UNIT 630

TORREY PINES STATE RESERVE

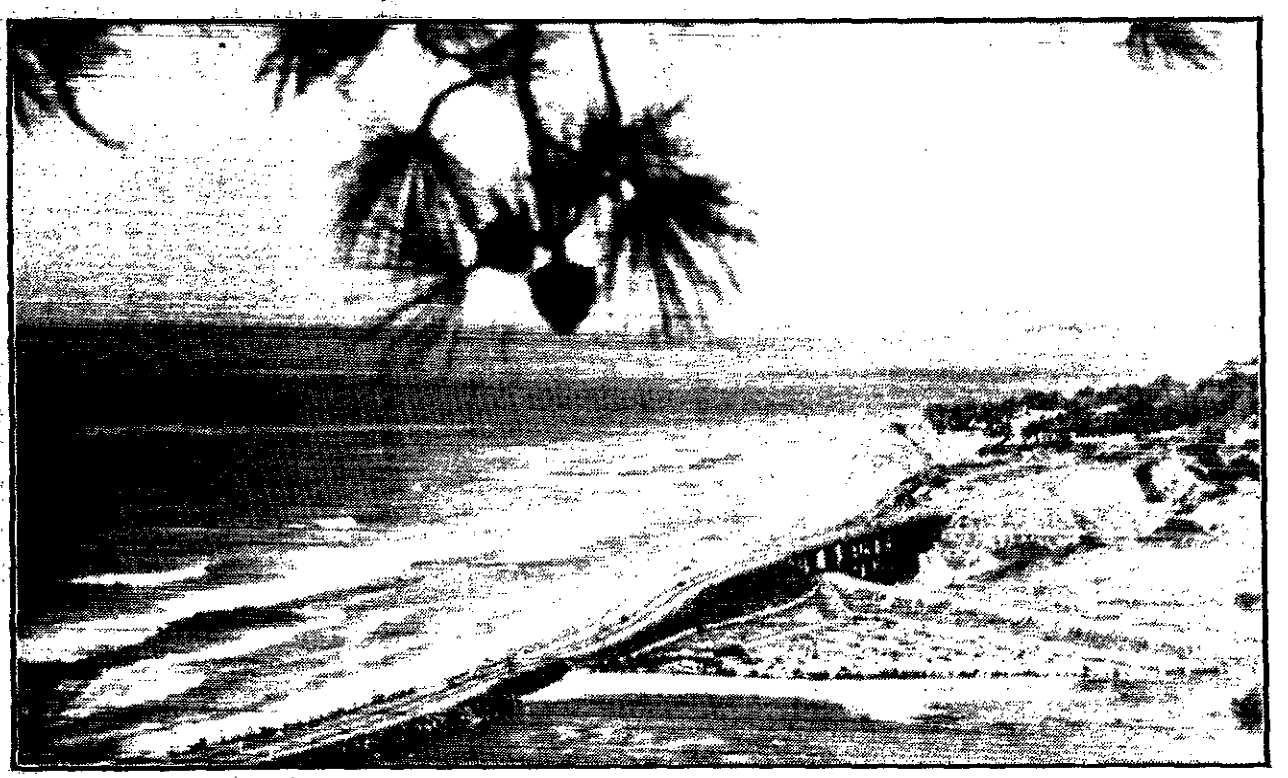
GENERAL PLAN

November 1983

San Diego Coastal State Park System General Plan

Volume 8 – Torrey Pines State Beach and State Reserve

July 1984



TORREY PINES STATE BEACH AND STATE RESERVE

State of California-The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

This is volume eight of the general plan for nine coastal State Park System units in San Diego County. Below is a list of the nine booklets that comprise the San Diego Coastal State Park System General Plan.

Volume Number	Name
1	Summary and Regional Data
2	Carlsbad State Beach
3	South Carlsbad State Beach
4	Leucadia State Beach
5	Moonlight State Beach
6	San Elijo State Beach
7	Cardiff State Beach
8	Torrey Pines State Beach and State Reserve
9	Silver Strand State Beach

STATE OF CALIFORNIA—RESOURCES AGENCY

George Deukmejian, Governor

DEPARTMENT OF PARKS AND RECREATION

STATE PARK AND RECREATION COMMISSION

P.O. BOX 2390, SACRAMENTO 95811

Resolution 76-83
adopted by the
State Park and Recreation Commission
at its regular meeting in San Diego on
November 4, 1983

WHEREAS, the State Park and Recreation Commission requests that the campsite in the Torrey Pines State Beach and State Reserve General Plan be deferred for further study and brought back to the Commission on February 10, 1984;

WHEREAS, the Commission encourages the City of Del Mar to give consideration to alternate solutions for the use of the restaurant site on Highway 101 to reduce some of the problems of the concerned residents;

NOW, THEREFORE, BE IT RESOLVED that the State Park and Recreation Commission approves the portion of the Department of Parks and Recreation's General Plan which includes the Torrey Pines State Beach and State Reserve.

I-2133L

STATE OF CALIFORNIA—RESOURCES AGENCY GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF PARKS AND RECREATION
STATE PARK AND RECREATION COMMISSION
` O. BOX 2390, SACRAMENTO 95811

Resolution 14-84
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in San Diego on
February 10, 1984

WHEREAS, the State Park and Recreation Commission has requested that the campsite in the Torrey Pines State Beach and State Reserve General Plan be deferred in an action taken November 4, 1983 by Resolution No. 76-83;

WHEREAS, the staff has restudied the matter of the campsite location and determined that an alternate proposal on the existing parking lot at the north end of the beach to accommodate camping is the only feasible alternative and that the plans have been amended to reflect that;

NOW, THEREFORE, BE IT RESOLVED that the State Park and Recreation Commission approves the amended portion of the Department of Parks and Recreation's General Plan which include the Torrey Pines State Beach and State Reserve.

BE IT FURTHER RESOLVED that only overnight camping will be permitted with the option of weekend camping, including three-day holiday weekends, and, after a period of one year, the Director will review this use and return to the Commission if in his opinion a modification is required.

San Diego Coastal State Park System
General Plan Volume 8 - Torrey Pines State Beach and State Reserve

GEORGE DEUKMEJIAN
Governor

GORDON K. VAN VLECK
Secretary for Resources

WM. S. BRINER
Director

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
P.O. Box 2390 Sacramento 95811

July 1984

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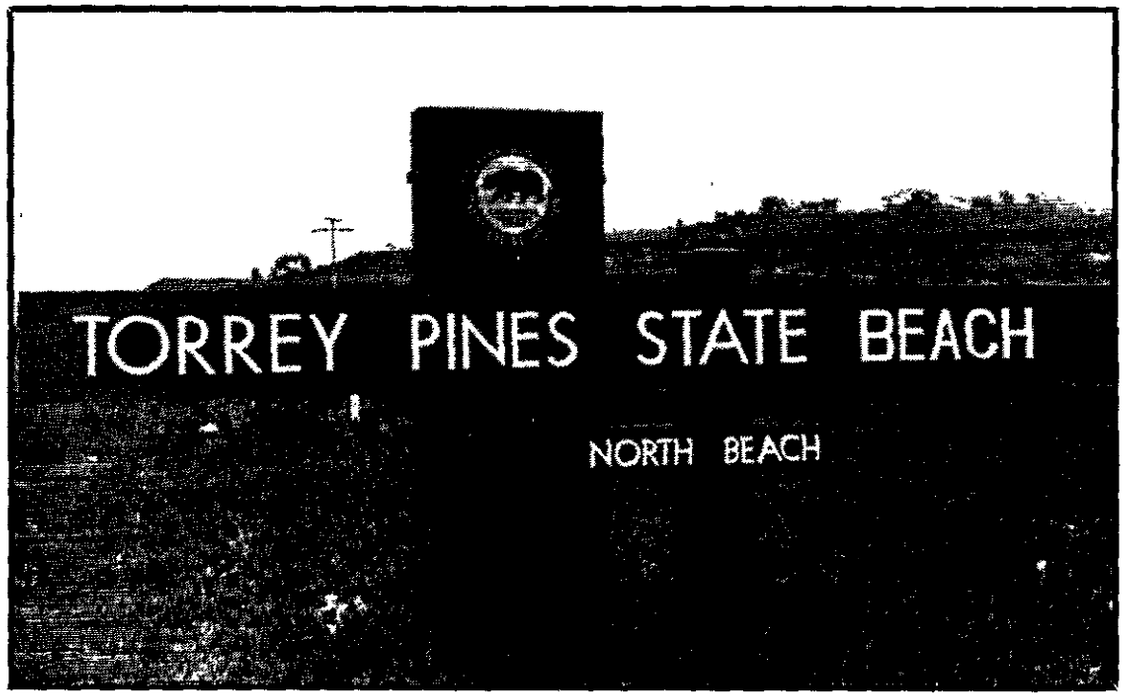
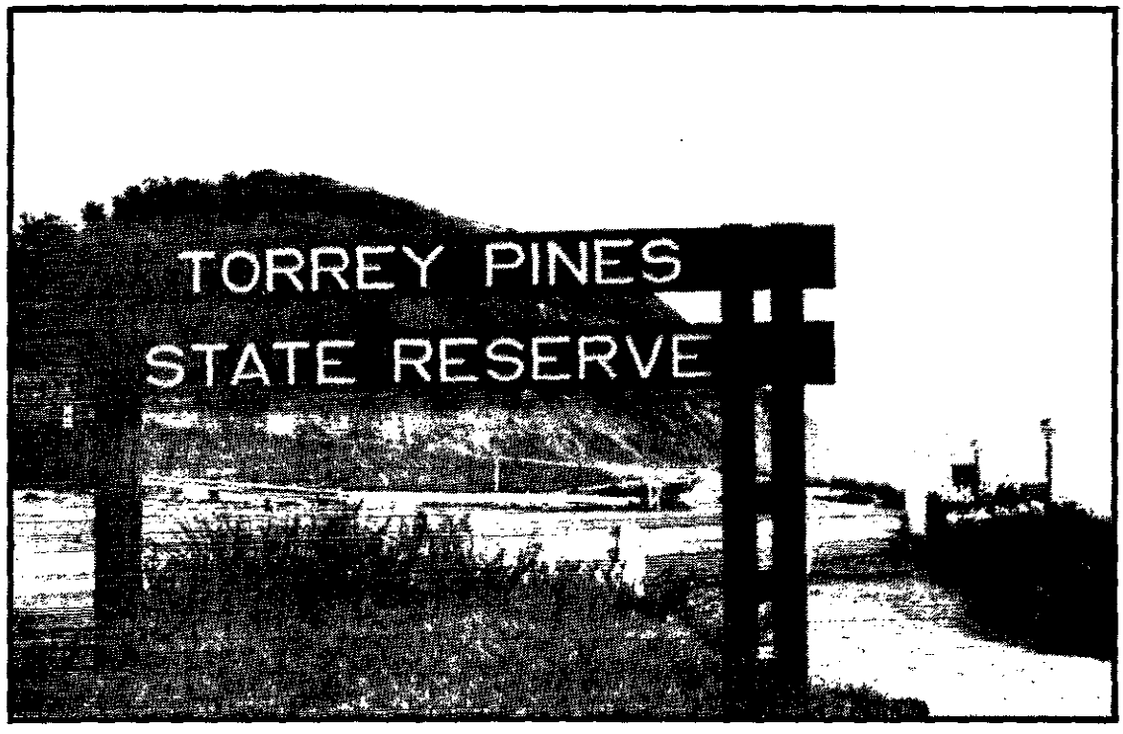
General Data


TORREY PINES STATE BEACH
NORTH BEACH


TORREY PINES
STATE RESERVE

GENERAL DATA ON
TORREY PINES STATE BEACH AND STATE RESERVE

Location: In central coastal San Diego County, in the cities of Del Mar and San Diego, about 16 miles north of downtown San Diego.

