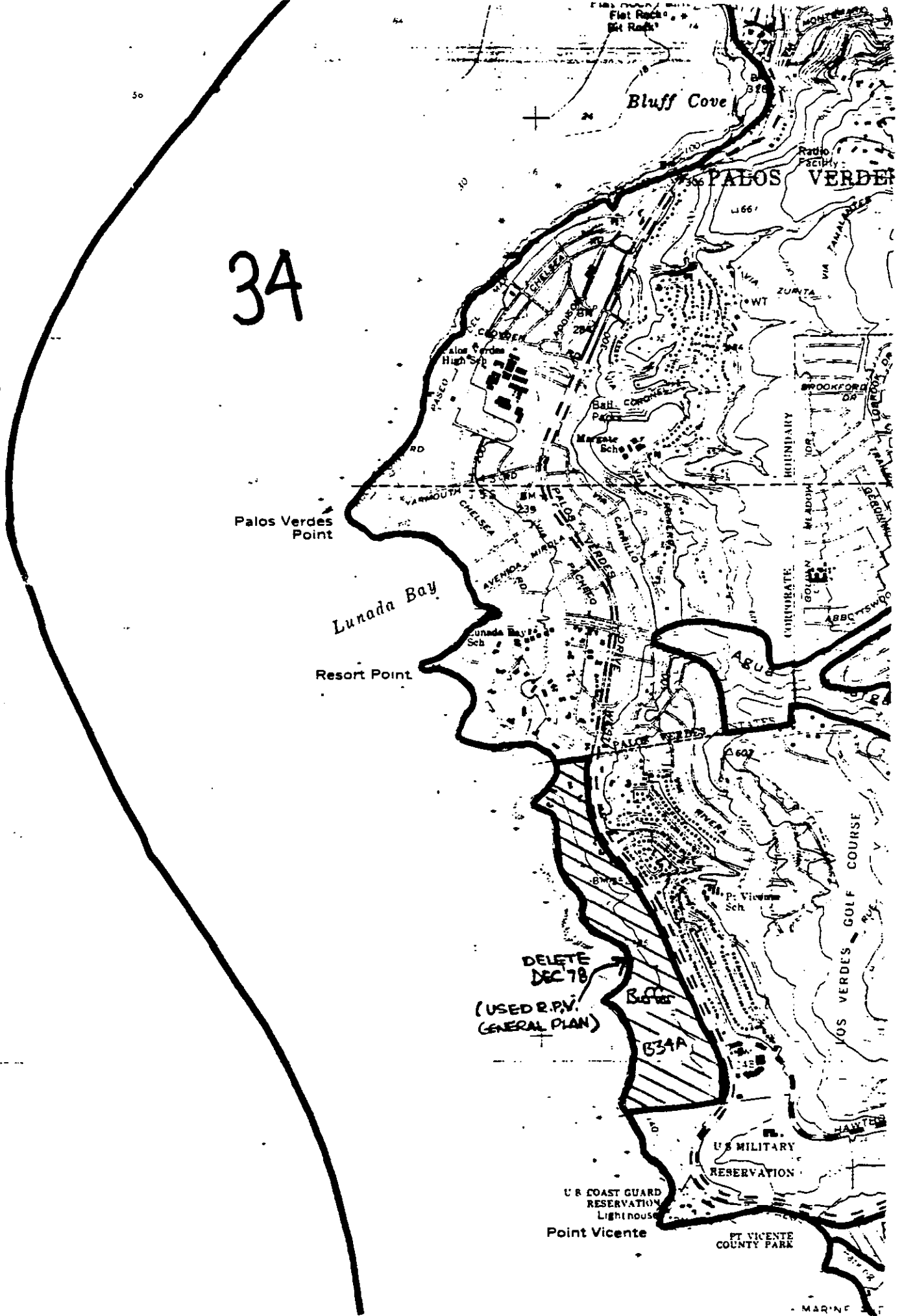
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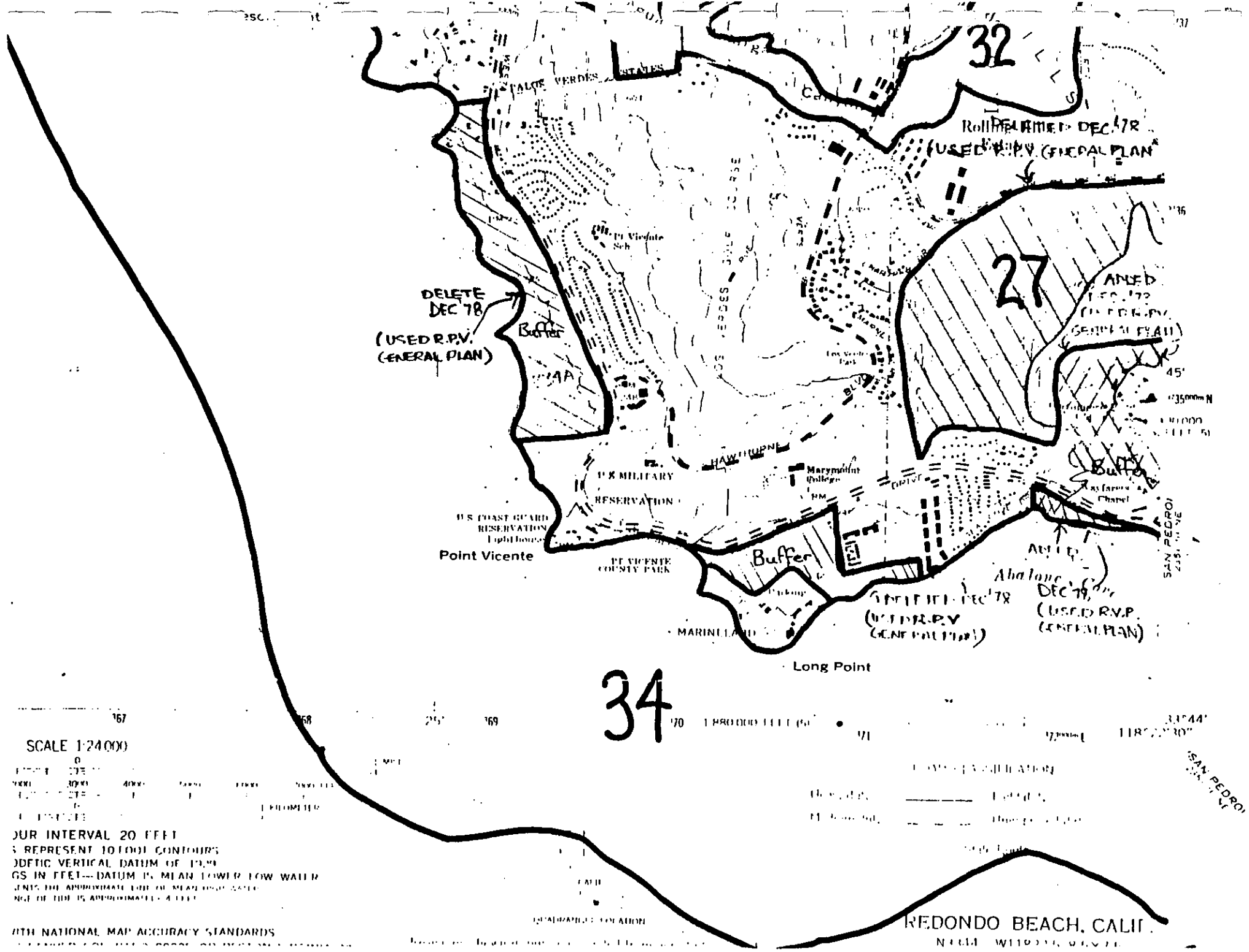


DELETE
DEC 78
(USED R.P.V.
GENERAL PLAN)

B34A

U.S. MILITARY
RESERVATION
U.S. COAST GUARD
RESERVATION
Lighthouse
Point Vicente
PT VICENTE
COUNTY PARK

MARINE



DELETE
DEC 78
(USED R.P.V.
(GENERAL PLAN))

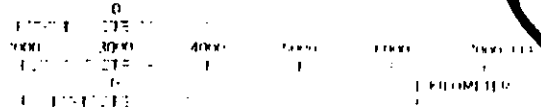
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(USED R.P.V. (GENERAL PLAN))

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DEC 78
(USED R.P.V.
(GENERAL PLAN))

ANED
DEC 78
(USED R.P.V.
(GENERAL PLAN))

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SCALE 1:24000



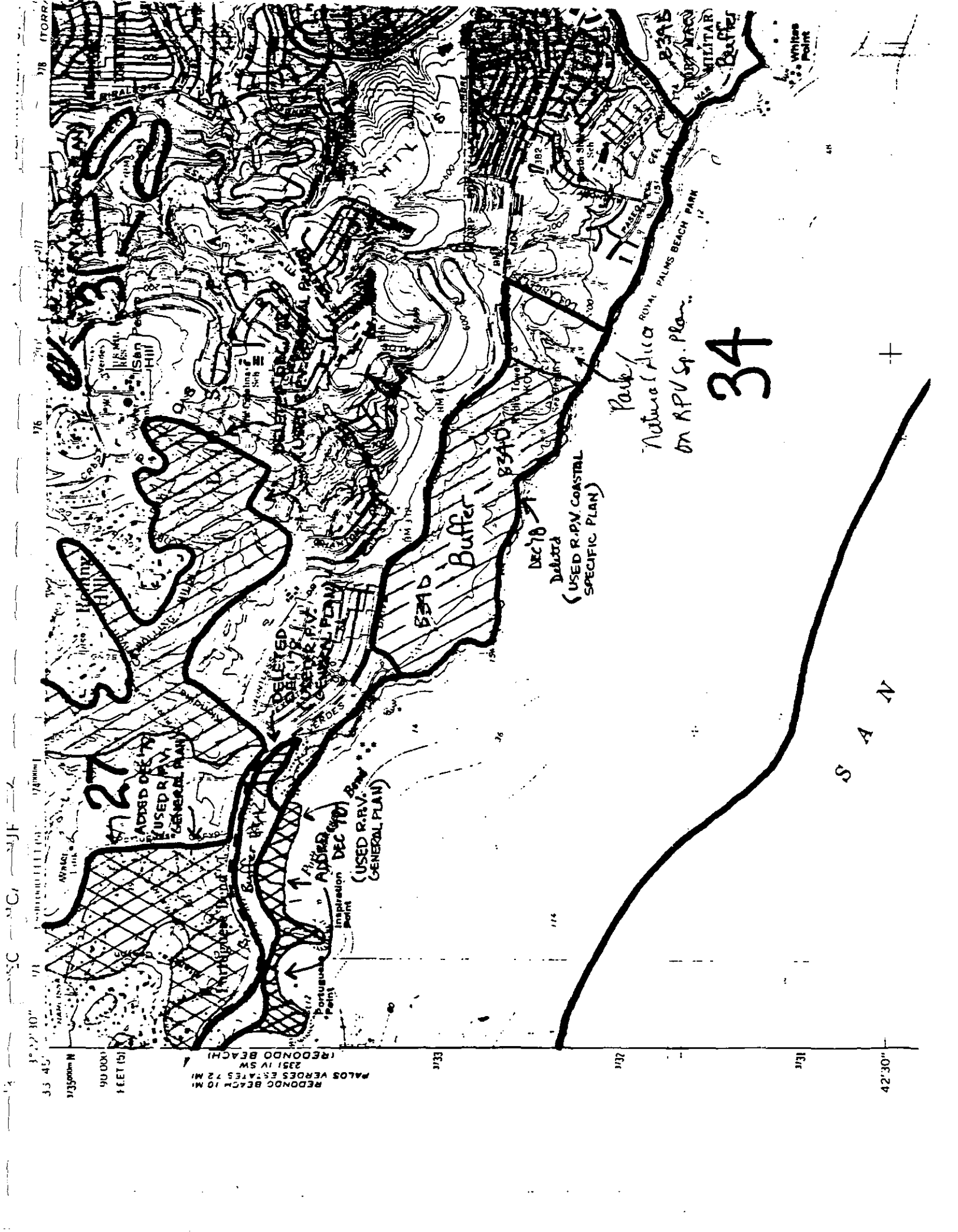
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ODIFIC VERTICAL DATUM OF 1929
GS IN FEET-- DATUM IN MEAN LOWER LOW WATER
ENTS THE APPROXIMATE EDGE OF MEAN HIGH WATER
NGE OF TIDE IS APPROXIMATELY 4 FEET

WITH NATIONAL MAP ACCURACY STANDARDS

REDONDO BEACH, CALIF.

NEED WITHIN 100 FEET

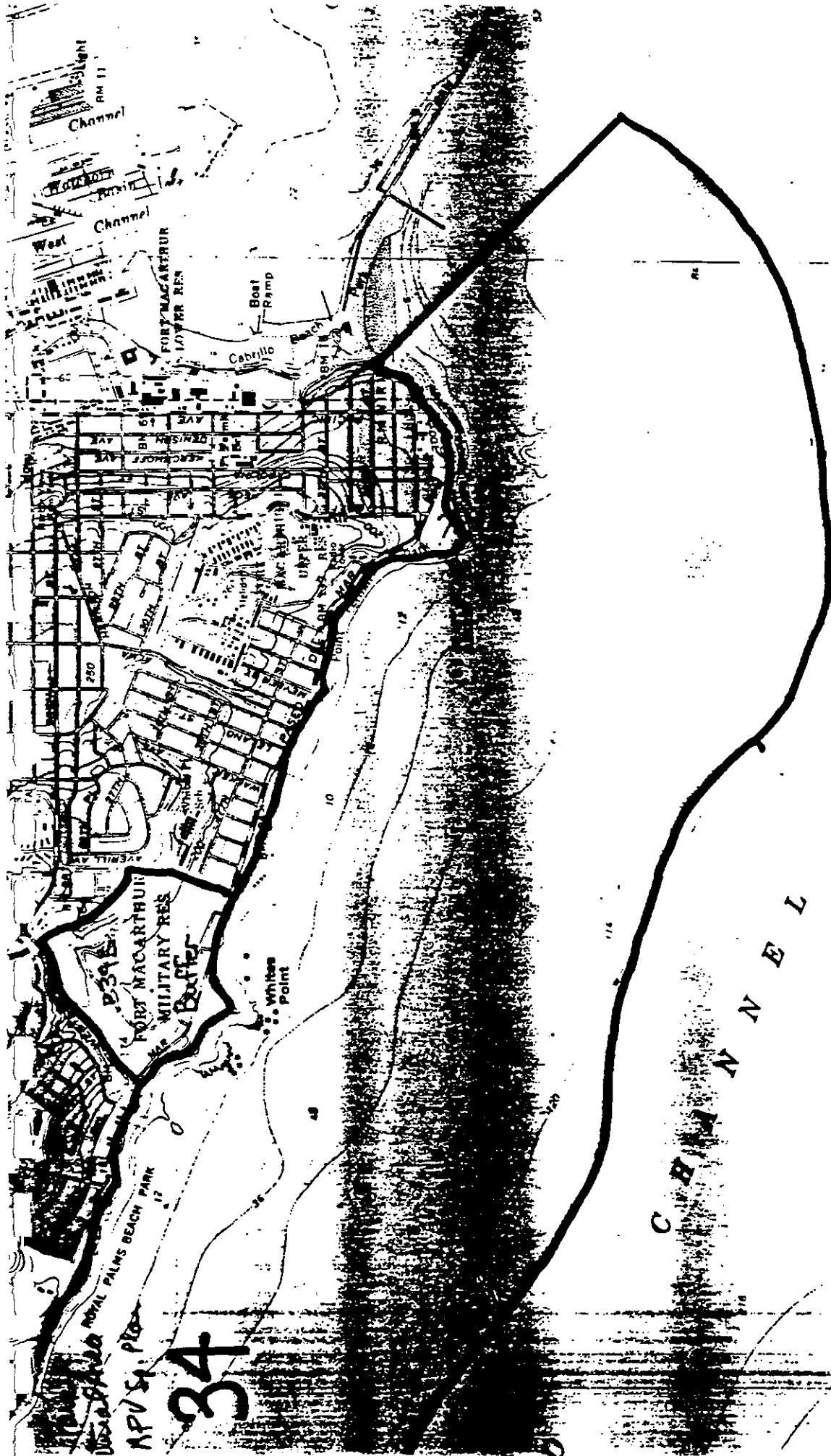
SAN PEDRO



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140 000
150 000
160 000
170 000
180 000
190 000
200 000

REDDOND BEACH 10 MI.
PALOS VERDES ESTATES 7.2 MI.
REDDOND BEACH
SAN ANTONIO
MILITARY BUFFER
ROYAL PALMS BEACH PARK
ADDED DEC 70 (USED R.P.V. GENERAL PLAN)
DELETED DEC 70 (USED R.P.V. GENERAL PLAN)
Buffer
Dec 70 Debra (USED R.P.V. COASTAL SPECIFIC PLAN)
Natural Area ROYAL PALMS BEACH PARK
on RPV Sp. Plan.
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42'30"

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C E R M A N N E L

34

APV SA Plaza

ROYAL PALMS BEACH PARK

FORT MACARTHUR MILITARY RES

White Point

Boat Ramp

Cabrillo Beach

West Channel

Channel

Area # 35

Name: Harbor Lake Regional Park

Quadrangle(s): Torrance

Class 3 (4,5,7)

Resource Description: Harbor Lake Regional Park supports one of two remaining wetlands that once covered the South Bay area. The freshwater plants and animals found here are completely surrounded by residential and industrial facilities. This type of habitat has been filled, drained, and lost to development throughout most of Los Angeles County. In some areas, man-made lakes and ponds have created small freshwater marshes along their edges, but this is minimal when compared to the large expanses of freshwater marsh that were once found in the Los Angeles basin.

Freshwater marsh habitat supports a great diversity of wildlife. Most of the bird species found here are dependent in some way on the surface moisture and vegetation, and would not be able to survive without it. It is also a habitat that supports several species of amphibians. Frogs and toads can be found here that are becoming extremely difficult to find throughout southern California. The marsh is also an important area for migratory birds. Because Harbor Lake Regional Park and Madrona Marsh are the only habitat of this type in southern Los Angeles County, they serve as miniature wildlife refuges. Waterfowl, shorebirds, marsh birds, and others can be found on the marsh in numbers during the spring and fall migration.

Status: The majority of the freshwater marsh is in the northern half of the park. Another portion lies to the north of the park across Pacific Coast Highway. The entire area is surrounded by residential and commercial development.

Information Source(s): Literature, ERC/UCLA

Nature of Information: The presence of the freshwater marsh has attracted considerable attention from the academic and scientific communities, and the resources of the area are well documented.

Buffer Zone Requirement: The freshwater marsh area is within the recommended boundaries. However, no development should be allowed on adjacent lands that will disturb its water source or increase the influx of pollutants.

Compatible Uses: Low intensity recreational uses are compatible with the remaining natural resources in most of the park. However, public use in the freshwater marsh areas should be very low intensity recreation.



Normanale
Playground

Ironsidee

Avalon Village

Harbor City

Wilmington

LOS ANGELES

Harbor Lake
35
HARBOR PARK
GOLF COURSE

RESERVATION

Area # 36

Name: Madrona Marsh

Quadrangle(s): Torrance

Class 3 (4,5,7)

Resource Description: Madrona Marsh is a remnant of the wetlands that once covered the South Bay area. The freshwater plants and animals found here are completely surrounded by residential and industrial development. This type of habitat has been filled, drained, and lost to development throughout most of Los Angeles County. In some areas, man-made lakes and ponds have created small fresh-water marshes along their edges, but this is minimal when compared to the large expanses of fresh water marsh that were once found in the Los Angeles Basin.

Freshwater marsh habitat supports a great diversity of wildlife. Most of the bird species found here are dependent in some way on the surface moisture and vegetation, and would not be able to survive without it. It is also a habitat that supports several species of amphibians. Frogs and toads can be found here that are becoming extremely difficult to find throughout southern California. The marsh is also an important area for migratory birds. Because Madrona Marsh and Harbor Lake Regional Park are the only habitat of this type in southern Los Angeles County, they serve as miniature wildlife refuges. Waterfowl, shorebirds, marsh birds, and others can all be found on the marsh in numbers during the spring and fall migration.

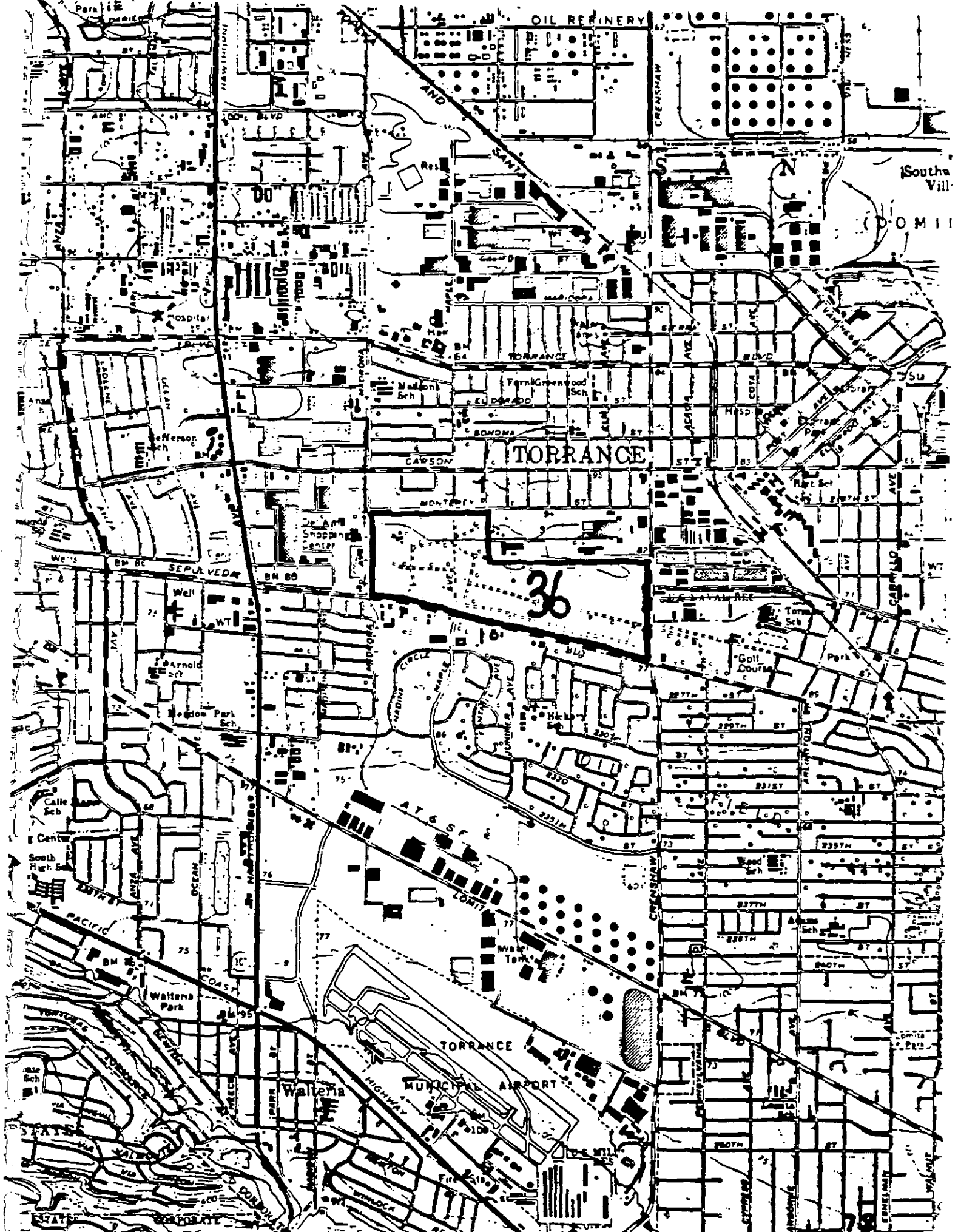
Status: The area is currently being used for gas and oil extraction, however remaining natural areas are in relatively good or salvageable condition. There is much interest in the local community and at academic and scientific institutions in acquiring and preserving the area.

Information Source(s): Survey/Interview, Literature, ERC/UCLA.

Nature of Information: Due to interest in preserving the remaining freshwater habitat and its use by educational institutions, the area has been surveyed by several competent biologists.

Buffer Zone Requirement: The freshwater marsh area is within the recommended boundaries. However, no development should be allowed on adjacent lands that will disturb its water source or increase the influx of pollutants.

Compatible Uses: Very low intensity recreational uses are compatible with the resources in the area. If collection of information on the area points to a need for restorative efforts, public use should be restricted until they are completed.



Area # 37

Name: Griffith Park

Quadrangle(s): Hollywood, Burbank

Class 7

Resource Description: Griffith Park lies at the eastern end of the Santa Monica Mountains. It supports the coastal sage scrub, chaparral, riparian, and southern oak woodland plant communities that are typical in the interior mountain ranges of southern California. What makes Griffith Park important is its geographical location. It has become an island of natural vegetation surrounded by urban and suburban development.

These isolated areas are important for preserving and documenting the geographical variability of vegetation and wildlife that formerly occurred throughout the region. They serve as reservoirs of native species that could be of scientific and economic value in the future. In addition, birds rely on these islands for areas to rest and feed along their north-south migration routes. In the case of Griffith Park, this function is made even greater than might be expected because it serves as a corridor for any gene flow and species movement that may still take place between the Santa Monica and San Gabriel Mountains via the Verdugo Mountains.

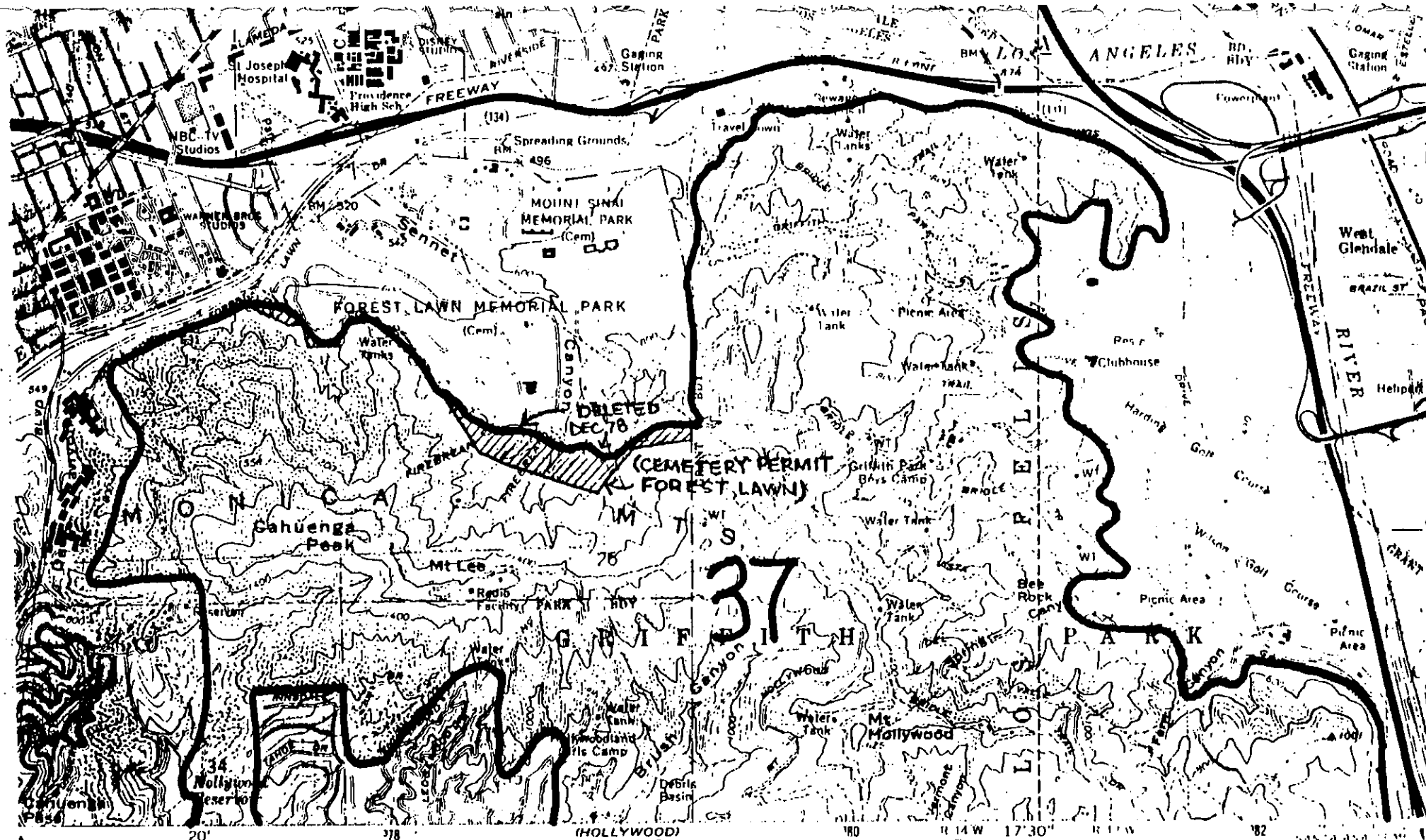
Status: With the exception of the Cahunga Peak-Hollywood Reservoir area, the land is publicly owned. Much of the natural vegetation of the area has been disturbed through human usage or modified by the introduction of non-native plants. However, large areas of natural habitat remain.

Information Source(s): ERC/UCLA

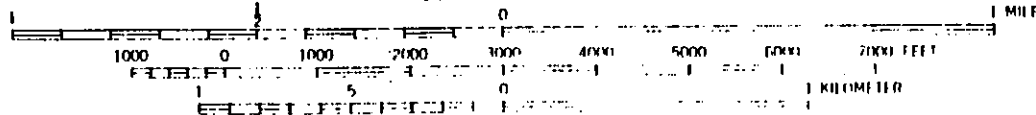
Nature of Information: General information on the biota of the park is available, but specific information is lacking.

Buffer Zone Requirement: None. Resources will be protected by recommended boundaries.

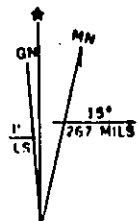
Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area.



SCALE 1:24000



CONTOUR INTERVAL 40 FEET
 DOTTED LINES REPRESENT 10 FOOT CONTOURS
 DATUM IS MEAN SEA LEVEL



1972 MAGNETIC NORTH
 AT CENTER OF SHEET



QUADRANGLE LOCATION

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80211 OR RESTON, VIRGINIA 22092

Area # 38

Name: Baldwin Hills

Quadrangles(s): Beverly Hills, Hollywood, Inglewood, Venice

Class 8

Resource Description: The Baldwin Hills support a coastal sage scrub plant community. This vegetation type was once common throughout the Los Angeles Basin, but has now been severely reduced by urban development. This type of community shows desert influences, and supports species that are now found only at the edge of the Los Angeles metropolitan area and on the desert side of the San Gabriel Mountains.

The Baldwin Hills should be considered as a significant ecological area not for what is there now, but for what they can become. They are one of the last remaining open spaces in the western portion of the Los Angeles basin. Consideration is already being given to the possibility of creating a major urban park in the Baldwin Hills when oil and gas operations cease. If this comes about, a portion of the area should be restored and planned for light recreational uses such as hiking, observation, and educational programs. Emphasis should be placed on landscaping with native species. This vegetation can be self-perpetuating, and thus easier and cheaper to maintain.

The biotic communities in the Baldwin Hills have been heavily impacted by ORV use, oil and gas extraction, and other human encroachments. However, the remaining vegetation type is limited in distribution in Los Angeles County, and can be salvaged. If this is done, it will become a unique natural island within the metropolitan area, and again support a healthy sample of this once widespread community.

Status: See resource description.

Information Source(s): Survey/Interview, ERC/UCLA

Nature of Information: The area has been recognized by biologists and conservationists as a potentially valuable open space.

Buffer Zone Requirement: None.

Compatible Uses: Low intensity recreational uses are compatible with the resources in the area. However, before the area is opened to public use, a restoration program should be implemented.

SEA #38 Baldwin Hills

Redesignated to Open Space

Area # 39

Name: Encino Reservoir

Quadrangle(s): Canoga Park, Topanga

Class 7

Resource Description: This area contains the best undisturbed stand of inland chaparral, coastal sage scrub, and streamside vegetation remaining on the inland slope of the Santa Monica Mountains. In addition, there is freshwater habitat along the Encino Reservoir.

The absence of moist marine air influences gives the vegetation types found here characteristics that are considerably different than those found in similar communities on the coastal side of the mountains. The species present and their composition vary significantly.

The association between the freshwater habitat and surrounding vegetation enhances the diversity and abundance of wildlife. Under these conditions, the overlap of habitats provides a greater number of resources than are provided by each habitat alone.

Status: Development within the area has been limited to Mulholland Drive along the southern boundary, a paved road around the reservoir, and a few dirt roads and firebreaks along the ridges.

Information Source(s): Survey/Interview, ERC/UCLA

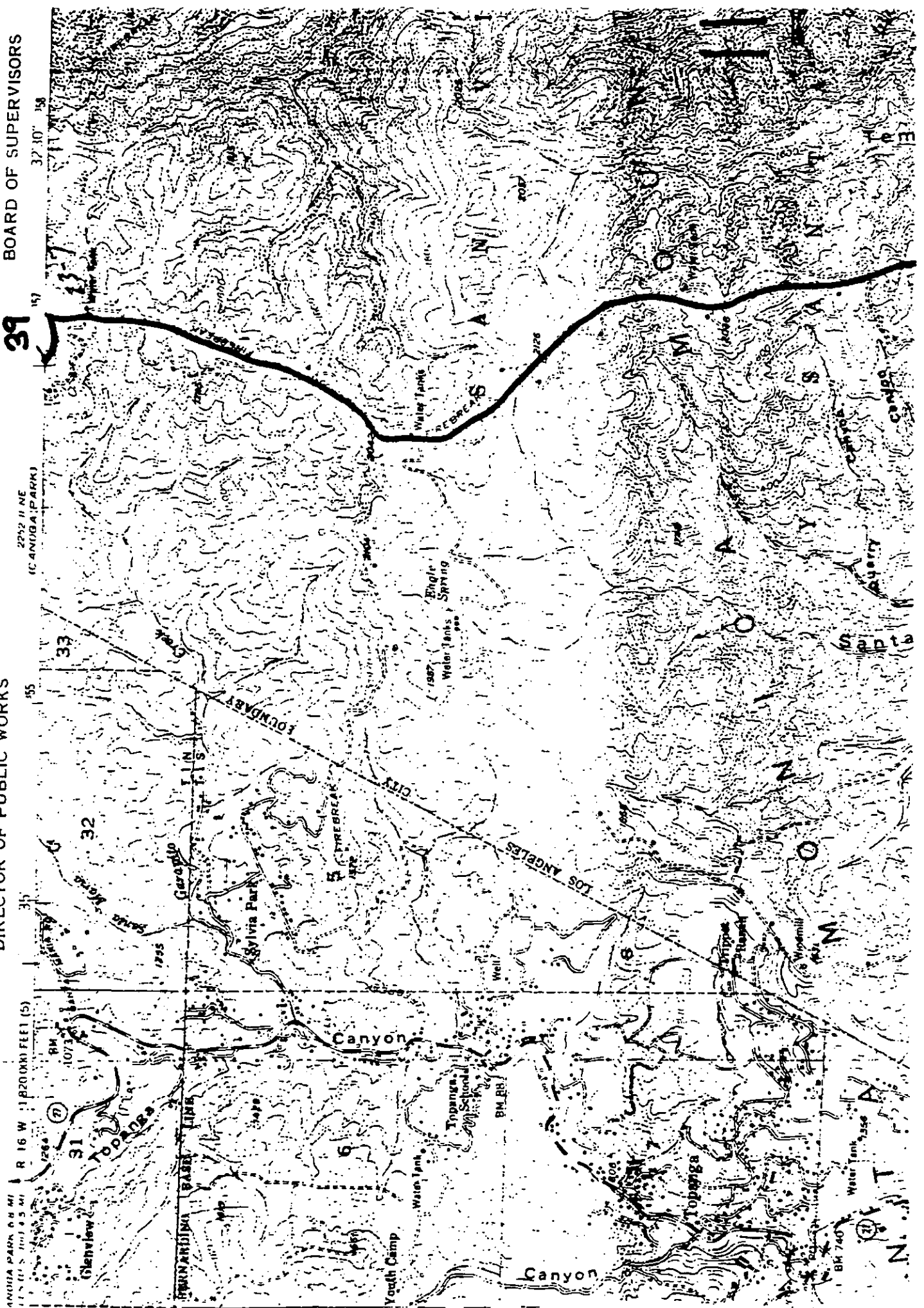
Nature of Information: The rapid development of the Santa Monica Mountains has concerned many professional and non-professional biologists. This concern has generated information on the remaining areas of relatively undisturbed natural vegetation.

Buffer Zone Requirement: None, the area recommended should provide an adequate buffer for the resources present.

Compatible Uses: Very low intensity recreational uses are compatible with the resources in the area.

STATE OF CALIFORNIA
REPRESENTED BY THE
DIRECTOR OF PUBLIC WORKS

LOS ANGELES COUNTY
BOARD OF SUPERVISORS



Area # 40

Name: Verdugo Mountains

Quadrangle(s): Burbank, Sunland, Pasadena

Class 7

Resource Description: The Verdugo Mountains are an extensive, relatively undisturbed island of natural vegetation in an urbanized metropolitan area. Their geographic location makes them important for scientific study, genetic interchange between otherwise isolated populations, and recreation to urban residents.

Chaparral and coastal sage scrub cover the hillsides of the mountains, with riparian vegetation, including California bay, sycamore, ferns, and tiger lilies, found in many of the stream drainages. These plant communities provide habitat essential to the diverse and abundant fauna found in the area.

The area serves as an island refuge, providing what remains of a link between plant and animal populations found in the Santa Monica and San Gabriel Mountains. Genetic interchange, by way of this linkage is important in perpetuating the genetic variability in isolated populations, and consequently the maintenance of healthy ecosystems.

The proximity of the mountains to urban areas provides an excellent opportunity to study the interaction between wild animal populations and humans. The area has already been used for studies concerned with public health.

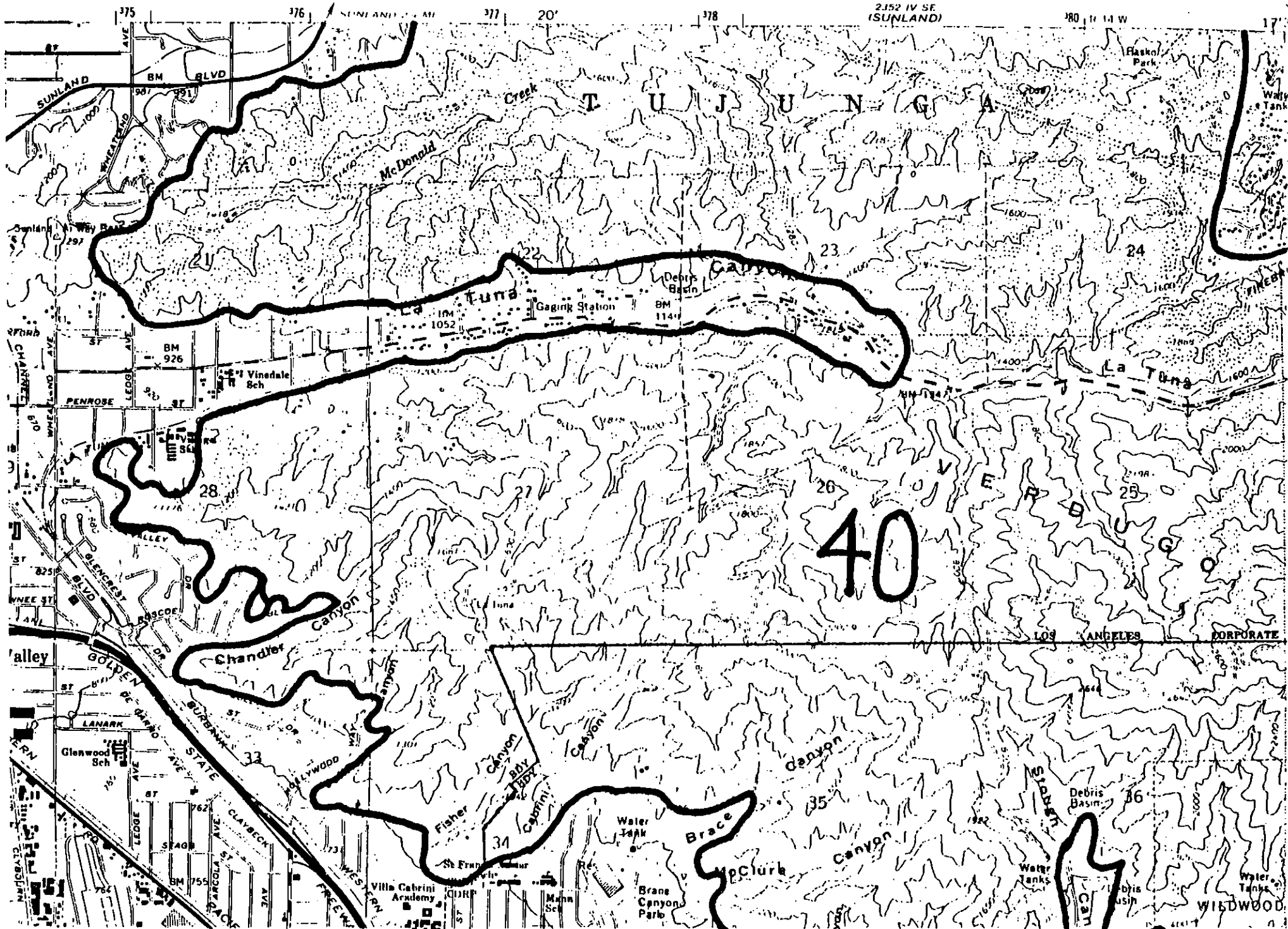
Status: In general, the area has been lightly impacted by dirt roads, firebreaks, transmission lines, and structures such as isolated houses, radio towers, and water tanks. A paved road through La Tuna Canyon traverses the area. The Foothill Freeway crosses the northern edge. However, present human use of the area has been low and has not significantly effected the natural resources found here

Information Source(s): Survey/Interview, ERC/UCLA

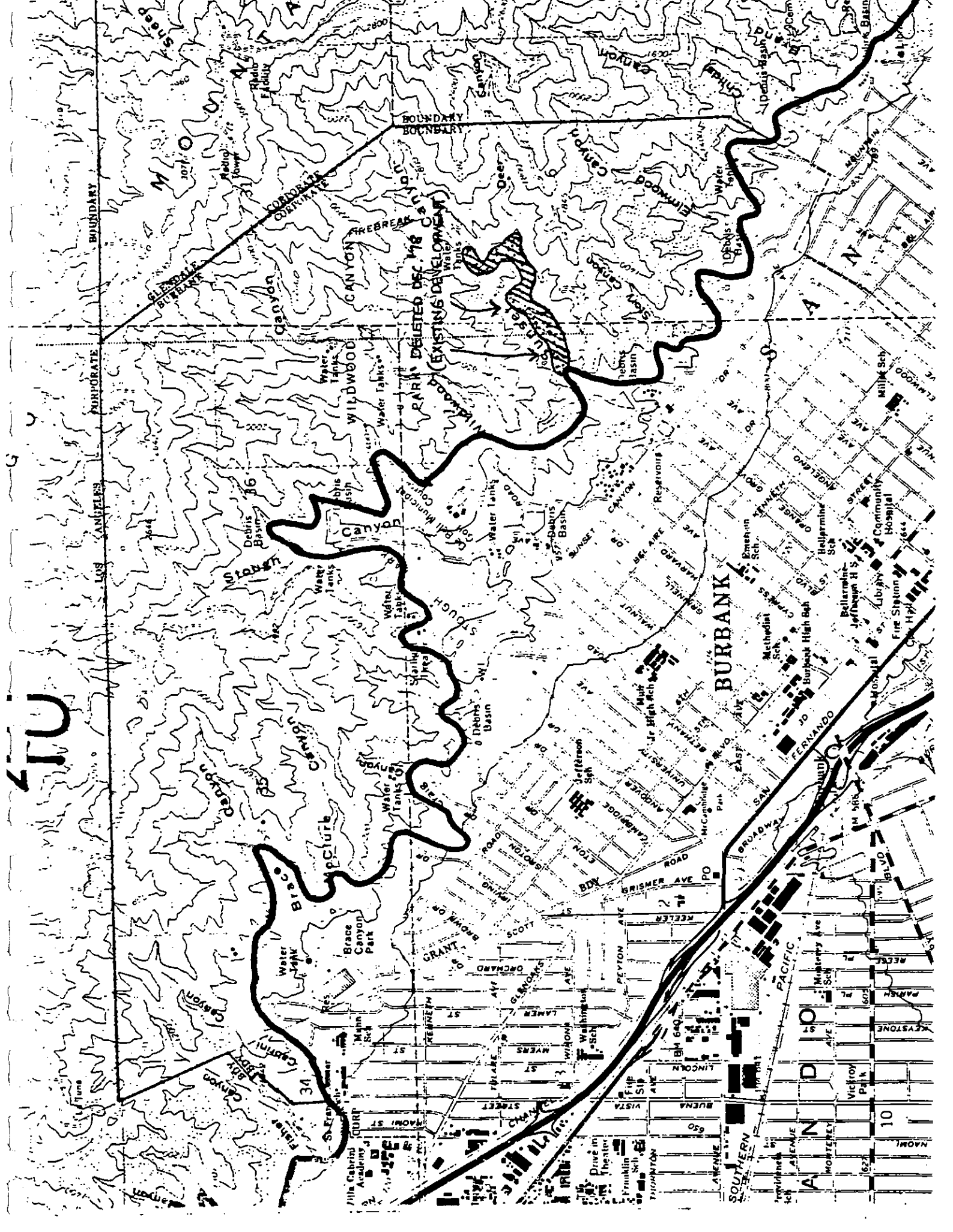
Nature of Information: The scientific, recreational, and ecological values of the area have long been recognized and used by professional and non-professional biologists. Considerable information exists on the area.