Size: The state beach is 69.88 acres with about 4.5 miles of ocean frontage.

The state reserve of 1,256 acres is composed of two separate areas. Within the reserve are two natural preserves.

Facilities: The state beach has two parking lots with a total of 750 spaces, two comfort stations, one contact station, and seven lifeguard stands.

The state reserve has two parking lots with a total of 64 spaces, one comfort station, a visitor center, a maintenance area, four employee residences, and 7.49 miles of trail.

Vegetation: The state beach has retained very little native vegetation. Vegetation is limited to back-beach coastal dune vegetation, many of the species being exotic (alien).

The state reserve has three major vegetation types: Torrey pine woodland associated with chaparral, pickleweed scrub, and coastal scrub. The unit supports the finest natural stand of Torrey pine, a tree with an extremely limited natural geographical range.

There are 13 rare plants in the reserve and beach and one endangered plant in the reserve.

Wildlife: The state beach provides habitat for sand-dwelling invertebrates, shorebirds, and gulls. No rare or endangered species are known to currently nest on state beach property.

The state reserve supports a wide variety of animals which reside in or frequent coastal wetlands and uplands habitats. The wetlands provide important habitat for three state-listed endangered birds and many other species with declining populations.

Historical and Archeological Values: These units have been extensively surveyed, and several archeological and historic sites are known to exist.

Ownership: The first preservation action in this area was taken by the City of San Diego in 1889, involving 369 acres. Additional acreage was purchased by Ellen B. Scripps and ultimately turned over to the city for stewardship under the direction of Guy Fleming. Title was conveyed to the State of California in 1959. The beach unit was reclassified from reserve status in 1971.

Resource Element

Torrey Pines State Beach is a popular recreation site, which is separated from Los Penasquitos Marsh by North Torrey Pines Road.

Torrey Pines State Reserve preserves Los Penasquitos Marsh and the habitat of the Torrey pine.

RESOURCE ELEMENT

The purpose of this element is to establish the long-range resource management objectives and policies necessary to perpetuate the resource values for which Torrey Pines State Reserve, Torrey Pines State Beach, Ellen Browning Scripps Natural Preserve, and Los Penasquitos Marsh Natural Preserve were established. (The natural preserves are State Park System units within Torrey Pines State Reserve. For convenience, these three units will be referred to collectively as Torrey Pines State Reserve, unless there is a reason to mention them individually.) Development of specific programs and details for carrying out management policies for all the units will follow approval of the general plan.

This element also identifies specific resource sensitivities and physical constraints, and establishes the department's guidelines for acceptable levels of development and use with respect to these concerns.

The Resource Element has two main parts. The first is a brief summary of the units' resources. More detailed information on these subjects is on file with the Department of Parks and Recreation. The second part deals with policy formulation, which begins with unit classifications and declarations of purpose and arrives at specific resource management policies.

Unit Descriptions

Torrey Pines State Beach is a narrow unit including 4.5 miles (7.3 km) of coastal beach and 69.88 acres (27.95 hectares) of land. The unit lies between mean high water and the toe of the coastal bluff, except for a 6-acre (24-hectare) parking lot located inland of North Torrey Pines Road and adjacent to the mouth of Los Penasquitos Creek.

Torrey Pines State Reserve totals 1,256 acres (502 hectares) of coastal terrace, bluffs, coastal wetlands, and floodplain. Included in the reserve are 183 acres (74 hectares) of rugged ridges and canyons, commonly referred to as the "Extension," which is separated from the rest of the unit by private development. North Torrey Pines Road, a mostly four-lane portion of Highway 101, divides both the state beach and state reserve.

The beach and reserve are located in the Coastal Strip and the Southwest Mountain and Valley Landscape Provinces, which are classifications used by the department to denote geographic features.

Summary and Evaluation of Resources

This section summarizes the units' inventory of features, a more detailed document on file with the department.

Natural Resources

Topography

There are five major terrain features: sandy beach, coastal bluffs, coastal terraces, ridges and eroded canyons, and the Los Penasquitos floodplain.

The area of sandy beach varies seasonally and from year to year. In the summer, the beach is often 50 to 150 feet (15 to 45 m) wide along most of its length, with the central portion narrowing to 10 to 50 feet (3 to 15 m). Most of the central beach is impassable by foot during high tides when the surf beats against the base of the steep cliff. There are two rocky points on the beach, Flat Rock and Mussel Rocks.

Inland of the beach are coastal bluffs rising to coastal terraces. North of the entrance to Los Penasquitos Lagoon, the terrace is low-lying, about 100 feet (30 m) above mean sea level. The bluff bordering the terrace rises sharply, on a greater than 50 percent slope. The terrace and most of the bluff along this northern stretch is not state-owned. In the southern portion of the state beach and state reserve, the coastal terrace lies at an elevation of about 360 feet (110 m). A golf course outside the southern boundary of the reserve is developed on this terrace. The coastal bluff rising to the terrace in this area is extremely steep, mostly 60 to 100 percent slope. Some slopes exceed 100 percent.

The terrain between the lagoon mouth and the southern coastal terrace is comprised of ridges and eroded canyons, where Torrey pine stands are most extensive. The bluffs in this area are generally not as steep as in the southern portion, but eroded escarpment-like cliffs occur in some of the canyons. Ridges and eroded canyons are also dominant features in the Extension, which ranges in elevation from 150 feet (45 m) to 400 feet (120 m).

About half of the Los Penasquitos Creek floodplain is in the reserve. It is a broad, flat lowland about 3 miles (5 km) long, comprised of salt and mud flats, fresh and saltwater marshes, and tidal lagoon channels. The floodplain varies in width from 1,000 to 3,000 feet (300-900 m).

Climate

The climate is Mediterranean, moderated by the Pacific Ocean. Average maximum temperatures at the nearest weather station (Lindberg Field) are 65°F (18°C) in January and 77°F (25°C) in August. Extremes of heat and cold are unusual. Temperatures of 32°F (0°C) or below have occurred only 11 times since the record began in 1871. Hot weather of 90°F (32°C) or above is more frequent.

Most of the rainfall occurs from November through March, caused by Pacific storm systems. Intense storms, occasionally of hurricane force, infrequently strike the San Diego area, causing floods. Average seasonal rainfall on the coast is 10 inches (25 cm), increasing to 16 inches (40 cm) in the upper Los Penasquitos watershed.

Important meteorological features in the region include periodic fog and overcast and hot, dry winds. Nighttime and early morning cloudiness occur along the coast in summer. Periods of persistent coastal fog generally occur in winter. In the fall, dry easterly winds blow for several days at a time. Known locally as Santa Anas, these winds can raise temperatures into the 90 to 100+°F range (32 to 38°C).

The beach and reserve are located in the San Diego Air Basin. Air pollution in this basin is largely caused by motor vehicles in the central San Diego area to the south. In the spring and fall, subsiding air traps and concentrates pollutants, resulting in the highest photochemical smog levels. Pollution also travels into the area from the South Coast Air Basin to the north.

Hydrology

Except for some parts of the coastal terrace which drain directly into the sea, Torrey Pines State Reserve and State Beach lie within the Los Penasquitos watershed, which encompasses a drainage area of about 100 square miles (260 sq. km) (see Figure 1). The three major drainages in the watershed (Carmel Valley, Los Penasquitos Canyon, and Carroll Canyon, from north to south) empty into Soledad Valley, a broad lowland floodplain, and eventually into Los Penasquitos Lagoon in the state reserve. The drainages have their sources in the mountains to the east. Streamflow in the three major tributaries is absent during the summer months and ephemeral at other times. During fall, winter, and spring, streamflow occurs after storms for days, weeks, or months, depending on rainfall intensity and frequency.

Los Penasquitos Marsh Natural Preserve, which has outstanding wetland resource value, is influenced largely by the watershed's hydrologic system and land uses. All major storm runoff from the watershed flows into Los Penasquitos Lagoon, except for a small amount stored by a few small reservoirs. Most waterborne sediments from the watershed's highly erodible soils are also carried into the floodplain and lagoon. Large volumes of suspended and bedload sediments are deposited during heavy storms.

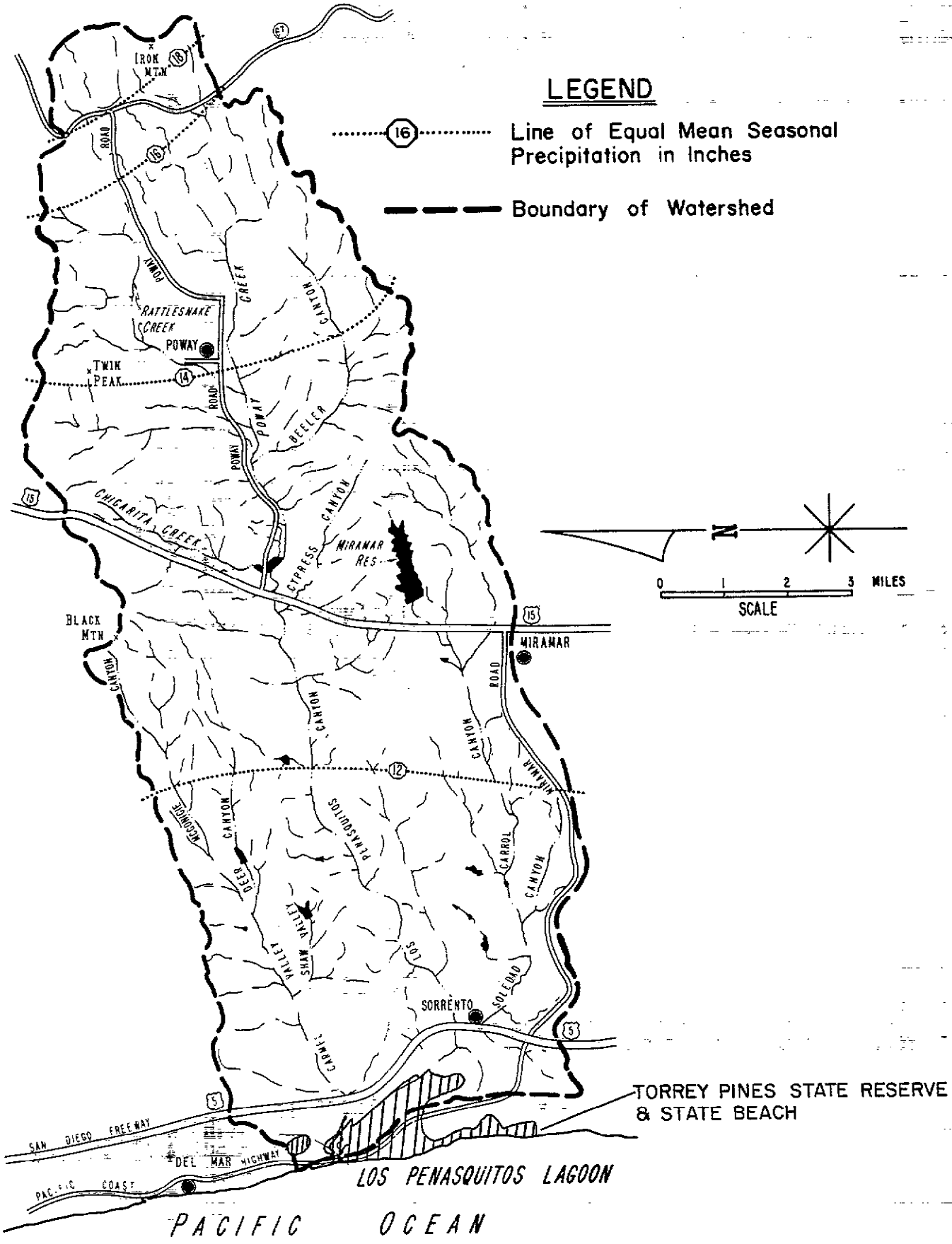
The lower floodplain has been gradually filling in for thousands of years. However, watershed modifications resulting from agricultural use and urban development have significantly increased the natural rate of uplands erosion and deposition into the lower floodplain. A decrease in upland infiltration rates, increases in total flow volume and peak runoff, and soil disturbance during urban construction have all contributed to this increase in sediment yield. Although much of the sediment reaching the Soledad Valley is carried into the lagoon and flushed out to sea, a significant amount is being deposited as alluvial fans at the mouths of major drainages bordering the valley, particularly at Carmel Creek and Los Penasquitos Creek.

Sedimentation in the Soledad Valley and Los Penasquitos Lagoon is a major issue in the management of the important wetlands ecosystem. This accelerated sedimentation poses a serious threat to the lagoon and the wetlands ecosystem of the state reserve and Los Penasquitos Marsh Natural Preserve. The relationship to the wetlands system of watershed runoff, sedimentation, and tidal action is described in greater detail in the later section on Lagoon and Wetlands Ecology.

Another serious water quality factor is the amount of chemical and organic waste entering the watershed drainage as urbanization increases in the vicinity of the units. The Sorrento Valley Industrial Park to the southeast and residential and commercial development to the north and east all pose potential threats to the water quality of the wetlands system.

Figure 1

LOS PENASQUITOS LAGOON WATERSHED



Adapted from DFG. Coastal Wetlands Series #7

Most of Soledad Valley, including low-lying state reserve and state beach property, is subject to periodic flooding as a result of storm runoff. The frequency and magnitude of this flooding is affected by storm frequency and intensity, topography, urbanization, tidal cycles, and sand bar formation at the ocean outlet. Flooding in areas of lower Soledad Valley that are below the 5-foot (1.5-meter) elevation can be expected at least once every 50 years, according to the U.S. Army Corps of Engineers Floodplain Information Report. However, flooding of this magnitude has occurred frequently over the last decade. The existing north state beach parking lot has been flooded during some of these periods of high water. The overall frequency of flooding in Soledad Valley is expected to increase with greater urbanization.

The main drainage through the Extension is deeply gullied, in some places 10 feet (3 m) deep and 40 feet (12 m) wide. The gully began forming in the early 1970s shortly after construction of underground sewer and water lines for residential property in the upper watershed. Beginning in 1974, attempts were made to halt expansion of the gully and related downstream sedimentation. Gabions (wire mesh baskets filled with rocks) were used to construct a series of checkdams in the drainage to trap sediment. Unfortunately, the checkdams have not been effective. Instead, storm runoff bypasses the checkdams, eroding the channel around the ends of the gabions, and further aggravates erosion in the drainage and downstream sedimentation problems. This situation still exists.

Geology

Torrey Pines State Reserve and State Beach are on the coastal margin of the Peninsular Ranges Geomorphic Province, which includes the southwestern corner of California and all of Baja California. The province is a northwest-trending granitic block sharply uplifted on the east and tilted to the west. The eastern boundary is the San Jacinto fault zone and the western limit is the edge of the continental shelf.

The coastal margin of the geomorphic province is made up of Late Cretaceous, Eocene, and Pleistocene-aged sedimentary rocks resting on a Mesozoic metamorphic and plutonic rock basement complex. The Eocene and Pleistocene strata were deposited unconformably on the Upper Cretaceous sediments in a northwest-trending basin called the San Diego embayment. Rocks of the San Diego embayment are generally gently folded and faulted Eocene marine, lagoonal, and nonmarine rocks deposited in a tectonically downwarped basin. Ocean level changes related to the Ice Ages, and normal and strike-slip faulting associated with the Rose Canyon fault zone have modified the coastal area since depositional times. Despite these modifications, the sedimentary processes operating today are essentially the same as those which were occurring 50 to 55 million years ago.

The geology of the Torrey Pines area is characterized by thick layers of marine, lagoonal, and nonmarine rocks which are well exposed in the steep cliffs along the beach and in the short canyons which cut through the reserve. The oldest formation is the Delmar Formation which is exposed in the lower part of the seacliffs from the south beach parking lot southward to Flat Rock. This formation is notable for several resistant layers that are very rich in fossil oysters. Above the Delmar Formation is Torrey Sandstone -- a clean, beach-type deposit with extensive cross-bedding, white to very light

tan, with the distinctive weathering characteristic of forming caverns or round hollows in the cliff face. Torrey Sandstone is extensively exposed in the Extension and above the Delmar Formation southward to Flat Rock. South of Flat Rock, the cliffs are predominantly made up of Ardath Shale and Scripps Formation, which are particularly susceptible to landslides and slope failures, due to their fissile, shaley nature and vertical joints and fractures. The Lindavista and Bay Point Formations are relatively thin layers which overlie the much older Tertiary formations. The Lindavista Formation is particularly striking, with bright red layers stained by iron oxide minerals.

The principal geologic concerns at Torrey Pines are cliff, canyon, and trail erosion, landslide potentials, and seismicity. Although the cliffs south of Mussel Rocks are more subject to landslides and blockfalls, all the seacliffs from the south beach parking lot southward are prone to block falls and undercutting by wave erosion (see Geologic Hazards Map, Sheet 3).

Soils

Twelve soil units have been recorded at Torrey Pines State Reserve and Torrey Pines State Beach, most falling into the textural class range of loamy sand to sandy loam.

Most of the soils in the reserve are very fragile, subject to severe erosion, and have poor revegetation potential. As a result, the maintenance of trails and other areas of soil disturbance in the reserve is, and will continue to be, a major management concern requiring constant attention.

The most extensive and visible soils in the reserve are terrace escarpments and loamy alluvial land-Huerhuero complex 9 to 50 percent slopes, severely eroded. Both soils are highly eroded. In many places the substratum is exposed and there is no vegetation, especially in the case of terrace escarpments. Both soils have variable shrink-swell and high runoff potentials.

Found in association with the loamy alluvial land-Huerhuero complex and the terrace escarpments are Carlsbad and Corralitos soils. Altogether, these four are the dominant soils at Torrey Pines State Reserve, except in the lagoon area. Carlsbad and Corralitos soils are scattered in the main state reserve and the Extension. They occur on hilltops, in narrow canyons, and at the bottom of slopes, are highly erodible, and have a low shrink-swell potential. Slopes range from 5 to 15 percent. The texture is loamy sand; Carlsbad soils are gravelly. Both are young soils.

Corralitos soils are classified in the Entisol order. Entisols show little or no modification of the parent materials and are the youngest order of soils in terms of degree and time to develop. Carlsbad soils are classified in the order Inceptosol. Inceptosols have been in place long enough for slight modification of the parent material to occur. Carlsbad soils have a few prominent characteristics -- a weakly cemented pan and iron concentration or "rust balls." One of the main differences between the Corralitos and Carlsbad soils is in the area of infiltration rates. Corralitos soils have a high infiltration rate. Carlsbad soils have a very slow infiltration rate due to the pan.

Imported landfill, which makes up a small percentage of soils at Torrey Pines State Reserve, was deposited to level or raise areas for development. Landfill is found at the beach parking area at the northwest end of the lagoon and at the reserve main entrance, where a small parking area is located.

Along the reserve's main entrance road is the only example of Marina soils at Torrey Pines. Marina loamy coarse sand, 9 to 30 percent slopes, is rolling to hilly. Runoff is medium to rapid; erodibility is severe due to the high sand content in the surface layer. The shrink-swell potential is low. Like the Corralitos soil, the Marina soil is in the Entisol order.

A few small areas of Chesterton soils are located in the state reserve west of the railroad and east of North Torrey Pines Road. Chesterton fine sandy loam, 5 to 9 percent slopes, is moderately sloping on coastal ridges. Runoff is slow to medium, and erodibility is severe due to a shallow cemented pan. The shrink-swell behavior is moderate. Chesterton soils are in the Alfisol order. Alfisols are characterized by a dry, massive, hard surface layer and a silicate clay accumulation within the soil profile. Chesterton soils have a silicate cemented pan (within a depth of 40 inches) that is below the main horizon of clay accumulation (35 percent clay).

The eastern portion of Los Penasquitos Lagoon is composed of Chino series soil. Chino silt loam, saline, 0 to 2 percent slope, has moderate shrink-swell behavior and a moderate erodibility rating due to its silt loam texture. Chino soils, in the Molisol order (thick, dark-colored surface horizon with a moderate to strong structure and a high organic matter content), are poorly drained and develop from medium to moderately fine-textured floodplain alluvium.

The tidal flats that make up the western portion of the lagoon consist of clays to very fine sands which typically contain an excess of soluble salts. The higher parts are seldom covered by high tides and support salt-tolerant vegetation.

Plant Life

The state reserve and state beach have three major vegetation types: the Los Penasquitos Lagoon is dominated by pickleweed scrub, the coast is bordered by coastal scrub, and on the upper terraces is a Torrey pine woodland associated with chaparral. Nineteen plant communities have been described in the inventory of features (see Plant Communities Map, Sheet 4). The greatest diversity is found within the coastal scrub, which is composed of six communities.

The Torrey pine, for which the reserve lands were originally acquired, is known from only two populations, one on the San Diego coast and the other on the northeastern coast of offshore Santa Rosa Island. The range of the mainland population is very limited, extending from San Dieguito Estuary to Del Mar, a distance of 5 miles (8 km). The largest stand occurs in and around the state reserve. The two populations have never been known to connect, nor has a wider native distribution been documented.

Many genetic studies of the Torrey pine have been conducted. Findings indicate that there is little or no genetic variation within the populations. Interpopulation variation was also found to be very low. A lack of genetic variability may indicate that the pine would have a poor response to any environmental change.

The pines in the reserve do not show a good representation of younger age classes. Although recruitment seems to be continuous, the average age is 70 years, and the recruitment rate has dropped considerably in the past 50 years. When regeneration is noted, the young pine is usually in an area of low competition. The island population, which does not show uneven age class representation, is influenced by grazing which continually clears away competitive vegetation, allowing the pine seedlings to establish.