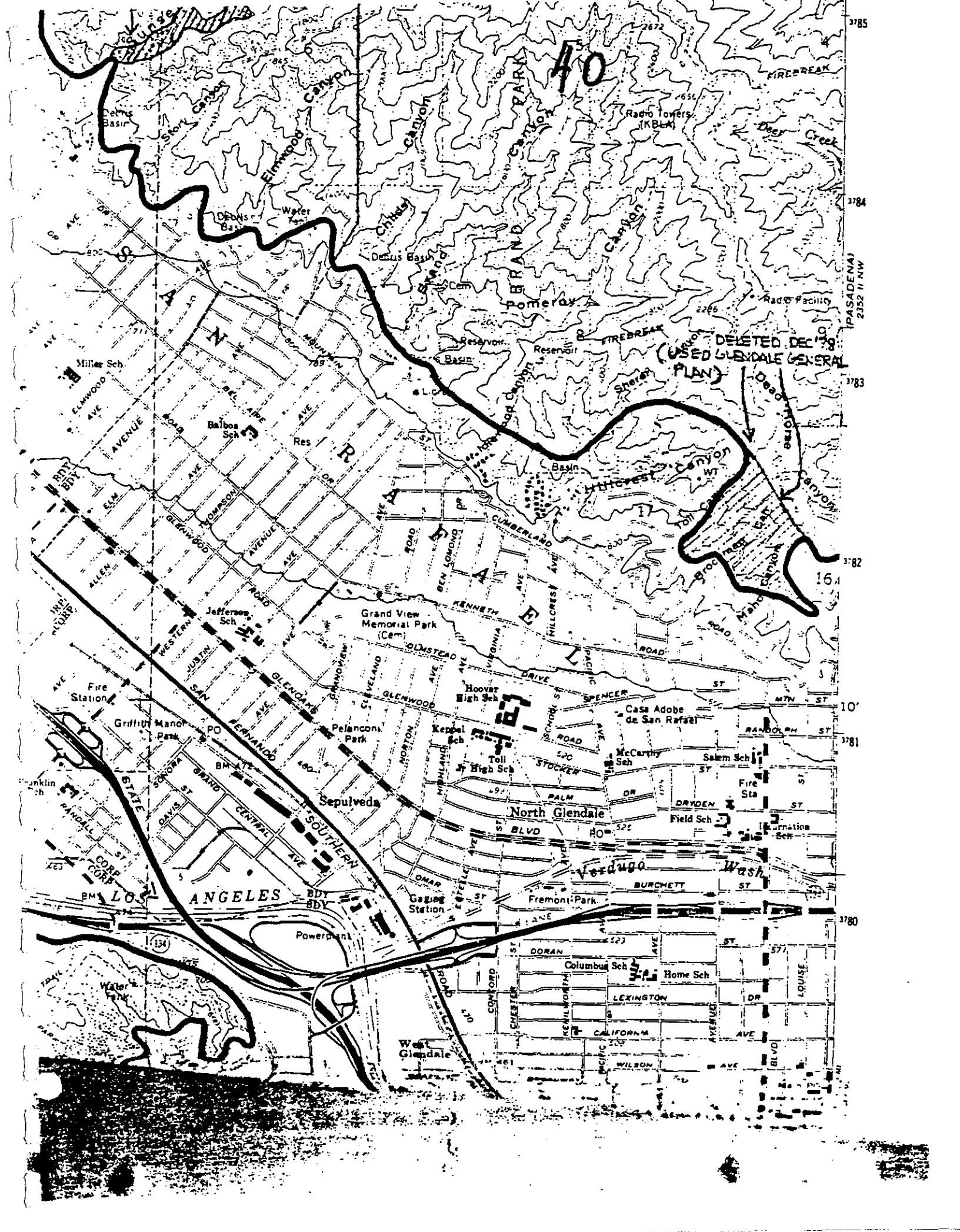
Buffer Zone Requirement: None, the area included should be sufficient to preserve the value of the mountains.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area.



STU





40

DELETED DEC 19
(USED GLENDALE GENERAL
PLAN)

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(PASADENA)
2352 11 NW

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LOS ANGELES

West Glendale

DORAN

COLUMBUS

HOME

LEXINGTON

CALIFORNIA

WILSON

LOUISE

LOUISE

LOUISE

LOUISE

LOUISE

LOUISE

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E OF CALIFORNIA
OF WATER RESOURCES

BURBANK
CALIFORNIA
7.5 MINUTE

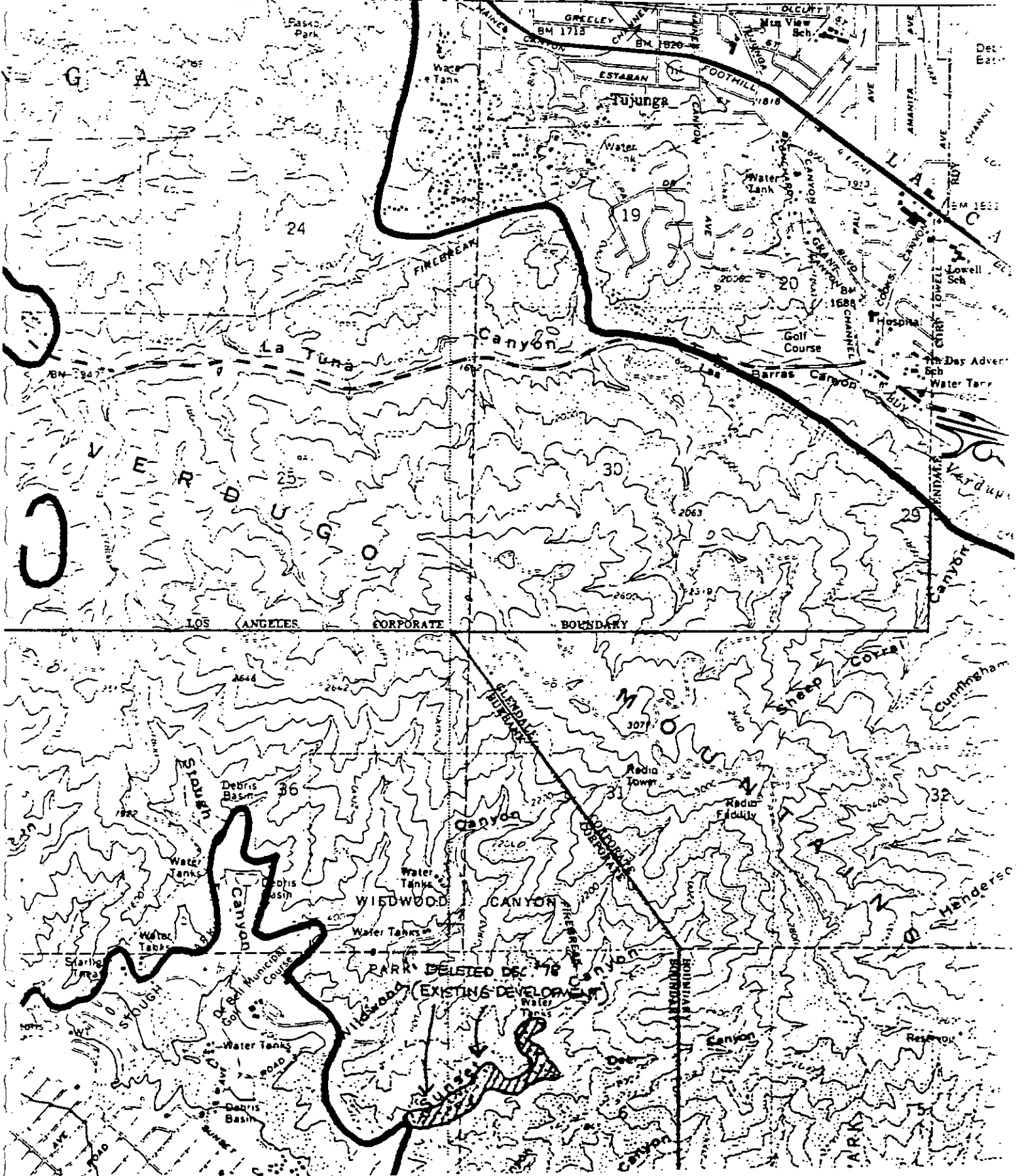
2352 IV SE
(SUNLAND)

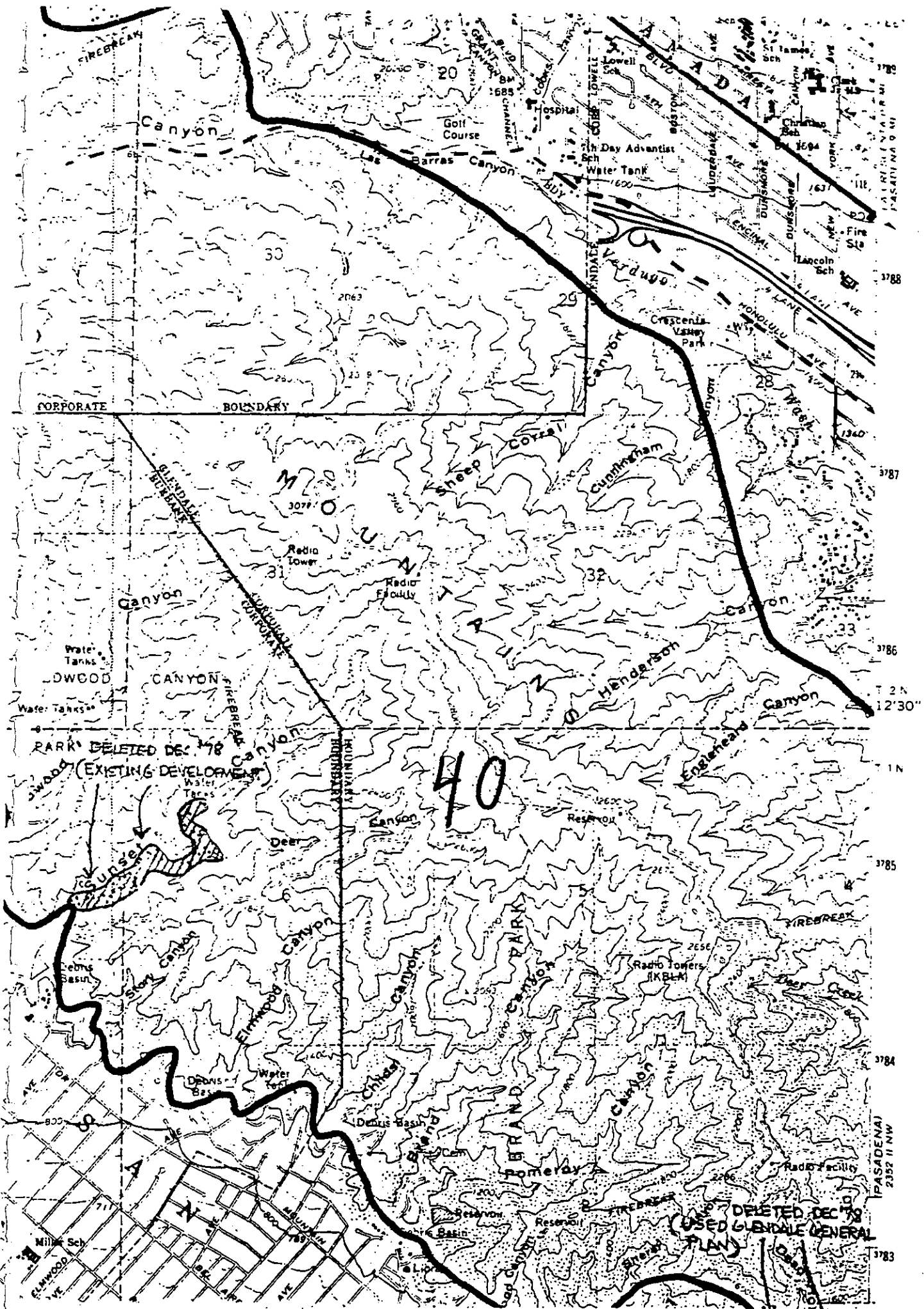
380

7'30" SAN FERNANDO 10 MI
SUNLAND 1.3 MI.

R 13 W

383





40

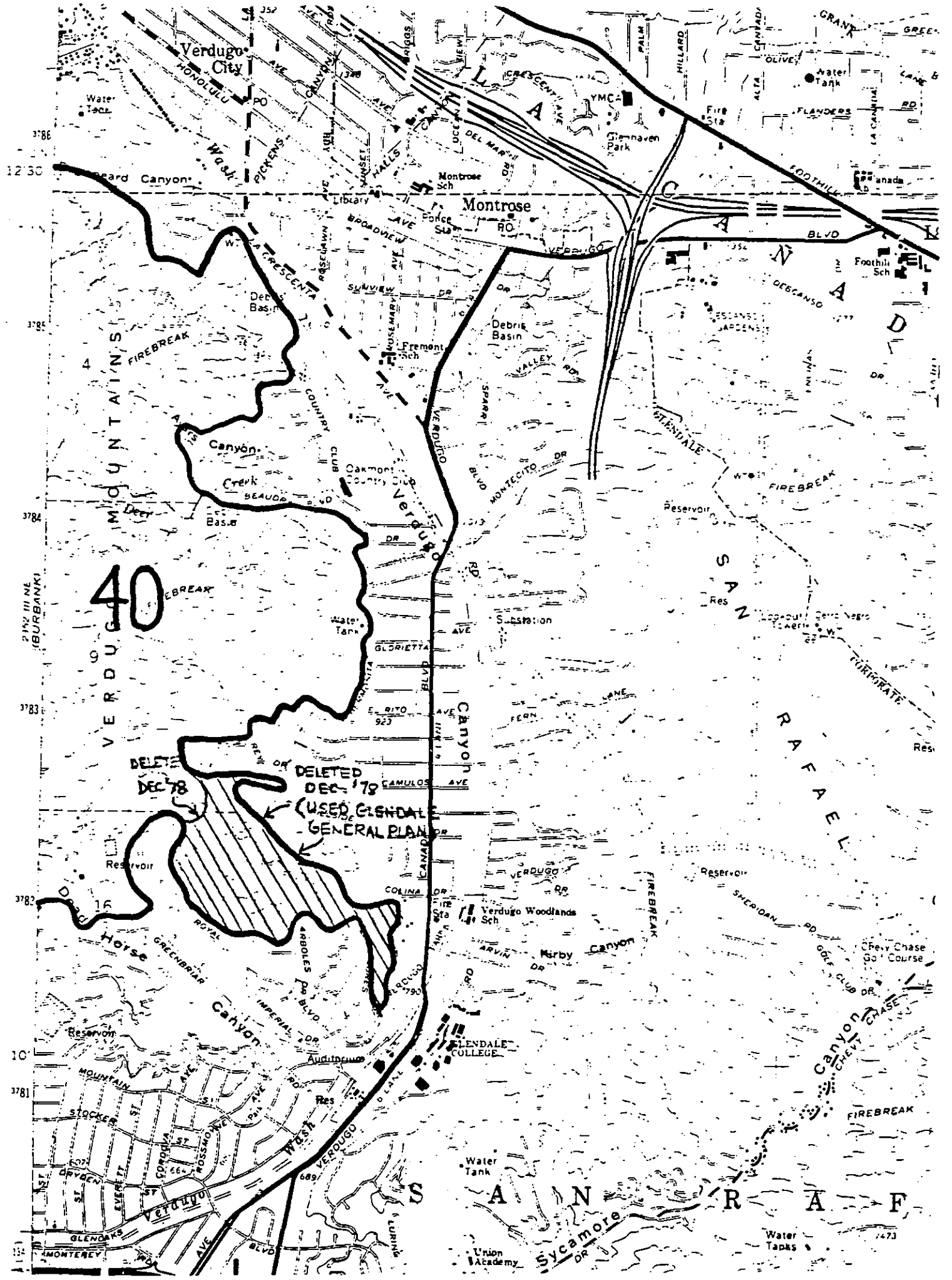
PARK DELETED DEC '78
(EXISTING DEVELOPMENT)

DELETED DEC '78
(USED GLENDALE GENERAL PLAN)

(PASADENA)
2352 11 NW

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118° 12' 30"
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118° 8' 00"
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118° 5' 30"
118° 5' 00"
118° 4' 30"
118° 4' 00"
118° 3' 30"
118° 3' 00"
118° 2' 30"
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118° 1' 30"
118° 1' 00"
118° 0' 30"
118° 0' 00"



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DELETED DEC 78
(USED GLENDALE GENERAL PLAN)

12 30

2 152 III NE (BURBANK)

3783

3782

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3781

154

Verdugo City

Montrose

VERDUGO MOUNTAINS

VERDUGO

Verdugo Canyon

SAN ANTONIO

Sycamore

Canyon

SAN RAFAEL

GLENDALE

FOOTHILL

GRAND

GREEN

Water Tank

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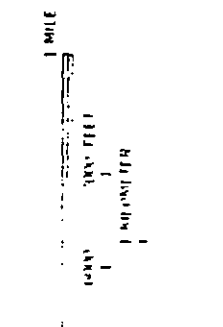
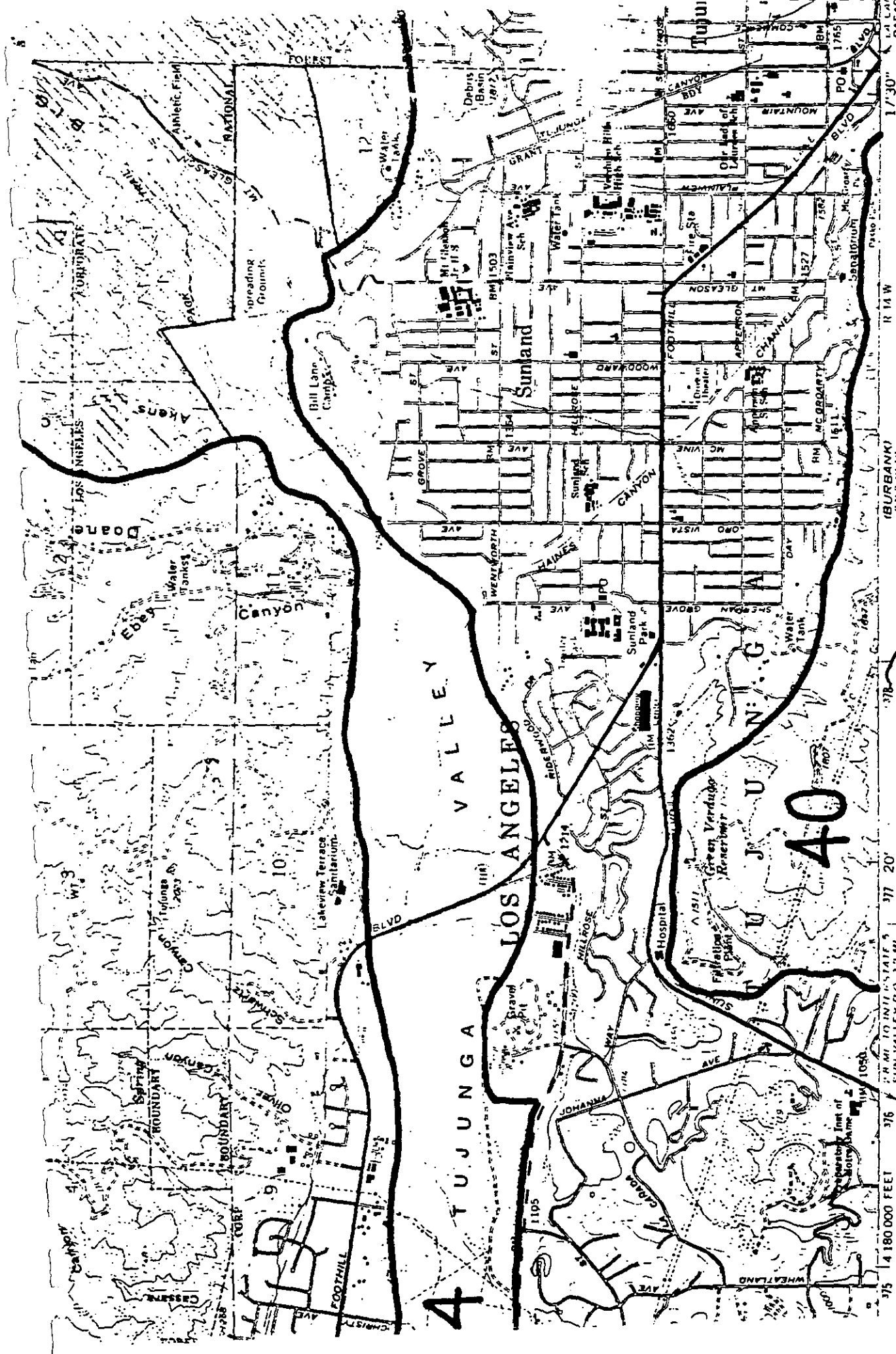
Water Tank

Water Tank

Water Tank

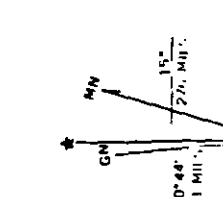
Water Tank

Water Tank



SCALE 1:24,000
 (BURBANK)
 252 1/2 FT

CONTOUR INTERVAL 40 FT
 DOTTED LINES REPRESENT



3
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ological Survey
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 erial

Area # 41

Name: Rio Hondo Spreading Grounds

Quadrangle(s): Whittier, El Monte

Class 8

Resource Description: The Rio Hondo Spreading Grounds provide a refuge for many species of birds within a highly urbanized region. The open water is particularly important as a resting and feeding site for migrating and wintering waterfowl. The abundance of birdlife found here offers an excellent opportunity for the establishment of a bird sanctuary and nature center.

Under present conditions the spreading grounds are void of significant natural vegetation. Plant cover primarily consists of low-growing shrub and herb species, many of which are weeds. Freshwater marsh vegetation is beginning to establish itself in a few places. Although the most significant resource is the birdlife, reptiles, mammals, amphibians, and fish are undoubtedly present.

The area's potential as a bird sanctuary and nature center can be realized by implementing a management program to increase the availability of marsh habitat. This has been done successfully in other areas, and has been found to significantly increase the availability of this limited community.

Status: The spreading ponds and surrounding area have been scraped and are devoid of significant vegetation. Many species found there are weeds. However, the area is used by a large number of bird species.

Information Source(s): Survey/Interview, Literature

Nature of Information: Ponds created by man frequently hold an abundance of birdlife. These areas are commonly used by professional and non-professional ornithologists at local colleges and by conservation groups, such as the Audubon Society. The significance of spreading grounds has been documented through this use.

Buffer Zone Requirement: None.

Compatible Uses: Low intensity recreational uses are compatible with the resources of the area. However, before the area is opened to public use, a management program to reestablish native freshwater marsh vegetation should be initiated.

SEA # 41 Rio Hondo Spreading Grounds

Redesignated to Open Space

Area # 42

Name: Whittier Narrows Dam County Recreation Area

Quadrangle(s): El Monte

Class 3 (4,5,7)

Resource Description: The Whittier Narrows Dam County Recreation Area contains an extensive area of excellent lowland riparian and freshwater marsh habitat, most of which has been set aside as a wildlife refuge. A nature center with excellent educational and interpretive facilities has been established on the property, and successful habitat restoration and management programs have been implemented.

The area is located in the southern San Gabriel Valley along the San Gabriel and Rio Hondo Rivers. The area is a low flood plain with a high water table and rich soils. The adjacent portions of the San Gabriel River and most of the Rio Hondo remain in a fairly natural state, supporting impressive stream-side vegetation of willows, sycamores, cottonwoods, and mulefat. In addition, there are several lakes in the area which support freshwater marsh vegetation. Many of these habitat areas are protected within the nature center boundaries.

The area provides habitat for a very rich and diverse vertebrate fauna, including 24 species of mammals, 240 species of birds, 8 reptiles, 4 amphibians, and several fish. Many of these are restricted to riparian and freshwater marsh habitats and are uncommon in Los Angeles County.

The nature center provides educational and interpretive programs with a nature trail system, museum, and tours for school children. It also includes a habitat restoration program where replantings with natives and re-introduction of wildlife are reestablishing a natural balance in areas previously affected by man.

Status: The vegetation along the Rio Hondo and San Gabriel Rivers has remained in a fairly natural state. However, most of the area has been man-altered at one time through grazing and clearing. Native vegetation is now being reestablished over much of the area.

Information Source(s): Literature, Survey/Interview, ERC/UCLA

Nature of Information: Comprehensive biotic surveys have been completed by the biologists at the Whittier Narrows Nature Center. In addition, the area has long been used to observe birdlife by the Audubon Society and professional ornithologists.

Buffer Zone Requirement: The area included and current policing by the nature center staff should be adequate to maintain the resources present.

Compatible Uses: Low intensity recreational uses are compatible with the resources of the area. Vegetation reestablishment pro-

Area # 42 continued

grams should be continued, and closure of important avian breeding grounds may be necessary during the spring and summer.

Area # 43

Name: Río Hondo College Wildlife Sanctuary

Quadrangle(s): El Monte

Class 8

Resource Description: This area has been designated as a Significant Ecological Area because it is currently used as a wildlife sanctuary by the faculty and students at Río Hondo College. The area possesses good examples of the riparian woodland, chaparral, oak woodland, and coastal sage scrub communities found in the west end of the Puente Hills. Its proximity to the Río Hondo College campus makes it a highly valuable educational and resource facility.

The biotic communities here contain a variety of plant life and an abundant fauna, including over 100 species of vertebrates. The biological resources of the sanctuary are widely used by students at the college. Only minutes from campus, it is an excellent natural classroom and laboratory.

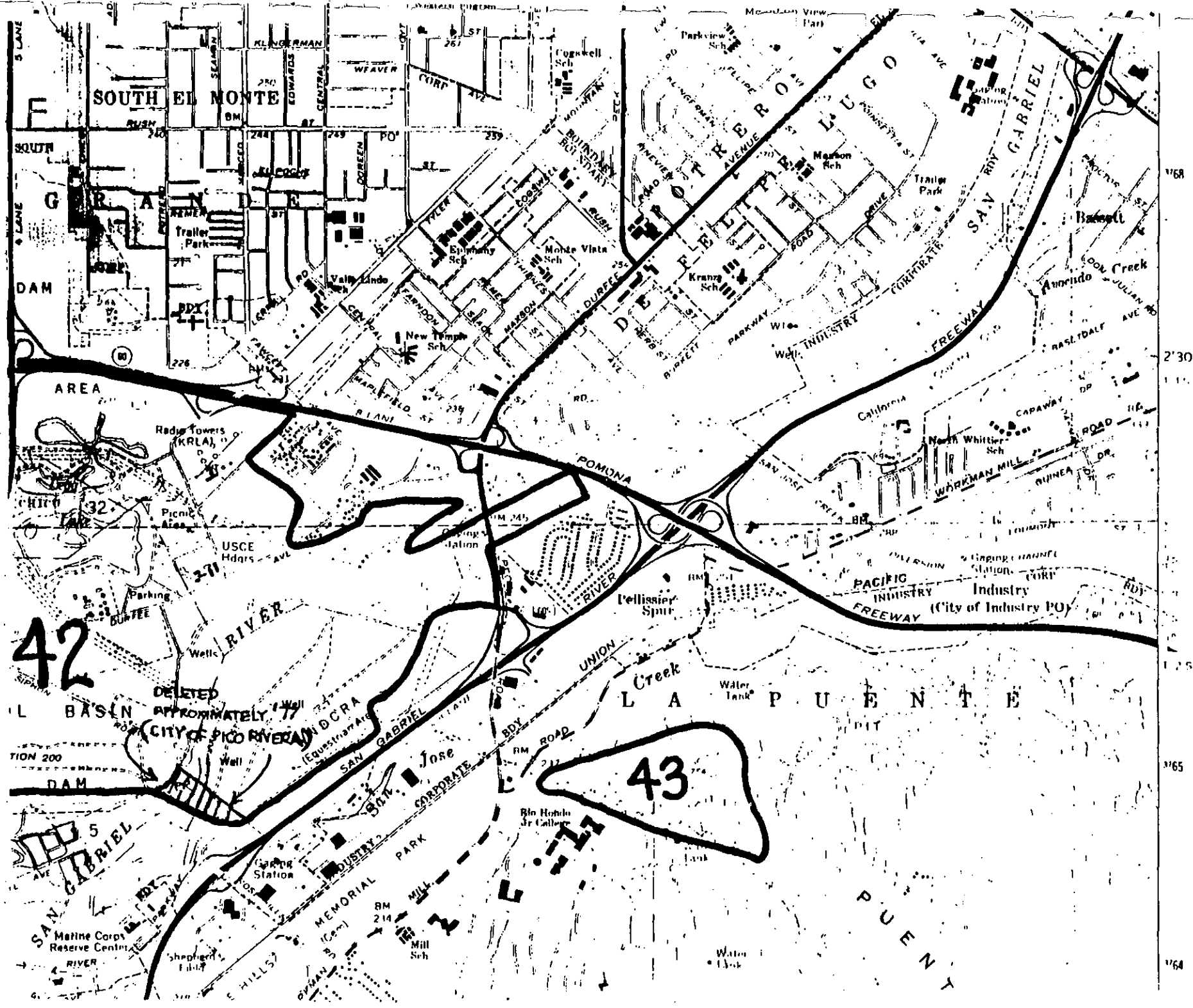
Status: The area is relatively undisturbed. The only developments have been a paved road which crosses the property, and a transmission line which skirts its southern boundary.

Information Source(s): Survey/Interview, ERC/UCLA, CNACC/CNPS

Nature of Information: Field records on the biotic resources of the area have been kept by professors and students at Río Hondo College for eight years. Additional documentation of the area's significance has come from many research projects conducted by biology students. The educational value and ecological significance of the sanctuary has also come to the attention of the California Natural Area Coordinating Council.

Buffer Zone Requirement: None. Resources will be protected by recommended boundaries.

Compatible Uses: Very low intensity recreational uses are compatible with the resources in the area.



SOUTH EL MONTE

GARFIELD

DAM

AREA

42

DELETED APPROXIMATELY
CITY OF PICO RIVER AND DCRA

43

SAN GABRIEL
Matine Corp
Reserve Center

INDUSTRY PARK
MEMORIAL PARK

SAN GABRIEL
CORPORATE

WILSON

L A P U E N T E

P U E N T

1'68

2'30"

1'25

1'65

1'64

Area # 44

Name: Sycamore and Turnbull Canyons

Quadrangles(s): El Monte, Whittier, La Habra

Class 7

Resource Description: These canyons and adjacent ridges possess one of the finest undisturbed examples of natural vegetation remaining in the Puente Hills. In addition, Sycamore Canyon contains a stream that usually flows year-round, and supports one of the best examples of riparian woodland found in the region.

A variety of plant communities is found in the area including riparian woodland, oak woodland, coastal sage scrub, and chaparral. The lush riparian vegetation provides food, nesting sites, and cover for many animals. The surrounding undisturbed vegetation is extensive enough to enable uncommon species like deer, coyote, bobcat, and badger to frequent the area.

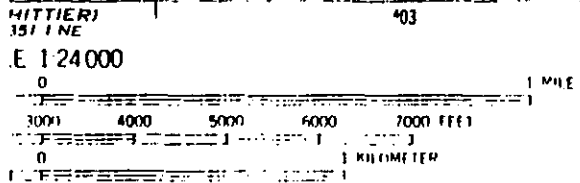
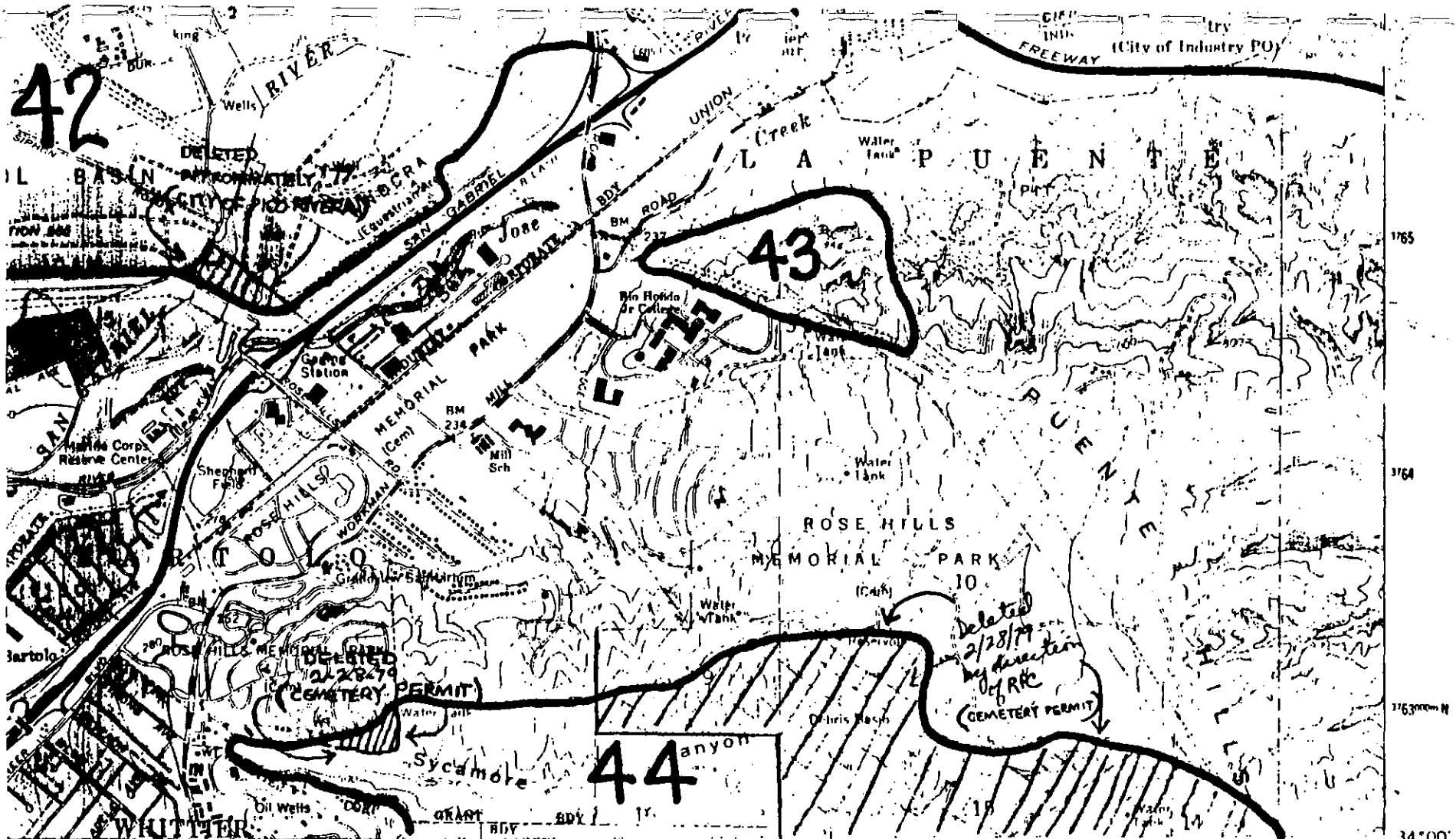
Status: The canyon bottoms were once overgrazed, but little evidence of this remains today. The entrance to the canyon has been used as a children's nature study area in the past. There are a few dirt and paved roads present, and a transmission line crosses the western portion of the area. However, man-made structures have been restricted to a few scattered water tanks. In general, the area is in good condition.

Information Source(s): Survey/Interview, ERC/UCLA

Nature of Information: The area has received much attention from biologists at Rio Hondo College and other nearby academic institutions, as well as from many local non-professional biologists.

Buffer Zone Requirement: The Rose Hills Memorial Park development to the north of the area will be helpful in this regard. Otherwise the area is large enough that it should sustain itself without designated buffer areas.

Compatible Uses: Low intensity recreational uses are compatible with the resources of the area.



INTERVAL 20 FEET
 ESSENTIAL 10-FOOT CONTOURS
 VERTICAL DATUM OF 1929

NATIONAL MAP ACCURACY STANDARDS
 FEDERAL GOVERNMENT, COLORADO 80225, OR RESTON, VIRGINIA 22092
 MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Heavy duty	—————	Light duty
Medium duty	- - - - -	Unimproved dirt
Interstate Route	—————	State Route



QUADRANGLE LOCATION

Boundaries shown in purple compiled by the Coast and Geodetic Survey from aerial photographs taken 1957. The information is not to be used for navigation.

EL MONTE, CALIF.
 N 3400 - W 11800 75

1966
 PHOTOGRAPHIC SERIES
 AMSC 2502 II SER. SERIES V80

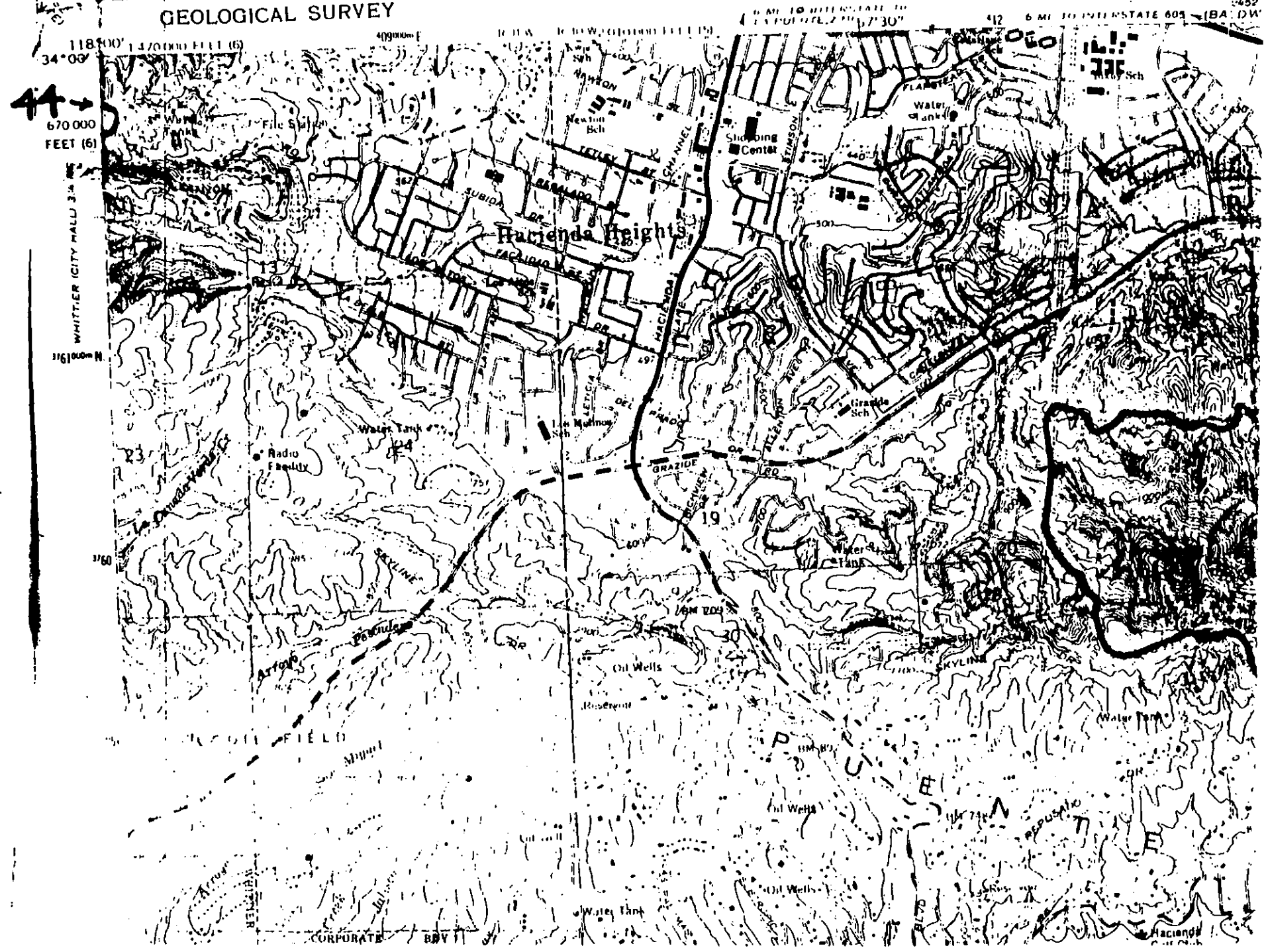
67

LA HABRA
 205-11-11

MSB 22

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES



44 →

670 000
FEET (E)

WHITTIER CITY MAP 3.4

316 000 N

3760

118°00' WESTERLY FEET (E)

34°00'

499 000 E

6 MI TO INTERSTATE 605
LA POINTE 2 MI 7'30"

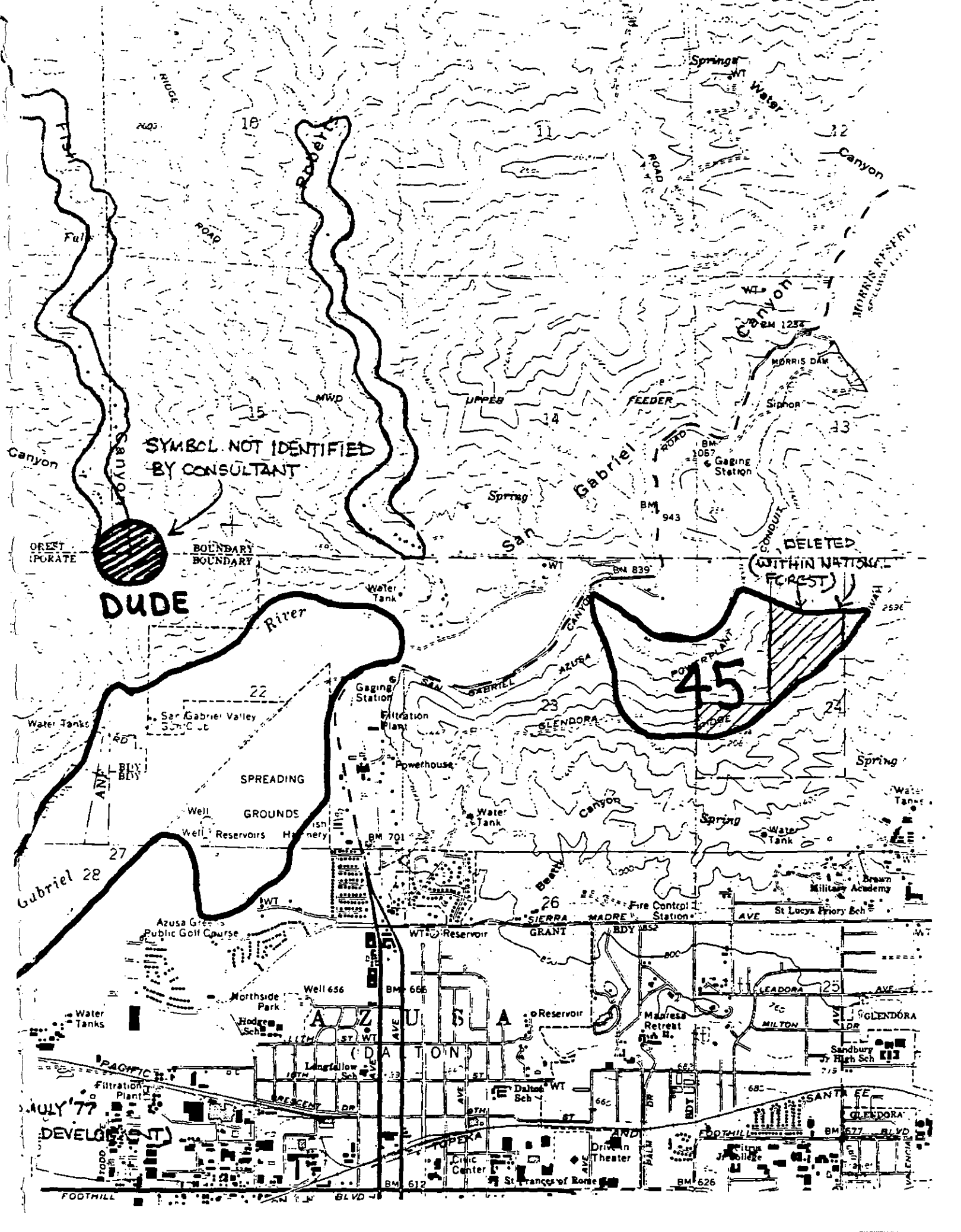
412

6 MI TO INTERSTATE 605

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BA DW

CORPORATE BRY

Hacienda



SYMBOL NOT IDENTIFIED BY CONSULTANT

DUDE

DELETED (WITHIN NATIONAL FOREST)

45

AUG 1977 DEVELOPMENT

Area # 46

Name: Tujunga Spreading Grounds

Quadrangle(s): Van Nuys

Class 8

Resource Description: The Tujunga Spreading Grounds is an area containing ponded water which serves as important nesting, feeding, and resting grounds for many migrating, wintering, and resident bird species. The abundance of birdlife found here makes the area popular to many amateur and professional ornithologists. Its location in the heavily populated San Fernando Valley gives it the potential to be developed as a highly desirable interpretive and educational facility.

At present, the spreading grounds contain very limited natural vegetation. Grading and scraping have removed most of it. Nevertheless, the ponds, with marsh developing along their banks, attract waterfowl, shorebirds, and other aquatic birds. The presence of these species is enjoyed by many nature observers.

With the continued growth of environmental awareness, citizens have expressed a desire for an educational nature center in the San Fernando Valley. To date, there are no centers in the valley that are available to schools. These spreading grounds have the potential to become the first. By implementing the proper management program, the area can become a highly valuable site for education and nature study.

Status: The entire area has been altered by man through grading and scraping. However, many birds use the man-made ponds as a refuge.

Information Source(s): Survey/Interview, Literature

Nature of Information: The lack of adequate nature study centers in the San Fernando Valley has been of concern to educators and citizens in the area. Recent interest in the Tujunga Spreading Grounds has culminated in the regional Audubon Society submitting a written proposal to the Department of Water Resources.

Buffer Zone Requirement: None.

Compatible Uses: Low intensity recreational uses are compatible with the resources of the area. However, before the area is opened to public use, a management program to reestablish native freshwater marsh vegetation should be initiated.

SEA # 46 Tujunga Spreading Grounds

Redesignated to Open Space

Area # 47

Name: Edwards Air Force Base

Quadrangle(s): Mt. Mesa, Redman School

Class 1 (3,5,7)

Resource Description: This area contains botanical features that are unique and limited in distribution in Los Angeles County. They include an officially recognized endangered species, the Mojave spine flower (Chorizanthe spinosa), and the only good stands of mesquite (Prosopis glandulosa) in the County. In addition, the area possesses fine examples of alkali sink and creosote bush scrub communities.

C. spinosa is a declining California endemic. Its range includes portions of the western Mojave Desert where it is found in dry, sandy, gravelly places from 2500 to 3500 feet. This species has recently been identified and located in the area just southeast of Buckhorn Lake.

Mesquite is commonly found in washes and low places in the drier portions of southern California. However, this species is limited in Los Angeles County. In many places where it does occur, stands are small and thin. The stands within this area are extensive and dense.

The area contains fine examples of creosote bush scrub, alkali sink, and the transition vegetation between the two. Creosote bush scrub is a common plant community and covers the floors and lower slopes of Southern California deserts. It consists of a shrubby vegetation dominated by creosote bush (Larrea tridentata), burrobush (Ambrosia dumosa), and brittle bush (Encelia sp.). The alkali sink community is found in alkaline flats and low places with little or no drainage. The plants found here are adapted to salty soils. They include pickle-weed (Salicornia sp.), saltbush (Atriplex sp.), and saltgrass (Distichlis sp.). The flora and fauna making up this biotic community are unique to it, and are not found outside this habitat.

Status: There are many roads and structures in the area but significant biological resources have not been destroyed. Some of the area lies within a military reservation, and is somewhat protected from development. Portions of the area outside the reservation do not seem to be threatened by development at this time.