Fire is one of the major environmental factors in the Torrey pines woodland, chaparral, and the coastal scrub. The Torrey pine is a partial closed cone pine, adapted to reproduce after fire. Annual seed drop is never complete, and high temperatures trigger a full opening of the cone. In the area of a 1972 wildfire, recruitment of pines was high for up to eight years following the fire. Fire also affects the chaparral's formation, renewal, and perpetuation.

Fire frequency is an important factor in the reserve's fire potential. The resinous, highly flammable content of the chaparral plants, their rapid accumulation of litter and compact growth, and associated climatic conditions make chaparral one of the most fire-susceptible vegetation types in the world. The longer a chaparral fire is suppressed, the greater its potential for damage. When fire does occur after a long period of suppression, it is more intense and difficult to control.

The fire history of the unit is not well known. The 1972 wildfire in the East Grove and two small controlled burns in the Extension offer some information on post-fire succession in the Torrey pine woodland. Post-fire seeding of annual ryegrass may have reduced the number of pine seedlings by competing for soil moisture.

The Torrey pine is associated with a unique chaparral composed of many species not found north of this area. The regional distribution of this chaparral has been greatly reduced in recent years by development in San Diego County, thereby increasing the ecological significance of the chaparral in the state reserve.

Eighty-nine exotic (alien or non-native) plant species which occur at the reserve and beach are naturalized. Some small-scale eradication projects have been successful.

There is one state-listed endangered plant in the reserve, Dudleya brevifolia. It occurs on the "ball bearing" surface of the Lindavista Formation in both the main part of the reserve and the extension. Thirteen other plants that occur in the beach and reserve are considered rare or sensitive by the California Native Plant Society. The distribution of 10 of the species has been mapped in the inventory of features.

Animal Life

Torrey Pines State Reserve and State Beach provide suitable habitat for a wide variety of animals. This section discusses some of those animals occurring in the terrestrial and wetlands (semiterrestrial) habitats in the units. Nearshore ocean animals will be discussed under the Marine Life section.

Terrestrial Habitats: These are Torrey pine woodland, chaparral, coastal scrub, and coastal strand. Each supports its own assemblage of animals, although there is considerable overlap between some of them.

Birds of the woodland and chaparral communities include the mourning dove, scrub jay, common bushtit, mockingbird, California thrasher, brown towhee, rufous-sided towhee, American goldfinch, and western tanager. Common reptiles are the western fence lizard, California side-blotched lizard, California striped racer, and the San Diego gopher snake. The red diamond and southern Pacific rattlesnakes also occur in this environment. Commonly seen mammals are California or Beechey ground squirrel, black-tailed hare or jackrabbit, and Audubon cottontail. Small mammals, which are more abundant but probably less obvious because of their nocturnal habits, are the California mouse, western harvest mouse, and Botta pocket gopher. Large mammals are coyote, gray fox, and mule deer.

The coastal scrub community provides habitat for some of the animals previously mentioned as well as several notable additions. The diverse and dense flora of the scrub community attracts many birds, such as Anna's hummingbird, western kingbird, ash-throated flycatcher, black phoebe, and lazuli bunting. Reptilian fauna include many of the lizards and snakes previously mentioned and others -- the western skink, San Diego horned lizard, silvery legless lizard, San Diego ringneck snake, and California glossy snake. Common mammals are the brush rabbit, California pocket mouse, and deer mouse.

The coastal strand (the intertidal beach and adjacent sandy areas at the state beach and state reserve) provides habitat for shorebirds which feed mainly on beach-dwelling invertebrates. Birds commonly seen along the shore include killdeer, western gull, semi-palmated plover, black-bellied plover, long-billed curlew, willet, and western sandpiper. The coastal strand habitat at the mouth of Los Penasquitos Creek was historically used as a nesting site by the snowy plover and California least tern. However, construction of the Coast Highway and recreational use have made this area unsuitable for the snowy plover. The California least tern still nests in small numbers in the general vicinity. Reptile and mammal use of the coastal strand is limited because of sparse cover. However, the silvery legless lizard survives here by burrowing into the sand. Raccoon, striped skunk and, to a lesser extent, the long-tailed weasel, forage in this area.

Terrestrial habitats in Torrey Pines State Reserve and State Beach are somewhat similar to what they were before Mexican and European settlement. A notable exception is the loss of much coastal strand habitat to highway construction and recreational use. In the Extension area, the reduction in the number of native predators, such as coyote and bobcat, has no doubt been more than compensated by the introduction of domestic cats and dogs.

Wetlands Habitats: The most severe impact on the units' pristine fauna has occurred in the wetlands ecosystem, the most complex and dynamic of the ecosystems at Torrey Pines. The wetlands include the lagoon, saltwater marsh, salt and mud flats, freshwater marsh, and willow riparian communities. The diversity of life and numbers of animals associated with the lagoon and wetlands is probably greater than that of all of the other habitats at Torrey Pines. When regular tidal exchange is maintained, invetebrates of the tidelands, fishes of the lagoon, and the marsh vegetation form a highly productive base for a complex food-web of plants and animals relying on other plants and animals for sustenance. Invertebrates such as marine worms, mussels, and clams feed on organic material in the water and bottom substrate of the tidelands. Other invertebrates, such as insects, feed on living vegetation and each other. All of these organisms, in turn, provide food for adult and juvenile fishes which reside in the lagoon for all or part of their lives.

More than 21 species of fish have been recorded in the lagoon. Some of the more common are bay topsmelt, killifish, mullet, and opaleye perch. The lagoon waters are an important nursery ground for many other species such as California halibut and diamond turbot. Without adequate tidal flushing, this part of the food chain is lost.

Tideland invertebrates and plants and lagoon fishes support a wide variety of resident and migratory birds. The estuary is one of the relatively few wetlands remaining on the coastal migratory route used by millions of waterfowl, shorebirds, and other water-associated species. Over 68 species of water-associated birds are known to frequent the Los Penasquitos Lagoon and wetlands. Waterfowl and shorebird populations are greatest between September and April, with peak daily counts of 1,700 birds in October.

The list of water-associated birds includes waterfowl such as pintail, shoveler, green-winged and cinnamon teal, scaup, black brant, and ruddy duck. Among the more common shorebirds are plover, willet, dowitcher, avocet, black-necked stilt, and sandpipers. Other birds of the lagoon and wetlands are great blue heron, black-crowned night heron, Caspian and elegent terns, egrets, grebes, loon, red-winged blackbird, and marsh hawk.

The wetlands also provide important habitat for three state-listed endangered birds: the light-footed clapper rail, the Belding's savannah sparrow, and the California least tern. The rail and sparrow are dependent on the salt marsh's pickleweed vegetation and freely flushing tidal channels. The tern nests on the barren sand bars and nontidal flats and forages for small fish for its young in the lagoon and nearshore waters. The wetlands also provide roosting and foraging habitat for the endangered California brown pelican and endangered American peregrine falcon.

The wetlands and upland interface provide habitat for about 20 species of mammals. Although many of these species reside in the uplands, they spend considerable time in the wetlands margin. Conspicuous species such as mule deer, raccoon, bobcat, skunk, and rabbit forage regularly in the salt and brackish water marsh areas, particularly during the dry season.

Marine Life

Marine life is an important part of the recreational experience of visitors to this portion of the coastline. The nearshore waters, although not technically under the jurisdiction of the department, provide opportunities for viewing many marine mammals, as well as for sport fishing.

The California gray whale is the most popular mammal seen from shore as it migrates to and from its breeding grounds in the lagoons of Baja California. The best time to see these marine mammals is from December to February. The Pacific bottle-nosed porpoise and harbor seal are other marine mammals seen from the state beach and state reserve, often within the surf zone. Other mammals occasionally seen include sperm whale, beaked whale, pilot whale, killer whale, and the California sea lion.

One of the most interesting marine fishes occurring along the Torrey Pines coastline is the grunion. Grunion spawn on the intertidal beach at high tide two to four nights after the new and full moon in spring and summer. This event attracts both curious visitors and sport fishing enthusiasts. Other nearshore fishes common to the area are corbina, barred surfperch, walleye surfperch, yellowfin and spotfin croaker, shovelnose guitarfish, leopard shark, and round stingray.

The invertebrate fauna along the coastline of Torrey Pines State Beach is typical of sandy beaches. Many invertebrates can be found in debris cast up along the shoreline at high tide. This potpourri of aquatic debris provides habitat for seaweed flies, kelp flies, and sand fleas. Sand crabs, bean clam, and pismo clam also occur in the sand and surf zone.

Lagoon and Wetlands Ecology

Coastal lagoon and wetlands habitat, such as those at Torrey Pines State Reserve and Los Penasquitos Marsh Natural Preserve, are highly valued and seriously threatened natural resources. More than 60 percent of the tidal wetlands of California have been destroyed in the last 100 years, including 90 percent of the original coastal wetlands in San Diego County.

The Los Penasquitos Lagoon and wetlands ecosystem includes the tidal lagoon, saltwater marsh, salt and mud flats, freshwater marsh, and willow riparian community. This system is regulated by complex interactions of abiotic (nonliving) and biotic (living) features. A thorough understanding of these interactions and the impact that modern man has had on the system is needed in order to manage this area for the restoration and perpetuation of its important natural values. This section briefly describes some of the basic characteristics inherent to the ecosystem and some of the management problems.

Soledad Valley and Los Penasquitos Lagoon have been extremely dynamic over long-term geologic time, as well as from season to season and year to year. About a half million years ago, the valley was several hundred feet below sea level. About 18,000 years ago, the sea level had fallen to about 400 feet below the present level. Between 18,000 and 5,000 years ago, the sea level gradually rose to about its present level. Physical alteration of Soledad Valley over the last 5,000 years has mainly resulted from the accretion and erosion of sediments in the watershed. The magnitude of these changes has

been much greater in the last 100 years than in the entire previous 5,000-year span due to human modifications of the uplands and the resultant increase in the sedimentation rate in the lower valley and lagoon. These changes have resulted in the accelerated filling in of the lagoon and wetlands.

The composition and distribution of the myriad lifeforms associated with Los Penasquitos Lagoon and wetlands are regulated largely by the interaction of tidal circulation in the lagoon and freshwater inflow from the upper watershed. The interaction of salt and fresh water in the lagoon and wetlands makes the ecosystem highly productive. The key to this productivity is the cycling of nutrients through tidal circulation and periodic freshwater flushing. Restriction of this cycling through accelerated sedimentation of the tidal flats and channels and the blockage of the lagoon's tidal inlet can result in a complete shift of plant and animal composition and a significant loss of diversity.

The sedimentation rate in the wetlands has increased over pristine conditions as a result of activities dating back to the time when the upper watershed was heavily grazed. Residential and commercial development in the watershed over the last 50 years, and especially over the last 10, has caused the most significant increase in uplands erosion and downstream sedimentation. Recent attempts have been made to reduce sedimentation by requiring major developers to practice soil conservation procedures at construction sites and to establish sediment traps in the downstream drainage. However, during major storms small sediment traps can be ineffective, particularly if not regularly maintained. The North City West community development planned over the next 10 to 20 years in the Los Penasquitos watershed poses an even greater potential sedimentation threat to the estuary unless stringent regulations and other protective measures are implemented.

There is strong evidence that the lagoon and wetlands were subject to relatively regular tidal exchange during historic times. However, landform manipulations over the last 70 years have altered the system, severely impeding the vital tidelands flushing by blocking the lagoon channel. This blockage occurs naturally as the result of coastal sand forming sand bars at the mouth of the lagoon channel. Under pristine conditions, sand bars did not regularly block the lagoon outlet for long durations due to a large tidal prism (i.e., the exchange of tidal waters between the lagoon and ocean). Under the historic water regime, the incoming tide would fill the lagoon and tidal wetlands, and the outgoing lagoon water would scour out the sands at the outlet. Periodically, major storms and subsequent runoff would contribute to this outward flushing.

The original volume of tidally exchanged water appears to have been critical to maintaining the open lagoon mouth. However, modifications over the last 50 to 70 years have reduced by more than half the volume of tidally exchanged water. These modifications include the construction of McGonigle Road along the sand spit in 1909, the construction of the Santa Fe Railroad levee which divided the wetlands in 1925, the widening and reconstruction of McGonigle Road to the present North Torrey Pines Road alignment in 1932, development of the department's north beach parking lot in the floodplain, and accelerated silting of the entire tidal area.

Several studies and recommendations have been made over the last 10 years on the problems of increased sedimentation flow, lagoon mouth closures, changes in biological diversity and species composition, and water stagnation problems in the lagoon and wetlands. All of the recommendations center on the need to reestablish reliable tidal flushing and circulation by establishing a permanent or semipermanent lagoon mouth opening. Some methods of establishing this opening were implemented on a short-term experimental basis during the mid-1960s and early 1970s.

Because lagoon mouth closure and associated flooding in Soledad Valley affect not only State Park System lands but also other public and private lands, the San Diego Association of Governments (SANDAG) had prepared under contract a Los Penasquitos Watershed Management Plan, published in June 1982. This plan describes potential mitigation measures that would minimize accelerated sedimentation rates, and also recommends investigation of procedures for maintaining an open lagoon mouth. The California Department of Parks and Recreation, SANDAG, the California Coastal Conservancy, and other interested parties are currently working on a course of action that will meet the management objectives and needs of all responsible jurisdictions.

Cultural Resources

Native American Resources

Numerous Native American cultural resource sites, ranging in age from ancient times to the European period, are present in the Torrey Pines units. They range in type from large shell middens to small sites, or activity areas, which consist of stone flakes and shells covering a small area. Thus far, 18 shell middens, six rock quarries, one bedrock mortar, one activity area, and one fire hearth site have been identified. It is certainly possible that there are other sites under the heavy vegetation that covers parts of the Torrey Pines units.

The known sites represent the periods designated Early Man, San Dieguito, La Jolla, and Yuman. Yuman culture has been identified as representative of Kumeyaay people. The Kumeyaay, called Diegueno by the Europeans, came into contact with the Europeans as the latter explored and settled the San Diego area. More specific site information may be found in the department's files.

Euroamerican Resources

Torrey Pines Lodge: Located on a promontory at the northwest end of the reserve, the lodge is bounded on the north by a deep gorge, on the east by a Torrey pine grove, on the south by a paved parking lot, and on the west by Torrey Pines Park Road. The lodge is currently used as a park headquarters and visitor center. Originally it was a restaurant and wayside stop for coast travelers.

Designed by the well-known southern California architectural firm of Requa and Jackson and constructed in 1922, the lodge appears much as it did when built. It is a long, low-profile rectangular Pueblo-style adobe brick building with rooms projecting forward at both ends of the front facade. The adobe brick is plastered over.

The front facade contains a long veranda supported by tree trunk porch posts. Low adobe walls across the facade enclose a tiled patio. Other interesting features include deep-set casement windows with heavy rough-cut lintels, a fireplace, and oversized rain spouts. The original vigas, the protruding log rafters which are a distinctive Pueblo Indian architectural feature, have been removed. Landscaped grounds west, north, and east of the lodge are enclosed by low adobe walls similar to those across the front facade. Historic photographs depict the lodge without landscaping. Copies of the lodge's original blueprints are on file with the department.

The Guy Fleming Residence: The residence is sited in a cut in the southeast side of a hill, about 200 yards north of and below Torrey Pines Lodge and east of Torrey Pines Park Road. Constructed in 1926-27 by park caretaker Guy Fleming and his father, the residence is a two-level wood frame Pueblo-style stucco building designed to be compatible with the Torrey Pines Lodge. The upper level was devoted chiefly to Guy Fleming's studio-office.

The north facade of the lower level has a heavy wood plank entrance door leading into the living room. There is no internal access to the upper level. It appears that the exterior entrance porch access to the upper level was a later addition. It is quite possible that a Pueblo-style wall ladder originally led to the upper level.

Fenestration consists principally of wood sash casement windows which contain thick wood lintel details. The plate glass windows on the upper level east facade appear to be replacements. Vigas project from the north and south facades. Guy Fleming and his father utilized the wood beams from the ruins of the first San Diego Natural History Museum. These rehewn beams span the ceilings of the major rooms in the residence. Other distinctive features still in place include the original wrought iron curtain rods and chandeliers.

Flat Rock (Indian Bathtub): Located on Torrey Pines State Beach in the middle of Flat Rock is a bathtub-shaped hole, locally referred to by some as the "Indian Bathtub." The hole, 5 feet wide and 6 feet long, is the remains of a turn-of-the-century coal mine shaft. Originally dug to a depth of 15 feet, the shaft is now filled with sand, rock, and other debris to within 9 feet of the surface. William Bloodworth, a Welsh coal miner, began this mine shaft in an unsuccessful attempt to locate a below-sea-level coal vein.

Historical Sketch

Cultural history started thousands of years ago in the Torrey Pines area with early human habitation. It was not until the latter part of the 19th century that Euroamericans had any definitive impact on Torrey Pines. However, while this Euroamerican history is interesting, it is the preservation of evidence of ancient times at Torrey Pines that is of critical importance to our understanding of human development in California.

The Torrey Pines units are unique in their area of California. While intensive land development has occurred elsewhere along the coast, Torrey Pines represents the one relatively untouched portion of coast between Orange County and Mexico. Besides flora and fauna at Torrey Pines, significant geological and cultural resources that have not felt the bite of the bulldozer can be observed and studied. For this reason, the Torrey Pines units are among the more significant in the State Park System.

This section will deal with major issues in the reconstruction of the history of Native Americans in this area, as well as with events in the Euroamerican era.

Native American Era

The presence of Early Man in southern California is a matter of controversy. Some scholars suggest only a few thousand years of human presence, whereas others assert tens of thousands of years. The earliest generally accepted culture in the Torrey Pines area is called San Dieguito, now usually considered to date from about 12,000 years before present (B.P.), or 10,000 B.C. San Dieguito sites contain "horse hoof" planes (specialized scrapers), scrapers, large choppers, large primary flakes, and small thinning and trimming flakes. These people were probably nonspecialized hunters and gatherers.

In coastal and nearby inland areas, another sequence, the La Jolla Tradition, replaces San Dieguito. La Jolla sites range in age from 9,000 to 7,500 years ago and are identified by the presence of manos and metates and a variety of both large and small projectile points. The La Jolla Tradition is additive in that new implements indicative of coastal and inland adaptations were added to the earlier tool kit by 3,000 to 2,000 years B.P.

In the San Diego area, the La Jolla Tradition was probably replaced around 2,000 years B.P. by a pre-ceramic Yuman horizon. This horizon is characterized by small pressure-flaked projectile points, manos, portable metates, Olivella beads, drilled stone ornaments, pestles, and bedrock mortars and milling surfaces. It was replaced, in turn, by a pottery-making Yuman horizon at different times in different geographic locales. This later Yuman horizon, representative of the ethnographic Kumeyaay, is identified by the addition of not only pottery, but pictographs and historic trade items during the early contact period.

The Torrey Pines units are located within the ethnographic territory of the Kumeyaay Indians, Yuman-speaking members of the Hokan language stock. These people were formerly called the Diegueno Indians, a collective name for those related bands living near the Mission of San Diego de Alcala. The name Diegueno is no longer being used to refer to these people since it is not native in origin or usage. The term Kumeyaay is native in origin and is preferred by many local Native Americans. The terms Ipai and Tipai are also used to refer to these people. These names are native in origin (meaning "people"), and reflect a northern and southern dialectic difference within the overall territory. Torrey Pines is in Ipai territory.

In prehistoric times, the Kumeyaay occupied a large territory including most of San Diego and Imperial counties and extended well into Baja California south of Ensenada, Mexico. The territory was bounded by the Cupeno and Luiseno to the north, Cahuilla to the northeast, Quechan to the east, Cocopa to the southeast, and the Paipai to the south.

The Kumeyaay were late arrivals to the region. Recent radiocarbon dates from an archeological site (SDi-5669) along the San Diego River date the earliest known Kumeyaay occupation to about A.D. 700. Exploitation of the mountain regions dramatically increased around A.D. 1400, as the large freshwater lake, Lake Cahuilla, became saline and evaporated.

The Kumeyaay were hunters and gatherers who followed a seasonal subsistence pattern focused on the scheduling of natural resources. They were divided into clans, each maintaining its own territory. Within the territory of each clan, there were summer and winter villages. Winters were spent at village sites at lower elevations from which the Kumeyaay could hunt and harvest the ripening foods of that season. Summers were spent in the mountains where acorns and pine nuts were harvested.

Kumeyaay material culture included a variety of pottery and basketry utensils which served a wide range of uses, including food gathering, preparation, and storage. Milling equipment, used to grind acorns, pine nuts, and other vegetal foods (and occasionally non-foods) is especially abundant within Kumeyaay sites. All village sites, and most of the smaller camp sites, are located adjacent to bedrock exposures containing bedrock mortars and metates. Portable milling stones are also common at Kumeyaay village sites. Projectile points are usually small arrow tips made from local materials, although obsidian is common. Obsidian, as well as Lower Colorado Buffware, indicates trade with the east.

There are slightly over a thousand Kumeyaay people today, many of them living on reservations scattered throughout San Diego County, including Mesa Grande, Santa Ysabel, Inaja, Cosmit, Capitan Grande, and Viejas. Others live in towns and cities throughout San Diego County and the west. Although most of the Kumeyaay have been assimilated into American society as educators, physicians, lawyers, and skilled laborers, others have been successful in maintaining many of the old ways that make Kumeyaay society distinctive from the society that almost destroyed it. Although many anthropologists have written of a "destroyed" culture among the Kumeyaay, the truth is that the culture of these people has adapted, evolved, and persisted to this day.

Euroamerican Era

The area of the Torrey Pines units was once part of the pueblo lands of San Diego. Located approximately 12 miles northwest of California's first mission site, San Diego de Alcala (founded 1769), the stands of unique maritime pines were unprotected and largely scientifically ignored until the latter part of the 19th century. The official San Diego public land maps drawn in 1845, 1858, and 1870 did not denote or name these pines. Although Dr. Charles C. Parry, botanist with the Mexican Boundary Survey, recognized these trees as a new and rare species of pine in 1850, nearly 50 years passed before this remarkable natural monument received municipal protection. In 1899, the City of San Diego set aside 369 acres in Pueblo Lots 1332, 1333, 1336, and 1337 as a public park, recognizing that "there is growing upon said lands certain rare and valuable trees of the variety known as Pinus torreyana" (San Diego City Clerk's Office, 1899: Ordinance #648). Today, almost a century later, Torrey Pines State Reserve contains 1,256 acres dedicated to the preservation of this unique pine.