Information Source(s): Survey/Interview, ERC/UCLA, CNACC/CNPS

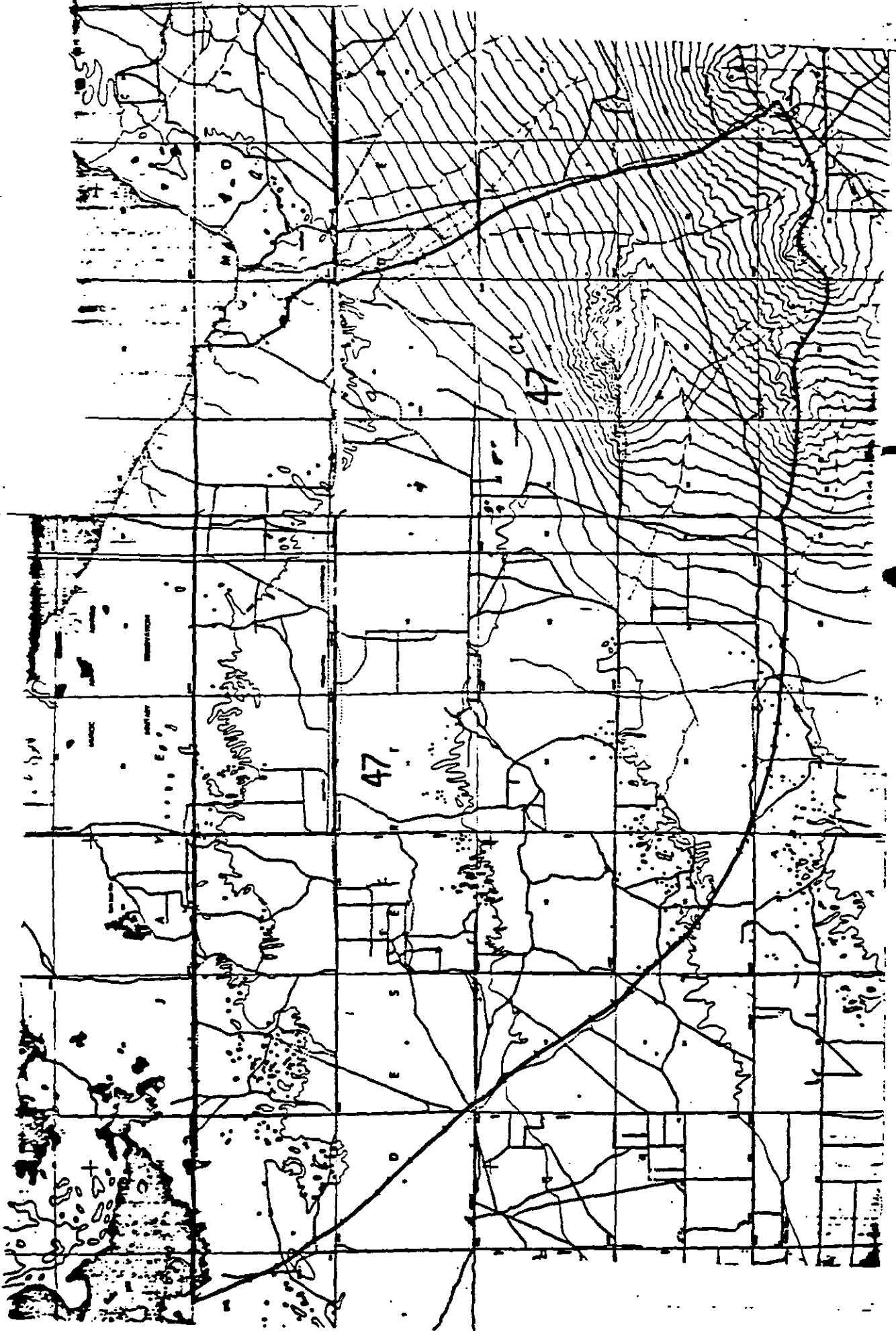
Nature of Information: The area has been known to competent botanists for some time. Literature is restricted primarily to rare and endangered species. The precise locations of other resources were not available and studies should be conducted in the area. In order to include all resources, a large generalized area was mapped.

Buffer Zone Requirement: None. Recommended boundaries are

Area # 47

sufficient to protect the resource.

Compatible Uses: In general, medium intensity recreational uses are compatible with the resources in the area. However, only regulated scientific study should be permitted in areas supporting the endangered Chorizanthe spinosa. All vehicle travel should be restricted to existing roads.



9,10

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Area # 48

Name: Big Rock Wash

Quadrangle(s): Littlerock, Lovejoy Butte, Valyermo

Class 4 (5,7)

Resource Description: Desert wash areas are important because they provide critical wildlife habitat and migration corridors, and a means of seed dispersal for many desert plants. In addition, they commonly possess a much greater diversity than surrounding areas, and are important to the stability of many desert ecosystems.

Big Rock Wash is a large and relatively undisturbed example of desert wash. Shadscale scrub, creosote bush scrub, and desert riparian plant communities are found within the area. The wash extends from the San Gabriel Mountains out into the Mojave Desert. Many montane species have extended their range a short distance into the desert along the wash. The unique ecological relationships created by these extensions are of scientific interest to ecologists.

The diverse and comparatively dense plant growth found here provides concentrated nesting habitat for most desert avian species. In desert areas, habitat of this nature is found in washes only, and is therefore limited in its availability.

In addition, the area supports a surprising variety and abundance of mammals. The wash banks provide burrowing and denning areas for many species, and the wash vegetation provides necessary cover.

The use of Big Rock Wash as a wildlife migration corridor and as a means of plant seed dispersal is highly significant. In this manner, the area helps to maintain the floral and faunal diversity of surrounding areas. Furthermore, the wash terminates in a group of buttes. Dispersal of organisms into and from the buttes is critical to their functioning as a reservoir of biotic diversity.

Status: Dirt and paved roads frequently cross Big Rock Wash and isolated low density housing developments are present within the area. Cultivated fields are found at the edge of the wash in several places. Despite these disturbances, the area has maintained its biological integrity.

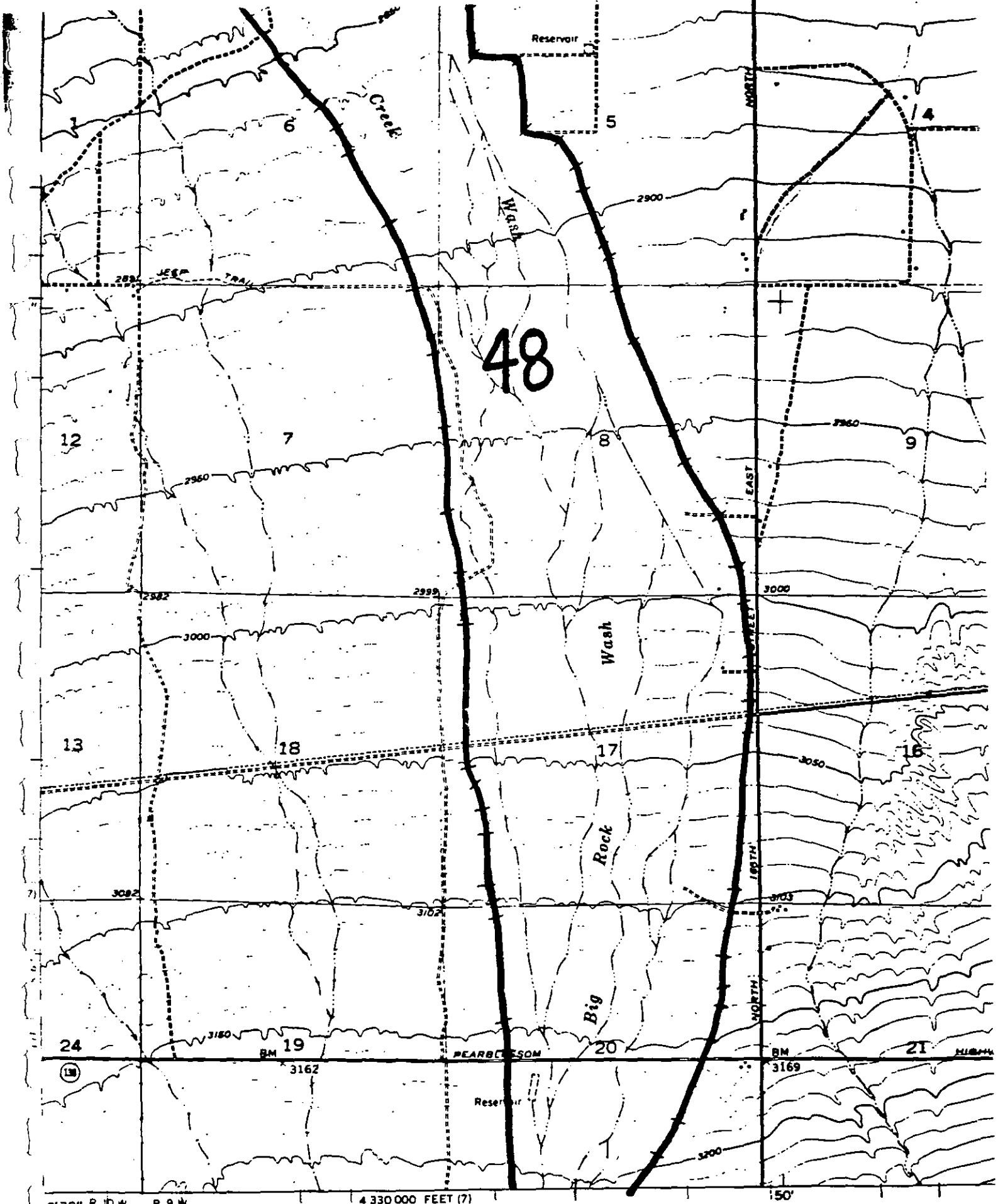
Information Source(s): Literature, Survey/Interview, ERC/UCLA

Nature of Information: A fair amount of general information on desert washes exists in the scientific literature. More specific information on Big Rock Wash is very limited, but is available in unpublished form from a few professional biologists.

Buffer Zone Requirement: None. Recommended boundaries should be sufficient to protect the resources of the area.

Area # 48

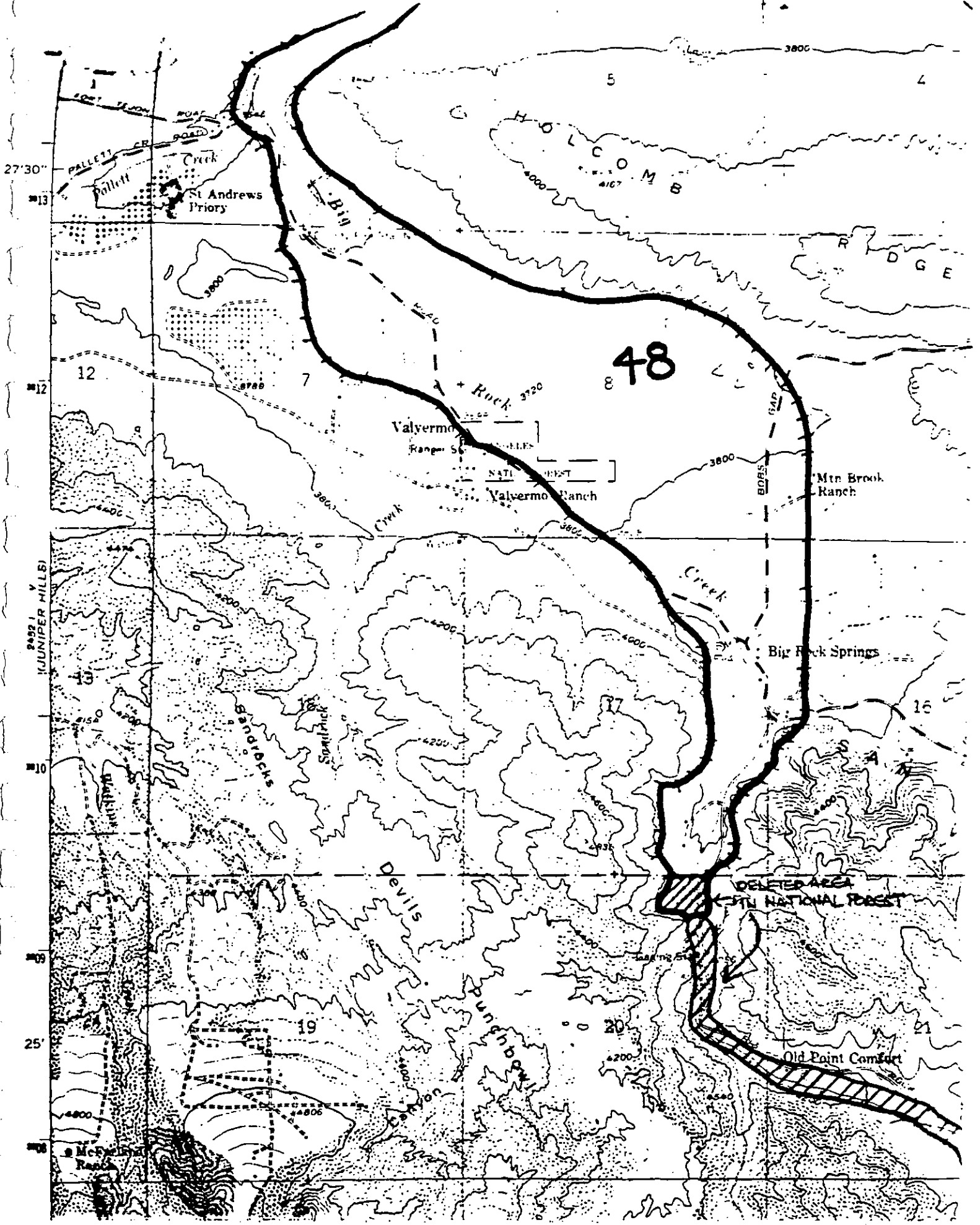
Compatible Uses: Medium intensity recreational uses are compatible with the resources of the area. No alteration of the stream course should be permitted, and facilities must be placed away from desert riparian woodland habitat. All vehicle travel through the area should be restricted to existing roads.



2' 30" R 10 W R 9 W 4 330 000 FEET (7) 150'

Mapped, edited, and published by the Geological Survey
 Control by USGS, USC&GS, and Los Angeles Co.
 Topography by planetable surveys 1930



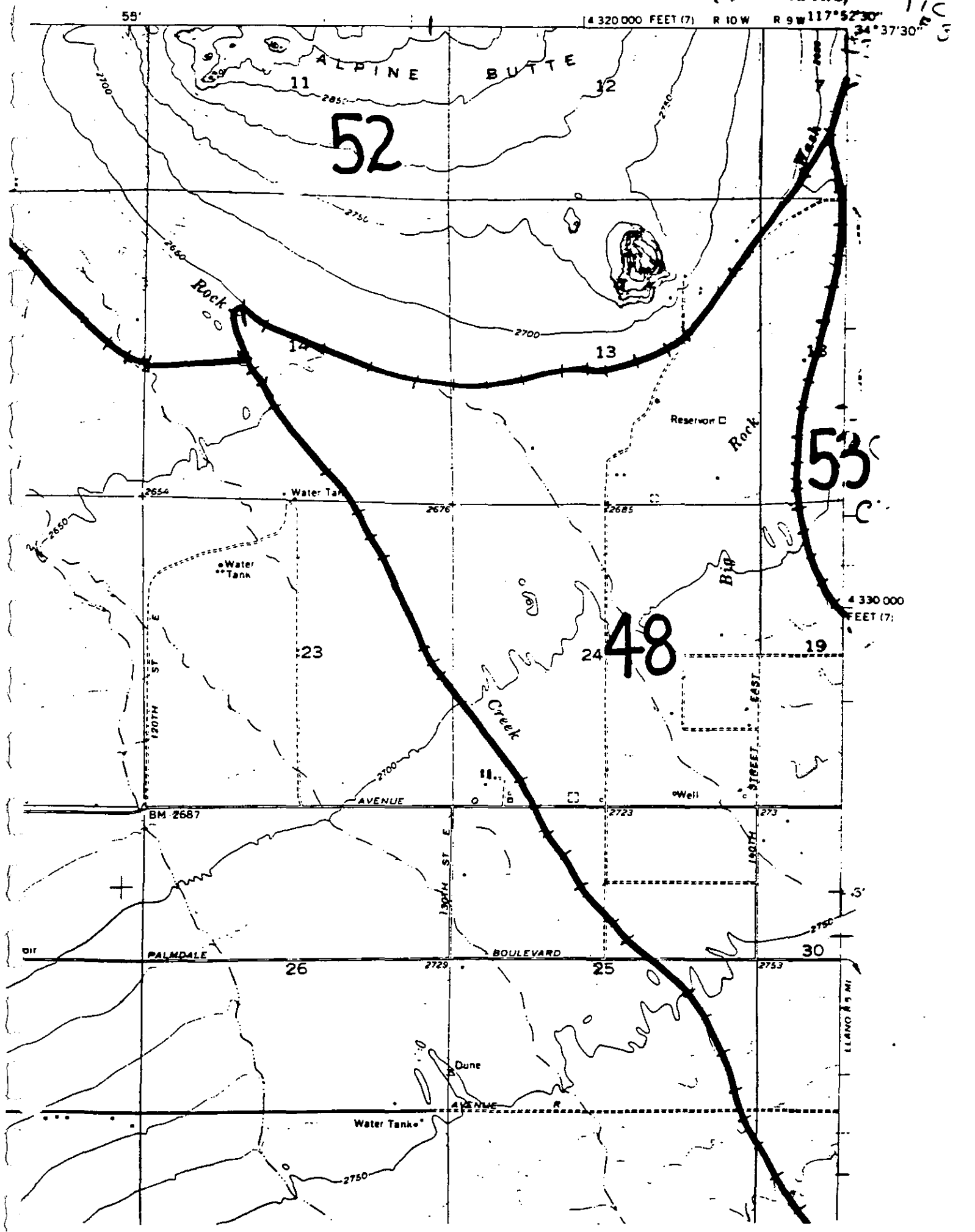


TIC
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58'

4 320 000 FEET (7) R 10W R 9W 117°52'30"

34°37'30"



52

53

48

23

24

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BM 2687

AVENUE

Well

S STREET EAST

PALMDALE

26

130TH ST E

BOULEVARD

25

2753

30

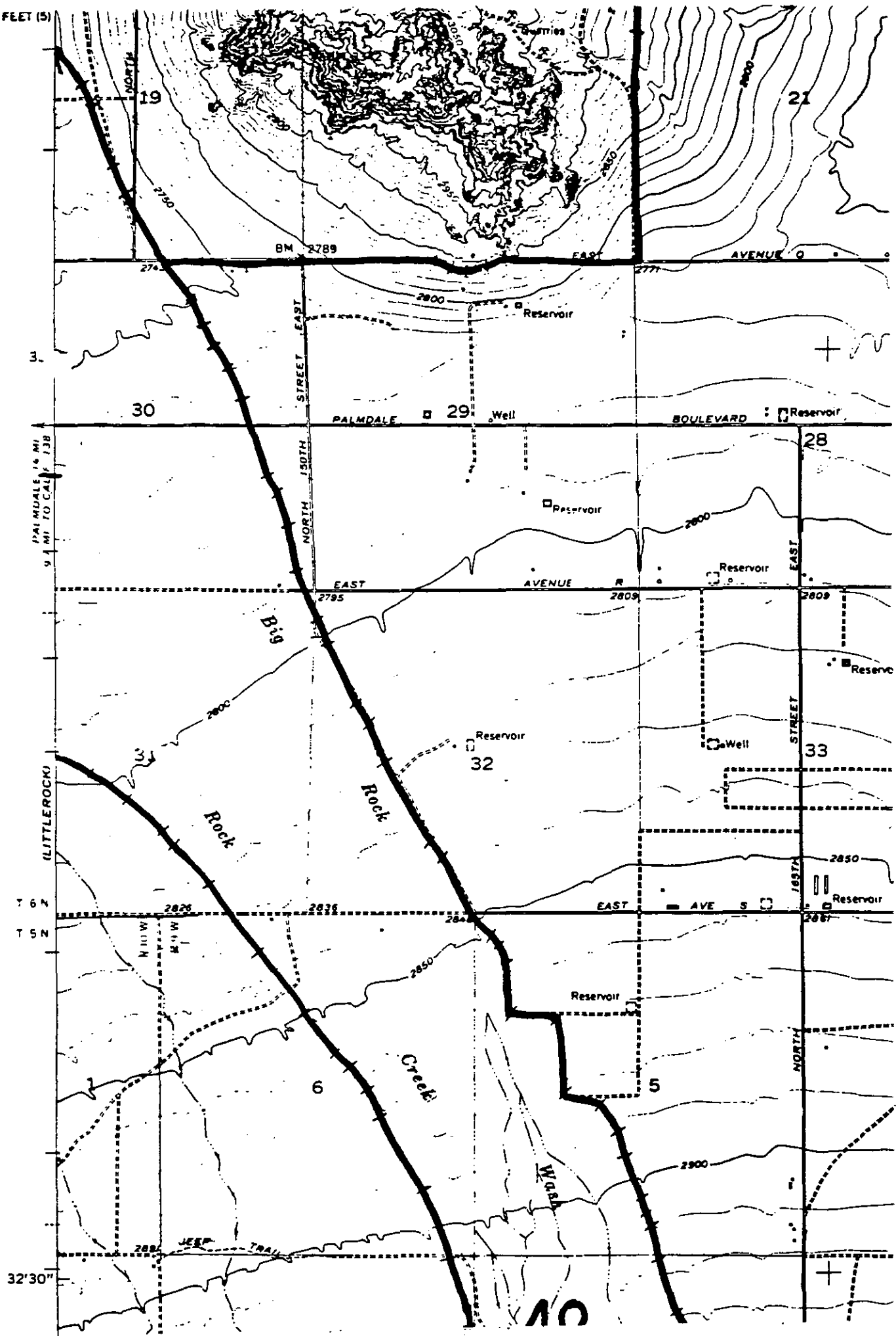
Dune

Water Tank

LLANO 2.5 MI

2750

FEET (5)



PALMDALE 1/4 MI
LITTLE ROCK 1/4 MI

T 6 N
T 5 N

32'30"

FEET (5)

NORTH
19

21

BM 2789

EAST AVENUE Q

30

PALMDALE 29 Well

BOULEVARD Reservoir

EAST AVENUE R Reservoir

Big

28

Rock

Rock

33

Reservoir 32 Well

EAST AVE S Reservoir

Mill Mill

6

Creek

5 NORTH

Reservoir

JEEP TRAIL

2900

WOODS

40

Area # 49

Name: Little Rock Wash

Quadrangle(s): Lancaster East, Palmdale, Little Rock, Pacifico Mountain

Class 4 (5,7)

Resource Description: Desert washes are very important ecological units because they provide essential wildlife habitat and migration corridors, and a means of seed dispersal for many desert plants. In addition, they are commonly much more diverse than surrounding areas and are important to the stability of many desert ecosystems.

Little Rock Wash is the largest and least disturbed habitat of this type in the county. It contains shadscale scrub, creosote bush scrub, and desert riparian habitats. The wash runs from the San Gabriel Mountains out into the Mojave Desert. Many montane plant and animal species have extended their distributions a short distance into the desert by way of the wash. The unique ecological relationships created by these extensions are of scientific interest to ecologists.

The diverse and comparatively dense vegetation found here provides concentrated nesting habitat for a surprising number of bird species. In the desert, habitat of this nature is found in wash areas only, and is therefore limited in its availability.

In addition, the area supports an impressive variety and abundance of mammals. The arroyo bank provides burrowing and denning areas for many species, and the wash vegetation provides necessary cover.

The use of Little Rock Wash as a wildlife migration corridor and a means of plant dispersal is of great ecological importance. This function helps to maintain the floral and faunal species complement in the surrounding areas.

Status: Dirt and paved roads frequently cross the wash and isolated low density housing developments do exist within the area. Agricultural fields are found at the edge of the area in some places. However, these disturbances have not destroyed the biological integrity of the wash.

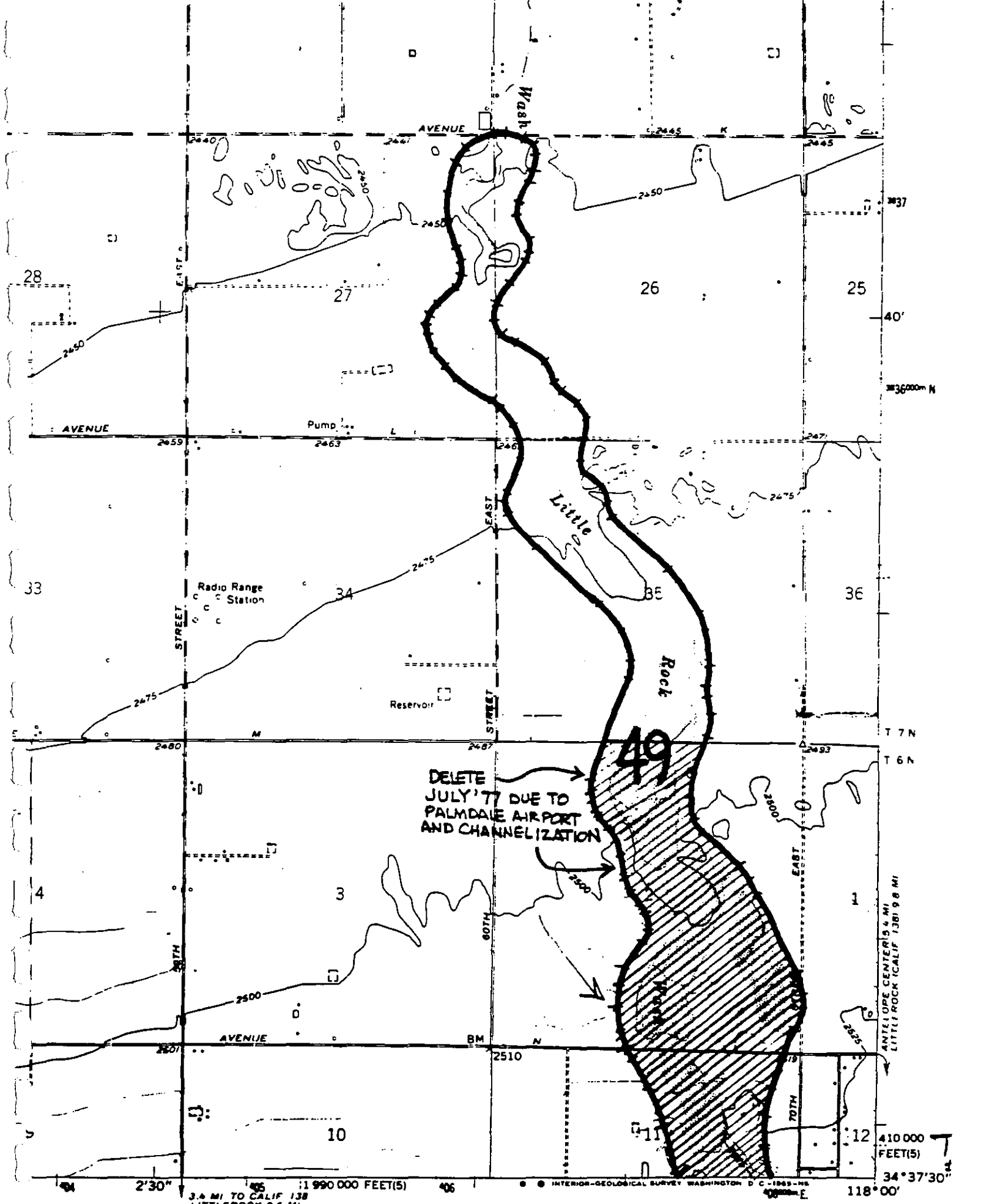
Information Source(s): Literature, Survey/Interview, ERC/UCLA

Nature of Information: There is a fair amount of general information on desert washes available in the scientific literature. The area has been recognized as one of the best examples of desert wash habitat in the county, and professional biologists have looked at the area.

Buffer Zone Requirement: None. Recommended boundaries should be sufficient to protect the resources of the area.

Area # 49 continued

Compatible Uses: Medium intensity recreational uses are compatible with the resources of the area. No alterations of the stream course should be permitted, and facilities must be placed away from desert riparian woodland habitat. All vehicle travel through the area should be restricted to existing roads.



DELETE
 JULY '77 DUE TO
 PALMDALE AIRPORT
 AND CHANNELIZATION

49

ROAD CLASSIFICATION

1 MILE

3.4 MI TO CALIF 138
 LITTLEROCK 9.6 MI

● ● INTERIOR-GEOLOGICAL SURVEY WASHINGTON D C 1965-NS

ANTelope CENTER'S 4 MI
 LITTLE ROCK (CALIF 138) 9.6 MI

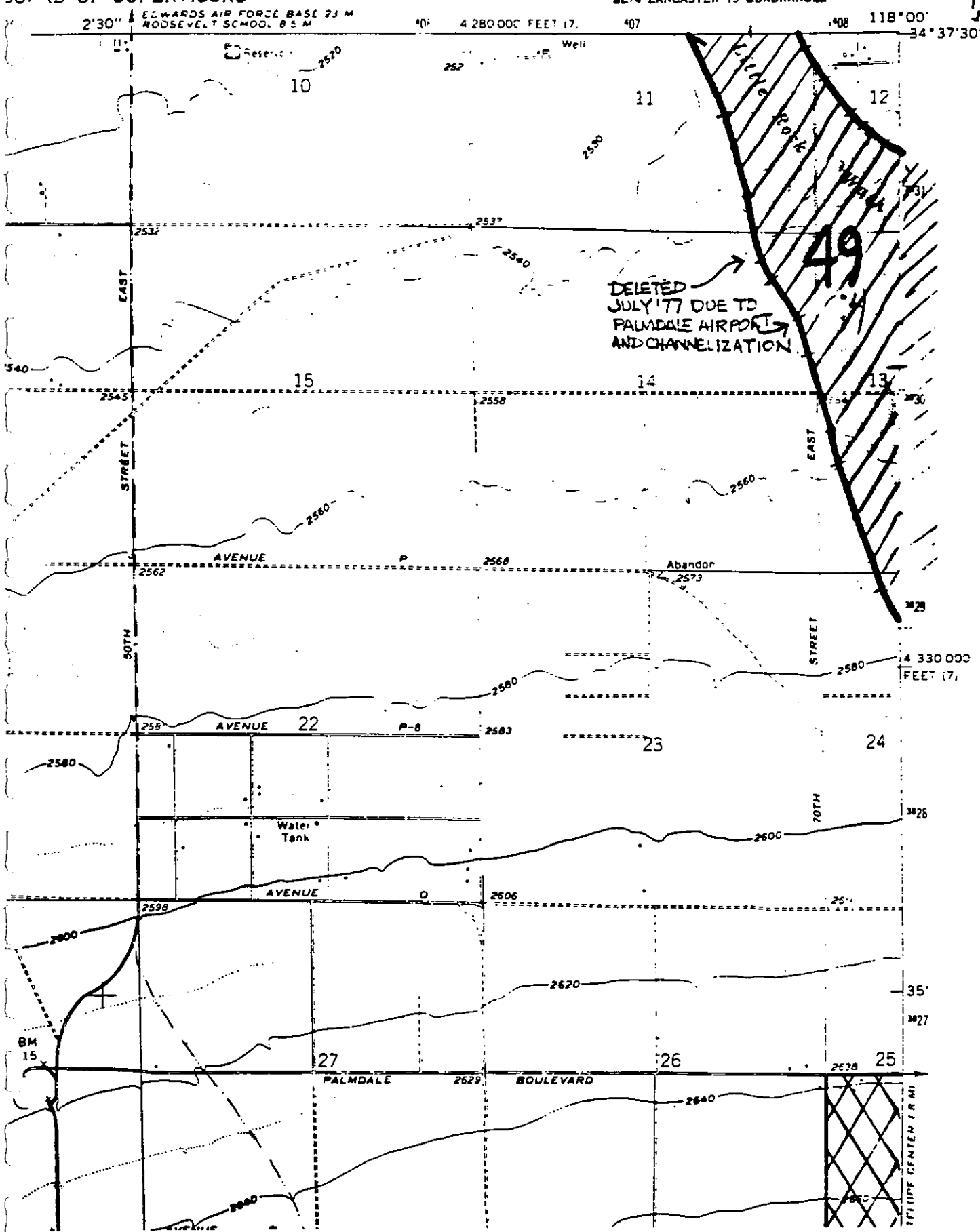
410 000
 FEET(5)
 34°37'30"

118°00'

LOS ANGELES COUNTY
BOARD OF SUPERVISORS

PALMDALE QUADRANGLE
CALIFORNIA—LOS ANGELES CO
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE 1/4 LANCASTER 15 QUADRANGLE

2653 III NW
PALMINE BUTTE



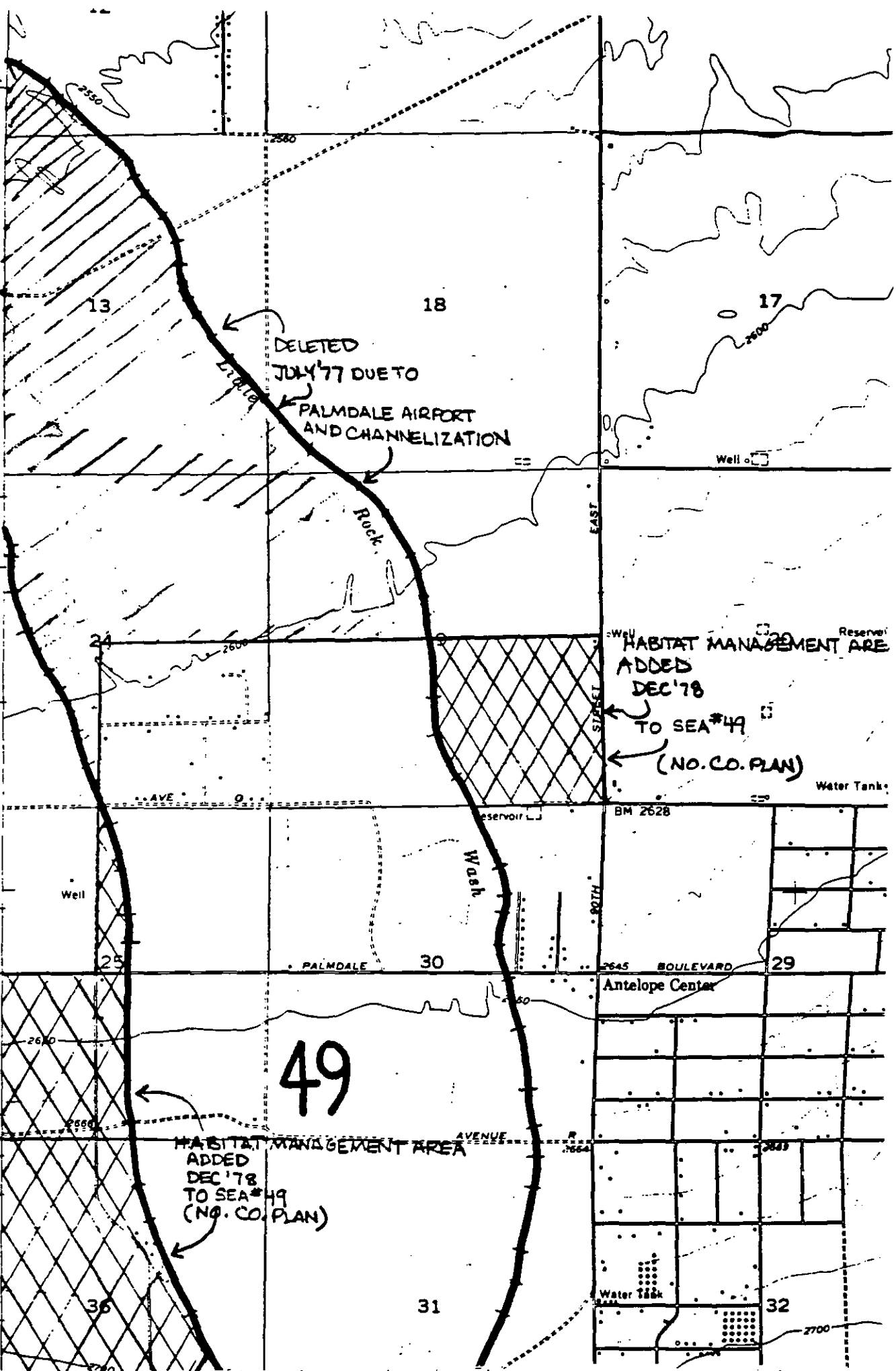
31000m N.

400 000
FEET (5)

35'

PALMDALE 6.3 MI

EJ



13

18

17

DELETED
JULY 77 DUE TO
PALMDALE AIRPORT
AND CHANNELIZATION

Rock

24

HABITAT MANAGEMENT AREA
ADDED
DEC '78
TO SEA #49
(NO. CO. PLAN)

25

30

29

49

HABITAT MANAGEMENT AREA
ADDED
DEC '78
TO SEA #49
(NO. CO. PLAN)

Antelope Center

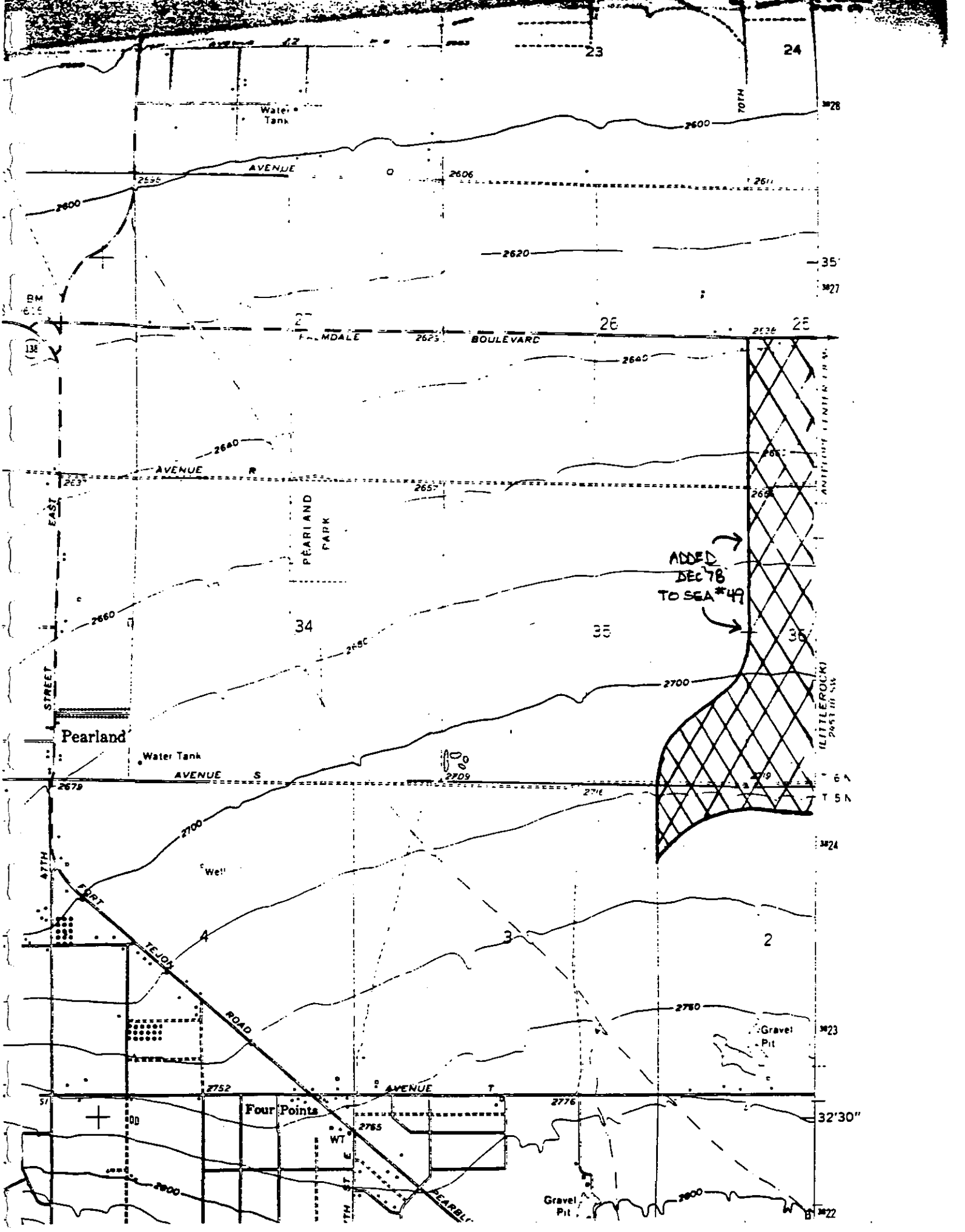
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Water Tank

2700

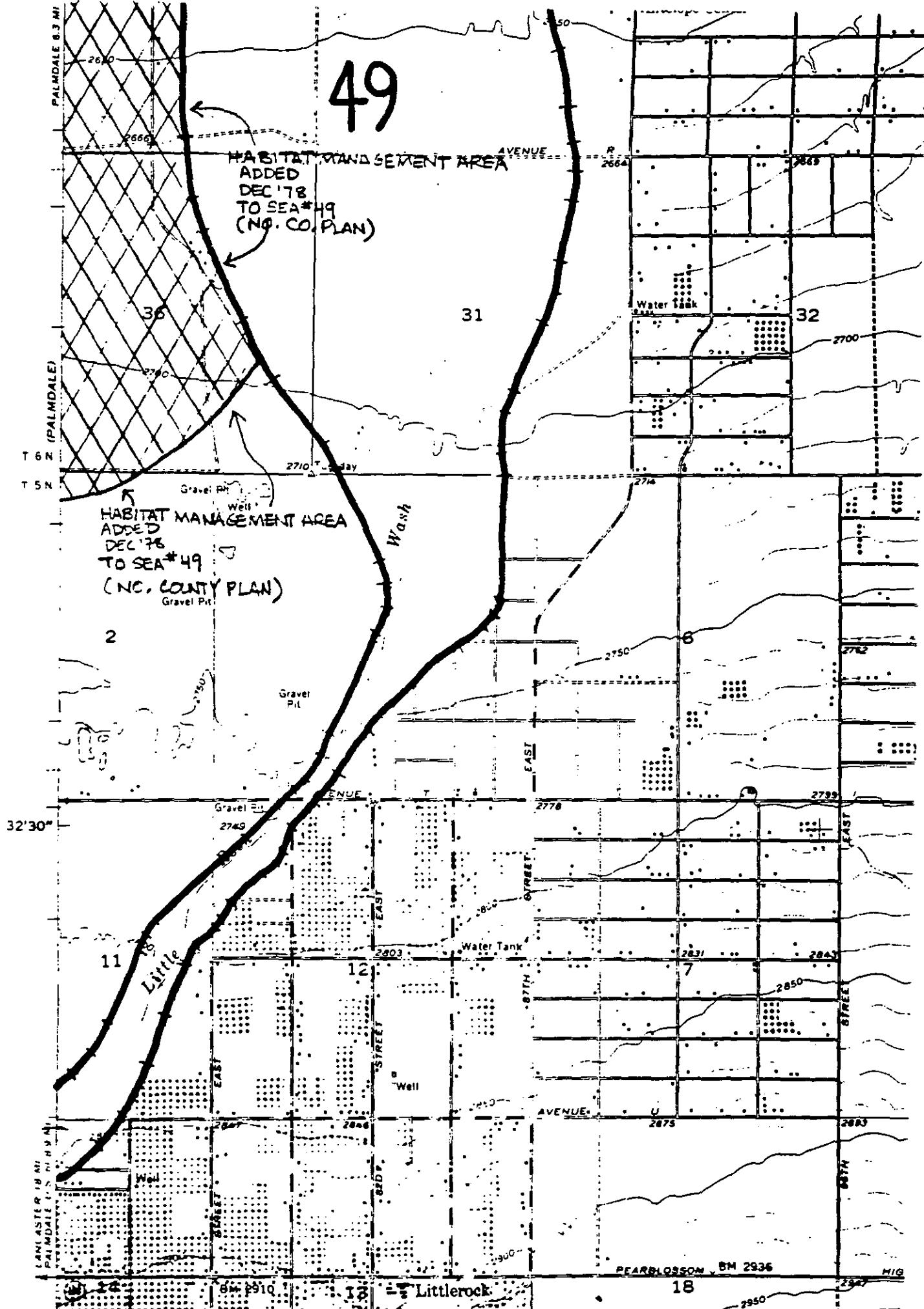


ADDED
DEC 78
TO SEA #49

LITTLE ROCK
2951 IN SW

6 A
T 5 A

32'30"



49

HABITAT MANAGEMENT AREA
ADDED
DEC '78
TO SEA #49
(NO. CO. PLAN)

HABITAT MANAGEMENT AREA
ADDED
DEC '78
TO SEA #49
(NO. COUNTY PLAN)

Wash

Little

Little Rock

PALMDALE 8.3 MI

T 6 N (PALMDALE)

T 6 N
T 5 N

32'30"

LANCASTER 10 MI
PALMDALE 1.5 MI N.W.

PEARLBLOSSOM BM 2936

BM 2910

18

HIG

2950

8TH STREET

EAST STREET

8TH STREET

8TH STREET

AVENUE

AVENUE

AVENUE

AVENUE

EAST STREET

EAST STREET

EAST STREET

EAST STREET

R 2664

2714

2778

2803

2875

2900

36

31

32

2

11

12

13

6

7

18

Water Tank

Water Tank

Gravel Pit

Gravel Pit

Gravel Pit

Gravel Pit

Well

Well

Water Tank

EAST STREET

EAST STREET

EAST STREET

EAST STREET

2640

2660

2700

2710

2750

2750

2664

2665

2700

2714

2750

2762

2799

2745

2803

2847

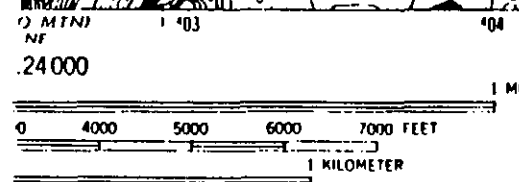
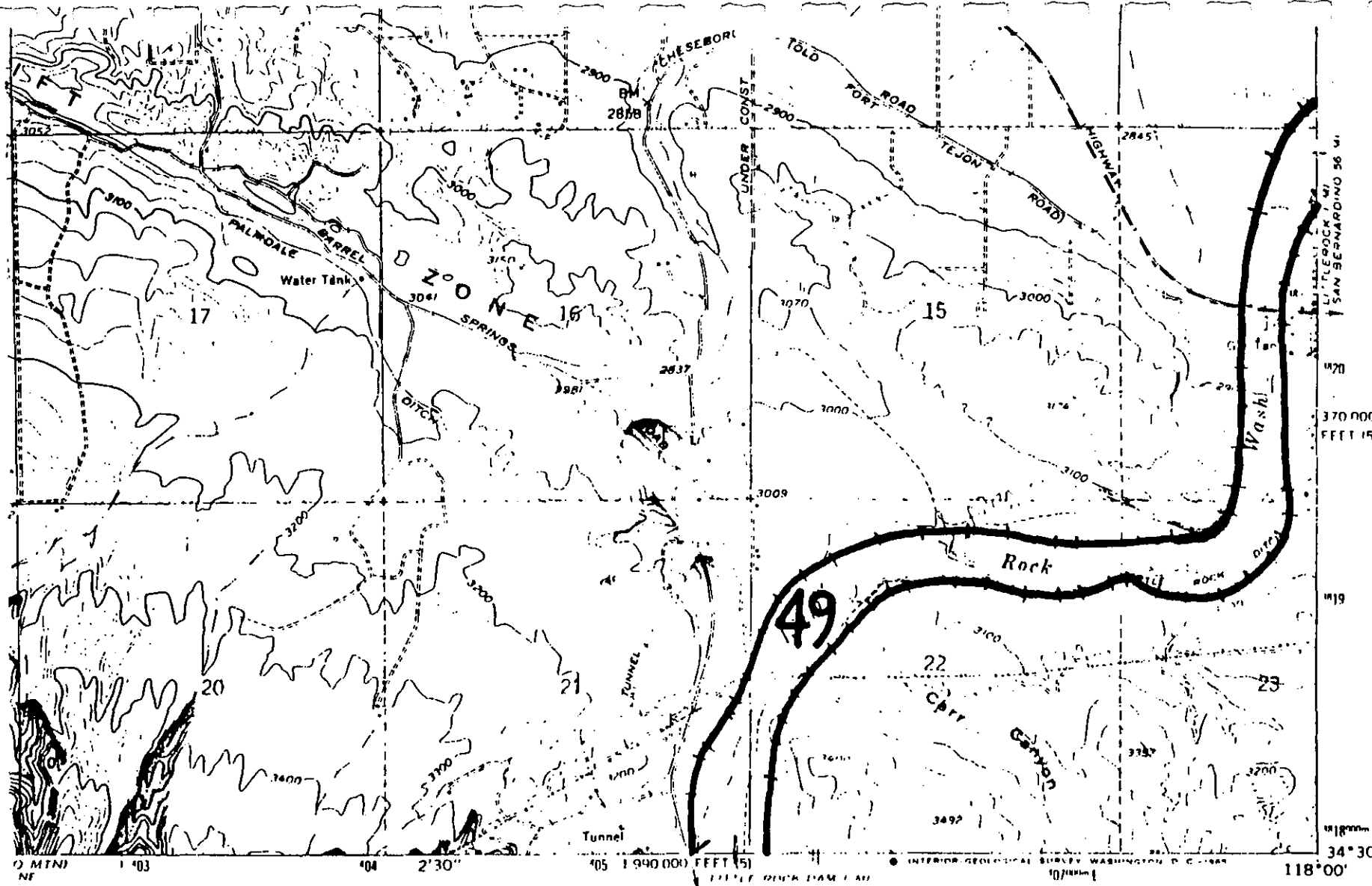
2846

2875

2900

2950

2947



RVAL 20 FEET
 NT 10-FOOT CONTOURS
 IN SEA LEVEL

NAL MAP ACCURACY STANDARDS
 OF THE GEOLOGICAL SURVEY, WASHINGTON, D. C.