Early European Explorations in the San Diego Area: Perspectives on the Pines -- The earliest documented sighting of the San Diego region occurred on September 28, 1542 when Spanish explorer Juan Rodriguez Cabrillo discovered and entered San Diego harbor. He named this "landlocked and very good harbor" San Miguel.

Sixty years later, on November 10, 1602, Sebastian Vizcaino sailed into the bay and renamed it San Diego de Alcala in part for his flag ship, San Diego, and, in part, because he entered the harbor two days before the saint's day.

Some 160 years after this second visit, Spanish officials attempted in earnest to secure Alta California by colonizing it. In 1769, Inspector General Don Jose de Galvez authorized several expeditions by land and sea which were to unite at San Diego.

The first objective of the united expedition, under the general command of Captain Gasper de Portola, was the founding of a presidio and mission at San Diego as a way station for the journey northward to Monterey. On July 16, 1769, Father Junipero Serra, president of the Franciscan missionaries, dedicated the first Alta California mission, San Diego de Alcala. The place selected was a "point of middling height," now known as Presidio Hill, near the site of Cosoy, an Indian village of some 30 or 40 families. The mission consisted of a chapel made of brush. (The site is located some 12 miles southeast of Torrey Pines State Reserve.)

Apparently, these early Spanish explorers were impressed by the fact that trees were not common along the southern California coast, and noted present-day Torrey Pines State Reserve as "Punta de los Arboles" or "Point of Trees." On the other hand, they were not scientifically interested in these trees and did not note them as rare or unusual.

These stands of trees were likewise ignored by the early 19th century Mexican colonists who populated the small pueblo of San Diego. Again, these unique maritime pines were scientifically overlooked by the first Americans to visit the region. They were simply noted as Soledad or "solitary" pines because they grew on the seaward slopes of both sides of the entrance to Soledad Valley.

Nineteenth-century county histories also ignored the pines in their descriptions of San Diego's resources, and as late as 1889 the site of Torrey Pines State Reserve was still popularly regarded simply as "Pine Hill." In that year, the Coast Pilot remarked on Pine Hill's importance as a landmark for passing ships, but failed to note its significance as the location of a rare species of pine:

> Pine Hill - one mile south of Del Mar and six miles northward from Point La Jolla. There is a hillock of 346 feet elevation sparsely covered with pines. As this is the only pine covered hillock for miles along this coastline, it is an important landmark to vessels that are running close along shore in foggy weather.

Bypassed and isolated, the small strip of land now known as Torrey Pines State Beach has almost no documentable history. Travelers during the Spanish and Mexican periods bypassed the area far to the east along the collection of routes known as the El Camino Real. In the mid-1820s, the Mexican government confirmed Soledad Valley as "Pueblo Lands of San Diego," and the beach became these lands' northwest boundary. In the early American period, the property became the "Public Lands of San Diego."

In 1881, after an earlier unsuccessful attempt to build a coast rail line, the California Southern Railway Company acquired a right-of-way across the easternmost portion of the wetlands and the uplands north of Soledad Valley. The labor gangs made some alterations to the landscape. The completion of the railroad affected the growth potential of the surrounding countryside but had little effect on the beachfront property, which remained under the control of San Diego.

The next few decades probably saw a slow growth in recreational use of the area (hunting, fishing, and beach activities). But these activities, while suspected, are hard to document. The construction of coast Highway 101 north from San Diego over Torrey Pines hill in 1924 probably had the most effect on use of the area. The highway made access to the beach (and other beaches north of San Diego) readily available to urban dwellers. In 1952, the City of San Diego turned over Torrey Pines Beach to the State Park System, giving the beach the unique historical reputation among southern California coastal areas of having always been in public ownership.

The Nineteenth-Century Movement to Preserve the Pines -- This rare stand of maritime pines was first scientifically recognized in the spring of 1850 by Dr. Charles C. Parry, one of several botanists accompanying the U.S.-Mexican Boundary Survey. Parry's attention had been drawn to these trees earlier that year when entomologist John Le Conte, then staying in San Diego, asked Parry what pine was growing near the beach at Soledad. A short while later, after Major William H. Emory, Boundary Survey commissioner, ordered Parry to make a geological investigation of reported coal deposits on the ocean bluff above Soledad, Parry examined the pines for the first time. Some 50 years later, in a paper read before the San Diego Society of Natural History, Parry described his experience:

> In making a section of these strata it was necessary to follow up some of the sharp ravines that here debouch on the ocean beach, and here (possibly to the neglect of strict geological duties) my attention was taken up by this singular and unique maritime pine, which, with its strong clusters of terminal leaves and its distorted branches loaded down with ponderous cones, was within easy reach of botanical clutch.

Parry named this new species in honor of his friend and colleague Dr. John Torrey, a botanist of international reputation then teaching at Princeton University.* In a June 30, 1850 letter to Torrey, Parry wrote:

> . . .I have been some 20 miles up the coast to the mouth of Soledad valley to examine a seam of Lignite which is exposed in the high bluff overlooking the beach....I here

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*Previous histories have erroneously stated that C. C. Parry was a student of John Torrey's at Columbia University. Although Parry and Torrey were both graduates of the College of Physicians and Surgeons (New York), Parry did not correspond with or meet Torrey prior to 1848 during the period Torrey was teaching at Princeton.

> found a new species of pine growing in sheltered places about the bluff. Its characters are so unique I am in hopes it may be non-descript -- . . .if new I wish it with your permission to bear the name of Pinus Torreyana (n.sp.). . .

Parry concluded the letter with an elaborate description of the pine tree, and shortly thereafter sent Torrey a single cone and bunch of leaves to be figured for the Mexican Boundary Report. This report, which elicited immense interest throughout the United States, was finally published in 1858 and 1859 in two volumes. Volume II, Part I, the "Botany of the Boundary," contained an accurate figure and description of the pine. This publication firmly established the species as Pinus torreyana, or the Torrey pine.

In 1880, 30 years after his initial discovery, C. C. Parry returned to the San Diego area with St. Louis botanist George Engelman. Together they made a more complete examination of the species, obtaining sections of a trunk over one foot in diameter to send to the Forest Commission of the Tenth United States Census.

Parry was alarmed by the fact that the pines, which grew on public land, had no protection against vandalism. Three years later, in 1883, he sent a paper to the San Diego Society of Natural History, appealing to this organization to begin taking measures to preserve these unique pines. His paper was read before the society on November 3rd at its 10th annual meeting:

> Why should not San Diego within whose corporate limits this straggling remnant of a past age finds a last lingering resting place, secure from theatened extermination this remarkable and unique Pacific Coast production so singularly confined within its boundaries, dedicating this spot of ground (utterly useless for any agricultural purpose) forever to the cause of scientific instruction and recreation...And finally why is not the San Diego Society of Natural History the suitable body to recommend such action?

As a result of this appeal, a committee of three members was appointed "to report and act upon such measures as may be deemed best for the preservation of the remnant of the Pinus Torreyana at Soledad."

Following Parry's 1883 paper, attention began to focus solidly on the Torrey pines' scientific value. On July 11, 1885 the San Diego Board of Supervisors took an initial step in preserving the pines by posting warnings in the Torrey pines area and other public places.

Several years later, the California State Board of Forestry, which had been created in 1885, assigned its botanist, J. G. Lemmon of San Bernardino, to prepare a study of Pacific Slope pines, particularly those in California.

Lemmon spent a considerable amount of time studying the Torrey pine. Devoting seven closely written pages to the species, Lemmon's 1888 report is a valuable detailed documentation of scientific interest in the species up to and

including that year. Included in this report was a letter from T. S. Brandegee, documenting his discovery earlier that same year of the same species 120 miles away on Santa Rosa Island.

Lemmon shared Parry's concern over the possible extermination of the Torrey pine. He differed from Parry, however, in recommending that the State Board of Forestry promote legislation for the species' protection.

> Young trees were noted in several localities, some just struggling above the grass and flowers. Spade holes here and there show that trees have been lately removed for cultivation; also a few stumps are seen, but generally north and south throughout the groves the trees seem to have been allowed to remain unmolested. Notwithstanding this happily untouched condition of these trees, with the influx of immigration this lovely seaside resort of Del Mar is destined to receive a large population, and then these trees will be menaced with extermination at the hands of men, unless steps are taken to protect them, as suggested in the closing paragraph of Dr. Parry's historical paper, hereafter cited; or better, they should be preserved by the State of California through the effort of proper legislation, and the State Board of Forestry is the proper party to look after the matter.

During this same period, Miss Belle Sumner Angier, a recent graduate of the University of California, became interested in the pines. She would be the individual directly responsible for their eventual protection. She first saw the trees in 1885 and began in earnest to lobby for their preservation. In a letter written to her uncle, Harold Angier, in 1925, Belle Angier vividly recalled her efforts over a 10-year period to provide protection for these trees.

In the late 1880s, she worked with Dr. Charles Sprague Sargent, director of the Arnold Arboretum at Harvard University, and Dr. William Canby, taking a census of the grove. Her letter illuminates their increasing alarm over the "raiding of the herds of cattle and the fires set by the cattlemen to improve the feed for their cattle."

By 1889, Angier and her father had decided to push for the creation of a "reserve or park." Learning that the pueblo lots on which the pines grew were all leased to cattle grazing or coal mining interests,* they made themselves into a committee of two to watch for the expiration of these leases. Ten years later, on August 10, 1899, Belle Angier succeeded in persuading the Common Council of San Diego to pass Ordinance #648 setting aside 369 acres in Pueblo Lots 1332, 1333, 1336, and 1337 as a free and public park. The

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*Around the turn of the 20th century, there was much interest in the possibility of mining coal veins along the cliffs and under the ocean in present-day Torrey Pines State Reserve. William Bloodworth's attempt to locate a below-sea-level coal vein by digging through Flat Rock is an excellent example of the zeal exhibited by eager turn-of-the-century coal seekers.

ordinance declared, in part, that "there is located and growing upon said land certain rare and valuable trees of the variety known as the 'Pinus Torreyana';" and that "it is the wish and desire of the citizens of the said City of San Diego to preserve said trees, and to have the land set apart and dedicated for the public use of a public park."

Thus, the initial Torrey Pines Park was created.

It is quite possible that during this period small groups of Native Americans gathered pine nuts in present-day Torrey Pines State Reserve. Delfina Cuero, a Kumeyaay, relates how she and her family would "gather pine nuts near the ocean...It wasn't far from Mission Valley to the place for pine nuts," which she believes was probably the present-day park.

The 20th Century Development of Torrey Pines -- In 1908, the City of San Diego hired John Nolen, Massachusetts landscape architect and consultant, to draw up a comprehensive plan for San Diego's improvement. Among Nolen's recommendations was "a great system of parks well connected by boulevards and parkways." Nolen included the fledgling Torrey Pines Park within his interconnecting park system. Unfortunately, his grand scheme was never enacted.

That same year, George Marston, an influential member of the San Diego Society of Natural History, and E. W. Scripps, head of the Scripps newspaper chain, interested Miss Ellen B. Scripps in acquiring portions of Pueblo Lots 1338 and 1339 which lay directly north of the original Torrey Pines Park. These lots contained the finest stands of Torrey pines but, unfortunately, had been privately acquired in 1870, 30 years before the park's formation.

Ellen Scripps, realizing these lots were threatened with subdivision and commercial development, purchased Pueblo Lot 1338 in June 1908. Three years later, in June 1911, she also purchased a portion of Pueblo Lot 1339. In August 1912, she acquired an additional portion of Pueblo Lot 1339. These lands included Torrey Pines Point and the valuable marsh lands of the Soledad Estuary.

Miss Scripps, who had already gained world-wide recognition as a philanthropist, became patron of a renewed movement to save the Torrey pines. In June 1921, with City Park Commission concurrence, she appointed Guy Fleming, a local horticulturist, as the custodian and naturalist for her pueblo lot purchases. About the same time, the Park Commission named Fleming caretaker of Torrey Pines Park. The entire area was designated a reservation and named Torrey Pines Reserve.

The following year, Ellen Scripps financed the construction of Torrey Pines Lodge as a gift to the City of San Diego. Designed by the San Diego firm of Requa and Jackson, the lodge was a highly successful adaptation of southwestern United States pueblo dwellings. Architectural drawings for the lodge range in date from July 17, 1922 to October 31, 1923, and document the lodge's original details.

Supervised by Guy Fleming, a crew of Indian workmen constructed the lodge. Historic photographs document the work as it progressed. Located on the cliffs overlooking the scenic Painted Gorge, the lodge was opened to the public in February 1923. A January 1, 1923 San Diego Union article noted that

the lodge would provide dining facilities to the public in an ambience of Hopi culture. "The lodge's furnishings will be of Hopi Indian design. Indian blankets, rugs, and pottery will be used for drapery and decoration. Pottery, rugs, baskets, blankets, and other products of Indian artisans will be offered for sale, as well as baskets made from the needles of the Torrey pine."*

Interest in expanding Torrey Pines accelerated, and on July 14, 1924, the San Diego Park Commission prevailed upon the City Council to add other pueblo lots to the Torrey Pines Reserve. That expansion included "that part of the Torrey Pines estuary lying west of the Santa Fe railway...as a water fowl refuge; also certain lands to the south of the original park grant, including all the cliffs and canyons fronting to the sea to a point about one half mile south of the Indian Spring Canyon."

Two years later, in 1926, Guy Fleming married Margaret Doubleday Eddy, and the couple decided to live at Torrey Pines. They occupied a tent house on the property while Fleming and his father designed and built a residence located several hundred yards below Torrey Pines Lodge. Designed to complement the Pueblo-style lodge, the house was finished in March 1927. By the terms of Ellen Scripps' will, the Flemings were given life tenancy in the property.

Torrey Pines Reserve suffered several intrusions during the next 15 years. Between 1929 and 1930, controversy swirled around the city's proposal to construct an additional cliff road through Torrey Pines. Finally, in June 1930, a compromise was reached between the San Diego Park Commission and the Common Council, the commissioners agreeing to a road which would skirt the east side of Torrey Pines in lieu of the cliff route along the ocean. This hotly debated new route through the pines is present-day North Torrey Pines Road.

The park experienced another major intrusion in 1940 when San Diego's City Council agreed to lease 710 acres of pueblo lands on Torrey Pines mesa to the Army to construct Camp Callan, where 7,500 draftees eventually received basic training. In connection with the lease, the City Council granted an occupational permit for the lower part of Torrey Pines, where the U.S. Marine Corps set up anti-aircraft guns for target practice. The public was not excluded from the park but had to submit to military rules and fire prevention regulations. Today, jeep trails in the southern end of the park remain as evidence of the Army's activities at Torrey Pines over 40 years ago.

In 1950, Guy Fleming and 20 other prominent San Diego citizens organized and incorporated the Torrey Pines Association, an organization "dedicated to the perpetual preservation of the mainland habitat of the rare Torrey Pines." Ellen Scripps, upon her death in 1932, had bequeathed her holdings to the City of San Diego "to be held in perpetuity as a public park," but no provisions had been made for guarding and preserving these holdings.

Through the efforts of the Torrey Pines Association, a special city election was held on June 5, 1956 "to convey portions of Torrey Pines Park, not to

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*An early photograph of the lodge's dining room depicts an eclectic arrangement of chintz curtains, hanging strings of garlic and chilis, lampshades made of Torrey pine needles, and a jukebox.

exceed 1,000 acres, to the State of California for park purposes." The proposition was passed by well over a two-thirds majority vote. On May 7, 1959, formal title was vested in the State of California.

As of 1964, the state reserve consisted of 877 acres and approximately 3,000 Torrey pine trees. Between 1964 and 1970, the Citizens Committee for Extension of Torrey Pines Reserve made a concerted effort to have additional property added to the reserve. Their efforts paid off in the summer of 1970 when the State Legislature confirmed the allocation of $900,000 in park bonds for the appropriation of the reserve extension and released the money for the purchase of the first parcel of land. With the incorporation of the Extension, located about one mile northeast of the main reserve across the estuary, Torrey Pines State Reserve now encompasses 1,256 acres devoted to the preservation of the Torrey pine.

Esthetic Resources

Torrey Pines State Reserve and State Beach are of outstanding scenic quality. Factors contributing to this quality include the ocean view, the colorful canyon cliffs and coastal bluffs artistically carved by natural erosion, the pines and their interesting growth forms, an annual flower display which carpets the reserve in the full color spectrum, and the lagoon with its large variety of bird life.

Negative features which impair the visual quality of the reserve and beach include road and railroad alignments in prominent locations, overhead power lines, adjacent houses and condominiums, carvings in the sandstone walls in the scenic canyons, the gabions in the Extension, and the north beach parking lot.

Natural and man-made sounds provide the auditory backdrop of the units. The roar of the ocean drifting up into the canyons fades into a peaceful atmosphere on the upper terrace of the reserve. However, the peace is broken repeatedly during the day by Navy trainer jets from Miramar Naval Station whose flight pattern is routed over the reserve.

Recreation Resources

The reserve and beach offer many forms of recreation. The beach is used primarily for swimming, sunbathing, beachcombing, fishing, walking, and jogging. The lagoon offers birdwatching, photography, swimming, sunbathing, and boating. The rest of the reserve is used for hiking, nature study, photography, drawing, jogging, and bicycling. However, the Extension is often used as a school shortcut and dog run.

Resource Policy Formulation

Classification

The classification of a State Park System unit forms the foundation on which all management and development policies are based. Classification statutes contained in Title 14 of the Public Resources Code specify broad management objectives and improvements appropriate in a state reserve, state beach, and natural preserve.

Background

Lands in Torrey Pines State Reserve have been referred to by many names over the years. In 1899, 369 acres were dedicated as a public park by city ordinance. In 1921, the area, which was then partially city and privately owned, was designated a reservation and named Torrey Pines Reserve. In 1959, title to a majority of the lands was vested in the State of California. The state lands were referred to as Torrey Pines State Park, embracing much of the present beach and reserve areas. It was during this time that the area containing Torrey pine trees was termed a scientific reserve. In the mid-1960s, the present State Park System classification system was established and the entire Torrey Pines unit was reclassified to Torrey Pines State Reserve. In 1970, two sub-units within the reserve were reclassified as Los Penasquitos Marsh Natural Preserve and Torrey Pines Natural Preserve (renamed in March 1983 the Ellen Browning Scripps Natural Preserve). The beach portion of the state reserve and the present beach parking area inland of North Torrey Pines Road were reclassified in 1971 as Torrey Pines State Beach. Lands north of the lagoon that were acquired beginning in the early 1970s were administratively added to Torrey Pines State Reserve.

Statutory Direction

Public Resources Code Article 1.7 provides fundamental direction for management of units classified as state reserve, natural preserve, and state beach. It is excerpted below.

> State Reserves. . .The purpose of a state reserve is to preserve its native ecological associations, unique faunal and floral characteristics, geologic features, and scenic qualities in a condition of undisturbed integrity. Resource manipulations shall be restricted to the minimum required to negate the deleterious influences of man.
>
> Improvements undertaken shall be for the purpose of making the area available, on a day-use basis, for public enjoyment and education in a manner consistent with the preservation of their natural features. Living and non-living resources contained within state reserves shall not be disturbed or removed for other than scientific or management purposes.
>
> Natural Preserves. . .The purpose of natural preserves shall be to preserve such features as rare or endangered plant and animal species and their supporting ecosystems, representative examples of plant or animal communities existing in California prior to the impact of civilization, geological features illustrative of geologic processes, significant fossil occurrences or geological features of cultural or economic interest, or topographic features, illustrative of representative or unique biographical patterns. Areas set aside as natural preserves shall be of sufficient size to allow, where possible, the natural dynamics of ecological interaction to continue without

interference, and to provide, in all cases, a practicable management unit. Habitat manipulation shall be permitted only in those areas found by scientific analysis to require manipulation to preserve the species or associations which constitute the basis for the establishment of the natural preserve.

State Beaches (Under State Recreation Units). . .In the planning of improvements to be undertaken within state recreation units (including state beaches), consideration shall be given to compatibility of design with the surrounding scenic and environmental characteristics.

Boundary Realignment Proposal

Expansion of Los Penasquitos Marsh Natural Preserve: It is proposed that the Los Penasquitos Marsh Natural Preserve be expanded to include nearly all State Park System lands and waterways in the floodplain below the 20-foot (6-meter) elevation contour and seaward of the railroad right-of-way (see Sheet 6). About 110 acres (45 hectares) would be added to the existing preserve. The sewage pumping station and service road corridor would not be included in the proposed addition.

This proposal requires that some portions of the existing state reserve be reclassified and added to Los Penasquitos Marsh Natural Preserve. The proposal is justified on the grounds that the lagoon water channels, salt and freshwater marsh, salt and mud flats, and riparian margins are all interrelated components of a complex wetland ecosystem, which must be thought of and managed as a whole.

Declarations of Purpose

A declaration of purpose (or statement of purpose) describes the purpose of the unit and identifies prime resources, long-range management objectives, and the relationship between the unit's resources and recreational uses. A declaration of purpose for the state reserve was approved by the State Park and Recreation Commission in 1964. Statements of purpose for the state beach and natural preserve were written in the mid-1960s but were never taken before the commission for approval.

Several changes in the declarations and statements are proposed to clarify the department's management goals and objectives. The original and proposed declarations and statements of purpose for the units and subunits are as follows:

Torrey Pines State Reserve

Original: The purpose of Torrey Pines State Reserve is to make available to the people forever, for their enlightenment, inspiration, and enjoyment, the only natural stand of rare Torrey pine on the California mainland, together with all related scenic, scientific, historical, and appropriate recreational resources inherent to the area.

The function of the Division of Beaches and Parks at Torrey Pines State Reserve is to prescribe and execute a program of management and interpretation consistent with the character and fragility of the resource values and directed toward their perpetuation, in accordance with the declared purpose of the unit.