ROAD CLASSIFICATION

Heavy duty Light-duty
 Medium duty Unimproved dirt

U S Route State Route



QUADRANGLE LOCATION

RIVERSIDE BLUEPRINT CO.
 P.O. Box 103
 Riverside, California 92502
 Phone 686-0530

PALMDALE, CALIF.
 SE/4 LANCASTER 15' QUADRANGLE
 N 34 30 --- W 118 00 / 7 5

TIC #43
 JUNIPER HILLS

MOU 428

70

Area # 50

Name: Rosamond Lake

Quadrangle(s): Rosamond Lake, Rosamond

Class 2 (3,5,7)

Resource Description: Rosamond Lake is the best example of the shadscale scrub and alkali sink biotic communities in Los Angeles County. It is also the southern most extension of the Great Basin kangaroo rat (Dipodomys microps), and is therefore of scientific value. This species and the shadscale scrub plant community are uncommon in California south of the Owens Valley.

The shadscale scrub plant community is found in heavy soils with underlying hardpan, between 3000 and 6000 feet elevation. Vegetation consists of low shrubs including many uncommon species generally found only in the extreme northern Mojave Desert and Owens Valley. The alkali sink plant community is primarily composed of a half dozen salt tolerant species, and presents a rather barren landscape. It can be found on or near salt pans throughout the Mojave Desert.

The Great Basin kangaroo rat has a range covering most of Nevada and portions of California, Oregon, Idaho, Utah, and Arizona. The population at Rosamond Lake is geographically isolated and should be preserved for scientific study. In addition, it is one of the few places this species is known to occur in southern California and the only known locality in Los Angeles County.

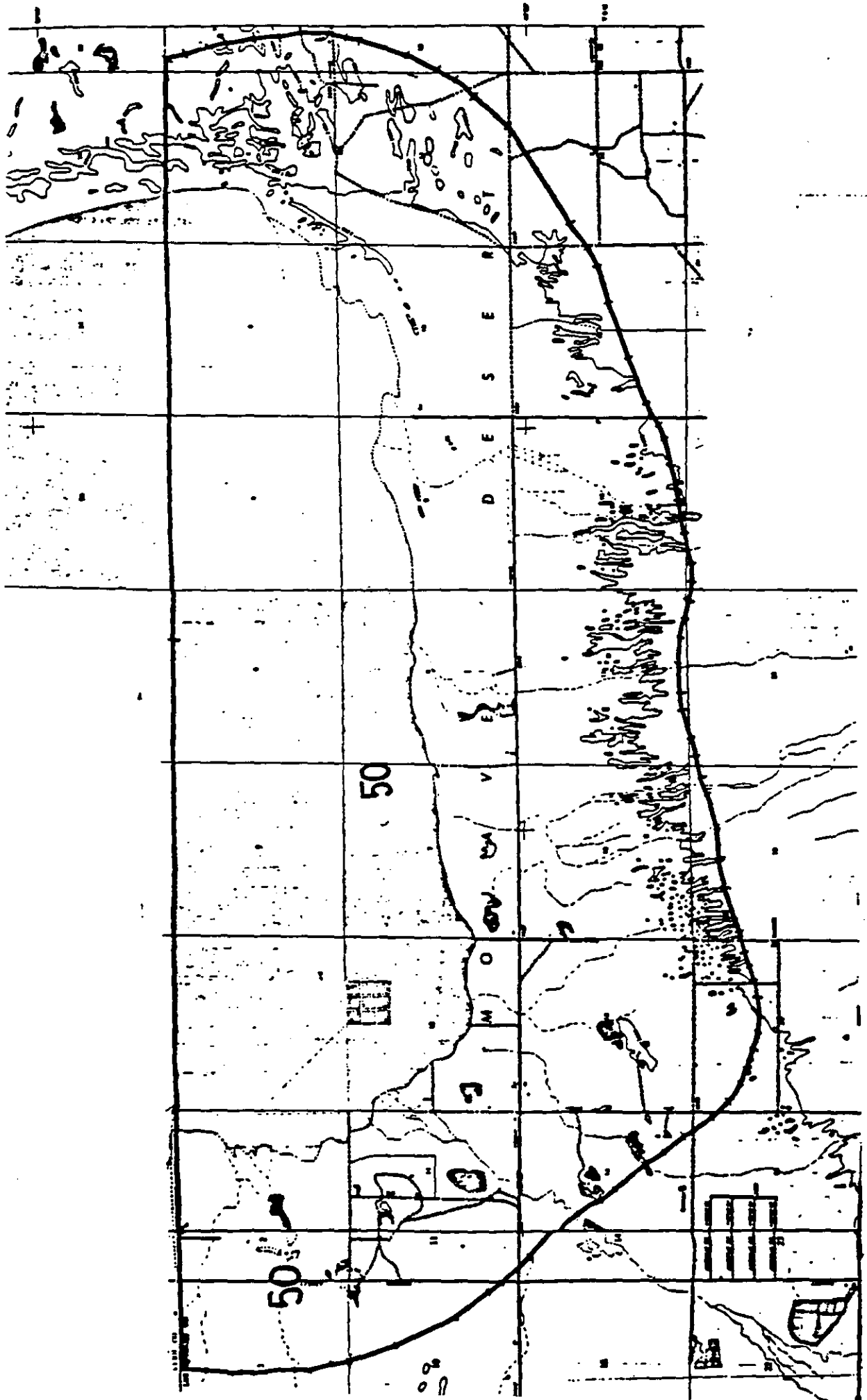
Status: Light development in the form of roads, isolated structures, spreading ponds, and reservoirs has occurred, and much undisturbed natural habitat remains. Intense development does not appear to be a threat.

Information Source(s): ERC/UCLA

Nature of Information: Reliable information about the area has come from highly competent biologists who have worked in the area. However, the precise localities of resources were not available, and mapping was done in a generalized manner to be sure all were included.

Buffer Zone Requirement: None, the area should be large enough to maintain its ecological integrity.

Compatible Uses: Medium intensity recreational uses are compatible with the resources of the area. However, as additional information becomes available, less intensive uses may become necessary to protect resources in certain portions of the area. All vehicle travel should be restricted to existing roads.



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Area # 51

Name: Saddleback Butte State Park

Quadrangle(s): Hi Vista

Class 7 (8)

Resource Description: This area possesses important desert butte habitat. In addition, it includes most of Saddleback Butte State Park, and is the only one of its kind that is currently protected from development.

In general, desert buttes maintain increased biological diversity over surrounding areas and possess ecological importance as vital habitat to many desert dwelling species. In addition, they serve as critical refuges for many biological resources that are disappearing in the county due to urban and agricultural expansion. These functions can continue for Saddleback Butte as long as its integrity is maintained. The buffer zone is important for this purpose.

The area also possesses valuable resources of its own. These include undisturbed examples of desert wildflower habitat, joshua tree woodland, creosote bush scrub, and desert wash. It is possible that the Mojave ground squirrel inhabits the area. The status of this officially recognized rare species within the area should be determined. Its presence would require the area to be classified as class 1.

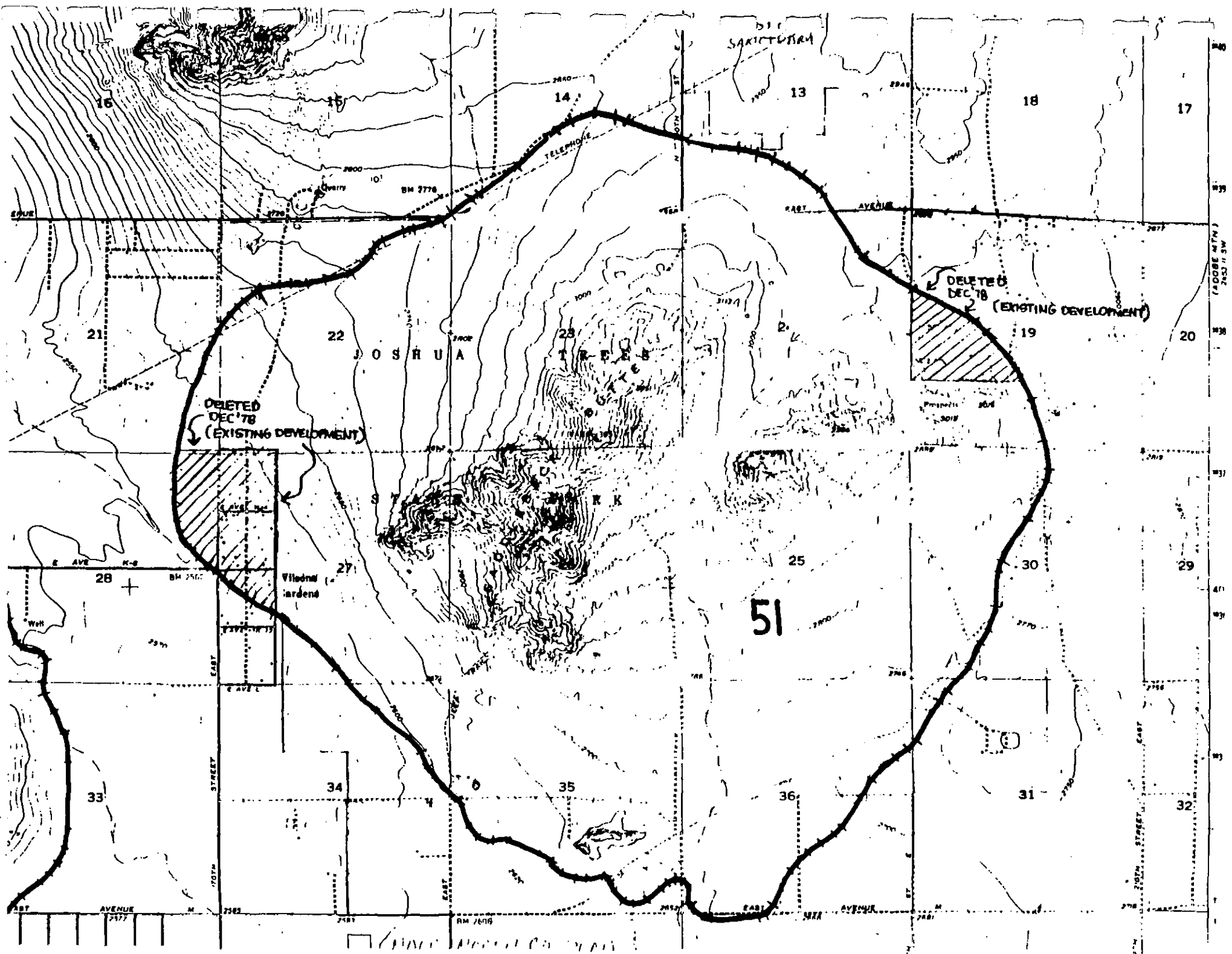
Status: Light, scattered development has occurred in the area. Activity has been limited to a few structures, several dirt roads and jeep trails, a few mine prospects, and a telephone line passing along the northwest edge. Biological resources have remained intact.

Information Source(s): Literature, Survey/Interview

Nature of Information: The resources of Saddleback Butte have been surveyed by biologists at the park. The information these surveys have netted has been summarized in publications associated with the state park development.

Buffer Zone Requirement: None. The recommended boundaries should protect the resource.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area. However, campgrounds and interpretive facilities should be placed off of the butte at the periphery of the area. All vehicle use of the area should be restricted to existing roads.



(ADORE MTN)
2453 11 SW

UNITED STATES GEOLOGICAL SURVEY

Area # 52

Name: Alpine Butte

Quadrangle(s): Alpine Butte, Hi Vista, Littlerock

Class 7

Resource Description: Increased biotic diversity over surrounding areas and ecological importance as vital habitat to many desert-dwelling species are general characteristics of desert buttes. In addition, they often possess biological resources that are declining in Los Angeles County due to increased agricultural and urban development.

Alpine Butte is the least disturbed butte habitat in the county. It contains excellent stands of joshua tree woodland and creosote bush scrub. Impressive desert wildflower habitat, now disappearing in the county, is also found in the area.

The number of species present in butte areas is high. This is the result of an increased number of niches available. Sand from the surrounding desert floor is carried by wind up into the buttes, creating a mixture of sandy and rocky habitats. This permits both sand- and rock-inhabiting plant and animal species to occur in a very localized area.

To many wide-ranging animals, buttes are critical habitat. Many birds of prey use the buttes for roosting and nesting. Several large mammal species, which forage in outlying areas, use buttes for denning sites and cover. Without buttes, these species could not exist in many regions of the desert.

This area is potential habitat for the Mojave ground squirrel. This species, once locally common in Los Angeles County, is now officially recognized as rare by the State Department of Fish and Game. The status of the Mojave ground squirrel at Alpine Butte should be determined. If this species is present, the area should be reclassified as class 1.

Like the Mojave ground squirrel, many biological resources are declining in the county's desert regions. Most of these resources are now common only on the buttes and immediately surrounding lands. Preservation of these areas is essential for the maintenance of biotic diversity in the county.

Status: In general, the area is relatively undisturbed. The only developments are several dirt roads and one paved road which cross the southern portion of the area.

Information source(s): Survey/Interview, ERC/UCLA

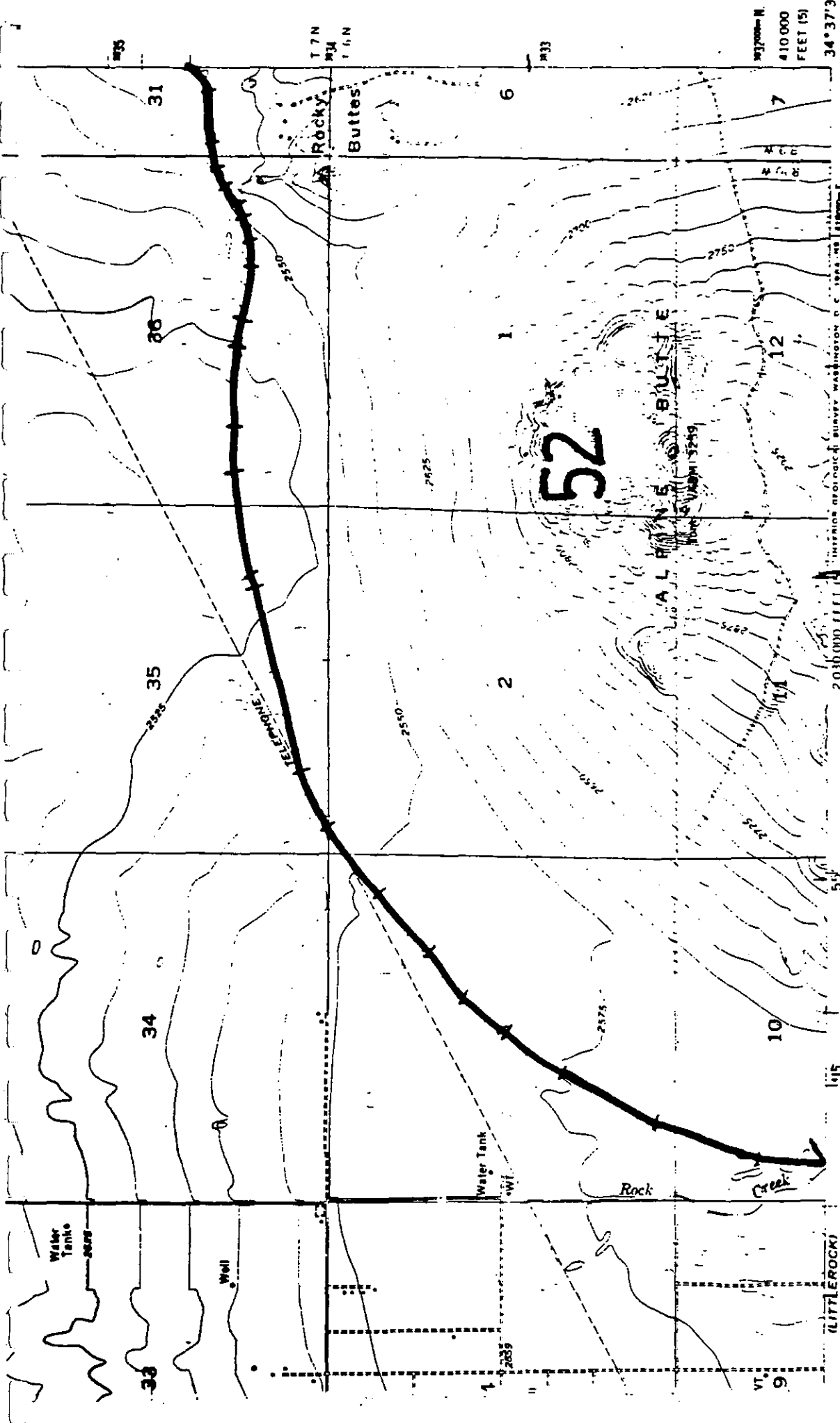
Nature of Information: A good deal of attention has been paid to desert buttes by professional and non-professional biologists. Their interests have been stimulated by the diversity of these areas and concern for their preservation. However, much of the information is general.

Buffer Zone Requirement: Alpine Butte is one of several butte areas that are located in close proximity to one another. As a

Area # 52 continued

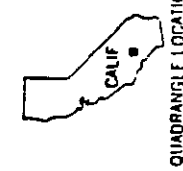
group, these should form a large enough area to sustain their diversity.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area. However, campgrounds and interpretive facilities should be placed off of the butte at the periphery of the area. All vehicle use of the area should be restricted to existing roads.



SCALE 1:24000
 0 1000 2000 3000 4000 5000 6000 7000 FEET
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 MILE
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 KILOMETER
 CONTOUR INTERVAL 5 FEET
 DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION
 Medium duty ——— Light duty
 Unimproved dirt

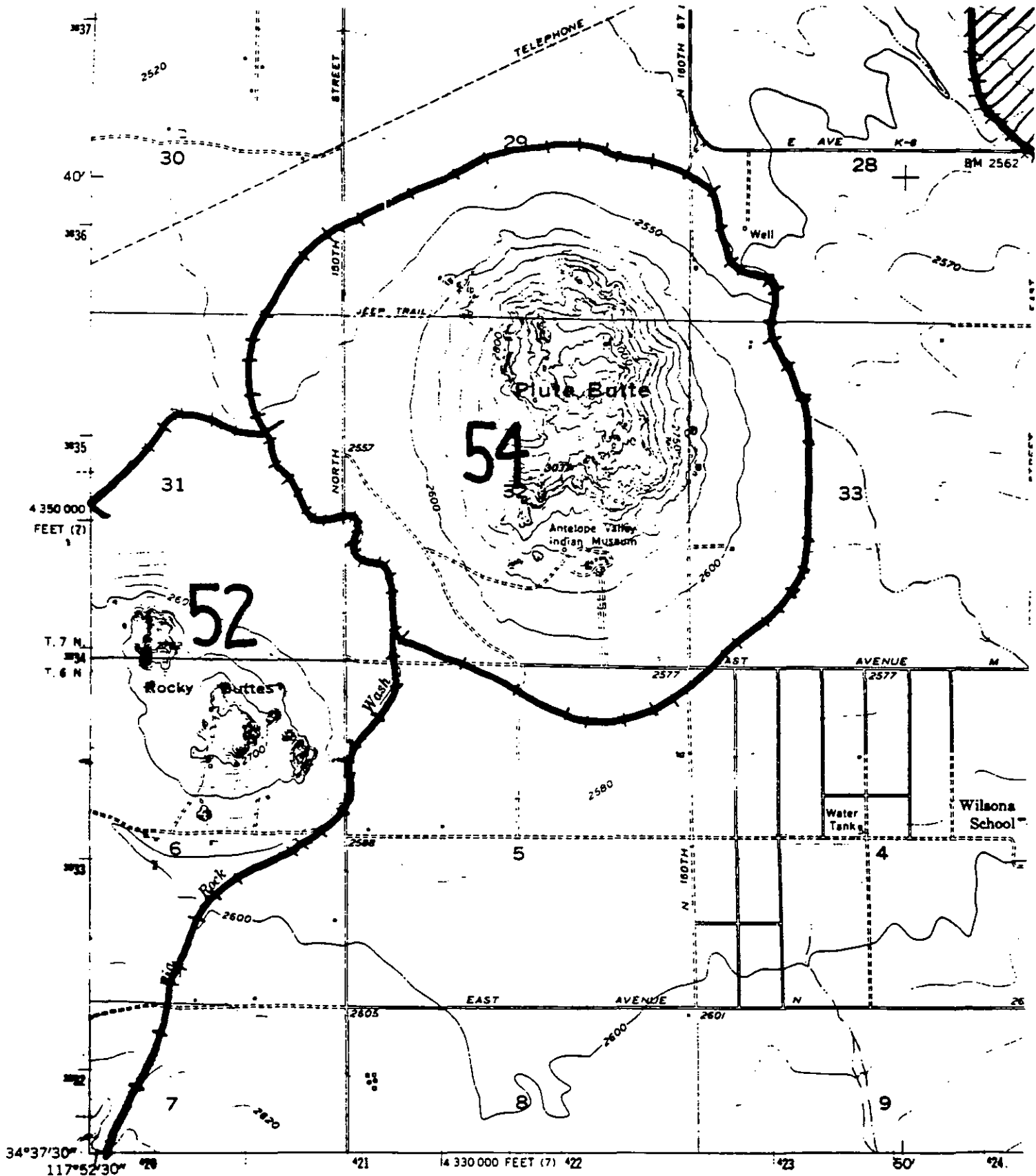


QUADRANGLE LOCATION

MOD 419
ALPINE BUTTE, CALIF.

RIVERSIDE DISTRICT
 U.S. GEOLOGICAL SURVEY

410,000 FEET (5)
 34°37'3
 117°52'30"



Mapped, edited, and published by the Geological Survey

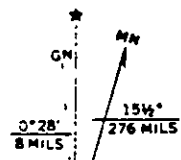
Control by USGS and USC&GS

Topography by planetable surveys 1930-31 and by Keish plotter from aerial photographs taken 1955. Field check 1957

Polyconic projection. 1927 North American datum
10,000-foot grids based on California coordinate system, zones 5 and 7

100-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue

TTLEROCK)
433 III SW



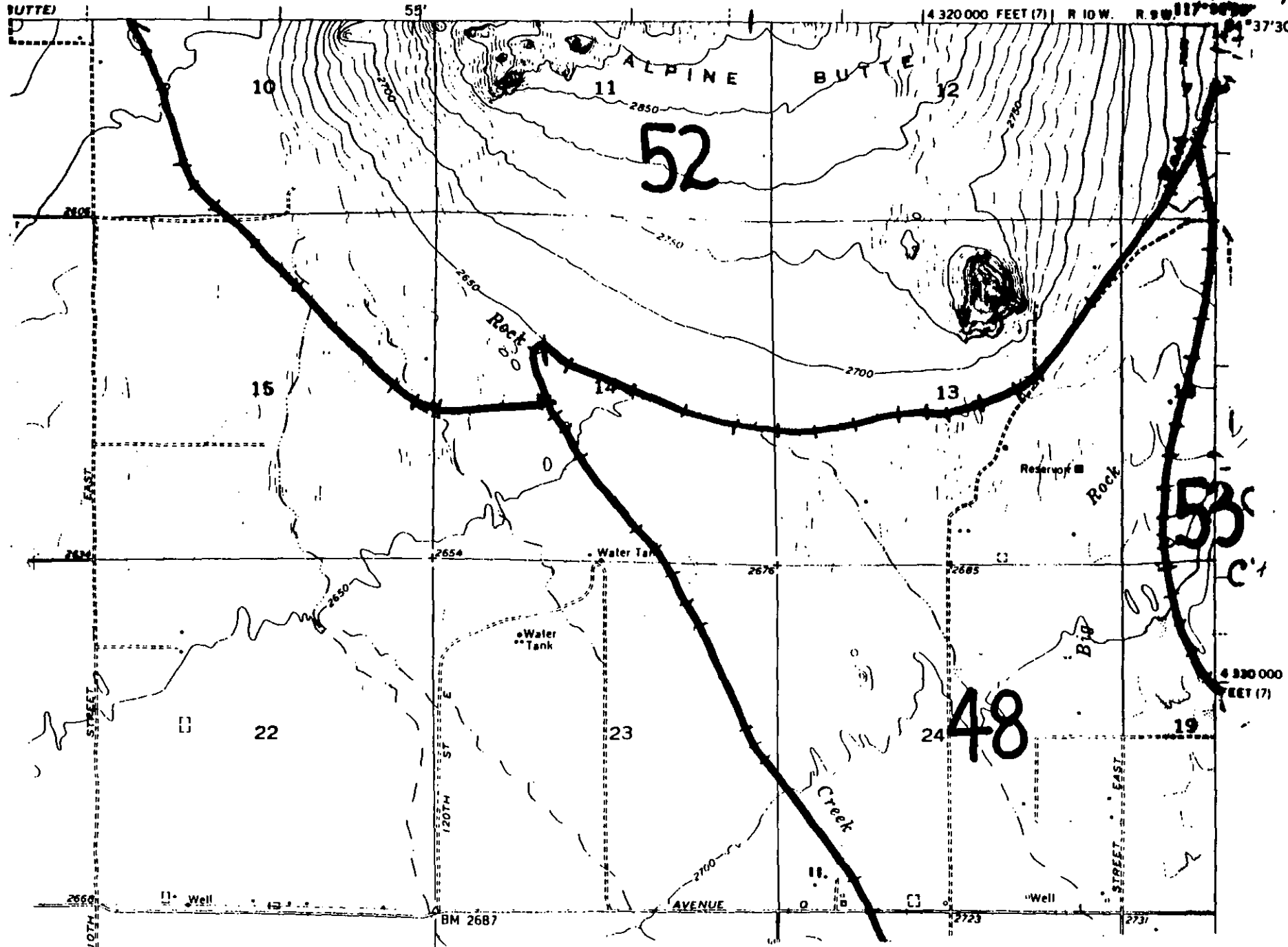
UTM GRID AND 1957 MAGNETIC NORTH

LOS ANGELES COUNTY
SUPERVISORS

LITTLEROCK QUADRANGLE
CALIFORNIA—LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

(M. VISTA)

TIC
33



Area # 53

Name: Lovejoy Butte

Quadrangle(s): Lovejoy Butte, Littlerock

Class 7

Resource Description: In general, desert buttes possess increased biotic diversity over surrounding areas and ecological importance as vital habitat to many desert-dwelling species. In addition, they serve as critical refuges for many biological resources that are now disappearing in Los Angeles County due to increased urban and agricultural development.

Lovejoy Butte contains Joshua tree woodland and creosote bush scrub vegetation. On buttes, these communities often have a more diverse flora and fauna than the desert floor. This is the result of an increase in the number of niches available. Wind-blown sand from the desert floor settles in the buttes, creating a mixture of both rocky and sandy habitats. This permits rock- as well as sand-dwelling species to occur in a very localized area.

Desert buttes are critical habitat to many birds of prey and large mammals. These wide-ranging species forage in the surrounding desert areas, but use the buttes as essential roosting, nesting, denning and refuge areas.

Most buttes in the county are potential habitat for the Mojave ground squirrel. This rare species is officially recognized by the California Department of Fish and Game. Once fairly common in localized areas, increased urban and agricultural development have caused its decline. This species' status at Lovejoy Butte should be determined. If it is present, the area should be reclassified into classification 1.

Like the Mojave ground squirrel, many biological resources are declining in the county's desert lands. Most of these resources are now common only in buttes and immediately adjacent areas. Preservation of these lands is essential for the maintenance of biotic diversity in the county.

Status: Activity within the area has been relatively light. A few dirt roads and jeep trails are present along with one paved road and two small rock quarries. However, the area has been impacted by large subdivisions immediately to the north, east and south of the butte. These developments have acted to partially cut off the area from the surrounding desert habitat. Complete isolation will lead to decreased diversity.

Information Source(s): Literature, Survey/Interview, ERC/UCLA

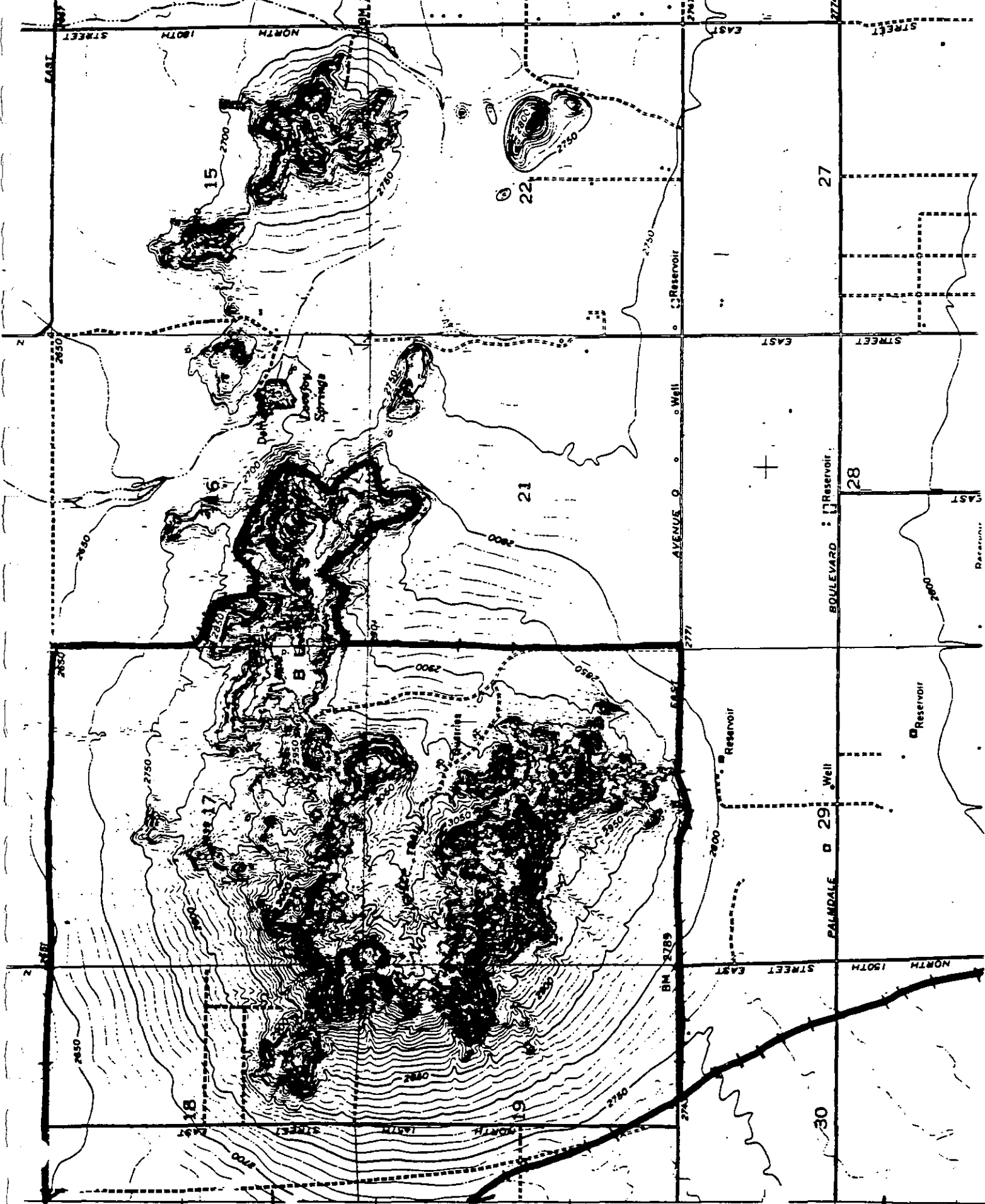
Nature of Information: The ecological significance of desert buttes and concern for their preservation has drawn considerable attention from competent professional and non-professional biologists. Although most of the information generated from these interests has been generalized, information specific to Lovejoy Butte has come from scientific research and a special wildlife investigation conducted by the California Department of Fish and

Area # 53 continued

Game.

Buffer Zone Requirement: Lovejoy Butte is one of several butte areas that are located in close proximity to one another. As a group, these should form a large enough area to sustain their diversity.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area. However, campgrounds and interpretive facilities should be placed off of the buttes at the periphery of the area. All vehicle use of the area should be restricted to existing roads.



400 000.
FEET (5)

3.

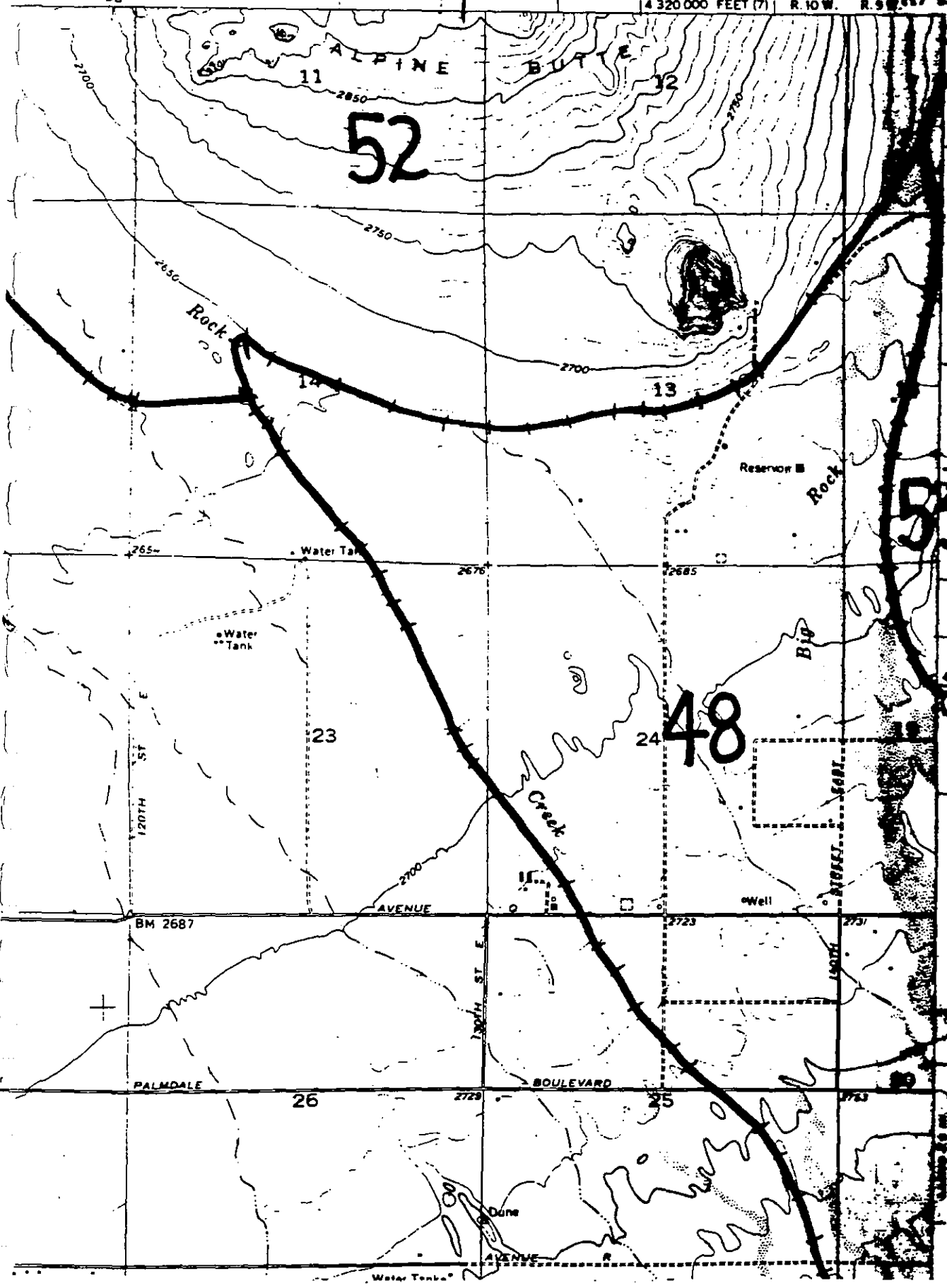
PALMDALE 14 MI.
9 7 MI TO CALF 138

LITTLEROCK QUADRANGLE
CALIFORNIA—LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

TIC
37'30"
83

55'

4 320 000 FEET (7) R. 10 W. R. 9 S.



4 320 000
FEET (7)

BM 2687

PALMDALE

BOULEVARD

Water Tank

Area # 54

Name: Piute Butte

Quadrangle(s): Hi Vista

Class 7

Resource Description: Desert buttes are generally characterized as having increased biotic diversity over surrounding areas and are ecologically important as vital habitat to many desert-dwelling species. Additionally, they serve as critical remnants of many biological resources that have been diminished in Los Angeles County by urban and agricultural expansion.

Joshua tree woodland and creosote bush scrub are found on Piute Butte. In butte areas, these communities commonly possess a more diverse flora and fauna than the desert floor. This is due to an increased number of niches. Wind carries sand from the desert floor up onto the buttes, creating a mixture of sandy and rocky habitats. This allows both sand- and rock-dwelling plant and animal species to exist in a very localized area.

To many wide-ranging birds of prey and large mammals, desert buttes are critical habitat. These animals forage in the surrounding areas but use the buttes for roosting, nesting, denning, and refuge. Without the buttes these species would not be present in many regions of the desert.

Many of the buttes in Los Angeles County are potential habitat for an officially recognized rare species, the Mojave ground squirrel. This species was once fairly common in butte areas in the county. However, accelerated urban and agricultural expansion has caused it to decline. Its status at Piute Butte should be investigated. This species' presence would require the area to be reclassified as class 1.

As in the case of the Mojave ground squirrel, many biological resources are declining in the county's desert lands. Most of these resources are now common only on buttes and in areas immediately surrounding them. Preservation of these areas is essential for the maintenance of biotic diversity in the county.

Status: Overall, the area has remained in a fairly natural state. There are a few dirt roads and jeep trails present. The Antelope Valley Indian Museum and some other minor buildings are the only structures in the area.

Information Source: Survey/Interview, ERC/UCLA

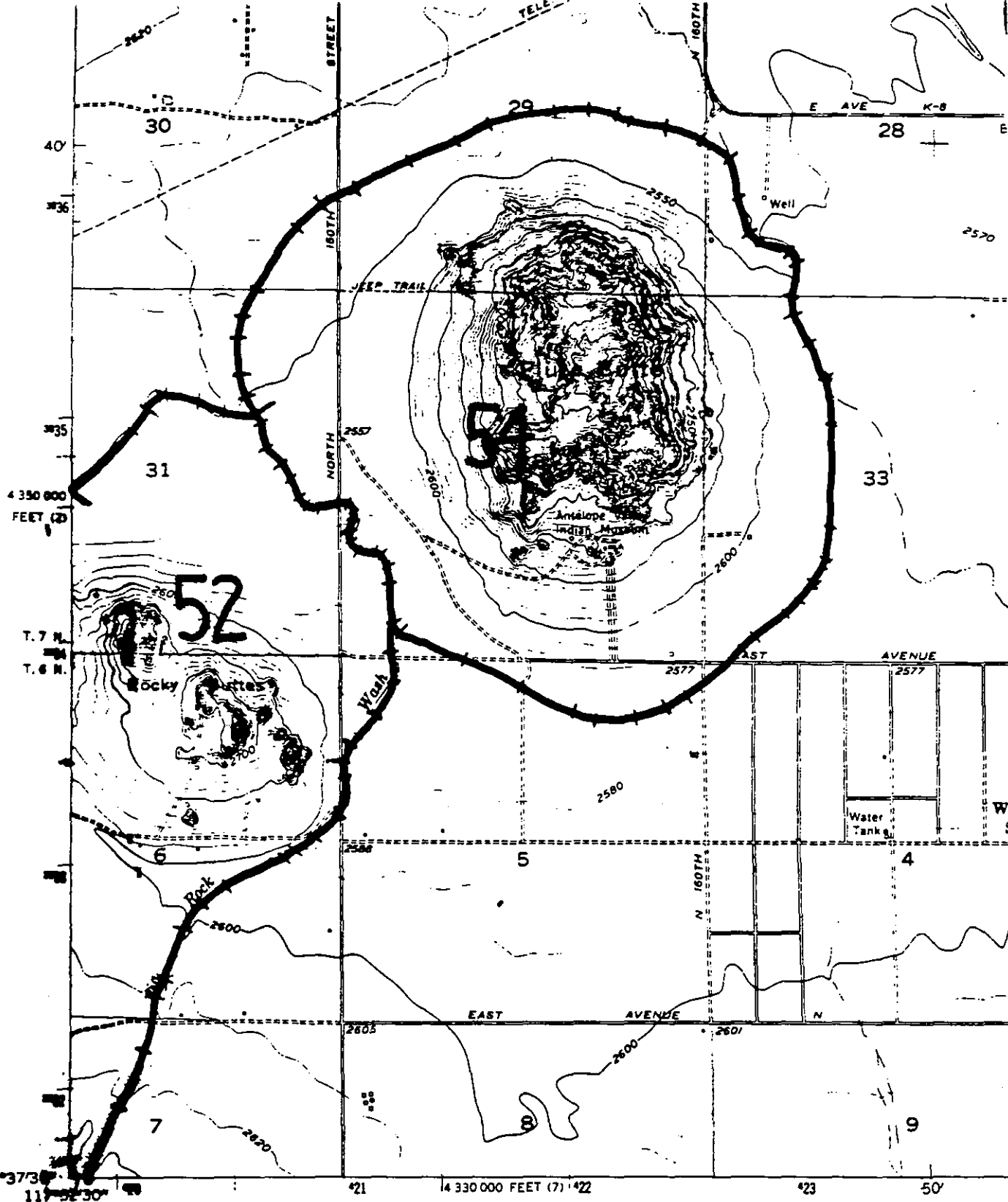
Nature of Information: The ecological significance of desert buttes and concern for their preservation has drawn a good deal of attention from professional and non-professional biologists. However, much of the information that has been generated from these interests is generalized.

Buffer Zone Requirement: Piute Butte is one of several butte areas that are located in close proximity to one another. As a group, these should form a large enough area to sustain their

Area # 54 continued

diversity.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area. However, campgrounds and interpretive facilities should be placed off of the butte at the periphery of the area. All vehicle use of the area should be restricted to existing roads.

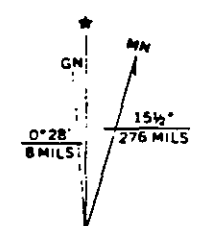


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Control by USGS and USC&GS

Topography by planetable surveys 1930-31 and by Kelsh plotter from aerial photographs taken 1955. Field check 1957

Polyconic projection. 1927 North American datum
 10,000-foot grids based on California coordinate system, zones 5 and 7
 1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue



UTM GRID AND 1957 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

33
 (LITTLE ROCK)
 117 32 30"

Area # 55

Name: Desert-Montane Transect

Quadrangle(s): Mescal Creek, El Mirage

Class 7

Resource Description: The Desert-Montane transect possesses vegetation types that are representatives of the transition between the Mojave Desert and the northern slopes of the San Gabriel Mountains. The combination of desert and montane habitats makes this one of the most diverse areas in the county, and one of the largest undisturbed areas outside the Angeles National Forest.

Desert communities include creosote bush scrub, sagebrush scrub, and joshua tree woodland. Creosote bush scrub is found on the desert floor and in the butte areas. Sagebrush scrub and joshua tree woodland are found above the floor in the broad alluvial fans and at the base of the rocky foothills. The sagebrush scrub community is limited in distribution in southern California. Pinyon-juniper woodland and desert chaparral habitats are found in the foothills and the lower mountain slopes. At higher elevations a mixed conifer forest occurs, with Jeffrey pine, ponderosa pine, and big-cone spruce as the dominants.

Despite the commonness of most of these communities, the area is very valuable because it is the only site where these communities can be found in an uninterrupted band running from the crest of the San Gabriels to a desert butte. This feature creates an outstanding opportunity for educational use and scientific research. Preservation of this area will also serve as a reservoir of diversity to maintain the diversity of surrounding desert, foothill, and mountain ecosystems.

The area is relatively large, and the precise locations of its most unique resources are not known. For this reason, the priority group assigned to it reflects only the value of the area as a means to preserve diversity. However, further studies should be conducted to determine the exact location of the more unique resources. Areas containing sagebrush scrub should be identified and placed in classification 2. Additional highly valuable resources should be identified and rated accordingly.

Status: The area has avoided extensive development. Many roads and scattered homesteads do exist here. Other less common developments include campgrounds, reservoirs, quarries, railroad tracks, and powerlines. However, the biological resources have remained intact.

Information Source(s): Survey/Interview, ERC/UCLA, CNACC/CNPS

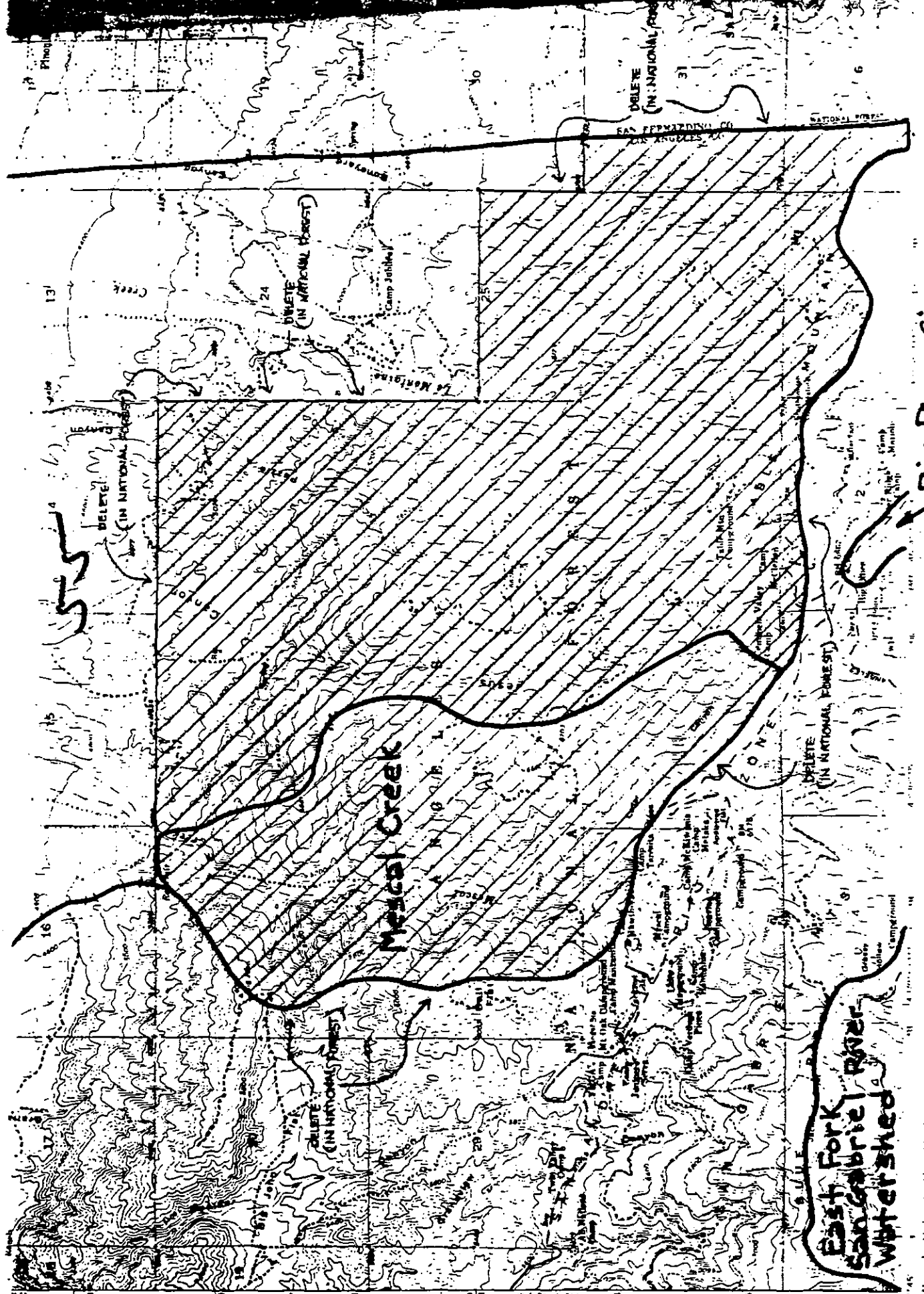
Nature of Information: Limited information exists on the area. Much of the information comes from air photo interpretation and the previous ERC report.

Buffer Zone Requirement: None are Required. The area is large

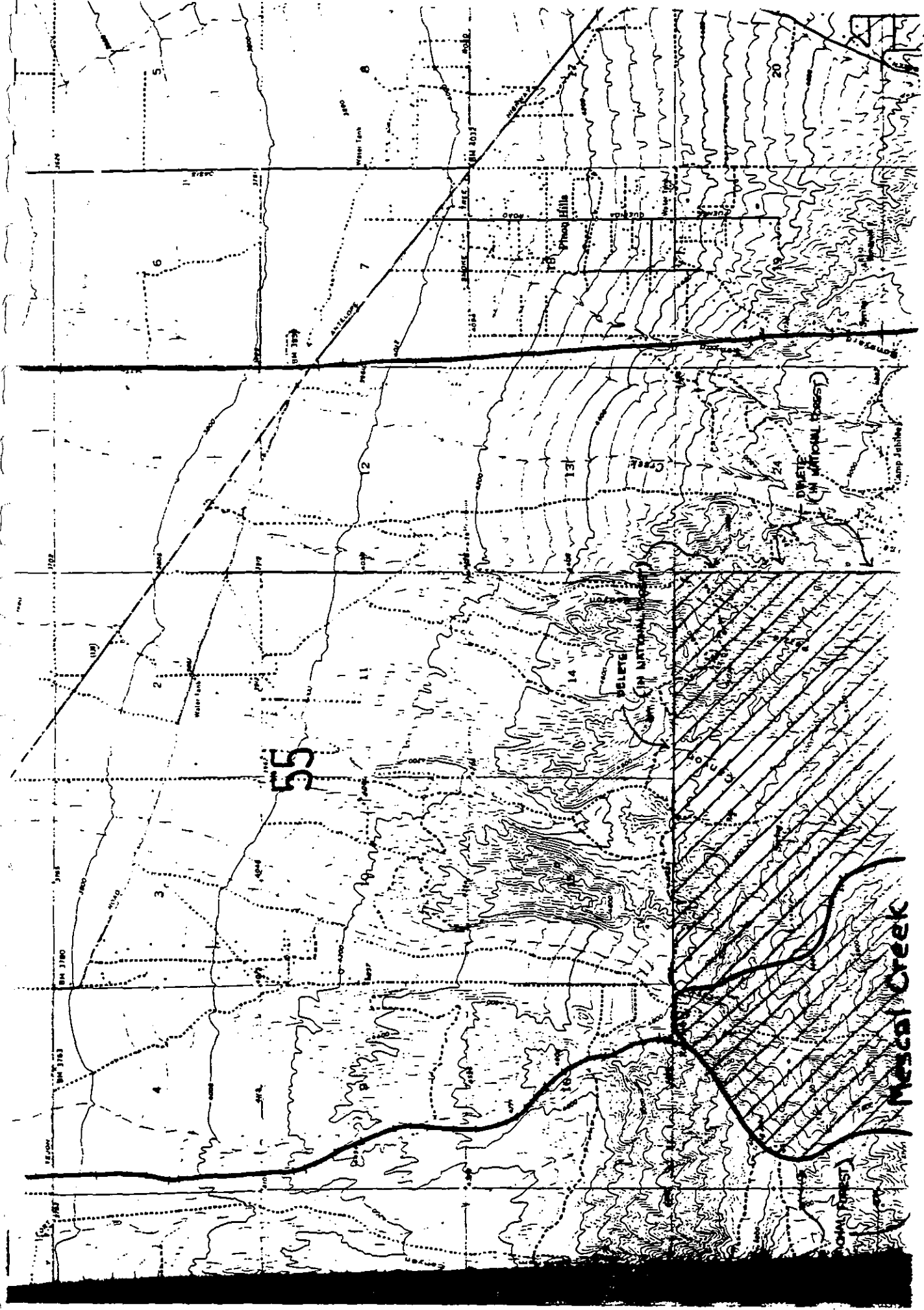
Area # 55 continued

enough to protect the resources.

Compatible Uses: Medium intensity recreational uses are compatible with the resources of the area. However, as additional information becomes available, less intensive uses may become necessary to protect resources in certain portions of the area. Hunting is an appropriate use in an area this size if managed in conjunction with the Department of Fish and Game. Vehicles should be restricted to existing roads.



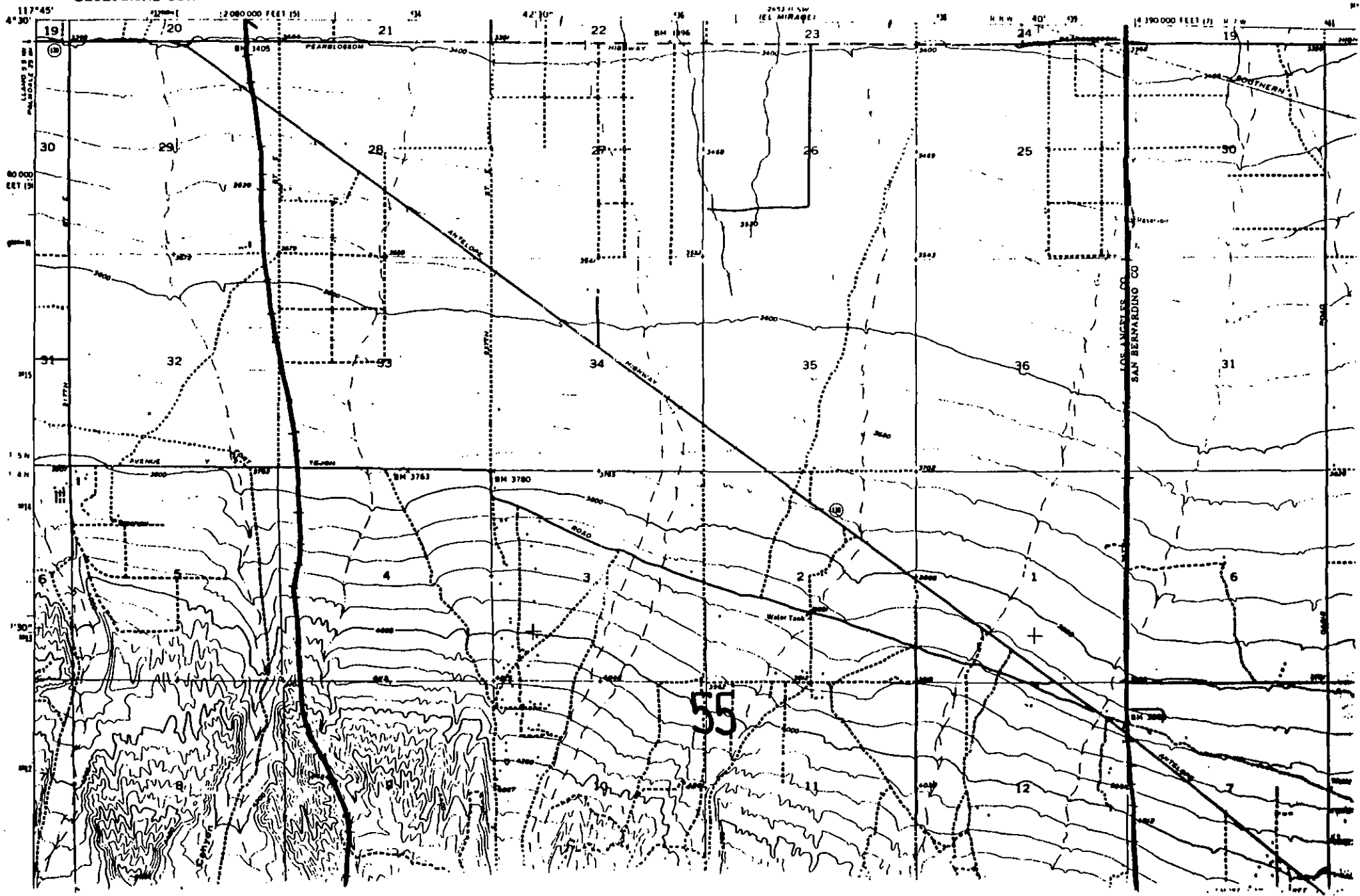
Rio Pine Cienada

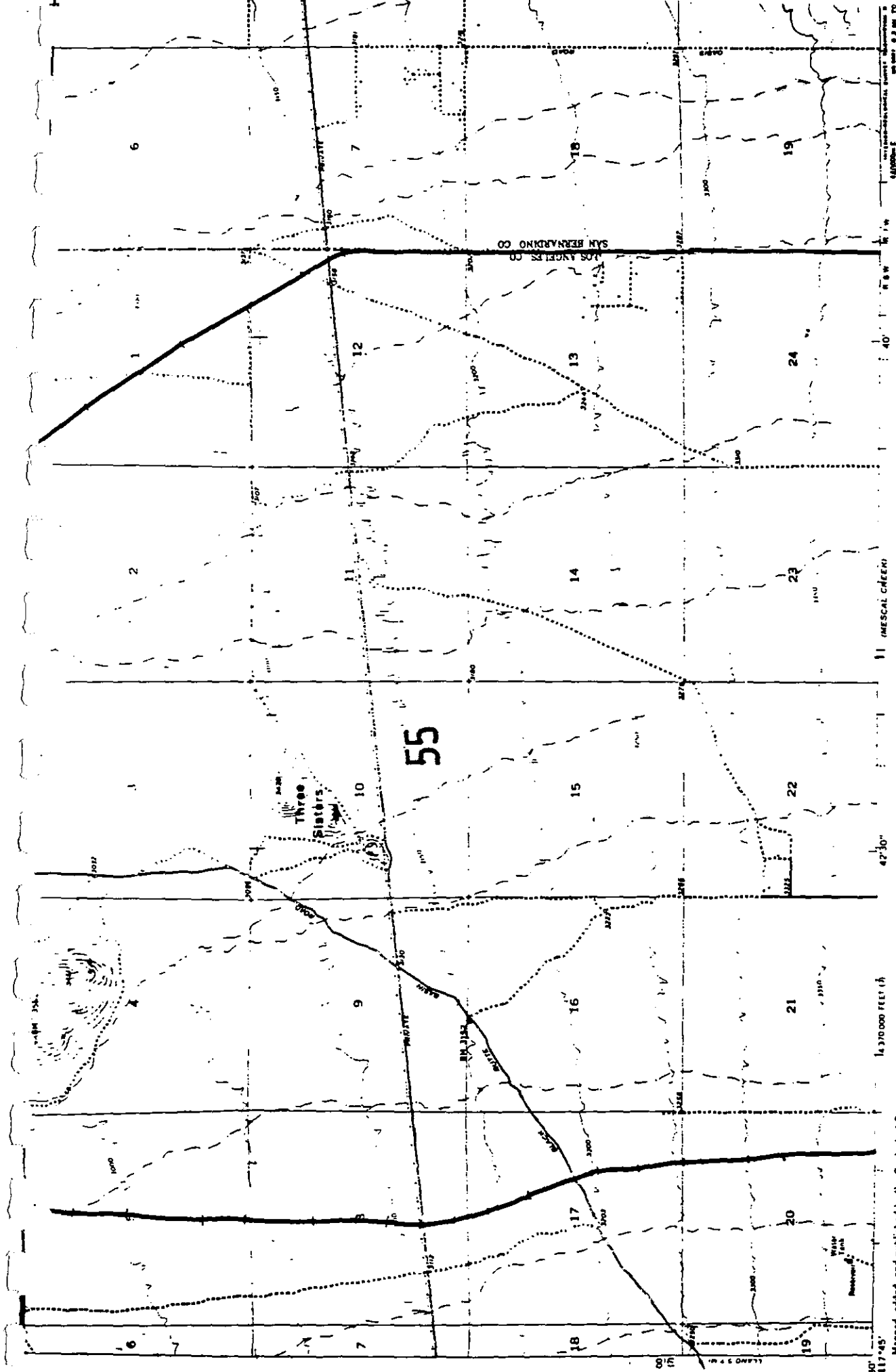


UNIT STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

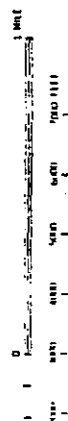
McSC/

7.5 MIN



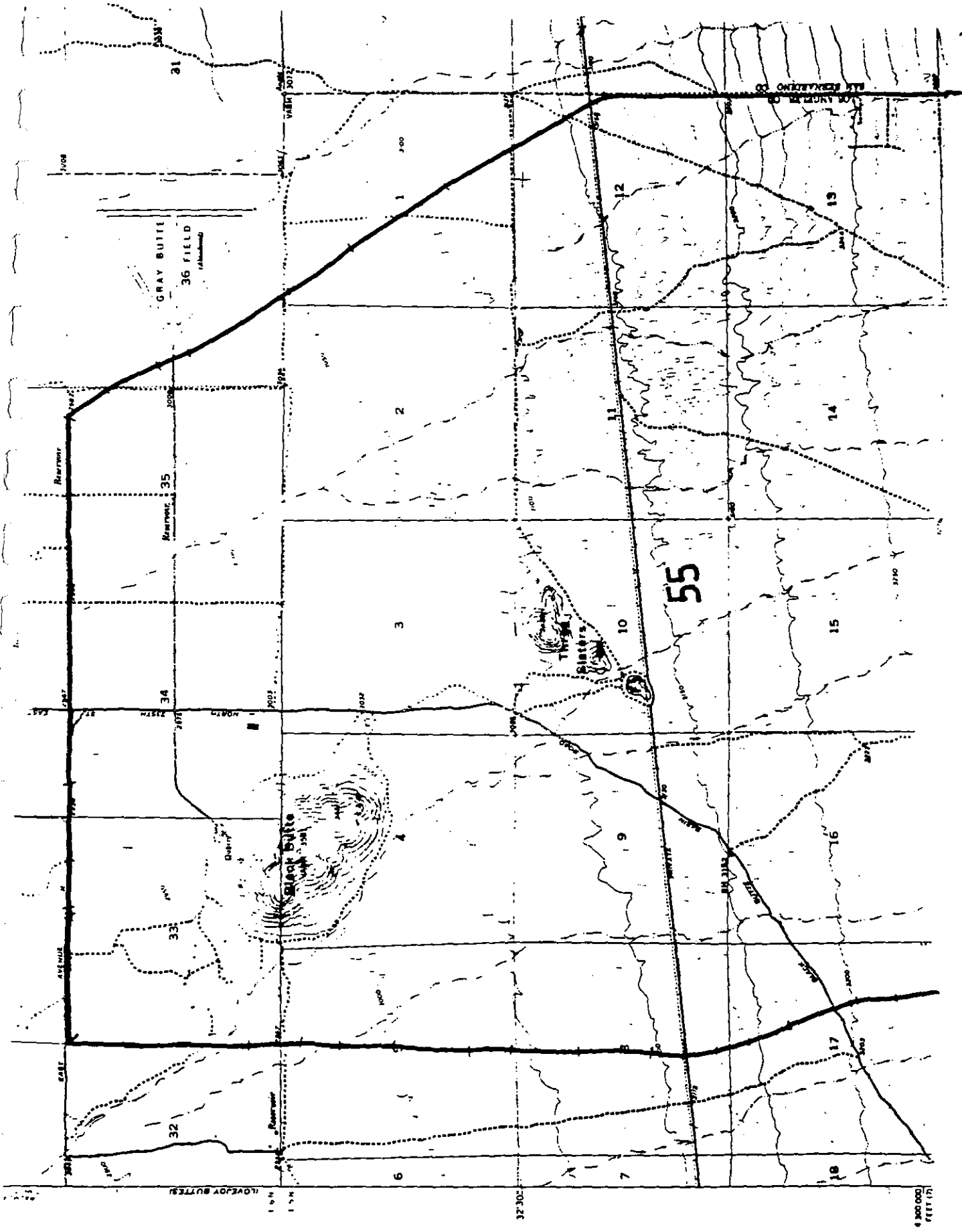


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 Control by USGS and USC&GS
 Topography by Krish plotter from aerial photographs taken 1954
 and by planimetric surveys 1930. Field check 1956
 Polycon projection 1927 North American datum



1:24,000
 Medium duty

GEORGETOWN DISTRICT



GRAY BUTTE
36 FIELD

Black Butte

Sisters

55

4 000 000
FEET (U)

32° 30'

106° 15' W
106° 30' W

FOR AMERICA
SAL. EDWARDS

Area # 56

Name: Ritter Ridge

Quadrangle(s): Ritter Ridge

Class 5 (7)

Resource Description: The vegetation on Ritter Ridge is a cross-section of several unspoiled habitats of the desert and foothills. It has one of the finest mixed stands of joshua trees and California junipers in the county. It is also an excellent area for wildlife, and possesses a rich fauna.

Ritter Ridge lies between the Sierra Pelona foothills and the Antelope Valley. The vegetation grades from creosote bush scrub in the desert floor into an excellent joshua tree woodland and California juniper association on the northern slopes. On the higher northern slopes and on the south-facing slopes are fine examples of desert chaparral. This is an excellent combination of desert and foothill plant species, and makes the area valuable for educational and scientific reasons.

Ninety-seven resident vertebrate species have been recorded from the ridge. These include twenty-five mammals, fifty-three birds, and nineteen reptiles. The area is also known as an important refuge for migratory birds.

Status: The California aqueduct runs along the north edge of the area and there are dirt roads along the ridge. The area has been grazed, but remains in good condition.

Information Source(s): Literature, Survey/Interview, ERC/UCLA, CNACC/CNPS

Nature of Information: Information on the area is available from several non-professional and professional biologists that are personally familiar with the area. Specific data gathered by professional scientists is available in the form of surveys and publications by the CNACC, Department of Water Resources, ERC, and professors at UCLA.

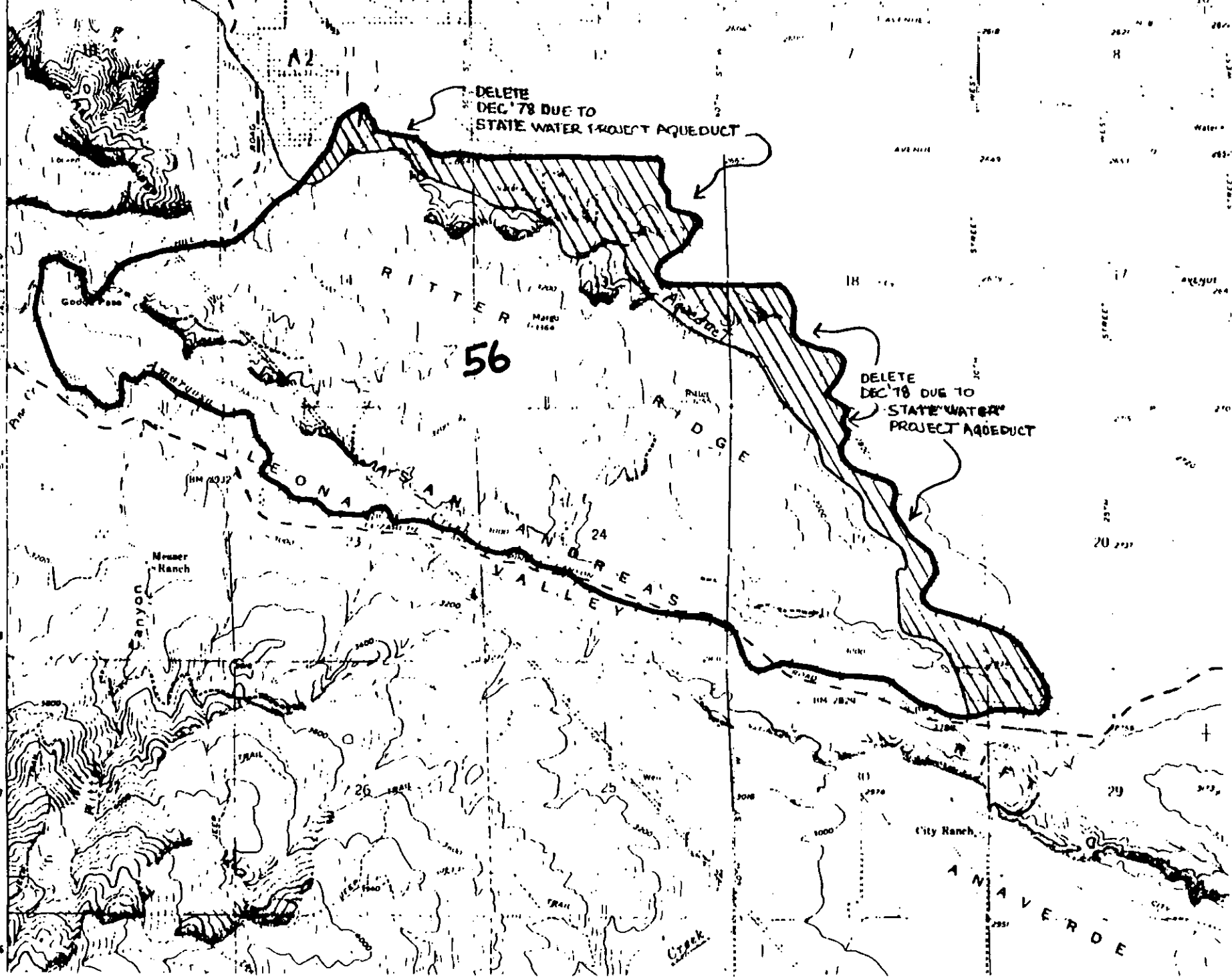
Buffer Zone Requirement: None. Recommended boundaries will be sufficient to protect the resource.

Compatible Uses: Low intensity recreational uses are compatible with the resources in the area. However, all vehicle travel should be restricted to existing roads.

T-10
1:25000

118°15'

37°30'



56

DELETE
DEC '78 DUE TO
STATE WATER PROJECT AQUEDUCT

DELETE
DEC '78 DUE TO
STATE WATER
PROJECT AQUEDUCT

Area # 57

Name: Fairmont and Antelope Buttes

Quadrangle(s): Lake Hughes, Little Buttes, Fairmont Butte,
Del Sur

Class 4 (5,7)

Resource Description: In general, desert buttes possess increased biotic diversity over surrounding areas. This is due to a high number of niches being created by mixing sandy and rocky habitats. These areas are also vital habitat to many wide ranging species which forage in outlying habitat, but use the buttes for nesting, roosting, denning, and refuge. In addition, they often possess biological resources that are declining in Los Angeles County due to accelerated agricultural and urban development. However, there are additional features which make the Fairmont and Antelope Buttes valuable.

These buttes are the most westerly habitat of this type in the Mojave Desert. Due to the non-uniform distribution of species and the proximity of these buttes to the San Gabriel Mountains, the species composition on them is likely to be different than that found on other butte habitats in the desert. The unique ecological relationships created by these features are of scientific interest.

The buttes also serve as concentrated wintering grounds for birds of prey. They provide excellent roosting sites surrounded by cultivated fields which support a plentiful food supply of rodents, rabbits, and hares. Concentrated raptor habitat of this type is uncommon in Los Angeles County.

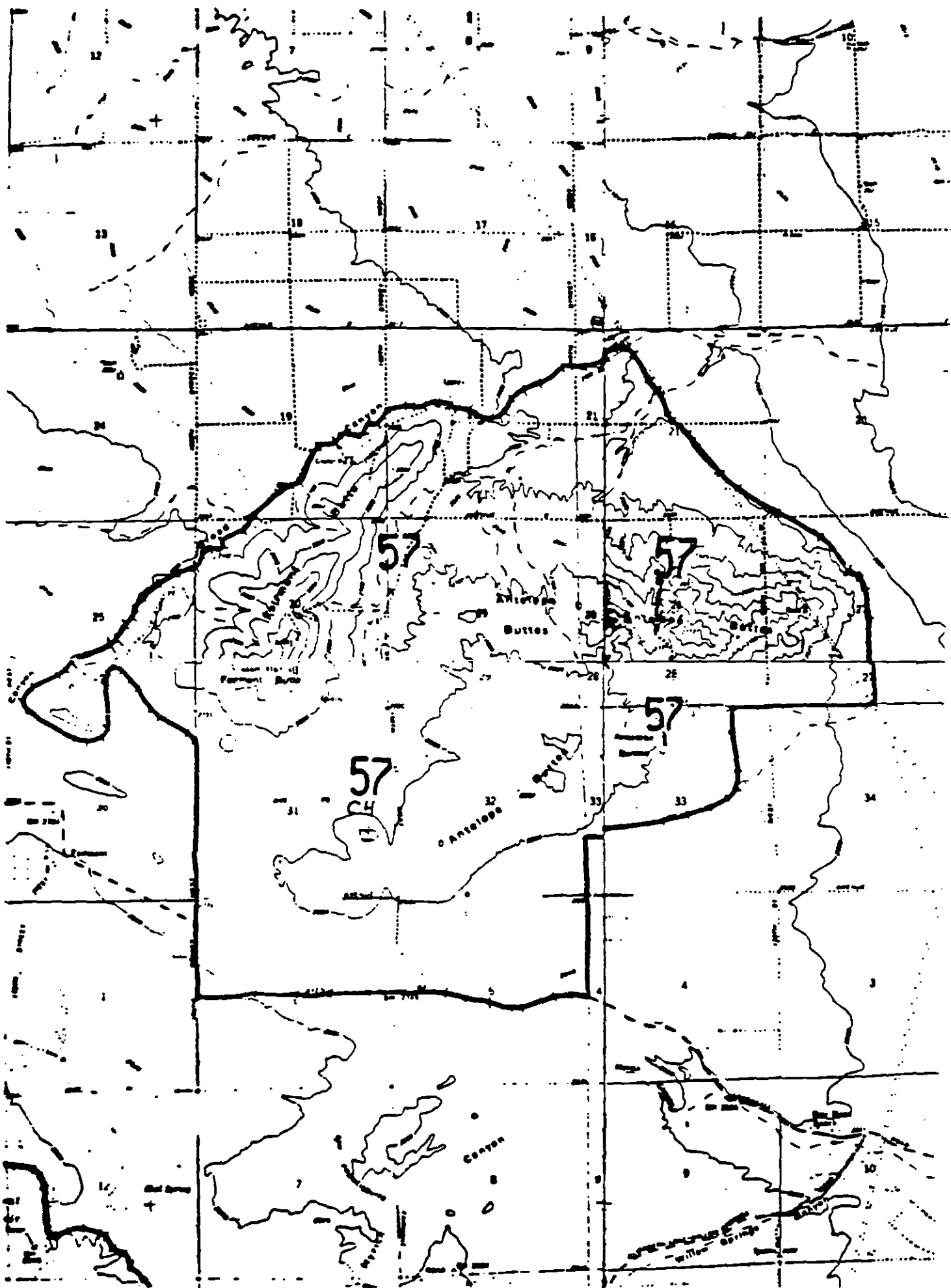
Status: Major development has not occurred on the buttes. Several dirt roads, a few windmills, a gravel pit, minor agriculture, and a transmission line are the only developments that have taken place within the area. However, the area has been grazed.

Information Source(s): Survey/Interview, ERC/UCLA

Nature of Information: A good deal of attention has been paid to desert buttes by professional and non-professional biologists, but much of the information is general

Buffer Zone Requirement: Although buffers are not indicated, surrounding land use will be important to the maintenance of resources. Agricultural uses should be encouraged.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area. However, campgrounds and interpretive facilities should be placed off of the buttes at the periphery of the area. Vehicle use of the area must be restricted to existing roads and jeep trails.



57

57

57

57

Buttes

CANYONS

SOUTH SPRING

Area # 58

Name: Portal Ridge/Liebre Mountain

Quadrangle(s): Lake Hughes, Neenach School, Burnt Peak, La
Liebre Ranch, Liebre Mtn., Lebec

Class 5 (7)

Resource Description: The Portal Ridge/Liebre Mountain area is in close proximity to the Mojave Desert, the San Gabriel Mountains, and the Tehachapi Foothills. This position, at the intersection of three major geographical regions has produced the most diverse and unique flora found in the county. The area contains ten distinct plant communities, representing the transition between desert, foothill, and montane environments. The diversity of the area is further enhanced by the presence of many northern species, some of which are rare in the county, reaching their southern limit here.

Foothill woodland is an uncommon plant community that occurs in this area. It is a community containing both oak parklands of blue oak (Quercus douglasii) and valley oak (Q. lobata), and digger pine woodland (Pinus sabiniana). This community is more common in northern and central California where it occurs along foothill and valley borders in the inner Coastal Ranges and western foothills of the Sierra Nevada. The distribution of this community extends south through the Tehachapi Mountains to the San Gabriel Mountains to reach its southern limit on Portal Ridge/ Liebre Mountain. This is the only place this community is found in the county. Similarly, several of the component species including blue oak, digger pine, and California buckeye reach their southern limits here, and are found nowhere else in the county.

On the lower slopes and in the valleys south of the main ridgeline, southern oak woodland, valley grassland, riparian woodland, and coastal sage scrub can be found. Higher slopes and ridgetops are covered with chaparral and yellow-pine forest. On the north-facing slopes, which are under desert influences, pinyon-juniper woodland habitat is present. Joshua tree woodland or sagebrush scrub cover the lower desert hillsides in the area.

All of these communities are relatively common in the county with the exception of sagebrush scrub. This community, dominated by great basin sage (Artemisia tridentata), is not common in California south of the Owens Valley. Populations in southern California are probably relicts from an earlier time when the community extended much further south than it does today.

Despite the commonness of most of the plant communities present, this area is very valuable because it possesses such a concentrated diversity of vegetation types. This creates an outstanding opportunity for educational use, nature study, and scientific research.

The Portal Ridge/Liebre Mountain area is relatively large, and the precise locations of its most unique resources are not known. For this reason, the priority group assigned to it

Area # 58 continued

reflects only the value of the entire area for scientific research. However, further studies should be conducted to determine the exact location of the more unique resources within the area. Those containing sagebrush scrub should be identified and placed in priority group 2. Foothill woodland habitat should also be set apart and given a priority group 3 rating. Additional highly valuable resources should be identified and rated as they are found. Enough of the area should be preserved so that the interface between the communities can be maintained.

Status: Surprisingly, this large area has avoided extensive development. Grazing has probably impacted most of the valleys and lower hillsides. Paved roads and isolated scattered developments are found in the larger canyons including Pine Canyon, Oakgrove Canyon, and Oakdale Canyon. Many of the smaller side canyons have dirt roads and isolated structures in them. The ridges and hillsides are relatively undisturbed with activity being limited to occasional dirt roads and firebreaks. However, the more level areas have been cleared at one time for grazing or agriculture.

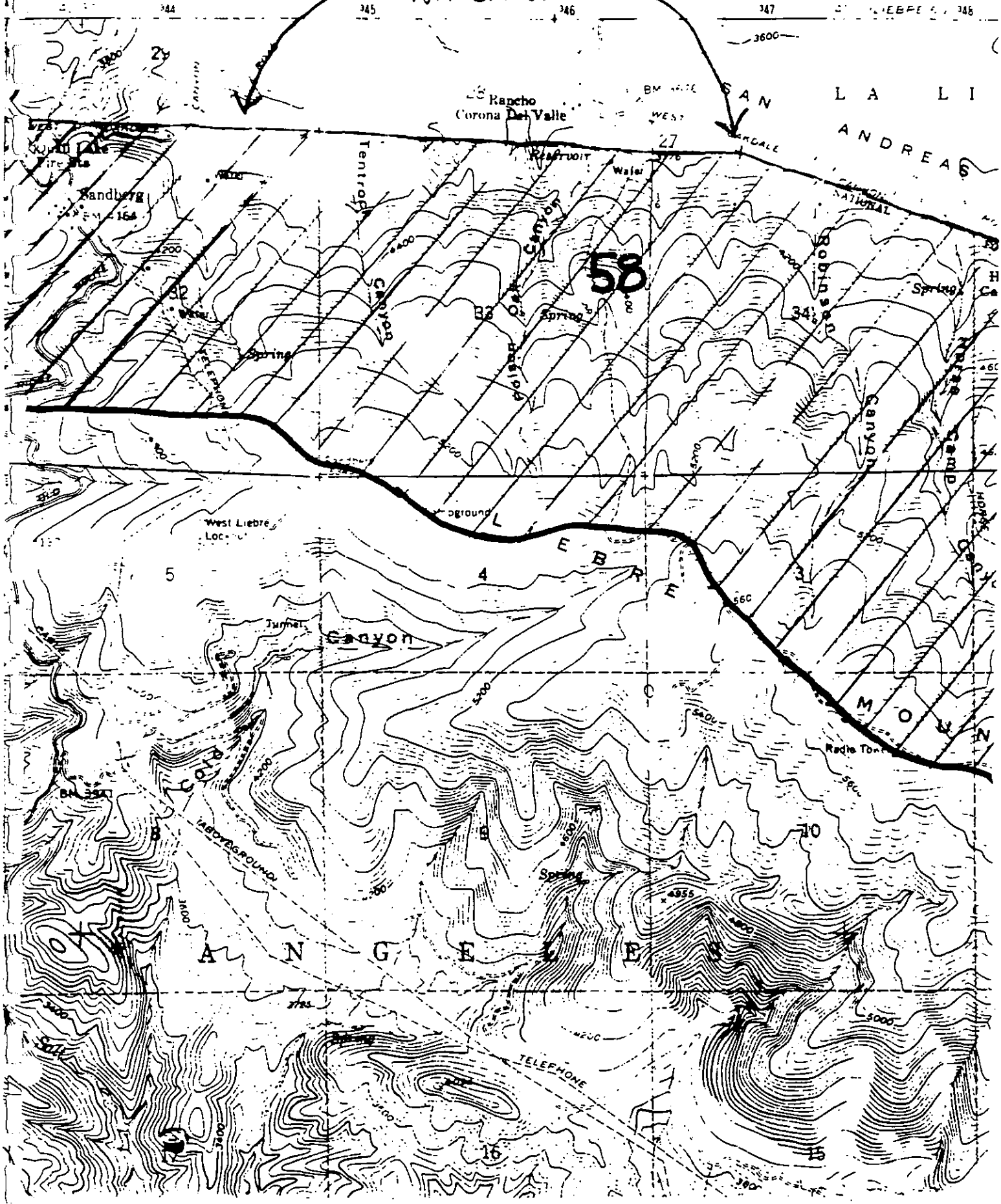
Information Source(s): Literature, Survey/Interview, ERC/UCLA, CNACC/CNPS

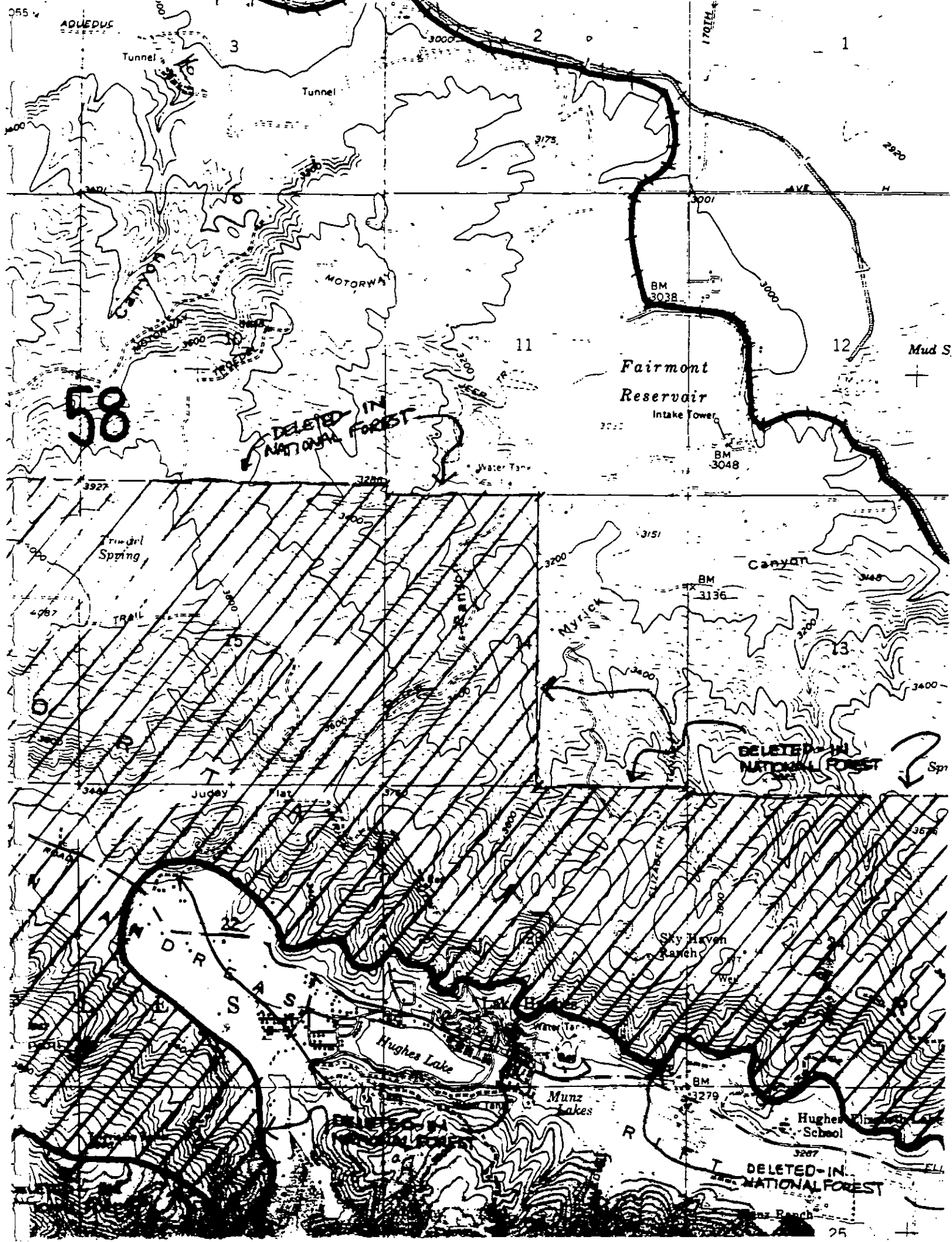
Nature of Information: Much information about the general area has been gathered by professional botanists who have used the area for research and instruction. A few areas within the Portal Ridge/Liebre Mtn. boundaries have been surveyed by the CNACC. Much of the same area was included in the original study by the ERC/UCLA study group, and specific locality data is still lacking.

Buffer Zone Requirement: The area is large enough to sustain itself. In addition, much of it lies within the Angeles National Forest.

Compatible Uses: Medium intensity recreational uses are compatible with the resources of the area. However, as additional information becomes available, less intensive uses may become necessary to protect resources in certain portions of the area. Hunting is an appropriate use in an area this size if managed in conjunction with the Department of Fish and Game. Vehicles should be restricted to existing roads.

DELETED - IN
NATL. FOREST





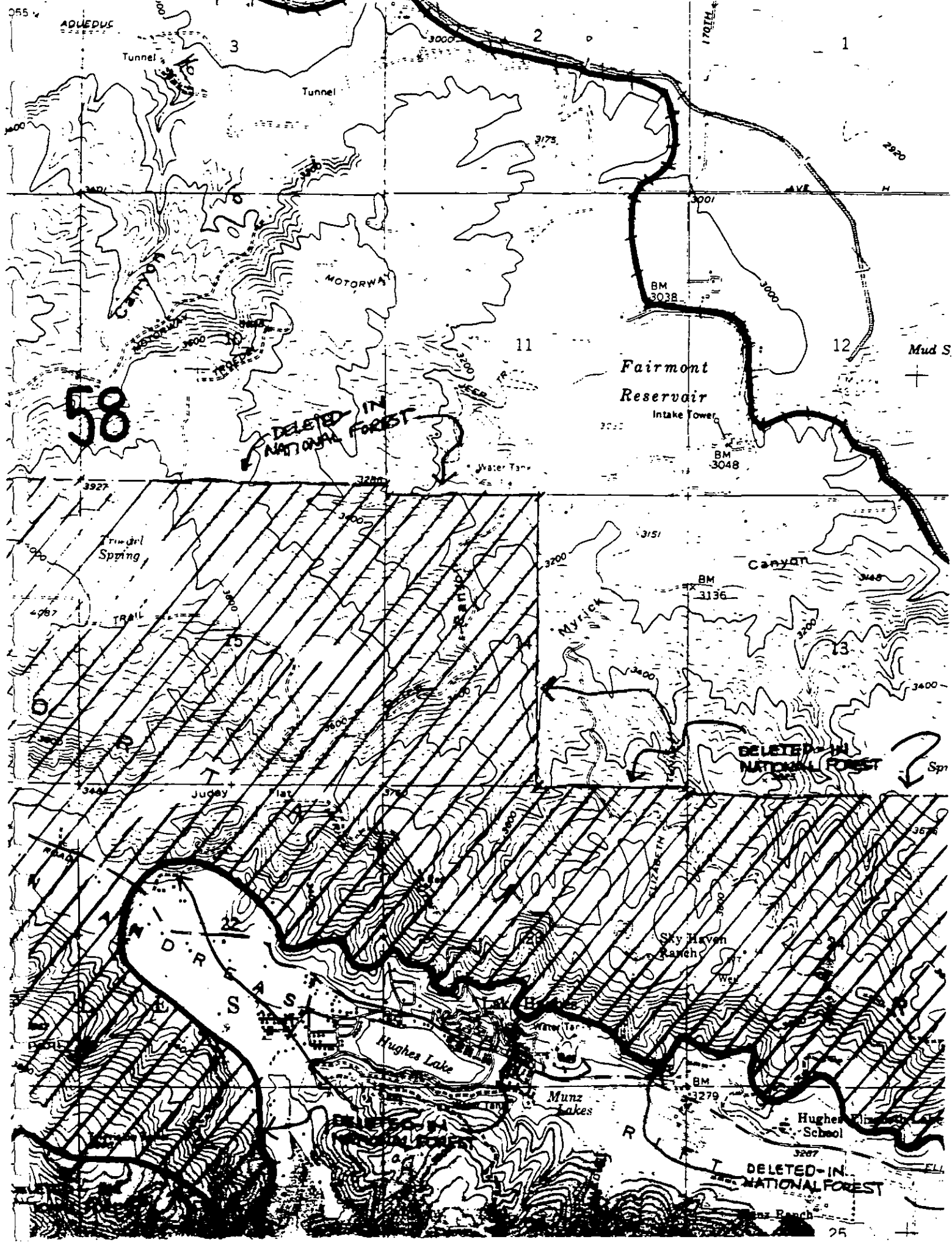
58

DELETED-IN-NATIONAL FOREST

Fairmont Reservoir Intake Tower

DELETED-IN-NATIONAL FOREST

DELETED-IN-NATIONAL FOREST



58

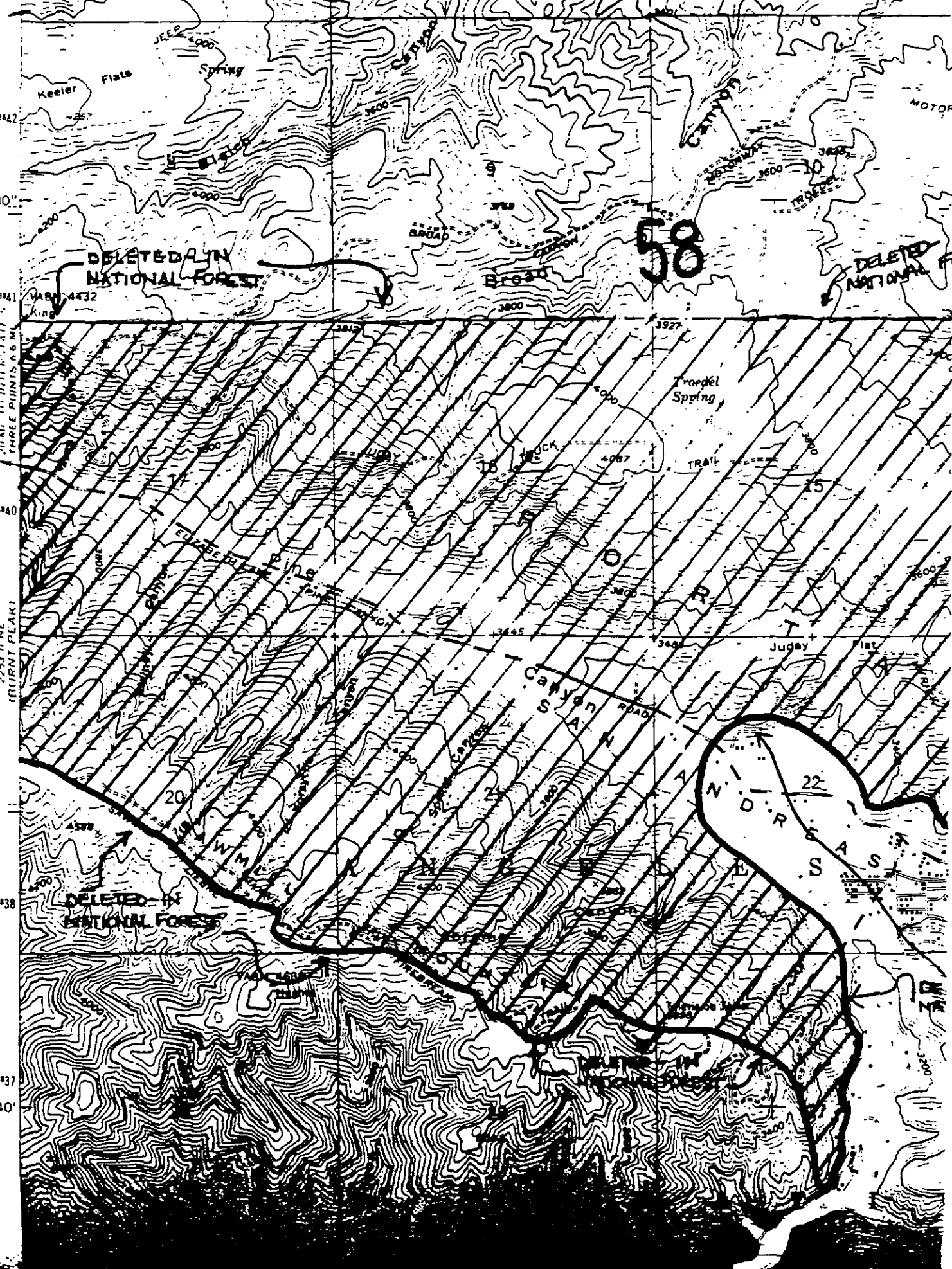
DELETED-IN-NATIONAL FOREST

Fairmont Reservoir Intake Tower

DELETED-IN-NATIONAL FOREST

DELETED-IN-NATIONAL FOREST

42°30' 3842 3841 3840 3838 3837 40



DELETED IN NATIONAL FOREST

58

DELETED NATIONAL F

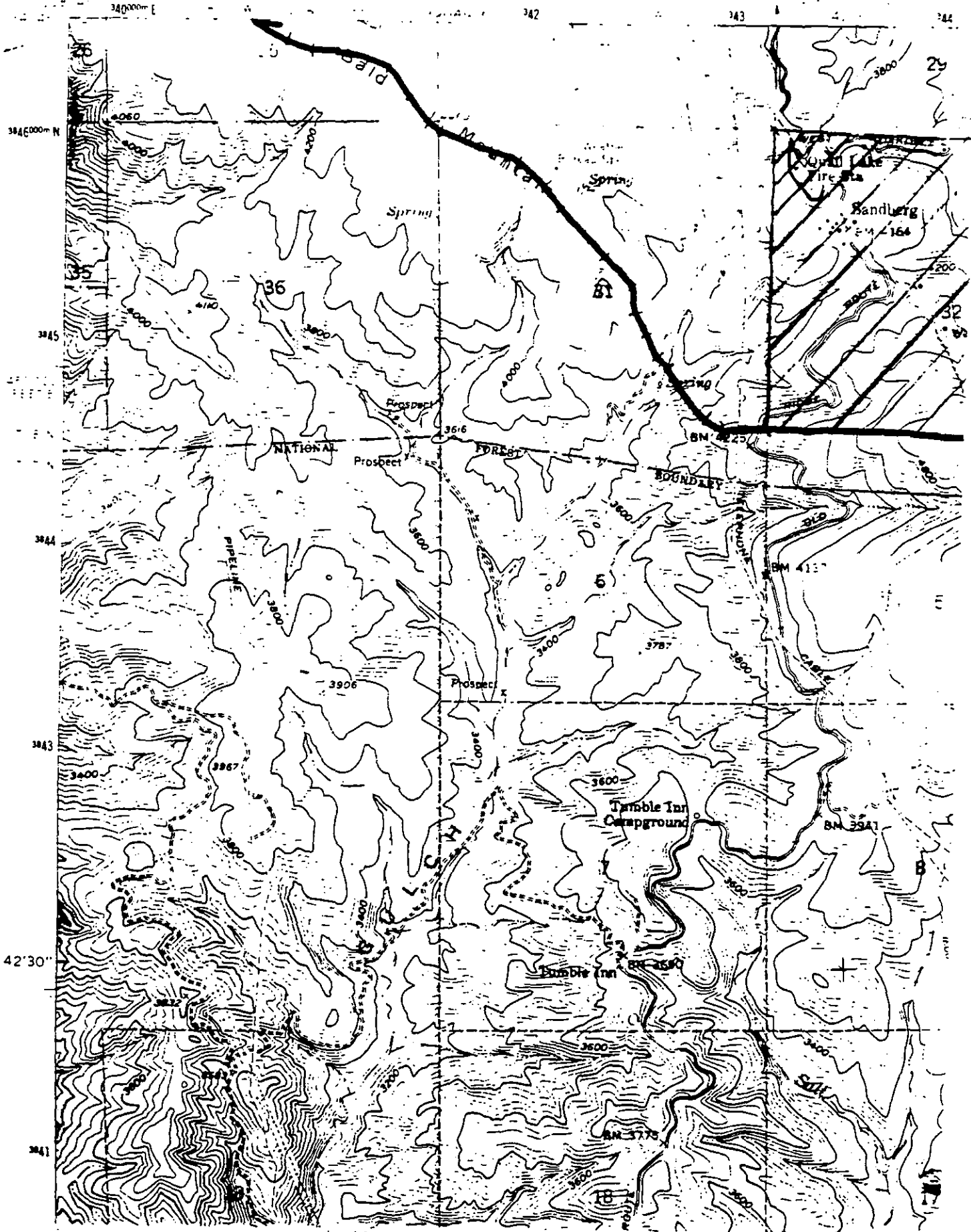
DELETED IN NATIONAL FOREST

JUDY FLAT
TROEDDEL SPRING
CANYON ROAD
22

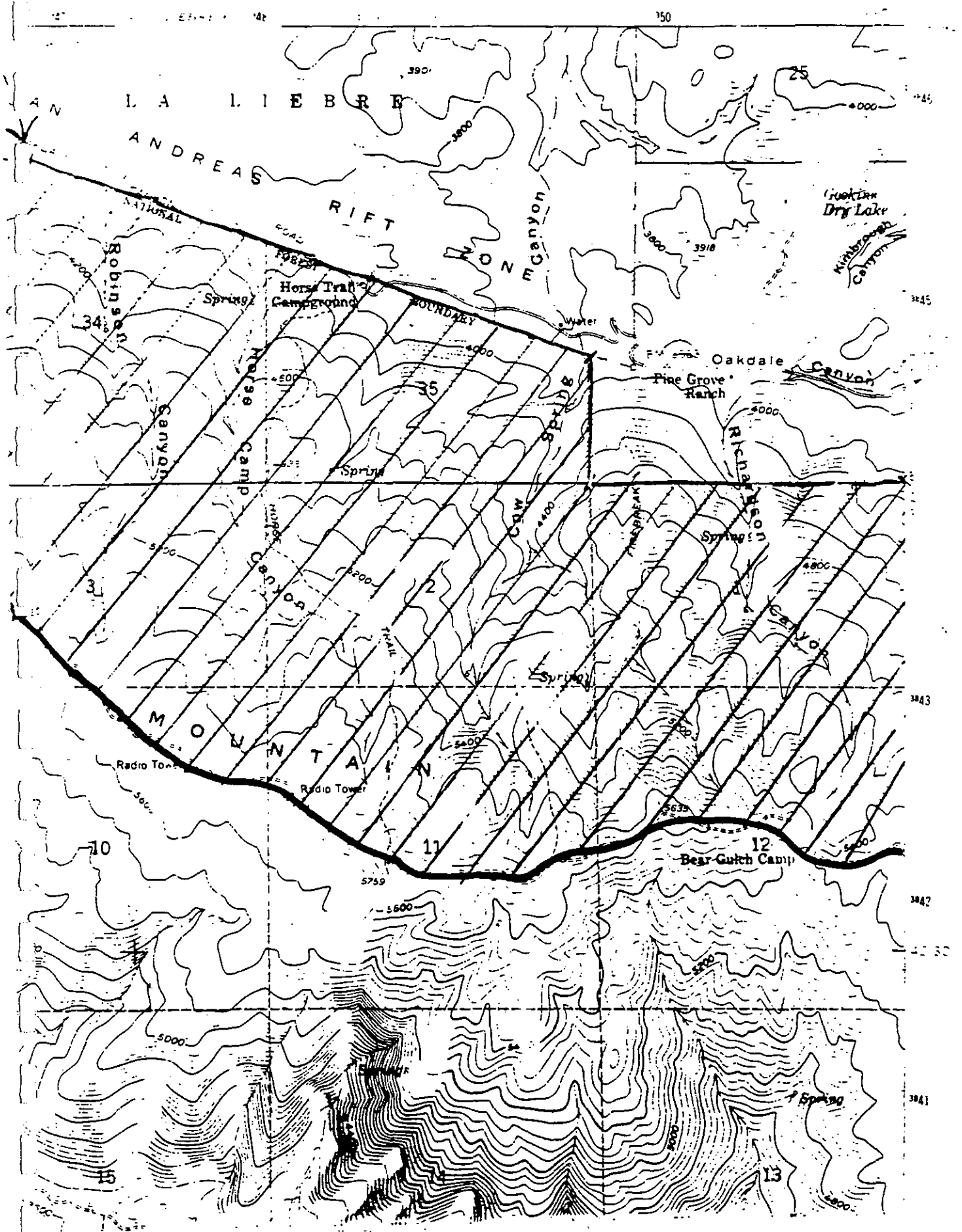
2253 DUNE (CURRENT PEAK)
SCALE IN HORIZONTAL
THREE POINTS 6.5 MI

2253 14 58
11756.7

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



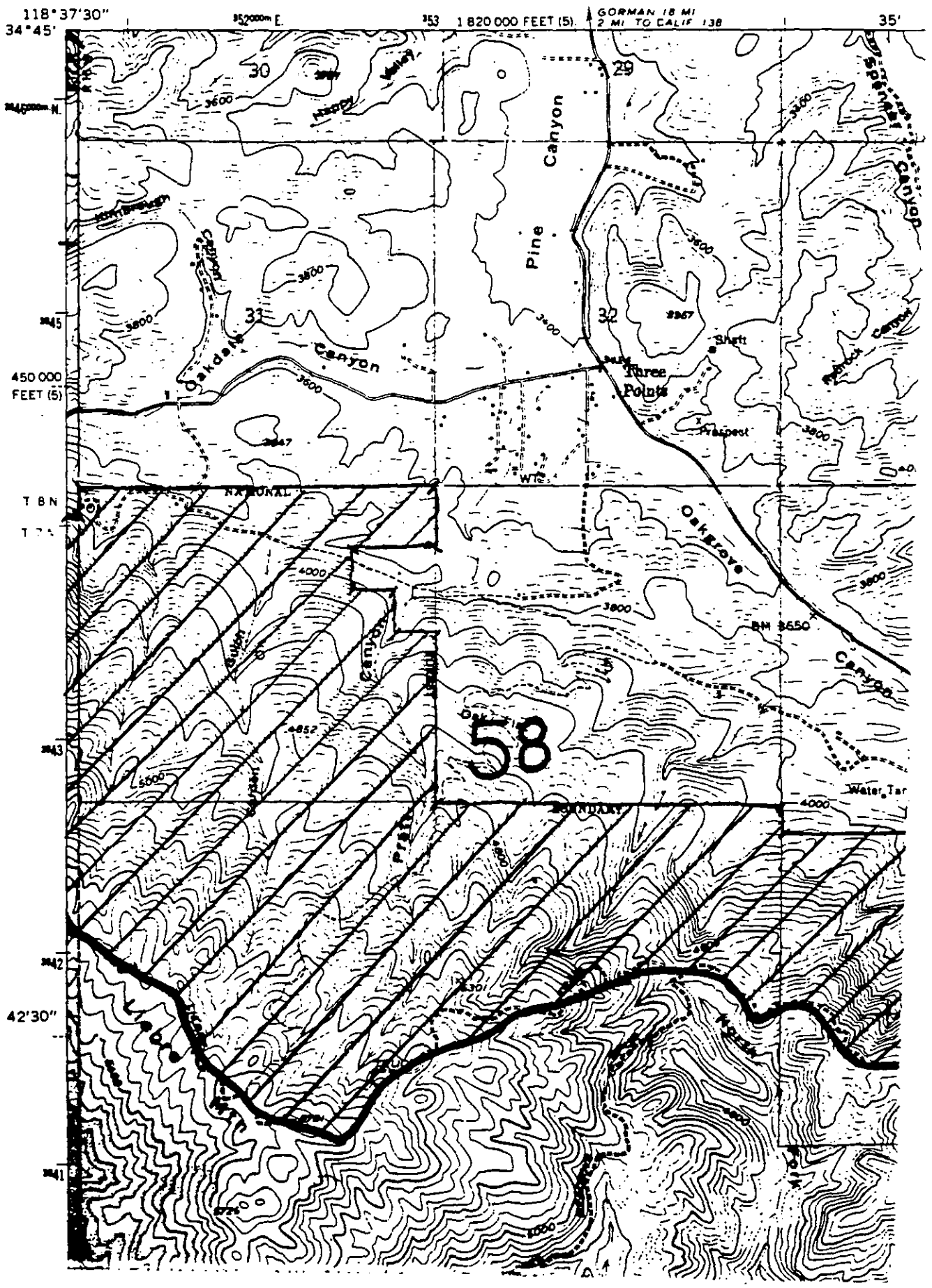
LIEBRE MTN. QUADRANGLE
CALIFORNIA-LOS ANGELES CO
7.5 MINUTE SERIES (TOPOGRAPHIC)

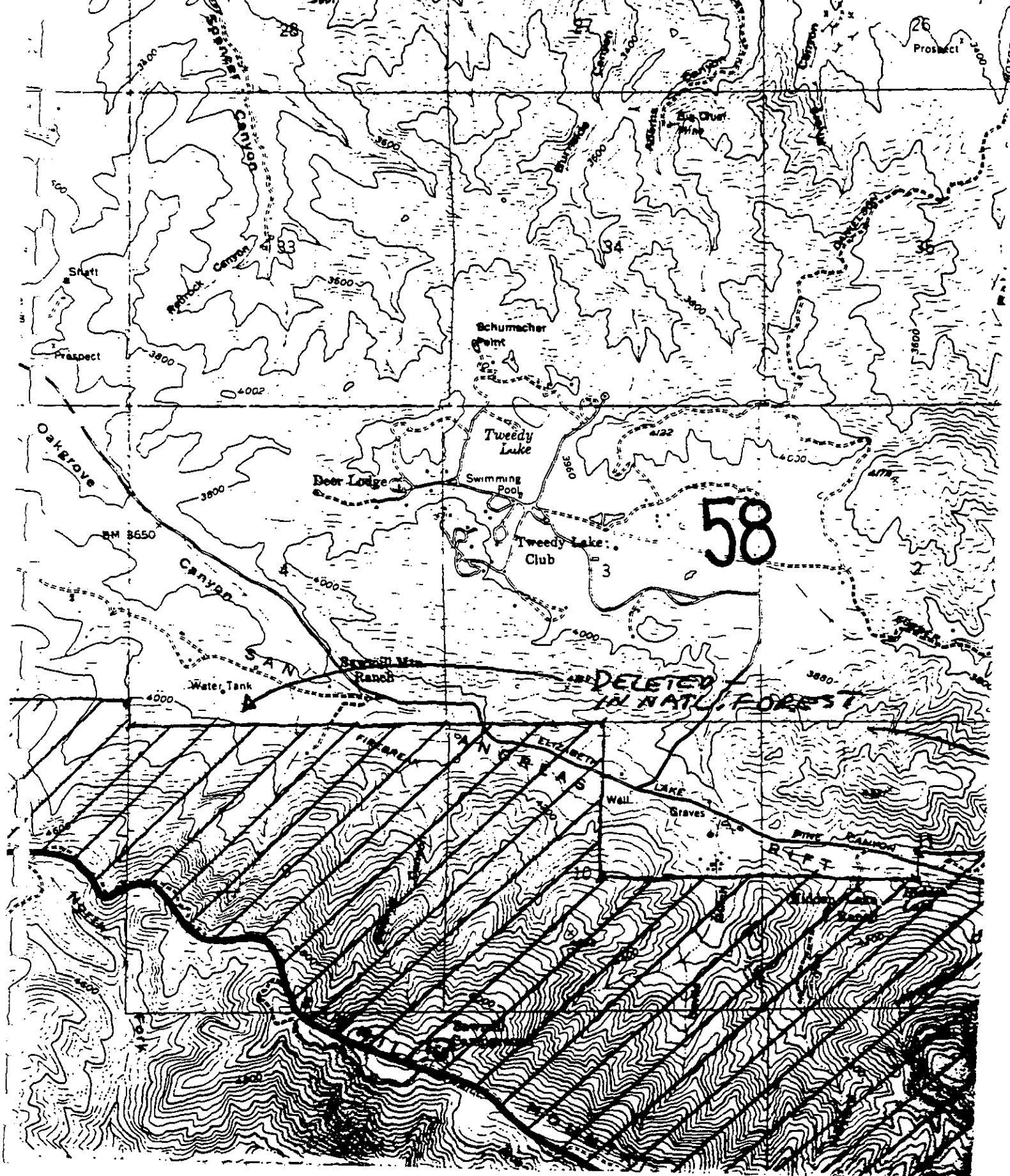


2253 - SW
(LA LIEBRE RANCH)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

TIC
#16





GEOLOGICAL SURVEY

118°37'30"
34°45'

1820000 E

1820000 FEET (5)

GORMAN 18 MI
2 MI TO CALIF 138

35'

450000 N

450000
FEET (5)

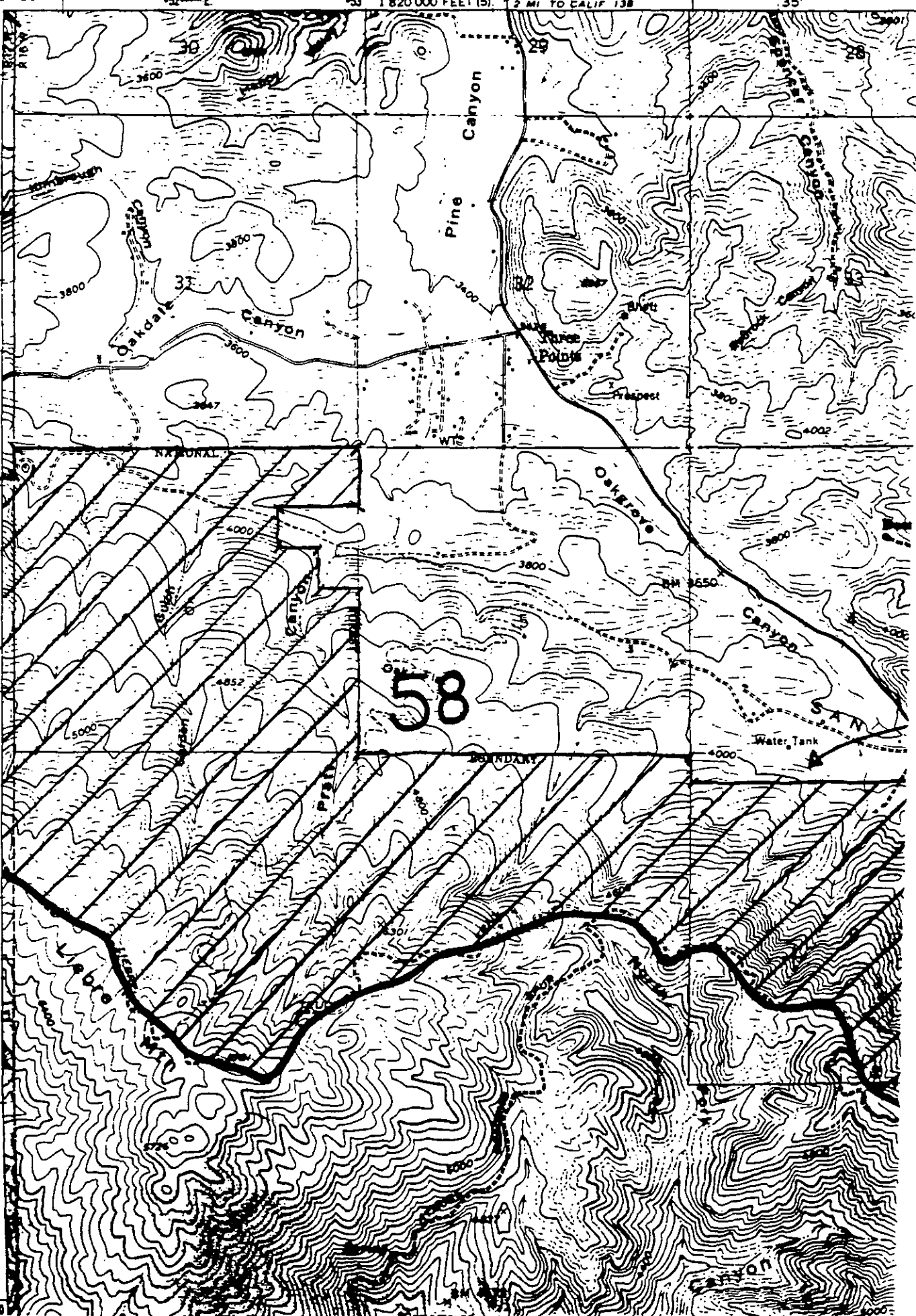
T 6 N

T 7 N

43

42'30"

41

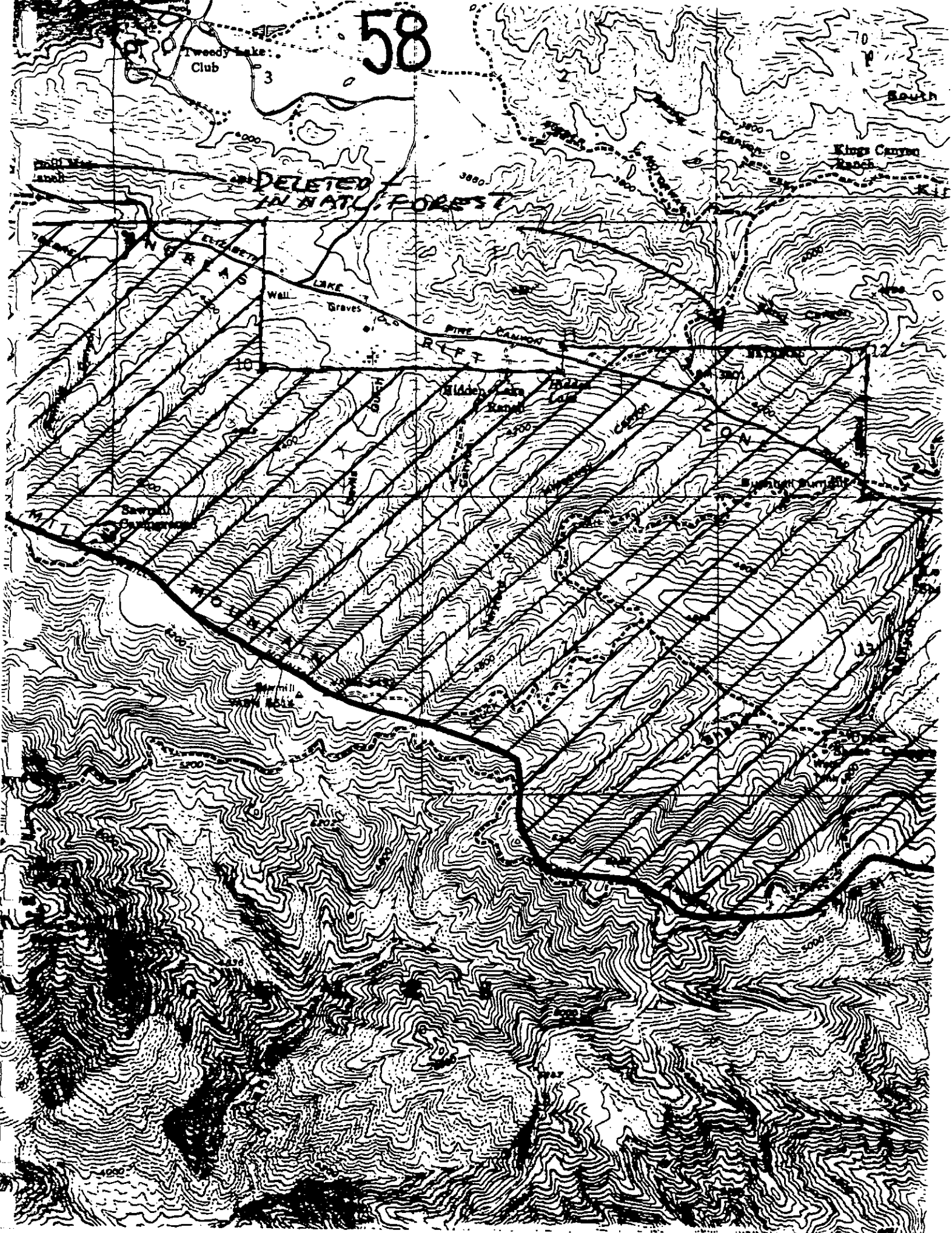


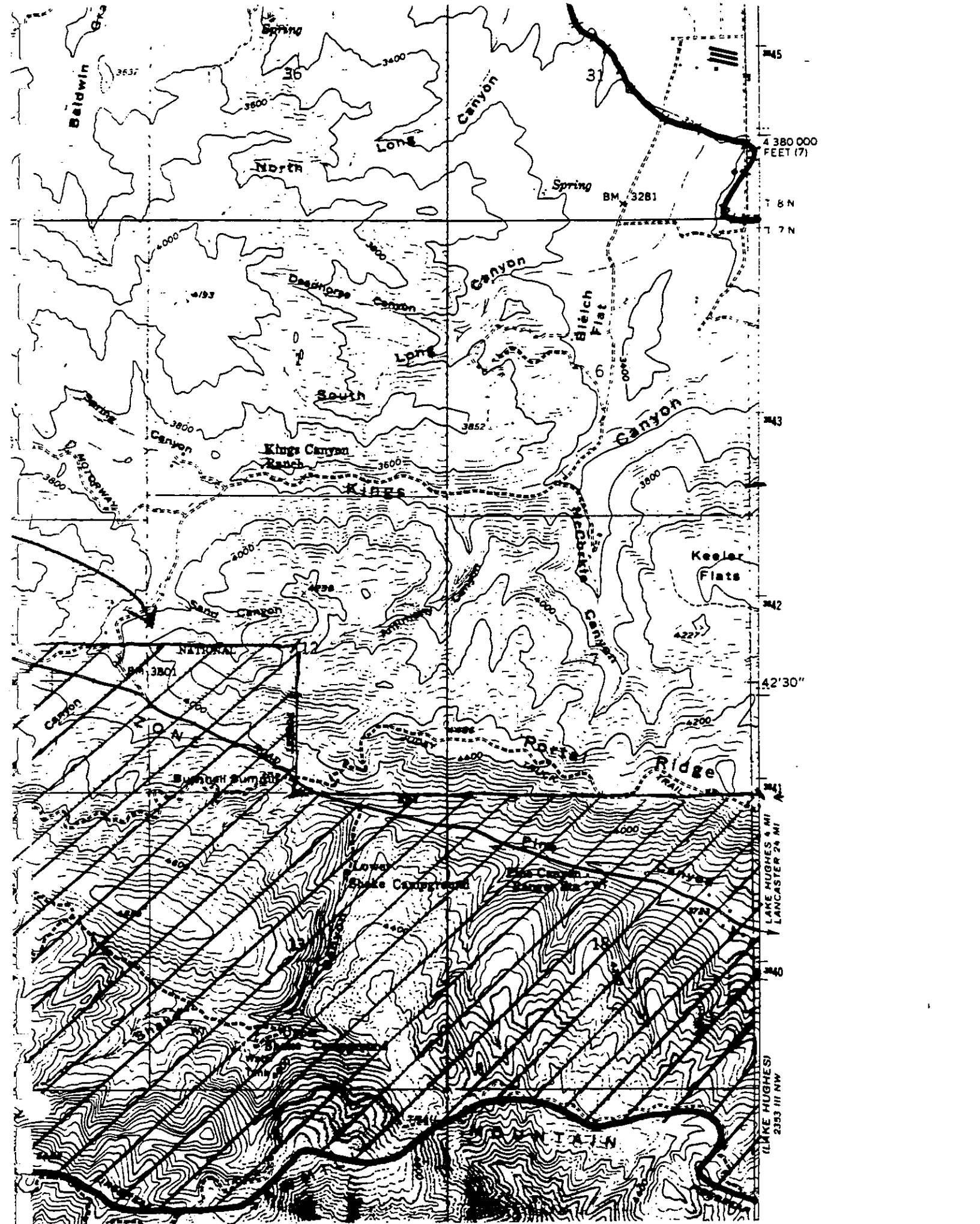
58

Twoody Lake Club

DELETED
IN NATL. FOREST

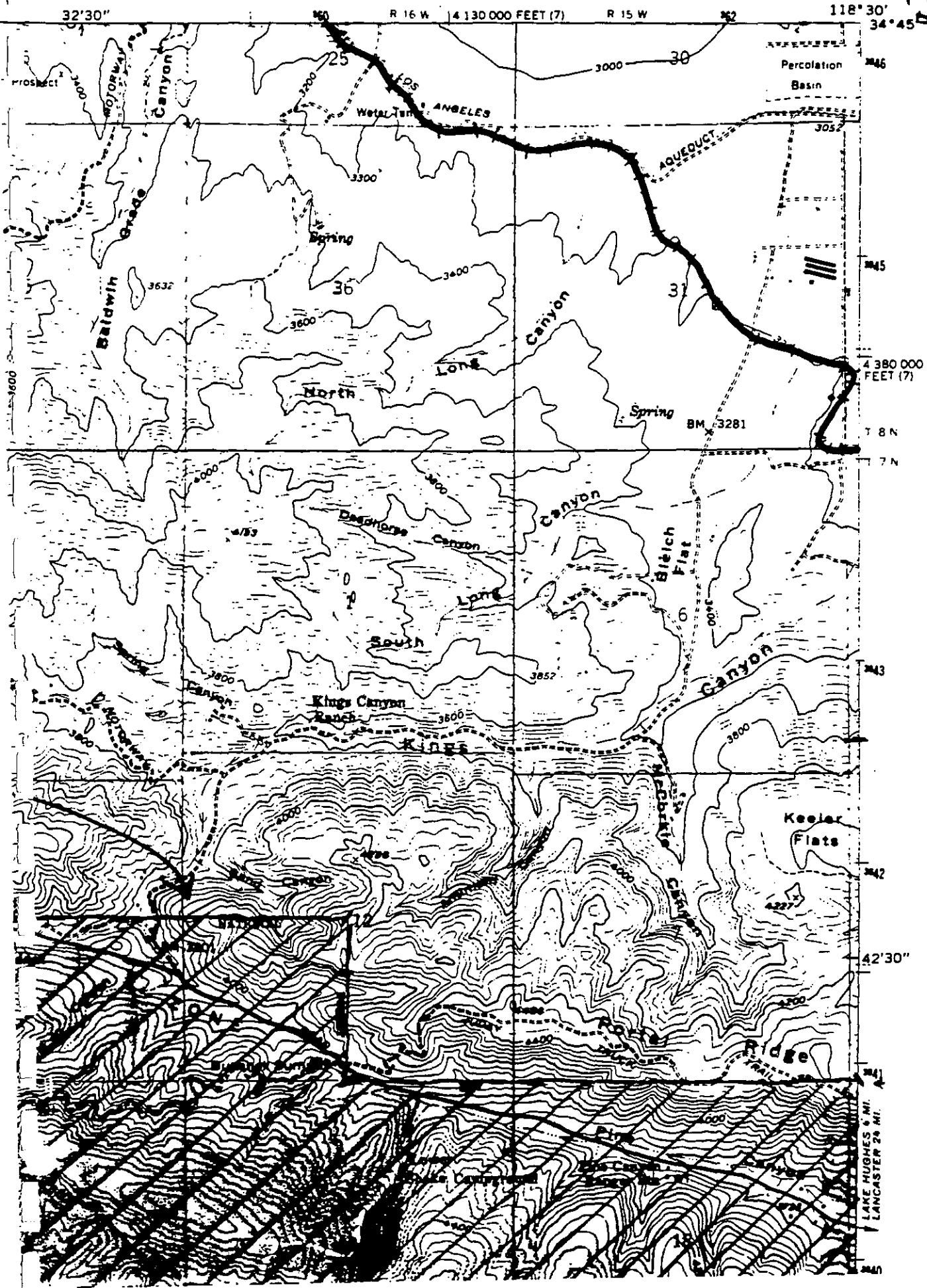
Kings Canyon Ranch



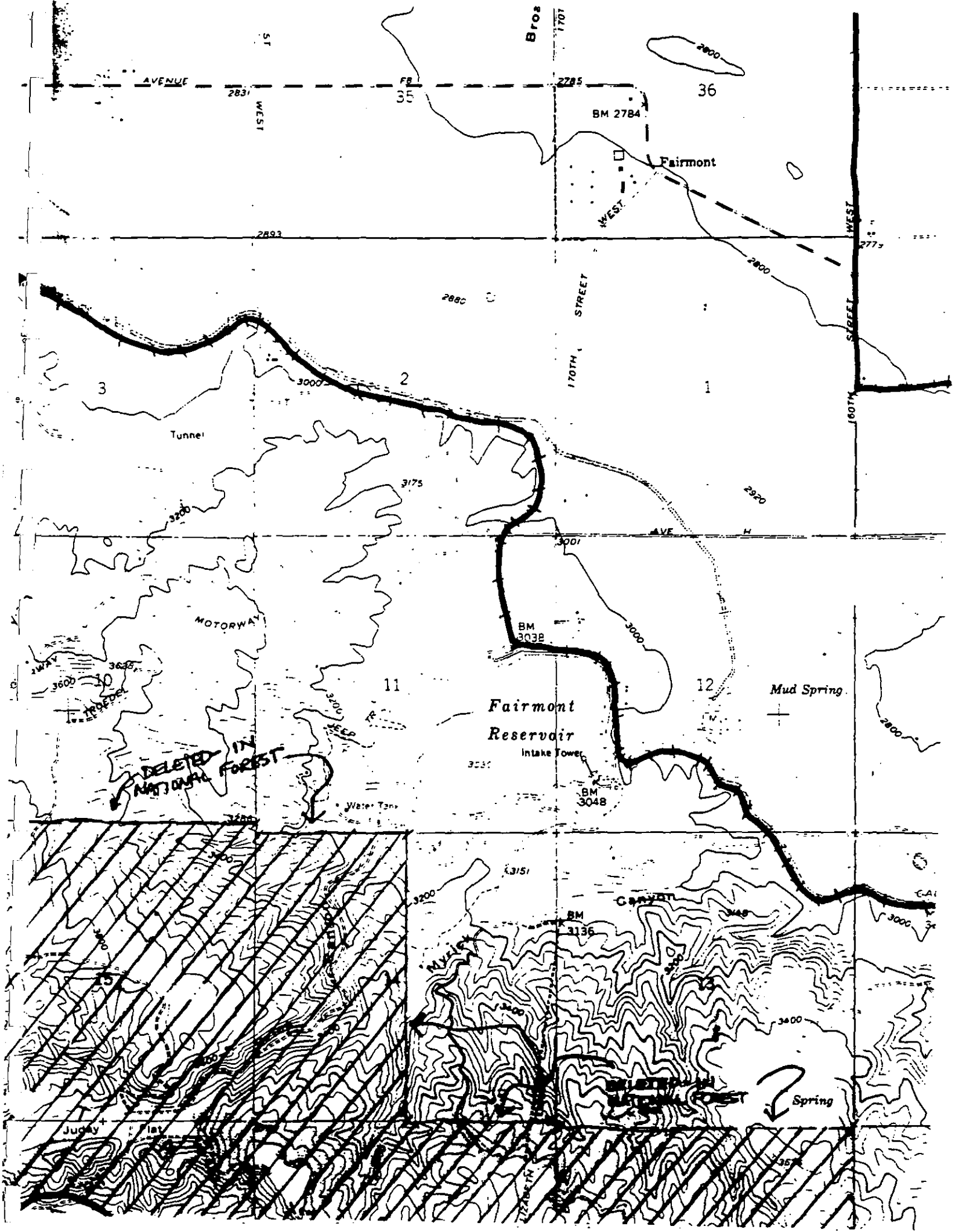


BURNT PEAK QUADRANGLE
CALIFORNIA-LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

2353 IN
FAIRMONT
TIC
34°45' 17"



LAKE HUGHES 6 MI.
LANCASTER 25 MI.



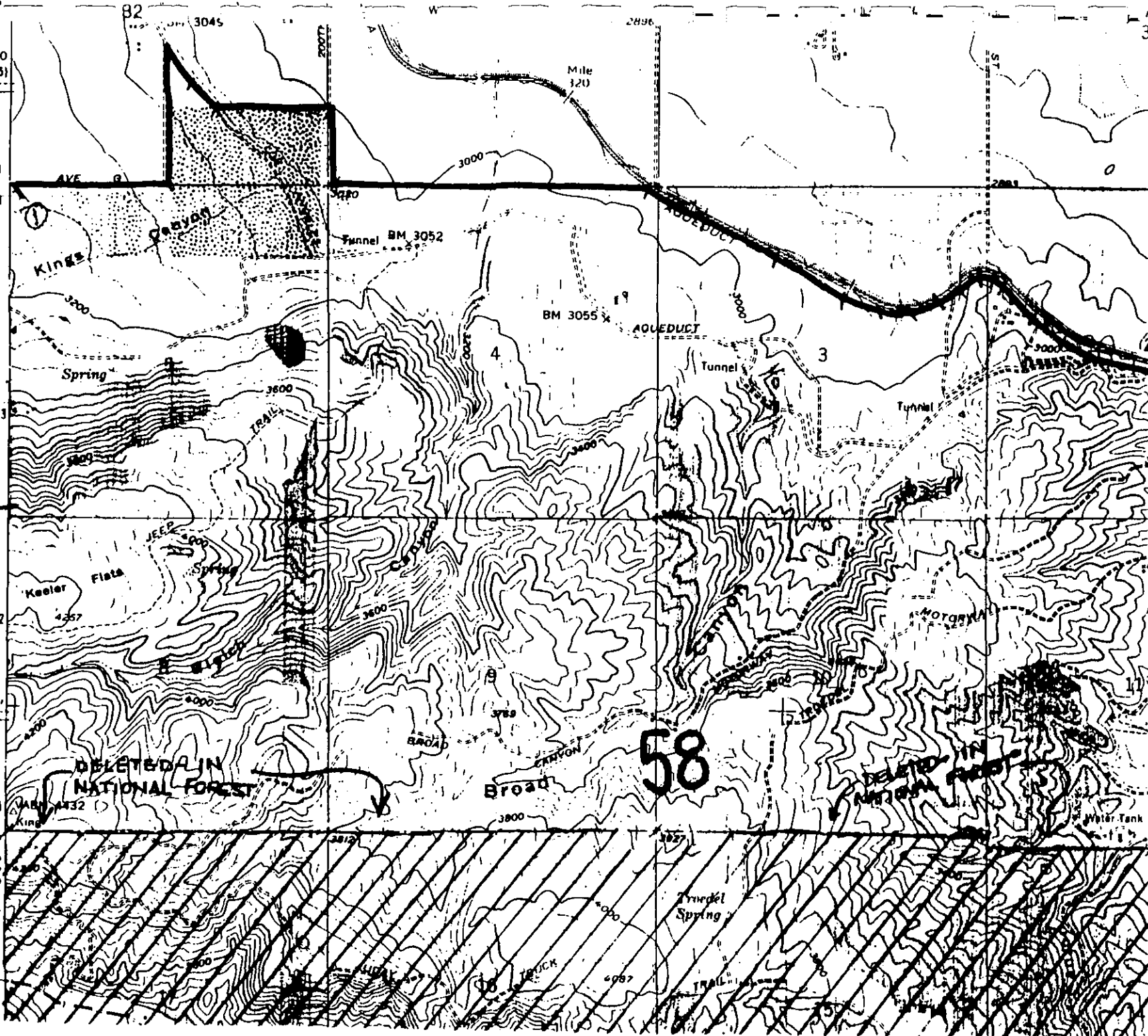
450 000
FEET (9)

T 8 N

T 7 N

42°30'

20 M. INTERSTATE 5
THREE POINTS 6.6 M.



BM 3048

ROAD - BM 2802

2768

Landing Field

Smiths Castle

Indian Petroglyphs

Well

SPRINGS

SPRINGS

CANYON

DELETED-IN NATIONAL FOREST

Spring

3675

3291

2867

(INF) 3100

19

Hughes Elizabeth Lakes School

3287

DELETED-IN NATIONAL FOREST

Manz Ranch

25

ELIZABETH LAKE

PINE CANYON

Elizabeth Lake

ZONE N. E

Edgewater Park

Lake

3400

3400

3400

3400

3400

3400

3400

3400

3400

3400

3400

3400

3400

LANCASTER 17 MI

AT MIDALE 16 MI

BM 3331

Water Tank

Water Tank

Water Tank

Water Tank

Water Tank

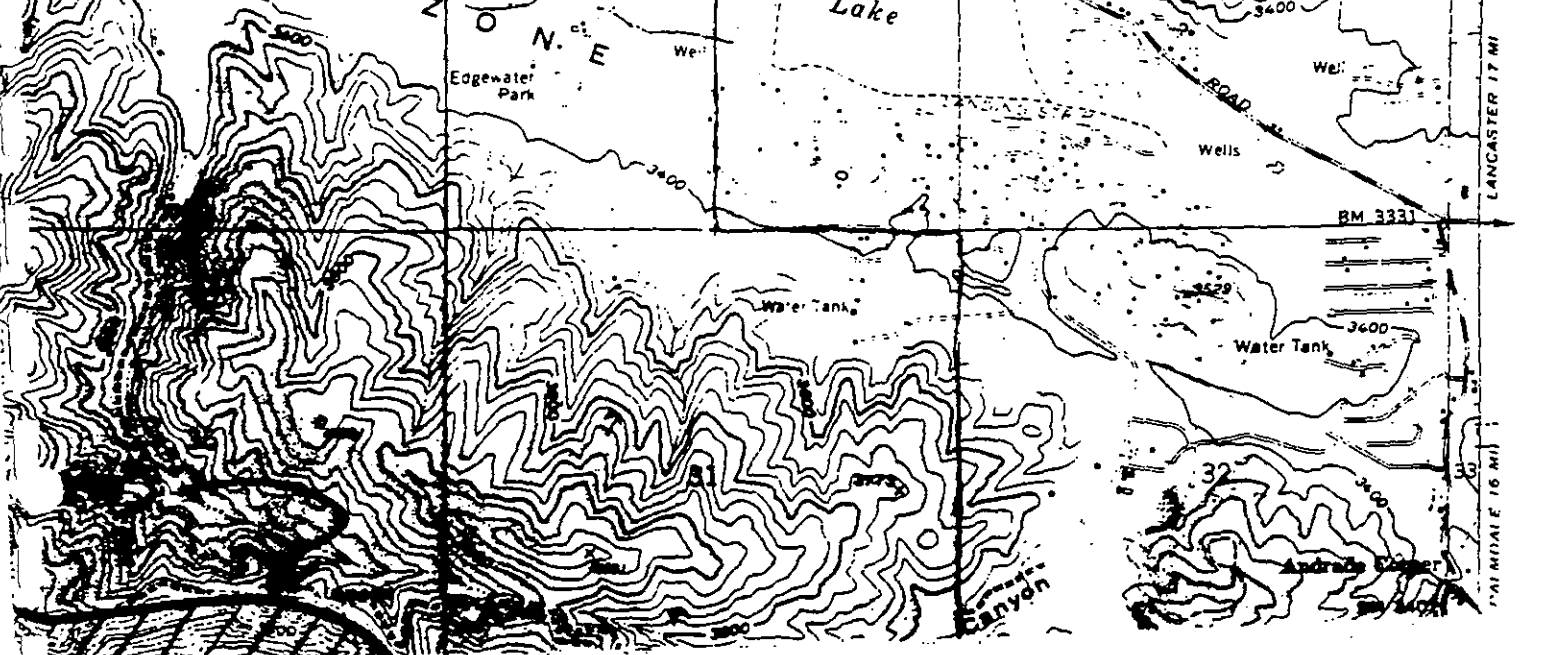
Water Tank

Water Tank

Water Tanks

Andrews Canyon

Andrews Canyon



Area # 59

Name: Tehachapi Foothills

Quadrangle(s): Lebec, Frazier Mountain

Class 5 (7)

Resource Description: The grassy, south-facing slopes of these hills are one of the best foothill wildflower sites in southern California. In addition, the area is located at the junction of the Mojave Desert, the transverse ranges, and the Tehachapi Mountains, and possesses floral and faunal components from each region. As a result, the area is extremely diverse and contains many unique ecological relationships of scientific value.

The herbland vegetation of the area consists primarily of herbs and forbs. Characteristic plant species include buttercup, poppy, owl's clover, and many species of sunflowers. Spectacular wildflower displays are common here.

Several other plant communities are found in the area. These include chaparral, riparian woodland, foothill woodland, southern oak woodland, and valley grassland. This variety of habitats, and the overlap of mountain and desert influences, make the area very valuable.

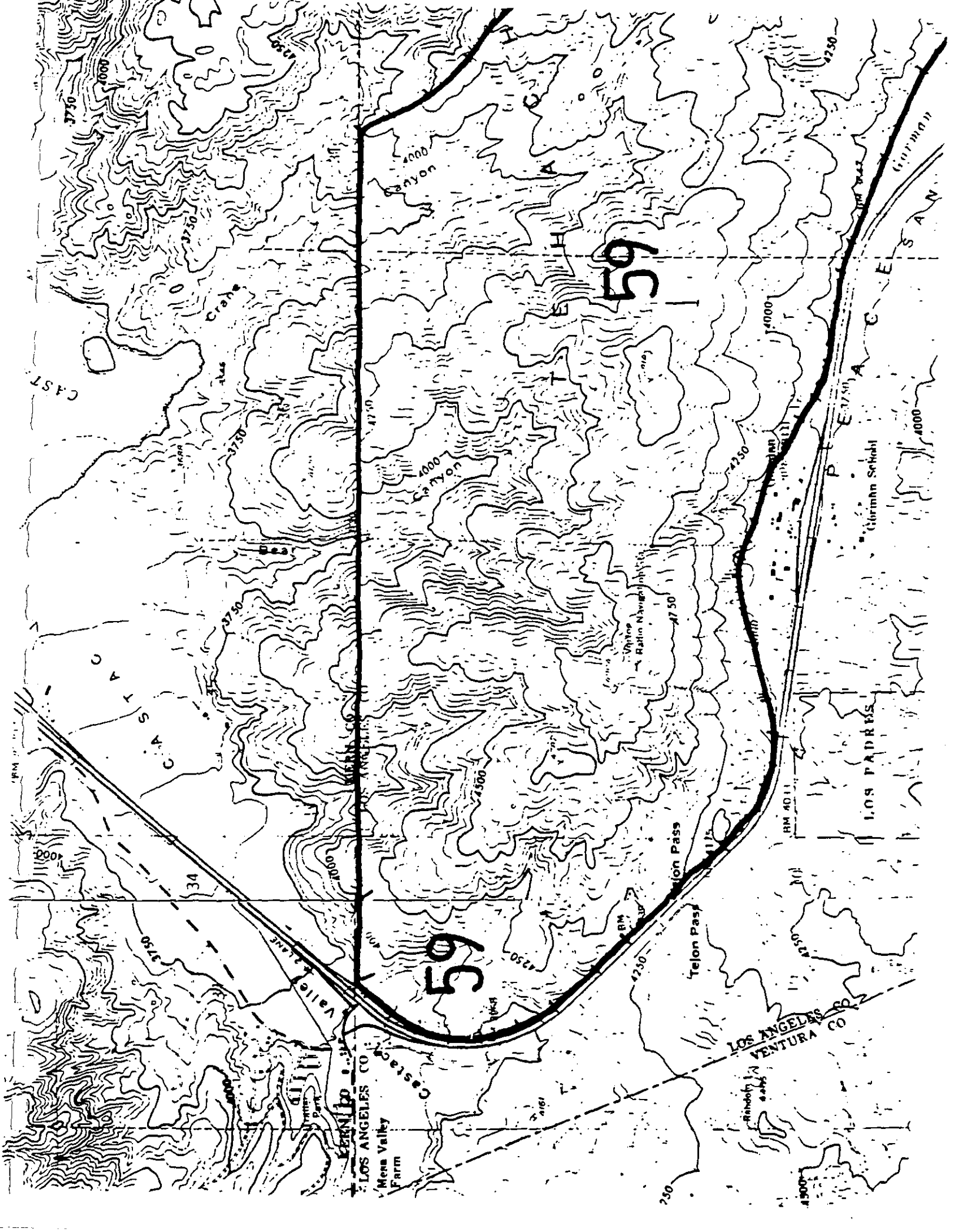
Status: The area is relatively undisturbed. Roads and powerlines are the primary disturbances. Surrounding development is very light, and development of the area does not seem to be an immediate threat. However, the area has been grazed.

Information Source(s): Literature, Survey/Interview, ERC/UCLA

Nature of Information: Highly reliable information comes from competent botanists that have visited the area over the past twenty years.

Buffer Zone Requirement: None in Los Angeles County. However, precautions should be taken to prevent impacts that could arise in Kern County.

Compatible Uses: Low intensity recreational uses are compatible with the resources of the area.



CAST

CASTAÑO CANYON

LOS ANGELES CO.
Mesa Valley Farm

59

59

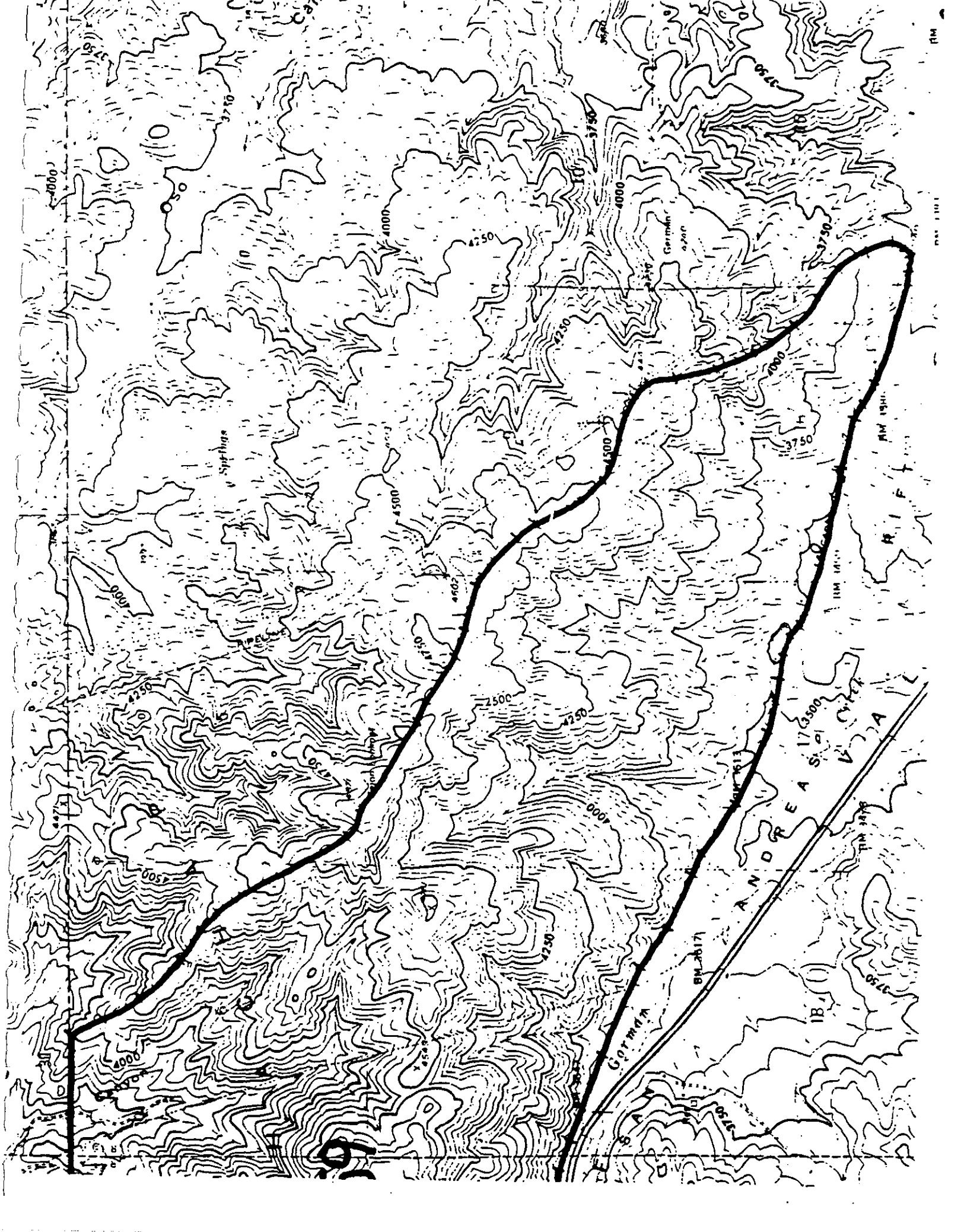
Telon Pass

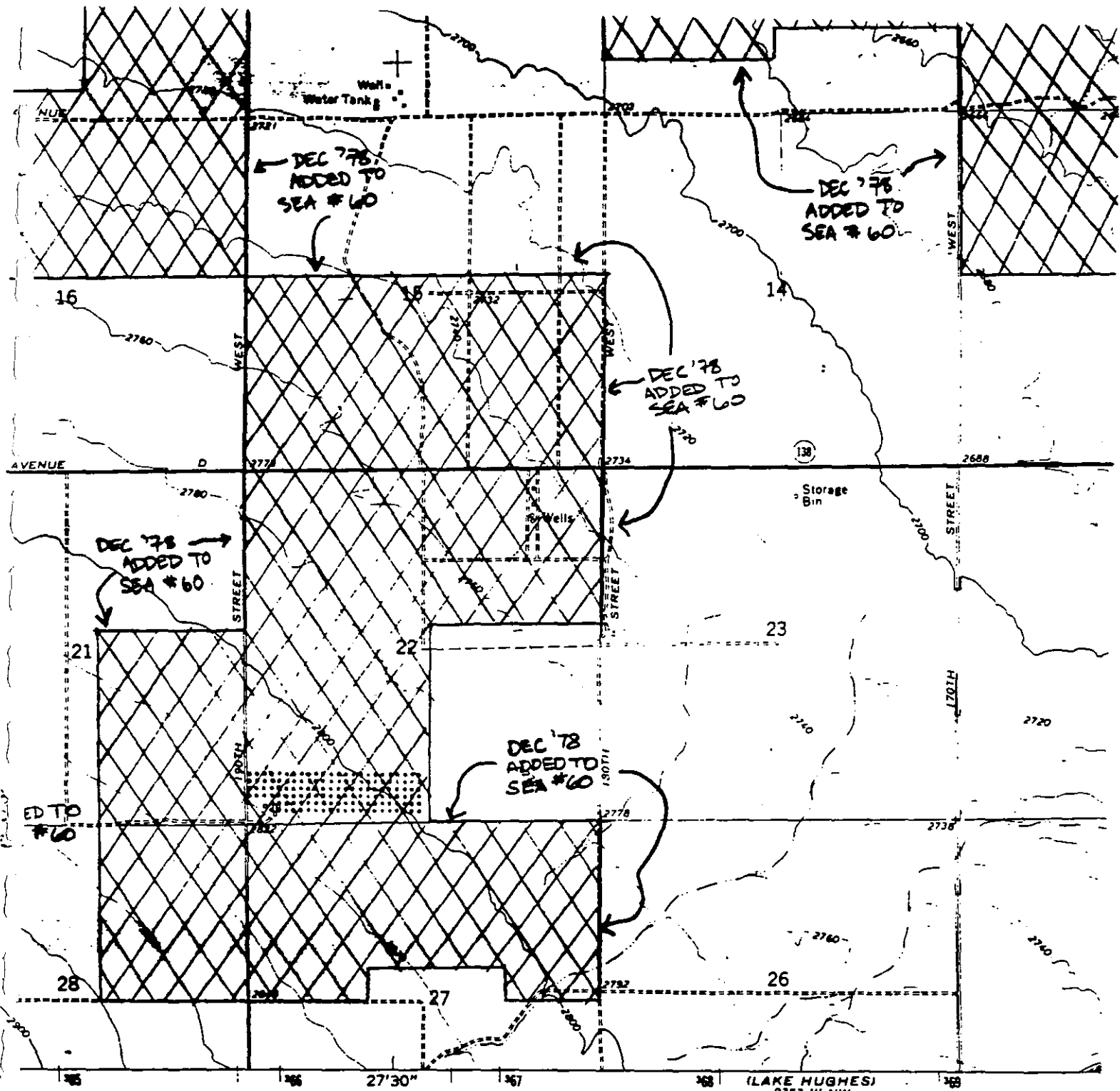
LOS ANGELES CO.
VENTURA CO.

LOS PADRES

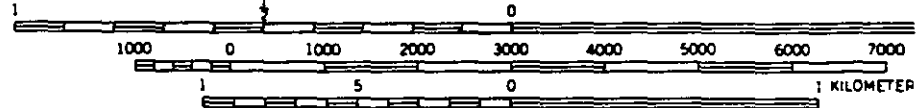
Görmm Schicht

ACCESSION

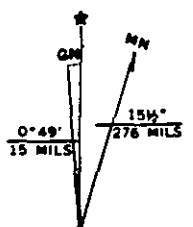




(LAKE HUGHES)
2353 III NW
SCALE 1:24,000



CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL



UTM GRID AND 1985 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D.C. 20508
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Area # 60

Name: Joshua Tree Woodland Habitat

Quadrangle(s): Neenach School, Fairmont Butte

Class 7

Resource Description: This area supports an excellent example of joshua tree woodland habitat. Due to accelerated agricultural and urban expansion in the county's desert regions, large dense stands of this habitat are becoming scarce, especially in the western Antelope Valley.

Joshua tree woodland occurs between 2500-4000 feet from the extreme western end to the extreme eastern end of the Mojave Desert. The dominant species is joshua tree, which reaches heights of 5 to 12 meters. Other common species include Mojave yucca, sage, box-thorn, and buckwheat.

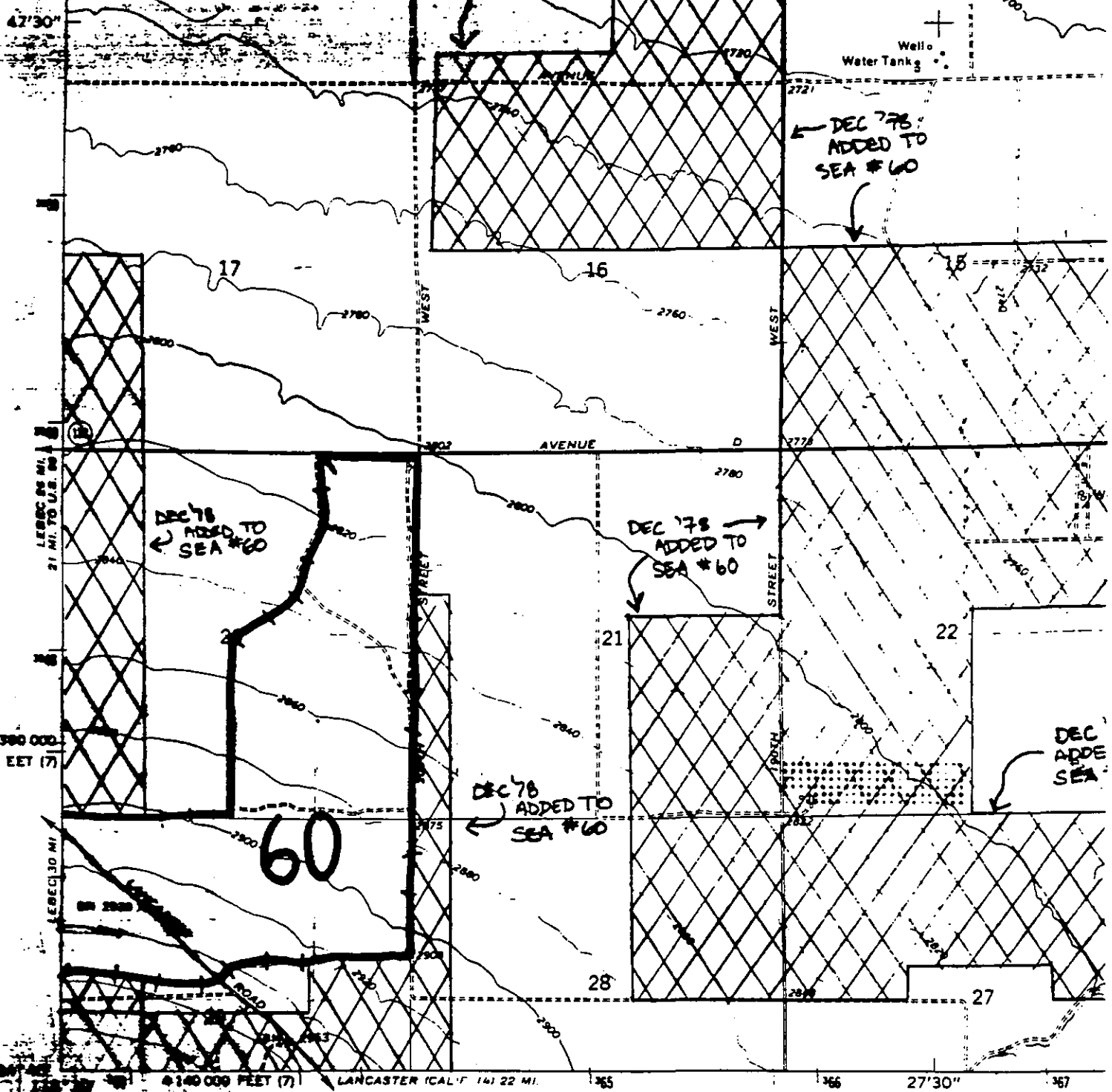
Status: The area itself is relatively undisturbed, with the exception of several dirt roads. However, the area is surrounded by agriculture, and further losses are possible.

Information Source(s): Survey/Interview, ERC/UCLA

Nature of Information: A great deal of generalized information about joshua tree woodland exists. In addition, specific information was available from the CNACC and air photos.

Buffer Zone Requirement: None, surrounding areas are in agricultural production. However, they should not be more intensely developed.

Compatible Uses: Very light recreational uses are compatible with the resources present. In addition, all vehicle travel in the area should be restricted to existing roads.



Prepared, edited, and published by the Geological Survey

USGS, WCO&S, and Los Angeles County

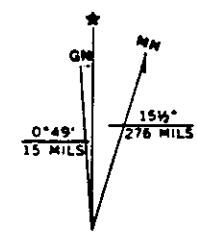
by photogrammetric methods from aerial photographs taken 1963. Field checked 1965

Projection: 1927 North American datum
 1000-foot grids based on California coordinate system, zones 7 and 8

1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue

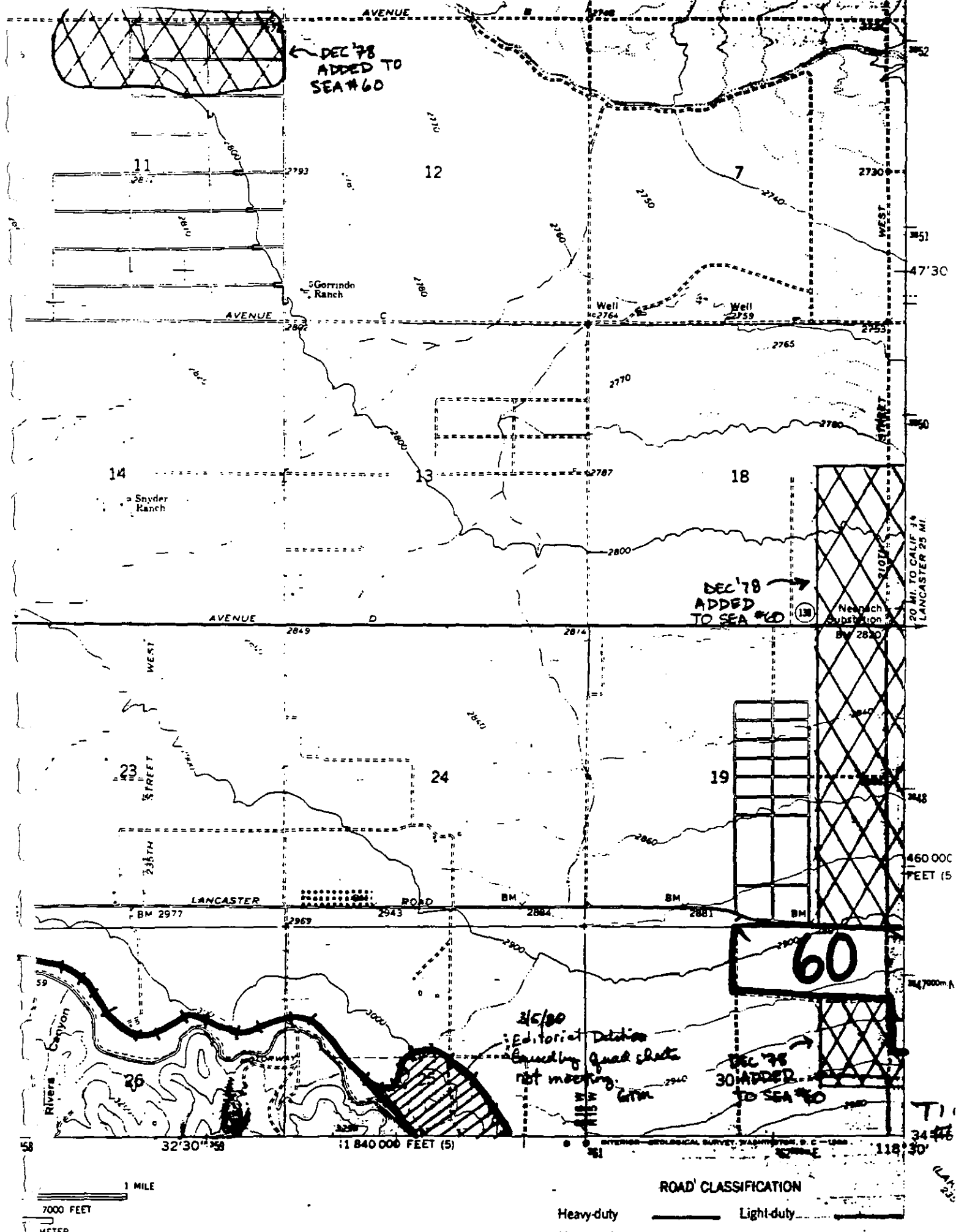
Supersedes portions of Manzanita, Fairmont, and Little Buttes 6-minute maps dated 1950

Thin red dashed lines indicate selected fence lines



UTM GRID AND 1965 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

FOR SALE BY U.S. GEOLOGICAL SURVEY
 A FOLD-OUT



DEC '78
ADDED TO
SEA #60

DEC '78
ADDED
TO SEA #60

60

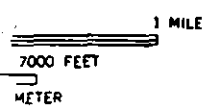
3/6/80
Editorial Detition
Boundary Quad sheets
not meeting.

DEC '78
30 ADDED
TO SEA #60

ROAD CLASSIFICATION

Heavy-duty

Light-duty



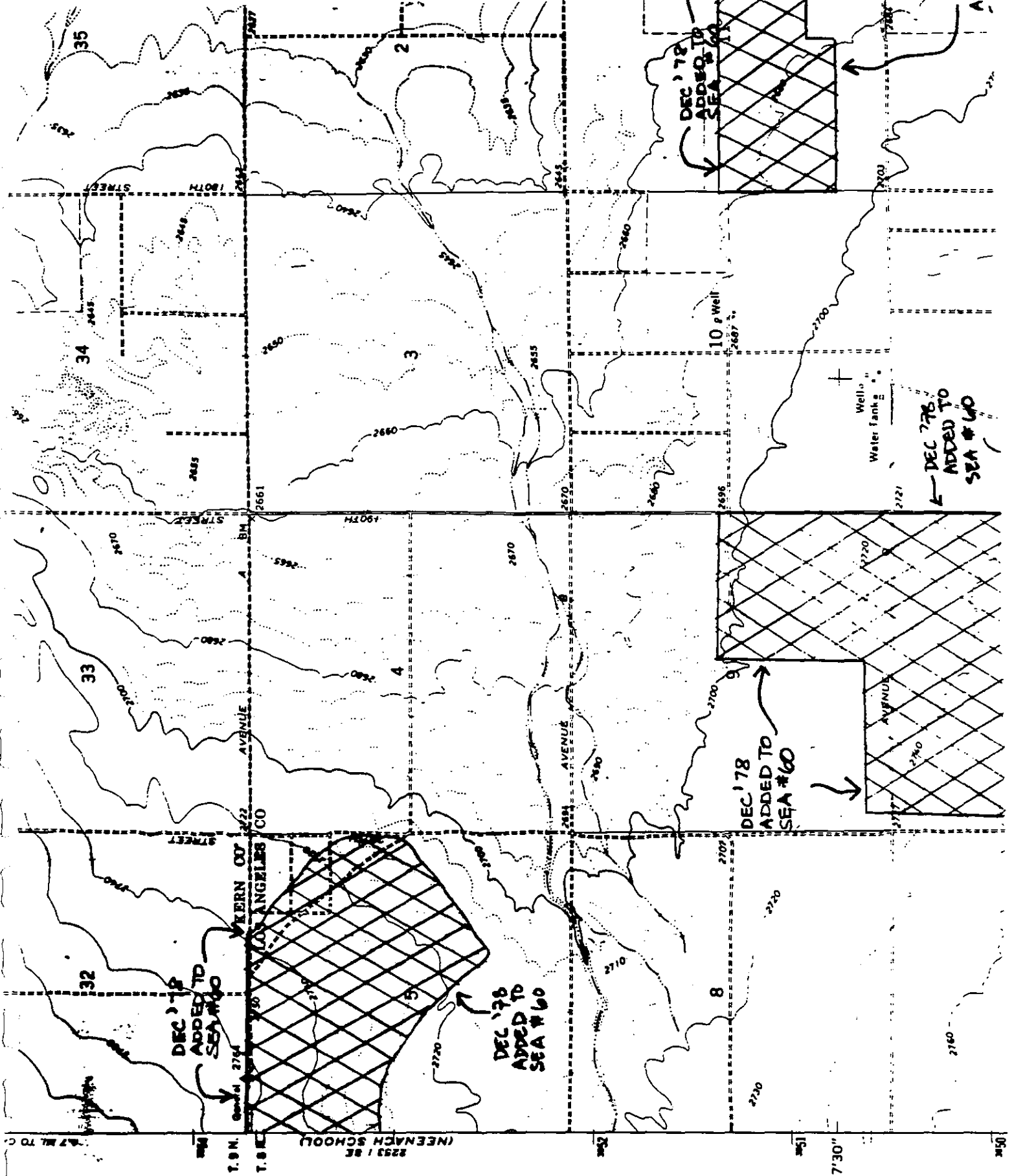
UNITED STATES GEOLOGICAL SURVEY, WASHINGTON, D. C. 20508

20 MI. TO CALIF 74
LANCASTER 25 MI

460 000
FEET (5)

118' 30"

LANC



DEC '78
ADDED TO
SEA #60

DEC '78
ADDED TO
SEA #60

DEC '78
ADDED TO
SEA #60

DEC '76
ADDED TO
SEA #60

Water Tank

10 p Well

VIERN OF
LOS ANGELES CO

NEENACH SCHOOL

0.7 MI. TO C.

T. 8 N.

T. 8 E.

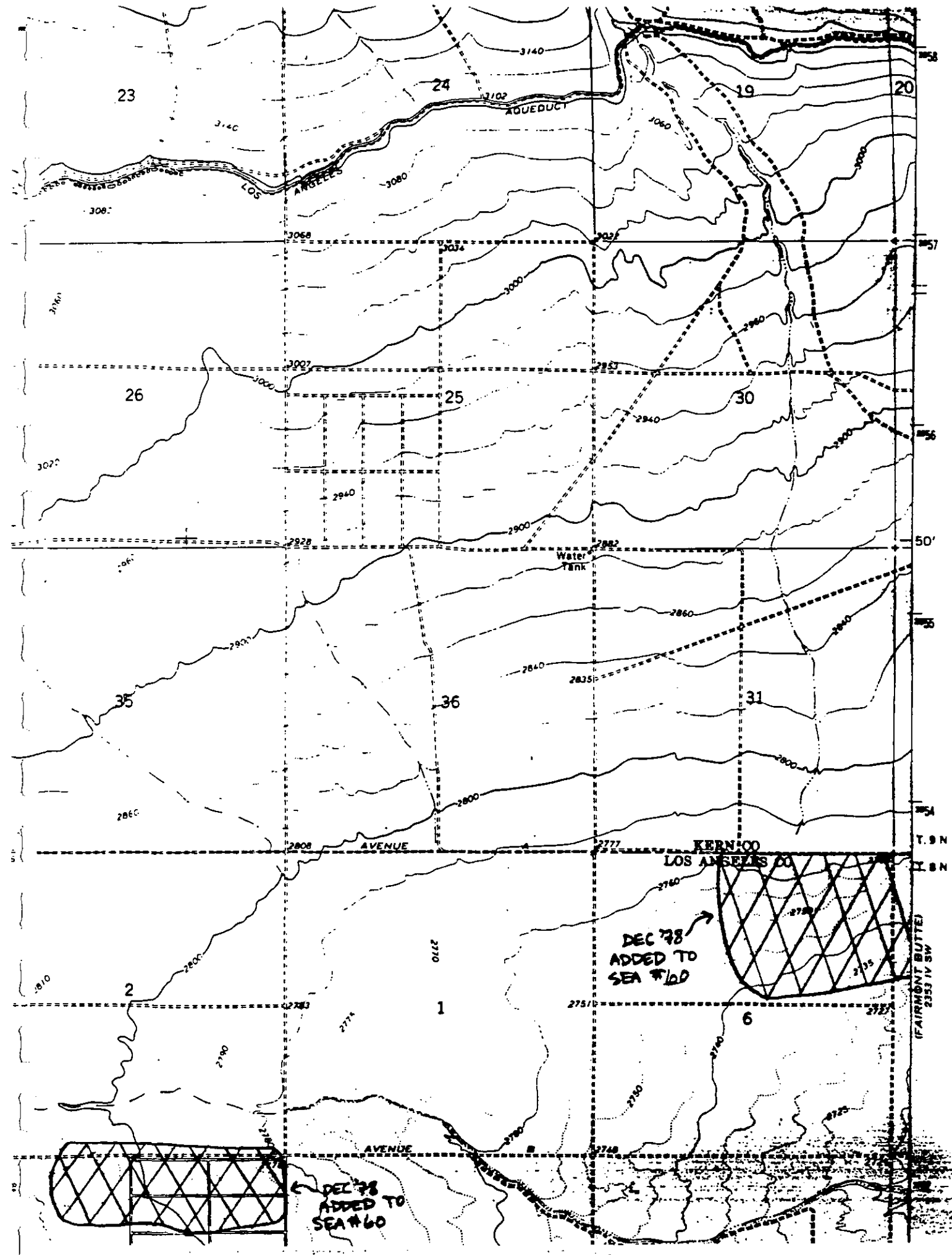
R. 25 S.

R. 25 E.

R. 15 E.

47°30"

05'



Area # (1)

Name: Kentucky Springs

Quadrangle(s): Acton, Pacifico Mtn.

Class 2 (3,5,7)

Resource Description: This area contains the best stand of great basin sage (Artemisia tridentata) remaining in Los Angeles County, and is one of the best in southern California. In addition, this stand and others in the county support a distinct subspecies of great basin sage (A. t. parishii), and are of scientific interest for the study of geographic variation.

Although great basin sage is widespread in the western states, it is very limited in southern California. It is infrequently found from San Diego County north along the western edges of the deserts to the Sierra Nevada. In Los Angeles County it is known only from a few isolated locations in the Santa Clara River Valley and the Antelope Valley. These are probably relicts from an earlier time when the community covered much of southern California.

Status: At present, large, relatively undisturbed stands of A. t. parishii exist in the area. However, these are threatened. Numerous roads, an electric company substation, power-lines, and many scattered houses have been developed, and continued development is probable.

Information Source(s): Survey/Interview, ERC/UCLA

Nature of Information: The area has long been known to botanists, both professional and non-professional. However, written information is limited.

Buffer Zone Requirement: The area is of sufficient size to protect the resource.

Compatible Uses: Medium intensity recreational uses are compatible with the resources in the area. However, equestrian use is not appropriate, due to the nature of the botanical resources present. All vehicle travel in the area should be restricted to existing roads.

ACTON QUADRANGLE
CALIFORNIA-LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 ACTON 15' QUADRANGLE

233 II SE
(PALMDALE)
TIC #42

10° 39'

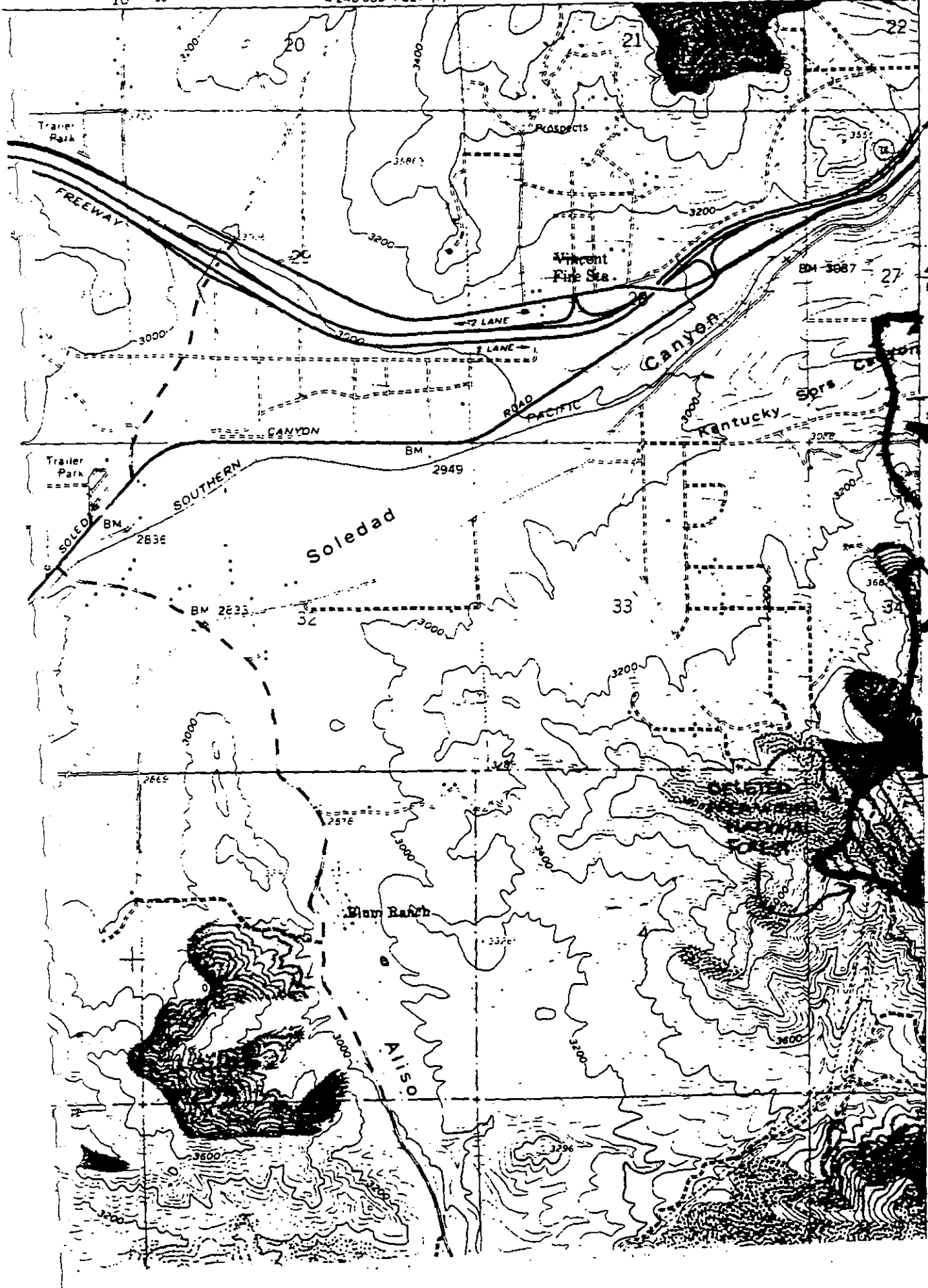
4 240 000 FEET (7)

395

396

116° 07' 30"

34° 30'



PALMDALE EXIT 7 MI
LANCASTER 16 MI

4 290 000
FEET (7)

3816

61

T 5 N

T 4 N

3814

27° 30"

3813

3812

TIC
#42

GEOLOGICAL SURVEY

118°07'30"

LANCASTER EXIT 15 MI.

PALMDALE EXIT (CALIF 138) 6 MI

1:1970000 FEET (5)

1400

5

34°30'

360000 N

360000

FEET (5)

3416

3415

T 5 N

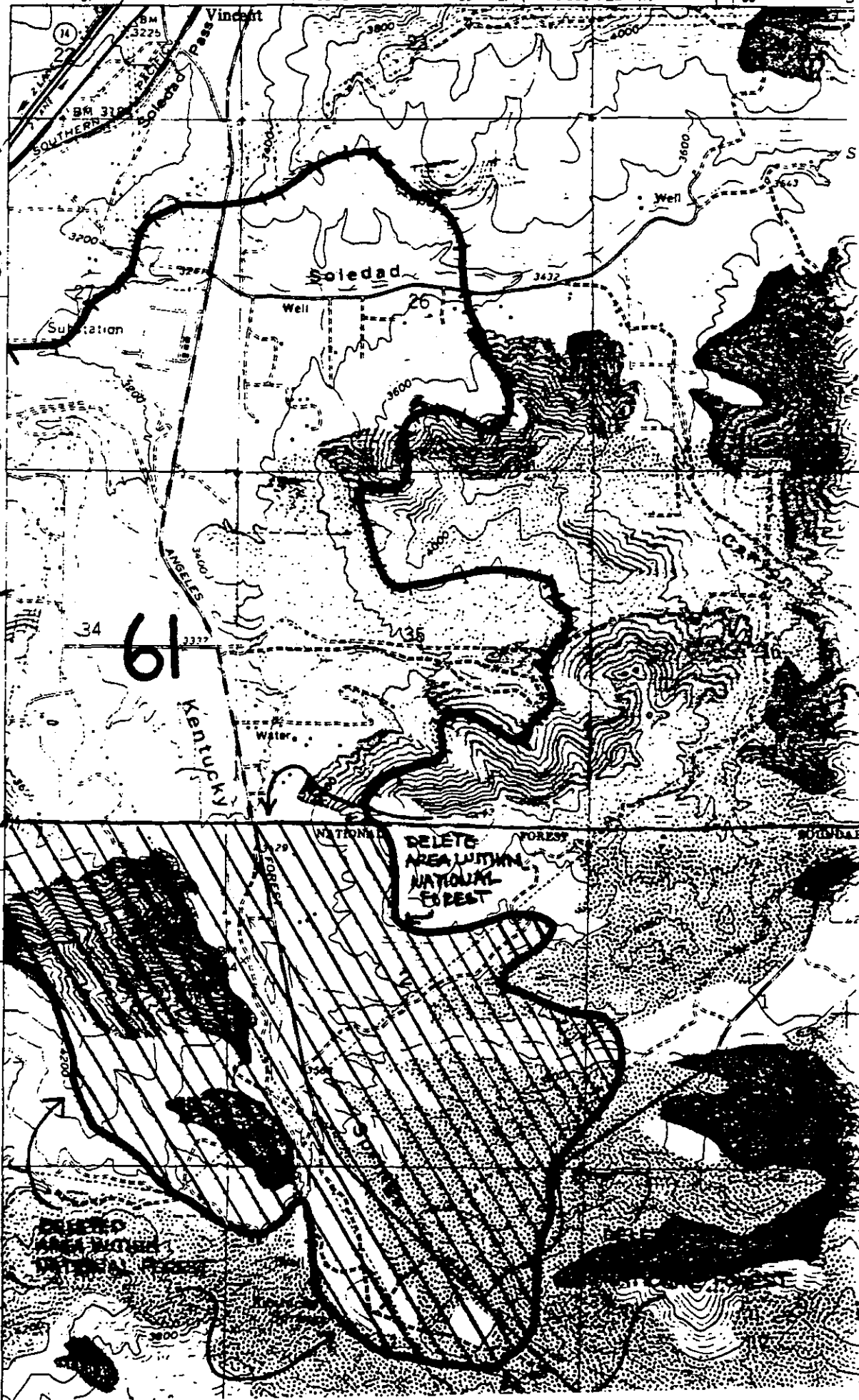
T 4 N

3414

27'30"

3413

3412



Area # 62

Name: Galium grande Population

Quadrangle(s): Azusa

Class 1 (2,3,4,5,7)

Resource Description: Galium grande, an endemic species of bed-straw, is recognized as endangered by the United States Fish and Wildlife Service. This species is highly restricted in distribution, being found only at isolated localities on the south slope of the San Gabriel Mountains. This population is in Sawpit Canyon, and is the only place it can be found outside the Angeles National Forest.

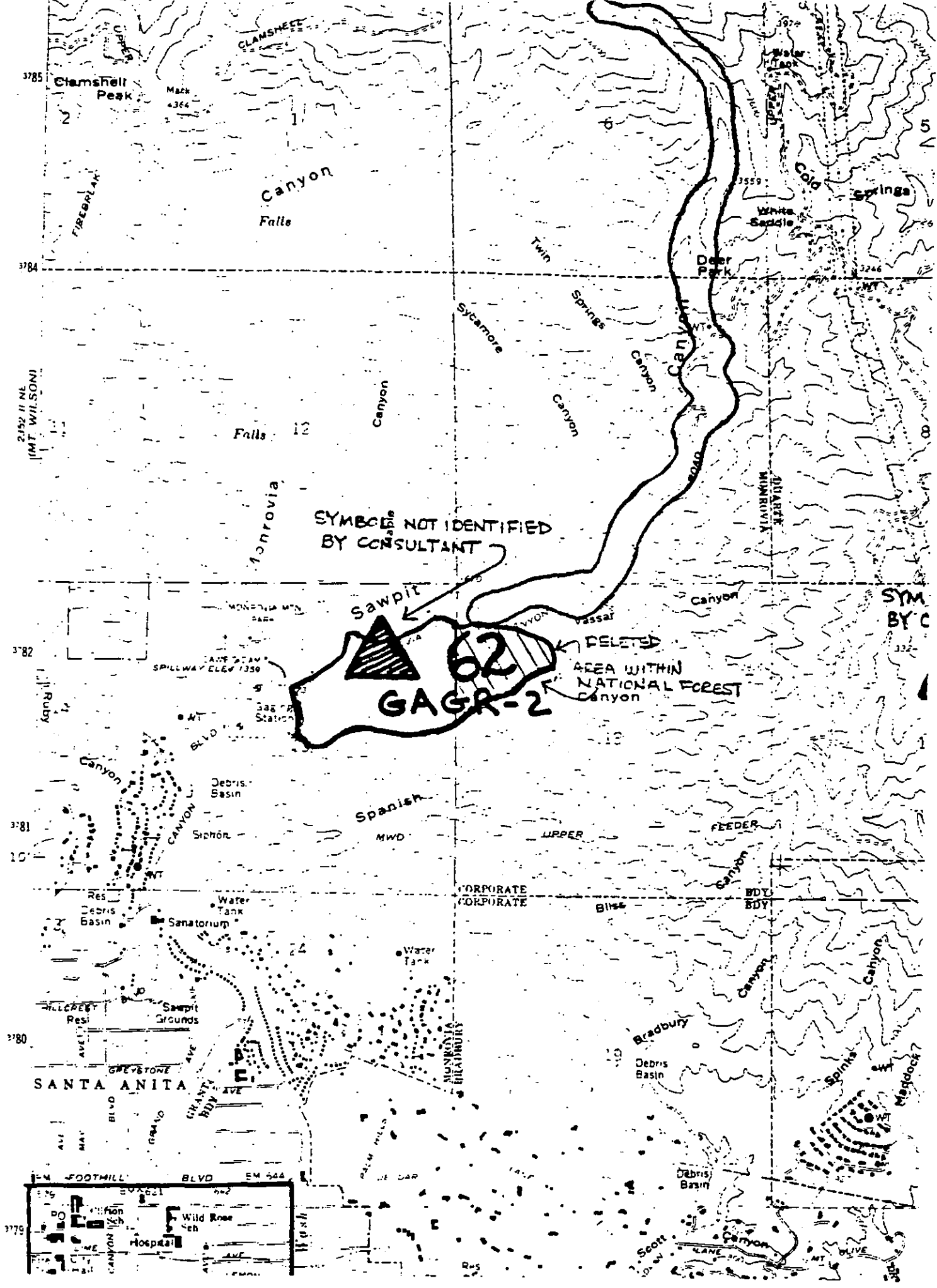
Status: The area is undisturbed.

Information Source(s): CNACC/CNPS

Nature of Information: This population has been identified by the California Native Plant Society since 1945.

Buffer Zone Requirement: None. Resource will be protected by recommended boundaries.

Compatible Uses: Regulated scientific study is a use that is compatible with the resources in the area.

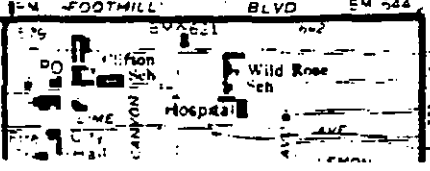


SYMBOLS NOT IDENTIFIED BY CONSULTANT

62
GAGR-2

AREA WITHIN NATIONAL FOREST Canyon

SYM BY C



HABITAT MGMT. AREA ADDED

Area # 63

LYON CANYON

Quadrangle: Oat Mountain

Class 7

Resource Description: The site consists of a relatively narrow canyon housing both an oak woodland along with an extensive chaparral community. The oak woodland is found in the southerly portion of the area and contains both the coast live oak (Quercus agrifolia) and the valley oak (Quercus lobata). Further north up the canyon is found the chaparral community consisting of sugarbush, ceanothus, black sage, mulefat and chemise-which is the dominant shrub.

Status: At present, the site is largely undeveloped, except for ranch outbuildings found at the mouth of the canyon. However the site is being grazed and there is an apiary at the rear of the canyon.

Information Source: CNACC; Santa Clarita Valley Areawide General Plan; Survey/Interview with Placerita Canyon Nature Center.

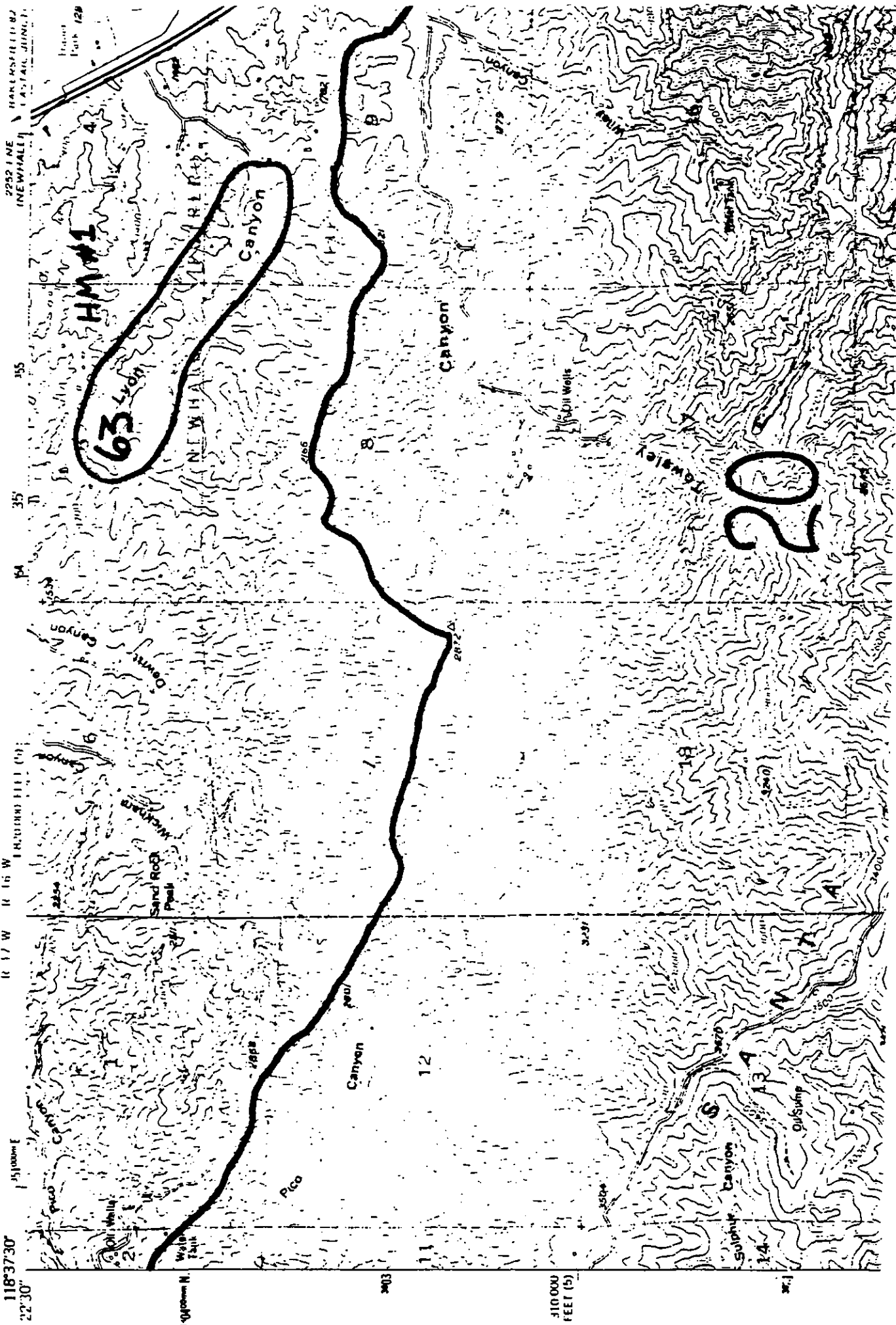
Nature of Information: The area was identified by the North County Citizens Planning Council as worthy of special protections.

Buffer Zone Requirements: Because of the chaparral community is dependent upon adequate watershed, concern should be given to assure that not only the resources themselves but the adjacent hillsides which face the canyon are not negatively impacted.

Compatible Uses: Very low intensity uses are potentially compatible with this resource. All vehicle traffic should be restricted to the existing roads.

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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
REPRESENTED BY THE
DIRECTOR OF PUBLIC WORKS



HABITAT MGMT. AREA ADDENDUM

Area # 64

VALLEY OAKS SAVANNAH, NEWHALL

Quadrangle: Newhall

Class 3 (7)

Resource Description: This area contains one of the last remaining stands of valley oak (Quercus lobata) in the Santa Clarita Valley. The site consists of such specimens scattered over the southerly 75% of the site. While the trees generally appear to be healthy, there is little evidence of new trees on the property, which raises questions about their ability to reproduce.

The northerly 25% of the site consists of a mixture of plants from the coastal sage scrub and chaparral communities typical of those found in the Santa Clarita Valley. The entire area is the habitat of coyote, deer, and other animal life.

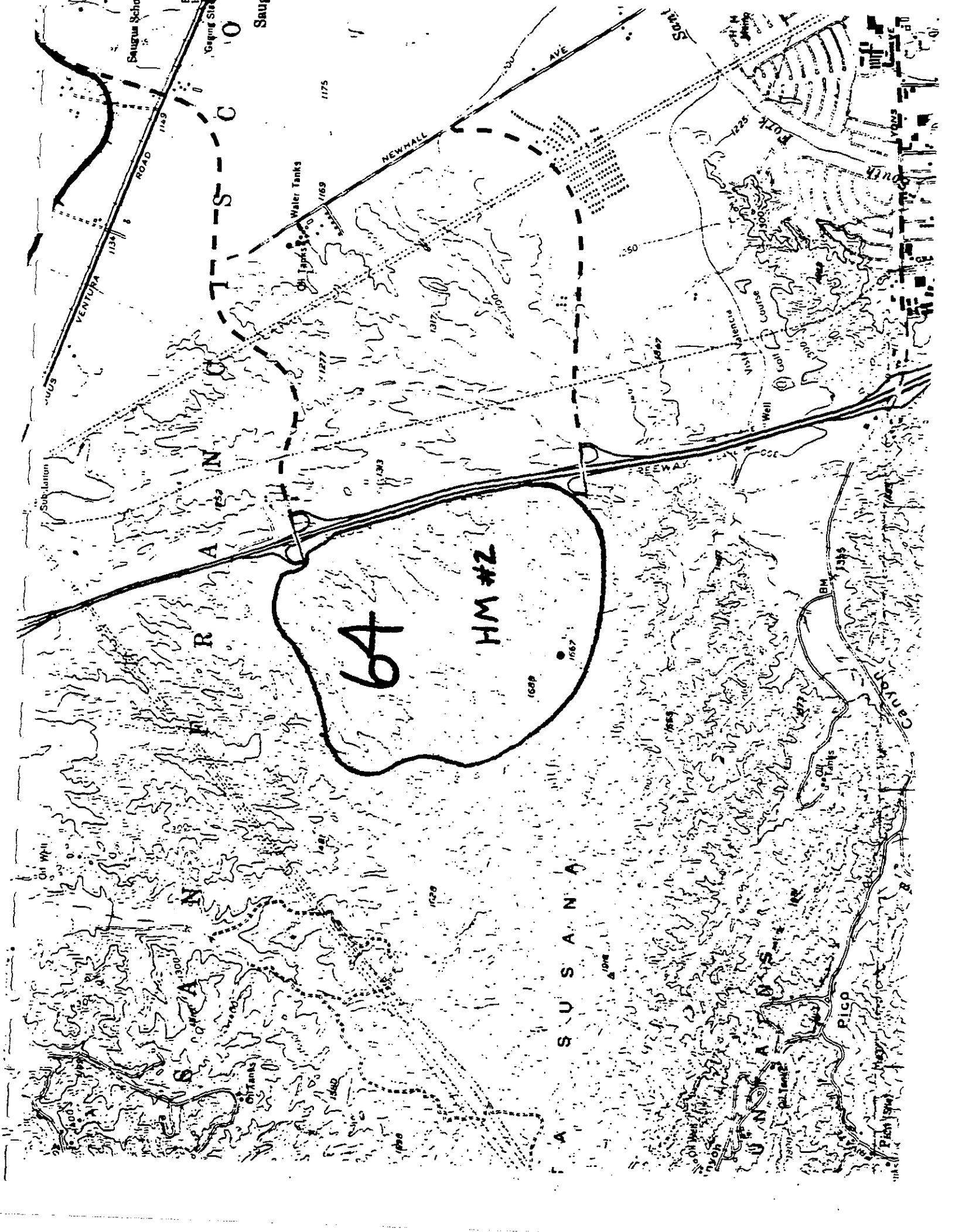
Status: At present the site is vacant but criss-crossed with a number of roads. It is expected that very low density residential development may occur on the site.

Information Source: CNACC; Santa Clarita Valley Areawide General Plan; Survey/Interview with Placerita Canyon Nature Center.

Nature of Information: The area was identified by the North County Citizens Planning Council as worthy of special protections. However, written documentation is limited.

Buffer Zone Requirement: The area is of sufficient size to protect the resources.

Compatible Uses: Very low density residential uses are potentially compatible with the resource provided that controls on future grading and removal of resources, particularly the Valley Oaks, are exerted. Extensive grading which blocks drainage or results in silting may negatively impact the Valley Oaks as would extensive grazing or off-road vehicle use.



Saugus School

Saug

T-S-C

64

HM #2

SANTA ANA MOUNTAINS

SANTA ANA MOUNTAINS

PICO

VENTURA

NEW HALL AVE

FREEWAY

WATER TANKS

OIL TANKS

WELL

WATER TANKS

OIL TANKS

WELL

WATER TANKS

OIL TANKS

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WATER TANKS

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OIL TANKS

SIGNIFICANT ECOLOGICAL AREAS

General Plan policy is aimed at protecting significant natural resources, and, more specifically, at preserving and enhancing Significant Ecological Areas (SEAs) for the benefit of present and future County residents. The Conservation and Open Space Element and Technical Supplement E of the General Plan describe the types of resources found within such areas. Associated conditions and standards for development within SEAs are outlined in the Land Use Element on pages III-43 -- III-47. This section describes procedures to be followed when it is determined that a project is located within an SEA as designated on the Special Management Areas Policy Map.*

Procedures

1. Uses proposed within areas designated as Significant Ecological Areas/Habitat Management on the Special Management Areas Policy Map are subject to the following provisions.
 - (a) Within areas shown as Significant Ecological Areas/Habitat Management on the Special Management Areas Policy Map, the approval of a Development Management Permit is required as provided by Urgency Ordinance No. 12,308.

*SEAs are more specifically delineated on the General Plan Interim Implementation Map series based on the areawide/community plans, as well as on the 1":2,000' overlay map series showing various Special Management Areas, described under "Reference Maps" in these Guidelines.

- (1) For proposed subdivisions or minor land divisions located within such areas, the filing of a Development Management permit is required.
- (2) The issuance of building or grading permits, or the construction or enlargement of any building or structure, is also subject to approval of a Development Management Permit. Exemptions are listed in Section 5 of the urgency ordinance. County Engineer/Facilities is to refer building permits requesting the construction or enlargement of any building or structure, and requests for grading permits, to DRP for review and a determination of whether or not a DMP is required. Referrals from County Engineer will be initially reviewed by District Office planning staff and/or the Petitions and Information Section. Other involved staff may be consulted in this review process.
- (3) A DMP need not be applied for or approved prior to the approval of a zone change, variance, permit or other zoning application. However, the applicant is to be advised that since the construction or enlargement of a building or structure and the approval of building and grading permits are subject to the DMP process (except as exempted by Ordinance No. 12,308), the filing and approval of a DMP will be required subsequent to zoning approval.

2. Within SEA Buffer Areas, as shown on the Special Management Areas Policy Map, approval of a DMP is not required. However, zoning, use permit and land division requests will be subject to the SEA Design Compatibility Criteria of the General Plan, including adequate biotic analysis, review by the Significant Ecological Areas Technical Advisory Committee (SEATAC), and the environmental review process, as listed on pages III-45 -- III-46 of the General Plan.

* II-16 TO III 47 ARE EXERPTS
FROM 11/80 ADOPTED GENERAL PLAN
REGARDING SEA'S

To provide for the future production of needed food supplies, there is a need to preserve lands where agriculture (including grazing) is economically viable or which have a high potential based on the presence of prime soils. With possible future shortages of fuel, chemical fertilizers, water and other materials, it is desirable to maintain naturally fertile areas near the source of demand.

BIOTIC RESOURCES

Los Angeles County has a diverse topography of coastline, flatlands, mountains, and desert. Elevations range from sea level to over 10,000 feet. The climate ranges from moist, moderate temperatures along the ocean front to temperature extremes in the mountains and deserts. This variety of environments has produced 24 unique and diverse biotic communities defined as assemblages of plant and animal species in specific physical habitats. They are ecological units where diverse organisms exist together in an orderly, predictable manner in close, complex relationships. They may be located by geographic region as follows:

- Coastline: marine aquatic, coastal dune, coastal strand, coastal salt marsh, sage scrub, chaparral, tidal flats and sea cliff.
- Hill and Mountain Ranges: freshwater aquatic, riparian woodland, coastal and inland sagebrush, grassland, southern oak woodland, mixed chaparral, pinyon woodland, Pacific and Sierran coniferous forests (on higher slopes).
- Desert: Great basin sagebrush scrub, joshua tree woodland, creosote bush scrub, desert rock plant, riparian woodland, shrubscale scrub and alkali sink scrub.

- Lowlands and inland valleys: inland sage scrub, southern oak woodland, and grassland (despite intensive development); lowland riparian (in unchannelized streams); and freshwater aquatic.

In Los Angeles County, 64 significant ecological and habitat management areas have been identified representing a wide range of biotic communities (13). Their complex ecological relationships are the subject of scientific study and outdoor educational programs, and the diverse animal and plant life provide the opportunity for activities such as nature photography, birdwatching, insect collecting, and other aspects of nature study and esthetic enjoyment. (More detailed information on these ecological areas is found in Appendix "F" of the Technical Supplement.)

Many biotic resources of the County have been lost due to the encroachment of urban and agricultural development. These resources are especially vulnerable to destruction as a result of unmanaged development.

Since biotic communities are affected by an area much larger than their own boundaries, attention should be directed to the compatibility of future development in areas adjacent to important habitats identified as significant ecological and habitat management areas.

MINERAL RESOURCES

A continuous and assumed supply of minerals for industrial production, construction, transportation, and chemical processing is essential to Southern California's economic well-being. Major local mineral resources consist of oil and deposits of rock, sand and gravel (14).

Most of Southern California's on-shore oil deposits are located in Los Angeles County. In 1979 more than 67 million barrels of oil, amounting to 20 percent of the State's oil production were produced in the County. Wilmington, the most productive oil field produced about 45 million barrels, more than two-thirds of the County's production.(15)

acquisitions are proposed, not all properties within the NRA boundaries are likely to be purchased. For those properties not acquired, this category recognizes the responsibilities of local government to plan in a manner compatible with the management of the mountains as a major recreation area and natural resource.

d. Special Management Areas

The area shown is a composite of special management areas. These areas include the national forests, open space easements, significant ecological/habitat management areas and buffers, hillside management areas, potential agricultural preserves, coastal zone, flood prone areas, and major fault zones.* The intent of this category is to designate those areas where comprehensive management is needed to protect natural and scenic resources, and to minimize the threat to life and property. It is specifically not the intent of the Conservation and Open Space Element to preclude reasonable use of private property in these areas, but to ensure that where development takes place, identified natural resources are protected and natural hazards are avoided or appropriately mitigated. A further elaboration of individual management areas can be found under the Special Management Areas Policy Map description.

*The boundaries of the scenic highway corridor and mineral resource management areas have not been determined to the extent of other Special Management Areas and are, therefore, shown only as symbols on the Special Management Areas Policy Map.

SPECIAL MANAGEMENT AREAS POLICY MAP*

This policy map (to be found in the pocket at the back of the Plan) depicts areas that require special management due to the presence of natural and scenic resources or hazards. Adherence to special criteria for development in these areas is necessary to prevent loss of, or severe damage to, life, property, and the natural environment. The individual special management areas shown on this map elaborate upon the general areas depicted on the Conservation and Open Space Policy Map. General and special conditions for development within management areas are found in the Land Use Element.

Legend Explanation

a. Significant Ecological Areas/Habitat Management

Significant Ecological Areas (SEAs)/Habitat Management areas are ecologically important or fragile land and water areas valuable as plant and animal communities.(20) These areas (21) are classified as one or more of the following:
 1) habitats for rare and endangered species of plants and animals; 2) restricted natural communities -- ecological areas which are scarce on a regional basis; 3) habitat restricted in distribution in the County; 4) breeding or nesting grounds; 5) unusual biotic communities; 6) sites with critical wildlife and fish value; and, 7) relatively undisturbed habitat.

This category recognizes the importance of protecting significant natural resources as living laboratories where examples of the County's diverse ecological heritage are preserved for

*Note: Due to the scale and generalized nature of this map, special management boundaries will be determined on a site analysis basis as needed, after a review of more detailed mapping and additional environmental data submitted.

the purpose of public education, research, and other non-disruptive outdoor use. The intent is to preserve these resources in an ecologically viable state.

The identification of specific SEAs, however, does not preclude the need to manage and protect all natural streams, riparian habitats, and larger habitat areas such as the San Gabriel, Santa Susana, and Santa Monica Mountains. Future additions or deletions to identified SEAs may be appropriate, based on updated, more detailed biological surveys, especially where cities or unincorporated communities have made subsequent boundary determinations based on biotic studies and have adopted protective measures. Since identification of significant ecological areas involved only limited field verification, the Plan sets forth a procedure for further verification of specific resources within these areas (see General Conditions and Standards for Development, Land Use Element, page III-43).

Preservation techniques may include County and city land use regulations, density transfers (commonly resulting in clustering), transfer of development rights, open space easements, deed restrictions, private land gifts and public acquisitions. The specific protective mechanism recommended for each SEA requires individual consideration based upon the nature of the specific resource value, land suitability, the degree of threat from urbanization, location within or adjacent to existing open space, and jurisdictional responsibility.

b. Significant Ecological Area Buffers

Areas shown include significant ecological area buffers. The intent is to provide additional protection for adjacent SEAs, since biotic communities are influenced by an area much larger than their own boundaries. In most cases, the boundaries of SEAs have been drawn to include self-contained units. However, in a few cases, it was necessary to designate a buffer zone in adjacent areas where special land use regulations may be appropriate to protect the SEA.

provision of visitor accommodations and services may accelerate normal community growth. Such development may be appropriate within the Rural Community classification, providing that it is compatible with the recreational and natural resource assets of the area, and does not create a demand for public investment in major urban service systems.

11. Significant Ecological Areas/Habitat Management

The Significant Ecological Areas/Habitat Management classification (SEA) identifies lands having important biological resources. This classification, as set forth in the Conservation and Open Space Element, includes habitats of rare and endangered species, sites with critical fish and wildlife values, relatively undisturbed areas of typical natural habitat and regionally scarce biotic resources.* The intent of the countywide General Plan is to preserve and enhance, to the extent possible, SEAs for the benefit of present and future County residents.

In addition to regulated scientific study and limited recreational activities, a range of more intensive uses may be permitted within SEAs where it can be demonstrated by a detailed biotic survey and project analysis that the proposed development is highly compatible with the resource values present. In the absence of specific project proposals and detailed biotic data, the countywide Land Use Element has not attempted to identify, in other than the most general terms, appropriate use types and intensities within significant ecological areas. The Element does however set forth the general process and criteria for evaluating specific use proposals as they arise (see General Conditions and Standards for Development).

*The Significant Ecological Area/Habitat Management classification includes Buffer Areas depicted on the Special Management Areas Policy Map of the Conservation and Open Space Element.

2. Resource Protection:

The proposed project is compatible with the natural biotic, cultural, scenic and open space resources of the area.

3. Suitability for Development:

The proposed project is conveniently served by (or provides) neighborhood shopping and commercial facilities, can be provided with essential public services without imposing undue costs on the total community, and is consistent with the objectives and policies of the General Plan.

4. Quality of Design:

The proposed project demonstrates creative and imaginative design resulting in a visual quality that will complement community character and benefit current and future community residents.

Performance review criteria and the process for determining compliance are set forth in Appendix A of this Element.

SIGNIFICANT ECOLOGICAL AREAS/HABITAT MANAGEMENT (SEAs)

It is the intent of General Plan policy to preserve the County's significant ecological resources and habitat areas in as viable and natural condition as possible. Major factors influencing the realization of Plan objectives in this regard include the County's ability to accurately identify areas of significant resource value; the availability of financial and other resources necessary to support preservation, restoration and enhancement efforts; and, competing priorities between resource preservation and other critical public needs.

Recognizing the resource values at stake and the constraints imposed by competing priorities and objectives, the General

Plan seeks to provide a process for reconciling specific conflicts between proposed land use and the preservation of identified Significant Ecological Areas. The Plan does not, however, suggest that this can be accomplished by applying a single set of regulatory standards to all SEAs. Nor does it infer that reasonable use of privately held lands within such areas shall be precluded without just compensation. Instead, the Plan recognizes that measures necessary to preserve and enhance Significant Ecological Areas will vary depending on the nature of resource values present and the degree of threat implied by potentially incompatible development. Within this context, the following general conditions and standards are provided to guide specific land use decisions.

SEA Compatible Land Uses: Within Significant Ecological Areas the following activities are considered compatible by definition: regulated scientific study; passive recreation including wildlife observation and photography; and limited picnicking, riding and hiking, and overnight camping. In addition, the following uses may be compatible as determined by a detailed biotic survey and such conditions as may be necessary to ensure protection of identified ecological resources:

- 1) Residential uses at densities compatible with the resource values present, and consistent with community character in terms of both overall density and magnitude as defined in adopted community, areawide, or countywide plans;
- 2) Where provided for in an adopted community or areawide plan, commercial uses of a minor nature serving local residents and visitors;
- 3) Where no alternative site or alignment is feasible, public and semi-public uses essential to the maintenance of public health, safety and welfare;

- 4) Agricultural uses compatible with the resource values present; and,
- 5) Where compatible with identified biotic resources, extractive uses including oil and gas recovery, and rock, sand and gravel quarrying.

SEA Design Compatibility Criteria: Each development proposed within a designated SEA will be reviewed for compliance with the following design criteria:

- 1) The development is designed to be highly compatible with biotic resources present, including the setting aside of appropriate and sufficient undisturbed areas;
- 2) The development is designed to maintain waterbodies, watercourses, and their tributaries in a natural state;
- 3) The development is designed so that wildlife movement corridors (migratory paths) are left in a natural and undisturbed state;
- 4) The development retains sufficient natural vegetative cover and/or open spaces to buffer critical resource areas from the proposed use;
- 5) Where necessary, fences or walls are provided to buffer important habitat areas from development; and,
- 6) Roads and utilities serving the proposed development are located and designed so as not to conflict with critical resources, habitat areas or migratory paths.

SEA Performance Review: The key components and participants in the Significant Ecological Area/Performance Review Procedure are

generally identified below. The countywide Land Use Element leaves for further definition the specific procedural steps and regulatory mechanisms to be employed.

- 1) Resource Identification - Development permit applications, including zoning, land division, building and grading permit requests, shall be accompanied by an adequate biotic analysis of the SEA or affected portion thereof. Necessary biotic data is to be prepared through a cooperative process involving both the project applicant and appropriate public agencies. The Department of Regional Planning shall be the lead agency in this regard.
- 2) Technical Review/Development Guidelines - The biotic analysis will be submitted with the preliminary project plan to an appointed Significant Ecological Area Technical Advisory Committee. This committee will function to review the biotic data submitted for its adequacy, and recommended conditions and guidelines for final project design.
- 3) Project Design Review - Planning staff in cooperation with the Technical Advisory Committee will review project plans submitted by the applicant for compliance with recommended conditions and guidelines.
- 4) Impact Analysis - Based on the biotic data previously generated and such other information as may be requested from the applicant, planning staff shall prepare a draft environmental impact report identifying potential project impacts and possible mitigation measures.
- 5) Regional Planning Commission Review and Action - Considering the recommendations of the Technical Advisory Committee,

potential impacts and mitigation measures identified in the Draft EIR, and such other provisions of countywide and local plans as may be applicable, the Regional Planning Commission shall consider and act upon the proposed development plan. Recommendations for approval shall be accompanied by a finding that the proposed project is sensitive to and compatible with the biotic resources of the area. In the event that such a finding cannot be made, the Commission may deny the project, request a revised development plan, or approve and forward the proposal together with a statement of overriding considerations to the Board of Supervisors for further review and action.

FLOOD PRONE AREAS

Areas subject to substantial flood hazard as determined by the County Engineer and Flood Control District are shown as Flood Prone Areas on the Special Management Areas Policy Map (see Conservation and Open Space Element). This classification includes both the watercourse itself and adjacent areas subject to overflow of flood waters during major storms. The County is in the process of mapping flood protection districts for major flood prone areas. These maps will precisely delineate the existing watercourse and additional areas necessary to provide reasonable protection from overflow, erosion and debris deposition.

At such time as a flood protection district is established by ordinance, no permanent structures shall be constructed, altered, modified, or enlarged within the boundaries of the district, except: a) those accessory structures that will not substantially impede the flow of water, and, b) flood control structures approved by the County Flood Control District.

*E-1 TO E-13 IS EXERPTED
FROM THE GENERAL PLAN -
TECHNICAL SUPPLEMENT

TECHNICAL SUPPLEMENT E
SIGNIFICANT ECOLOGICAL AREAS/HABITAT MANAGEMENT AREAS
IN LOS ANGELES COUNTY

This summary report identifies the most significant ecological areas in Los Angeles County, and contains selected portions of the full Significant Ecological Areas Report prepared in 1976 by England and Nelson, consultants to the County of Los Angeles.

A. Biotic Resources

Los Angeles County possesses within its approximately 4,000 square miles an extremely diverse topography. It contains coastline, flatlands, mountains and desert. Only San Diego County, among other counties in the United States, possesses such rich geographical diversity. Elevations within Los Angeles County range from sea level to over 10,000 feet. Likewise, the climate ranges from mild near the coast to severe in the high mountains and the desert. This tremendous variation in physical environments has produced a unique and diverse assemblage of biotic resources.

Biotic communities are composed of plant and animal species found in specific physical habitats. They are ecological units containing a diverse group of organisms that exist together in an orderly, predictable manner and have a close and complex set of interrelationships. These communities are commonly identified and discussed with reference to one or two dominant plant species and the nature of the vegetation.

B. Significant Ecological Areas

Over one hundred fifteen sites were nominated as significant ecological areas in Los Angeles County. Of these, sixty-two were selected by the consultants for final listing as proposed significant ecological areas.

During the final selection process, candidate areas within a geographical region were compared. For example, in the Santa Monica Mountain region, virtually every undisturbed canyon was recommended as a significant ecological area. Primary consideration was given to areas with unique, uncommon or scientifically interesting features. For this reason, Point Dume, Upper La Sierra Canyon, Malibu Canyon and Lagoon, Las Virgenes, Hepatic Gulch, and Cold Creek were chosen. Other areas were selected to provide good examples of the more common habitats and to ensure that the full range of the remaining biotic and geographic diversity in the region has been sampled. For these reasons, Zuma Canyon, Tuna Canyon, Temescal-Rustic-Sullivan Canyons, Palo Comado Canyon, and Encino Reservoir were selected. They were picked over other areas on the basis of such parameters as size, condition of habitat, the diversity of communities present, presence of water, and information available. Similar selection procedures were followed in other regions of the County.

A certain amount of natural habitat, already preserved in State and County parks, reserves and sanctuaries, has been included in significant ecological areas in Los Angeles County. However, this should not be interpreted to mean that the remainder of natural habitat in other parks is unimportant to the preservation of floral and faunal resources in the County.

Although the Angeles National Forest was not included in the study area, a limited amount of information on its resources was acquired during the course of the investigation. This data is also included in the full report. Significant ecological areas for Santa Catalina Island have been identified in a separate study prepared by the Center for Natural Areas.

C. Riparian Woodland Community

In addition to the sixty-two areas selected for inclusion, the riparian woodland community was identified as possessing significant biological resources. This community is composed of shrubs and trees that require a perennial water supply near or above the ground surface. The riparian community is extremely limited in distribution, and is extensively threatened with development. Characteristic plants include western sycamore, white alder, big leaf maple, Fremont cottonwood and willows. It is the best wildlife habitat found in the State. It can support wading birds, song birds, quail, deer, small mammals, reptiles and amphibians, a more diverse and often denser fauna than that found in any other habitat. It is the sole community for many of these organisms, while others use it for cover and forage in surrounding areas.

In 1963 less than 1.4% of the County supported riparian woodland. Losses from upstream reservoir construction, flood control, and water conservation programs are estimated to have reduced this to 1.2% by 1980, a greater proportionate reduction than for any other habitat type. The majority of the areas that remain today are in the National Forest and in the Santa Monica Mountains. Small examples can be found in the remainder of the south County, and most of these have been designated as significant ecological areas if surrounded by good examples of native vegetation.

Riparian woodland habitat, occurring outside the National Forest and not placed in a significant ecological area, should still be regarded as important wildlife habitat and preserved.

D. Habitat Management Areas

Eight "Habitat Management Areas" were identified by consultants for the North Los Angeles County planning program. Five of these areas have been added to the Joshua Tree Woodland Habitat (SEA #60); one area has been combined with Little Rock Wash (SEA #49); and the following two areas have been added to the SEA list:

1. Lyon Canyon (SEA #63) near Newhall; and,
2. Valley Oaks Savannah, Newhall (SEA #64).

E. Methodology

The following criteria were used to select and classify significant ecological areas in Los Angeles County.

The criteria are presented as classes in order of increasing availability of the resource. Each criteria is accompanied by a statement of its intent and the rationale behind it.

CLASS 1 — The habitat of rare, endangered, and threatened plant and animal species.

These areas are important for the maintenance of plant and animal species that are recognized as being either extremely low in numbers or having a very limited amount of habitat available. The terms "rare", "endangered" and "threatened" have precise meanings defined in both State and federal law.

State of California definitions:

Rare - An animal of a species or subspecies of birds, mammals, fish, amphibia, or reptiles that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens.

Endangered - An animal of a species or subspecies of birds, mammals, fish, amphibia, or reptiles; the prospects of which are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition or disease.

United States Government definitions:

Threatened - Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Endangered - Any species which is in danger of extinction throughout all, or a significant portion, of its range other than a species of the Class Insecta determined by the Secretary of the Interior to constitute a pest whose protection under the provisions would present an overwhelming and overriding risk to man.

Severe penalties can be imposed for destroying individual organisms or their habitat.

The California Department of Fish and Game and the United States Fish and Wildlife Service publish official lists of rare, endangered and threatened species. Both agencies recognize mammals, birds, reptiles and amphibians, but only the Fish and Wildlife Service is empowered to recognize insects and plants.

The literature on rare, endangered and threatened species is extensive, and increasing all the time. This information was used to identify existing habitats in Los Angeles County.

CLASS 2 -- Biotic communities, vegetative associations and habitat of plant and animal species that

are either one of a kind, or are restricted in distribution on a regional basis.

The purpose of this criterion is to identify biotic resources that are uncommon on a regional basis, where the region considered extends beyond the boundaries of Los Angeles County. The geographical region considered could be as small as the Southern California coastal plains, the transverse mountain ranges, the Mojave Desert, the Southern California coastline, etc; or it could be as large as Southern California, the Pacific coast, all of California, the western United States, or even larger. Resources that are limited in distribution in the region being considered, but are common elsewhere, are also included under this category.

CLASS 3 — Biotic communities, vegetative associations and habitat of plant and animal species that are either one of a kind, or are restricted in distribution in Los Angeles County.

The purpose of this criterion is to identify biotic resources that are uncommon within the political boundaries of Los Angeles County, regardless of their availability elsewhere. The County has a high diversity of biological components. It and San Diego County are the only counties in the United States that possess coastal, mountain and desert communities within their boundaries. It is a rich heritage that few local governments have an opportunity to preserve.

Many of the communities that were once common in Los Angeles County have been severely reduced due to urban and agricultural development. This is especially true south of the San Gabriel

Mountains and among the agricultural fields of the north County. Other biotic features have never been common.

CLASS 4 -- Habitat that, at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability.

Certain areas tend to concentrate a species or group of species at various points in their life cycles. These areas possess specialized characteristics that are essential to the maintenance of wildlife. This criterion is intended to identify those areas that are limited in distribution, and not the specialized habitat of a common species or group of species.

CLASS 5 -- Biotic resources that are of scientific interest because they are either an extreme in physical/geographic limitations, or they represent an unusual variation in a population or community.

Often scientists learn the most about a biological phenomenon by studying it at an extreme in its distribution. This reveals what the extremes are under which it can survive. In addition, isolated populations and communities are often relics of what was present in an area at some previous time, and often show genetic traits not found elsewhere in the species. These characteristics may be useful in determining taxonomic relationships.

CLASS 6 -- Areas important as game species habitat or as fisheries.

This criterion was designed to identify areas that are critical to the maintenance of game and fish populations in Los Angeles County.

CLASS 7 -- Areas that would provide for the preservation of relatively undisturbed examples of the natural biotic communities in Los Angeles County.

The intent of this criterion was to identify examples of the more common biotic resources in Los Angeles County. As often as possible, the areas selected:

1. Were completely or nearly undisturbed;
2. Had a diversity of habitats;
3. Were large enough to support a representative sample of the native fauna; and
4. Were more or less isolated from outside impacts, such as a self-contained watershed or an isolated mountain peak.

Examples of each vegetation type were selected from the various geographical regions in the County in order to preserve geographic diversity.

CLASS 8 -- Special areas.

Certain areas that are worthy of inclusion, but that do not fit any of the above criteria, are identified by this criterion. Each area has its own special characteristics that are discussed on the individual area description sheets.

Chart Note

The following chart identifies the criteria that each significant ecological area meets in order to be placed in a particular class.

The classes are presented in order of increasing availability of the resource. Thus, the "principal priority class" symbol identifies the rarest resource criterion that the particular SEA meets, while the "second priority class" symbol identifies all additional classes that the SEA falls into.

SIGNIFICANT ECOLOGICAL AREAS/HABITAT MANAGEMENT IN LOS ANGELES COUNTY

CLASS 1: The habitat of rare, endangered and threat-
end plant and/or animal species.

CLASS 2: Biotic communities, vegetative associations,
and habitat of rare, endangered and threat-
end plant and/or animal species.

CLASS 3: Biotic communities, vegetative associations,
and habitat of a kind, or are restricted in distribution
in Los Angeles County.

CLASS 4: Biotic communities, vegetative associations,
and habitat of plant and animal species that are
state breeding, feeding, nesting, or migrating grounds,
and is limited in availability.

CLASS 5: Habitat that at some point in the life cycle
interest because they are either an extreme in physical
geographical limitation, or they represent an unusual
variation in a population.

CLASS 6: Areas important as gene species habitat or
as habitat.

CLASS 7: Areas that would provide for the preserva-
tion of relatively undisturbed examples of the natural
biotic communities in Los Angeles County.

CLASS 8: Special area.

X = Principal priority class
O = Second priority class

In alphabetical
order (numbers in
parentheses assigned
for identification).

Kentucky Springs	(61)		X	O			O		O
Las Virgenes	(61)						X		O
Little Rock Wash	(49)					X	O		O
Levejoy Butte	(53)								X
Lyon Canyon	(63)								X
Madrona Marsh	(26)			X	O		O		O
Malibu Canyon and Lagoon	(5)		X	O	O		O	O	O
Malibu Coastline	(11)		X	O	O		O	O	O
Malibu Creek State Park, Buffer Area	(8)								X
Pala Comado Canyon	(12)			X					O
Palos Verdes Peninsula Coastline	(34)		X	O	O		O	O	O
Piate Butte	(54)								X
Point Dume	(2)			X	O		O		O
Porter Ridge/Liebre Mountain	(58)						X		O
Portuguese Bend Landslide	(27)			X	O		O		O
Powder Canyon/Puente Hills	(17)								X
Rio Honda College Wildlife Sanctuary	(43)								X
Ritter Ridge	(86)						X		O
Rolling Hills Canyons	(31)			X	O		O		O

SIGNIFICANT ECOLOGICAL AREAS/HABITAT MANAGEMENT IN LOS ANGELES COUNTY

X = Principal priority class
O = Second priority class

Geographical order (numbers in parentheses assigned for identification).	CLASS 1: The habitat of rare, endangered and threatened plant and/or animal species.	CLASS 2: Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution on a regional basis.	CLASS 3: Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution in Los Angeles County.	CLASS 4: Habitat that at some point in the life cycle of a species or group of species, serves as a concentration breeding, feeding, resting, or migrating grounds, and is limited in availability.	CLASS 5: Biotic resource that are of scientific interest because they are either an extreme in geographical limitations, or they represent an unusual variation in a population.	CLASS 6: Areas important as game species habitat or as fisheries.	CLASS 7: Areas that would provide for the preservation of relatively undisturbed examples of the natural biotic communities in Los Angeles County.	CLASS 8: Special areas.
Rosemond Lake (50)			X		O			O
Saddleback Butte State Park (51)								X O
San Antonio Canyon Mouth (28)					X			O
San Dimas Canyon (25)					X			O
San Francisquito Canyon (19)	X	O	O	O	O	O	O	O
Santa Clara River (23)	X	O	O	O	O	O	O	O
Santa Fe Dam Floodplain (22)				X				O
Santa Susana Mountains (20)								X
Santa Susana Pass (21)	X	O	O	O	O	O	O	O
Simi Hills (14)								X
Sycamore and Turnbull Canyons (44)								X
Tehachapi Foothills (58)						X		O
Temescal - Rustic - Sullivan Canyons (11)								X
Terminal Island (33)	X	O	O	O	O	O	O	O
Tonner Canyon/China Hills (18)								X
Tujunga Valley/Mansan Dam (24)	X			O				O
Tuna Canyon (10)				X	O			O

BIOTA REPORT requirements for SEATAC

The following outline is to be used in preparing the biota report or preliminary EIR. Generally, the department staff is concerned with adverse impacts on biota when: (1) the project is located within or adjacent to a Significant Ecological Area (SEA) or SEA Buffer Area, as identified in the County's General Plan; (2) the project may impact significant biological resources, such as rare, threatened or endangered species; riparian habitat; oak habitat or other large trees (including heritage trees) sensitive communities or species of special concern as reported by California Department of Fish and Game Natural Diversity Data Base; (3) the project is located within identified wildlife (biotic) corridors; and/or the project effects biotic movement between or within SEAs.

To avoid disruption of sensitive biological resources, the biota survey is to be completed prior to any on site geotechnical analysis.

The information below, including the survey of flora and fauna, is to be prepared by a biologist knowledgeable in the regional ecology (a person with a degree in biology or possessing other professional credentials); a statement of qualifications must be attached to the appendix of the report. The original report and the specified number of copies shall be submitted to the Department of Regional Planning.

These guidelines are not all-inclusive; they provide the minimum required information.

I. Project description including related maps, plans, exhibits and photos.

II. The Biota Report shall contain the following information:

1. Setting
 - A. characteristics of the project site:
 - B. characteristics of surrounding area
2. Biota survey of project site.
3. Impacts of project on site and surrounding area
4. Mitigation measures

III. Explanation of Biota Report requirements

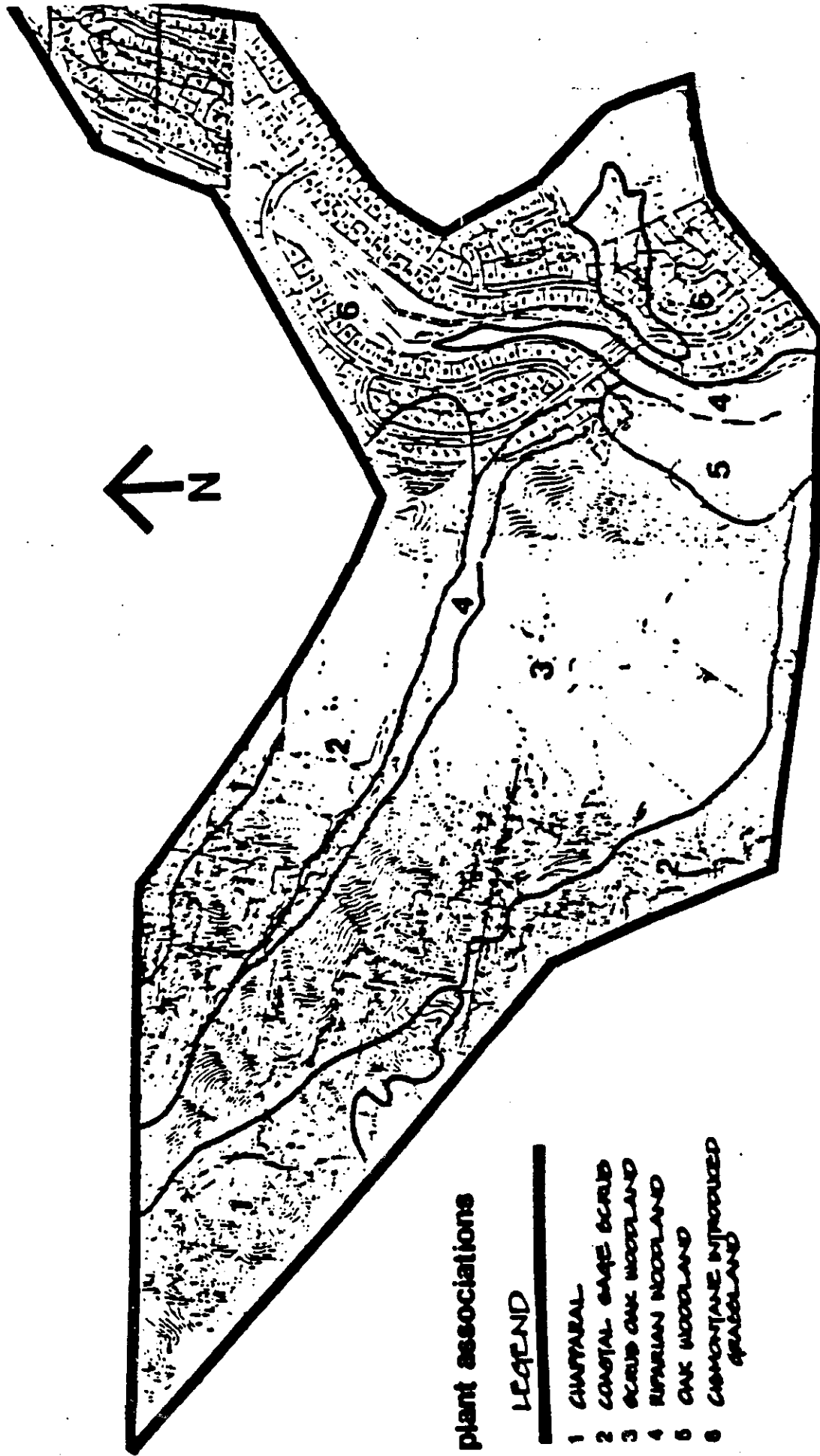
1. Setting

- A. Characteristics of the project site:
- General description of habitats present
 - Aerial photographs of the site, with project boundaries delineated, as well as photographs taken on the ground the project site keyed to a map of the site.
 - Map showing the specific location of major plant communities
 - 7 1/2" USGS topographical ("Quad Sheet") of the site must be included.
 - Drainage patterns are to be identified
 - Unusual geological features are to be identified

- Dates and time periods spent on site must be listed.
- Methods utilized must be given (e.g. walkthrough site utilizing binoculars; trapping for mammals, etc.).
- Personnel (names and addresses) involved in the field and laboratory work must be listed.
- All Endangered/Threatened/Rare Species or unique species or taxa of special concern to Local, State, Federal or International Agencies, both on and anticipated to be on, the project site must be considered.
- When Endangered/Threatened/Rare/unique/special concern Species are identified on the project site, their exact location and estimates of abundance must be given. The methods used to estimate population size must be given.
- Rough estimates of the population size of flora and fauna on the project site must be given. For animals and plants the terms rare (less than 10, uncommon (11-50), common (51-100), and abundant (more than 101) shall be used.
- The California Department of Fish and Game Natural Diversity Data Base must be contacted regarding the presence of Endangered/Threatened/Rare/unique elements and/or plant communities of concern. The address of the Data Base is 1416 Ninth Street Room 1225, Sacramento, California 95814. Copies of all correspondence is to be included with the Biota report.
- List of species observed/collected/anticipated on the project site is to be included as an appendix to the Biota Report.
- Written responses shall be requested from experts on the SEA (e.g. freshwater ichthyologists knowledgeable about the Three-spined Stickleback for SEAs along the Santa Clara River, etc.).
- A bibliography of the references used to complete the report is to be included.
- A list of persons contacted and their institutional affiliations is to be included.

3. Impacts

- Map showing the relationship between major vegetative types and land alteration, including the location of cuts and fills for building pads as well as access roads. This may be the same map used for "Setting". The location of proposed grading and trees that will be removed is to be shown on this map.



plant associations

LEGEND

- 1 CHITTARAL
- 2 COASTAL SAGE SCRUB
- 3 SCRUB OAK WOODLAND
- 4 EURASIAN WOODLAND
- 5 OAK WOODLAND
- 6 MONTANE INTRODUCED GRASSLAND

- Amount (volume) of proposed grading for building pads, roads and driveways shall be determined. The acreage and percentage of the site to be graded as well as a grading map shall be included with the Biota Report.
- Acreage and percentage of the vegetational communities to be altered or graded shall be included. This will include accidental loss.
- The number and species of significant trees (dbh greater than 6 inches) or all trees if the species is of special concern (e.g. Quercus species, etc) shall be mapped. The effect of any damage resulting from development at the site is to be discussed.
- Short and long term impacts to life history of all plant or animal species of special concern, or any ecological cycles shall be discussed.
- The effect of the project on the integrity of the SEA shall be discussed.
- The effect of "brush" clearance on plant and animal species and any ecological cycles is to be discussed. The ordinances and effective fuel clearance required by the Los Angeles County Fire Department shall be included.
- Potential damage to wildlife habitats and vegetational communities from accessory structures as horse corrals, stables, trails, driveways, etc is to be discussed.

4. Mitigation Measures

Specific mitigation measures which are to be incorporated into the project shall be discussed. Other mitigation measures that were considered must be included along with the reasons for rejection.

- The acreage and percentage of the site which is to be left as natural open area (as compared to "developed" area and areas which ornamental non-native vegetation is to be introduced).
- The relationship of the natural open area to the vegetational communities is to be discussed.
- Measures which will be taken to protect and manage the natural open areas (e.g. fencing, give conservation easement or deed to land trust, etc.).
- The type and amount of landscaping is to be discussed. Plant taxa native to the immediate area shall be utilized unless infeasible.

NOTE: Omission of any of these sections may be cause for SEATAC to return the Biota Report to the consultants.

BIOTA

The following guidelines are to be used in preparing the biota report or Preliminary EIR. Generally, the department staff is concerned with adverse impacts on biota when: (1) the project is located within or adjacent to a Significant Ecological Area (SEA) or SEA Buffer Area, as identified in the County's General Plan; (2) the project may impact significant biological resources, such as rare, threatened or endangered species; riparian habitat; oak habitat or other large trees (including heritage trees); and/or (3) the project is located within identified wildlife corridors in the Santa Monica Mountains. The information below, including the survey of flora and fauna, is to be prepared by a qualified biologist (a person with a degree in biology); a statement of qualifications must be attached to the report.

These guidelines are not all-inclusive; they provide the minimum required information.

Setting

1. Characteristics of project site:

- General description of biota.
- Aerial photographs of the site, with the project boundaries delineated, as well as photographs taken on the ground of the project site, keyed to a map of the site.
- Map showing general location of major vegetative types (including relationship to SEA, water courses and topography). (See Attachment No. 1). If topography is not clearly shown on the map, a separate topographical map showing relationship to vegetation types is to be provided.
- Surveys of flora and both vertebrate and invertebrate fauna, differentiating between those anticipated to be on-site and those actually identified during the field inspection. If possible, the field survey should be carried out at the optimum time of year for observing the particular group of organism (e.g., usually spring for plants, birds, insects; summer for mammals, etc); date(s) of survey and personnel involved must be cited. The survey material must also identify any endangered, rare, and/or threatened plants and animals, and/or unique species or species of special concern to state, federal and local conservation agencies, both on, and anticipated to be on, the project site. Where such rare, endangered or unique species are identified as being located on the project site, their location and abundance is to be indicated. The survey material is to be located in an appendix or as a separate attachment to the document.
- Identification of significant vegetation (oak trees, riparian vegetation, heritage trees).

2. Characteristics of surrounding area:

- General description of biota.
- Existing land use.
- Identification of public open space in the surrounding area and the potential for wildlife movement between this open space area and the subject property.
- Overall biological value (diversity, value to adjacent habitat).
- Known nesting sites for raptors; known migratory paths and wildlife corridors.

NOTE: If a project is within an SEA, submittal of the following is required;

- Vicinity map of appropriate scale showing the subject property in relation to nearby streets and other significant features. Street maps (such as Thomas Bros. maps) in urban areas and U.S.G.S. quad sheet(s) in rural areas should be used. These maps should be keyed to a map of the site;
- Map of appropriate scale showing generalized land use on the project site and on surrounding properties;
- A site plan with contours showing, where appropriate, the location and layout of the proposed development or buildable sites and elevations (i.e. pad locations) and the location of the SEA boundary in relation to the site plan (demarcated on the site plan where feasible);
- Photographs (including pad locations) of the site and surrounding area indicating the site's boundaries and keyed to the site plan. All submittals shall contain original photographs;
- Nine (9) sets of all materials must be submitted.

Impacts

1. Map showing the relationship between major vegetative types and land alteration, including the location of cuts and fills for building pads as well as access roads (could be the same map used for "Setting"). (See Attachment No. 1). The location of proposed grading and trees to be removed, as required in items 2-5 below, is to be shown on this map.
2. Amount (volume) of future grading for building pads, roads, and driveways.
3. Acreage and percentage of site to be altered by grading.
4. Acreage or percentage of each major vegetative type to be altered by grading (including accidental loss).

Biota
'2/85

5. Number and types of significant trees (trees with a circumference greater than 25 inches at a height of 4-1/2 feet above the base of the tree) to be removed. The potential for any damage subsequent to development is also to be discussed.
6. Potential damage to any ecological cycles (long term implications) due to the reduction of habitat (including areas of vegetation that will be left reproductively isolated).
7. Potential damage to the integrity of the SEA.
8. Potential damage to habitat due to "brush" clearance. A map is to be provided showing vegetation types affected by the required County Fire Code "brush" clearance.
9. Potential damage to habitat due to anticipated development of such accessory structures as horse corrals.

Mitigation Measures

NOTE: Mitigation measures discussed must be those which are to be incorporated into the project. Other mitigation measures should be discussed along with reasons for rejection.

1. The acreage and percentage of natural open area (as compared to "developed" area and area in which ornamental vegetation is to be introduced).
2. Relationship of open area to major vegetative types.
3. Landscaping, including the type and size.