Proposed: The purpose of Torrey Pines State Reserve is to protect and perpetuate the area's prime resource values for the enlightenment, inspiration, and enjoyment of present and future generations. Prime resource values in the reserve in descending order of significance are: 1) the Torrey pine and its native plant community, 2) Los Penasquitos wetlands, 3) state and federally listed rare, endangered, and threatened plants and animals, 4) evidence of Native American and possibly Early Man occupation, 5) plants and animals designated by the department as species of special interest, and 6) exposed geologic sequences. Secondary values include recreational opportunities which directly relate to, and do not detract from, the primary resource values.

The long-range objectives of the department shall be to manage the prime resource values in the unit in such a manner that the ecological processes function as closely as feasible to what they would have without modern mankind's disturbance. Management exceptions to this shall be made only upon a special determination by the department, such as site protection of Native American artifacts which would normally be lost through natural erosion processes.

Appropriate visitor use of the unit includes only those activities that allow for and encourage enjoyment of the prime resource values and do not detract from or degrade from these features, so that future generations shall have the same experiences and opportunities.

Torrey Pines Natural Preserve
(now the Ellen Browning Scripps Natural Preserve)

Original: Within Torrey Pines State Reserve there is established the Torrey Pines Natural Preserve, embracing the natural forest of Torrey pines which exist south of Los Penasquitos Marsh on the uplands between the marsh and the ocean. The purpose of the natural preserve is to provide the fullest measure of protection and perpetuation by management that can be achieved in relation to this only significant Torrey pine forest in the world. Only those public uses which can be accommodated without the slightest shadow of threat to the ecological integrity of the Torrey pines will be permitted. Only those public uses which are necessary to enable the people to see, understand, and enjoy the Torrey pines will be appropriate. The management undertaking for Torrey Pines Natural Preserve will be aimed specifically and energetically at the perpetuation of the Torrey pines in as nearly a pristine ecological situation as is possible.

Proposed: The purpose of Ellen Browning Scripps Natural Preserve is to protect and perpetuate the area's prime resource values. These values are: 1) the Torrey pine and its supportive native plant community, 2) state and federally listed rare, endangered, and threatened plants and animals, 3) evidence of Native American occupation, 4) plants and animals designated by the department as species of special interest, and 5) exposed geologic sequences.

The long-range objectives of the department shall be to manage the prime resource values in such a manner that the ecological processes function as closely as feasible to what they would have without modern mankind's influence. This management may involve purposeful resource manipulation to negate or minimize past or future impact by people.

Appropriate visitor use of the unit includes only those activities that allow for and encourage enjoyment of the prime resource values and do not detract from or degrade from these features, so that future generations shall have the same experiences and opportunities.

Los Penasquitos Marsh Natural Preserve

Original: Los Penasquitos Marsh Natural Preserve, within Torrey Pines State Reserve, is established to provide for the protection for public enjoyment, in an essentially natural condition, of the marsh and other wetlands values which exist between the north beach parking area on the north, the railroad right-of-way on the east, the 20-foot topographic contour on the south, and North Torrey Pines Road on the west. Public uses will be restricted to those

which can be accommodated on the perimeters of the marsh and wetlands area without impairing the values of the area. The management undertaking for the Los Penasquitos Marsh will attempt to establish the water cycle in a regime which as nearly as possible approaches that which existed in pristine times.

An effort will be made to acquire all wetlands in lower Soledad Valley not now a part of the state reserve.

Proposed: Los Penasquitos Marsh Natural Preserve, within Torrey Pines State Reserve, is established to provide for the protection and perpetuation of natural resource values associated with the lagoon and wetlands. Primary values, in descending order of significance, are: 1) the native estuarine plant and animal communities, 2) state and federally listed rare, endangered, and threatened plants and animals, 3) freshwater-riparian plant and animal communities, and 4) plants and animals designated by the department as of special interest. Secondary values include recreational opportunities which directly relate to and do not detract from the primary resource values.

The principal long-range objective of management of the preserve shall be to restore and maintain the estuarine water cycle in a regime which approaches that which existed prior to 1925, before major modifications were made. This may require purposeful modification to the hydrologic system. It is acknowledged that over geologic time, sea inlets were silted in to form marshes and eventually terrestrial valleys. However, this process at Los Penasquitos has been rapidly accelerated over the last 60 years by human activities.

Torrey Pines State Beach

Original: The purpose of Torrey Pines State Beach is to make possible the public use and enjoyment of the Pacific Ocean sandy beaches in the vicinity of Los Penasquitos Marsh. Limited uplands within the state beach may be developed to provide supporting recreational surfaces for the people using the ocean beach. The installation of recreational facilities may not impair the extent or quality of the sandy ocean beach which is the prime unit resource.

Proposed: The purpose of Torrey Pines State Beach is to make possible the public use and enjoyment of the Pacific Ocean and sandy coastline beach. The primary values are the coastal sandy beach, adjacent ocean waters, and associated recreational values. Recreation use of these primary values shall not be allowed to adversely impact the primary resource values of adjacent Torrey Pines State Reserve and its natural preserves, which are recognized as

of greater statewide significance. Recreational facilities and uses may be allowed at the state beach, only if they do not impair the extent or quality of the sandy shoreline beach and adjacent prime values of the reserve and preserves.

Zone of Primary Interest

A zone of primary interest is an area outside unit boundaries in which uses could adversely affect unit resources.

The department has an interest in present and future land, air, and water uses in the area that could harm the prime resource values of Torrey Pines State Reserve (including the two natural preserves) and Torrey Pines State Beach. In accepting responsibility for protecting and perpetuating these values (foremost among them the Torrey pine plant community and the lagoon-estuarine ecosystem), the department must be active in regional land use planning.

The primary zone in which land use could have an adverse impact on the stated purposes of the State Park System units and their management objectives encompasses the entire Los Penasquitos watershed and small coastal terrace watersheds (see Figure 1).

Resource Management Policies

Resource management in the State Park System is governed by laws contained in the Public Resources Code and the California Administrative Code, and is further guided by directives approved by the department director and by policies approved by the State Park and Recreation Commission. General policies related to unit classification and declarations of purpose have been addressed in previous sections.

Specific departmental Resource Management Directives amplify the legal codes and provide clearer management guidelines. Directives that are especially pertinent to existing or potential resource situations in these units are:

General

#3 Inventory - Update for New Lands
#6 State Reserves - Development and Resource Manipulation
#9 Natural Preserves - Standards
#18 State Beaches - Uses of Sandy Littoral
#19 State Beaches - Resource Protection
#31 Implementation of Resource Element
#32 Resource Management Program - Needs
#47 Control of Natural Hazards
#74 State Reserves - Recreational Facilities

Natural Resources

#33 Exotic Plants - Landscaping
#34 Exotic Plants - Elimination
#37 Soils - Conservation and Control Measures

#39 Geologic Features - Defacement
#43 Protection of Water Features
#47 Control of Natural Hazards
#49 Management of Vector Control

Cultural Resources

#52 Management of Native American Resources
#54 Historic Resources - Identification and Preservation
#58 Protection from Degradation
#59 Protection from Underground Work
#60 Flow of History
#63 Management Programs
#64 Handling of Historic Features
#65 Historic Structures - Authenticity
#66 Historic Structures - Use of Original Construction Methods
#67 Historic Structures - Modern Utilities
#68 Historic Structures - Business Authenticity
#69 Archeological Resources - Relationship to State Park System
#70 Archeological Resources - Recording and Protection
#72 Archeological Research - Authorization and Standards
#76 Adaptive Use

The State Park and Recreation Commission has adopted several policies that apply to the management of these units. Of specific import are Policy No. 2 (Integrity of State Park System Lands), Policy No. 5 (Management of State Reserves), Policy No. 16 (Conflicting Recreational Use), and Policy No. 40 (Natural Preserves). Other commission policies are, of course, generally applicable.

In addition to systemwide policies, specific policies that pertain to existing or potential resource issues or problems have been formulated for these units and are given below by major subject.

General Policies for All Units

Natural Resources

Hydrology

Conservation of Fluvial Material and Replenishment of Beach Sand -- Beach sand not only is a primary recreational resource value, but also plays a major role in protecting the coastal bluff in the reserve from accelerated erosion from wave action. Along the San Diego Coast, replenishment of littoral sand, which is naturally lost to submarine canyons, has generally decreased over the last 50 years due to the interruption of normal sand movement out of coastal creeks and rivers by dams, harbors, high surf, and heavy storms. Periodic flushing of fluvial sand and sediment down the Los Penasquitos watershed and into the Los Penasquitos estuary may continue to replenish locally significant amounts of beach sand, particularly in light of present and anticipated accelerated erosion in the watershed. Although this erosion should be minimized as much as possible, any subsequent sand sediment should be considered an important resource for beach sand replenishment.

The following policy is adapted from the Resources Agency's Policy for Shoreline Erosion Protection, adopted in September 1978:

> Policy: Sand and similar sediment in active alluvial fans and other storage areas in the Los Penasquitos watershed is a valuable resource that shall be considered for replenishment of littoral beach sand. Material excavated from sediment basins and other depositional storage areas in the watershed, and which is of suitable quantity, size, and chemical constituency to meet the management objectives of the state beach and state reserve, shall be considered for disposal into the littoral zone just below the Los Penasquitos Lagoon opening. When beach replenishment is not needed or appropriate at the time of necessary dredging, the sand should be deposited for eventual use for beach replenishment, provided that suitable locations for deposit are available and that steps are taken at them to protect significant natural resources and their public use.

Geology

Control of Littoral Sand Movement -- Attempts to maintain an open lagoon mouth by controlling littoral sand movement may result in the consideration of proposals calling for structural control measures.

> Policy: Construction of groins, jetties, or other artificial structures at the mouth of Los Penasquitos Creek to maintain an open lagoon mouth shall not be permitted unless it is demonstrated that such construction will not adversely affect downcoast littoral sand movement, beach recreation, or scenic resources.

Geologic Hazards - Public Notice -- Geologic hazards at Torrey Pines State Reserve and State Beach include landslides, blockfalls, and less frequent events of liquefaction and tsunamis. Landslides, blockfalls, tsunamis, and liquefaction can be triggered by earthquakes, which at present cannot be accurately predicted or controlled. Landslides and blockfalls can also be touched off by ocean wave undercutting, severe storms which saturate permeable formations, and human activities. Areas in the units that are prone to geologic hazards are shown on Map 3.

> Policy: Areas subject to potential landslides or blockfalls shall be appropriately signed to notify the public of potential hazards.

Geologic Hazards - Monitoring -- Historic blockfalls, landslides, and pothole development are evidence of active geological processes. Recognition of these processes and the tracing of their development will aid in proper resource management and visitor protection.

> Policy: A monitoring program shall be established to document development and progress of: 1) blockfalls on and adjacent to the beach, 2) landslides, 3) gully development in the main drainage of the Extension and other key localities to be identified later, 4) potholes on the bluff top, 5) pavement cracks due to settling collapse of pipes, undercutting, or faults, and 6) beach elevation and width. The monitoring program

shall be conducted by field staff, under the supervision of the Region and the Resource Protection Division. The program should involve the comparison of historical and recently flown aerial photos, ground photos with explanations, and the installation of permanent monuments, if necessary. The program should be coordinated with the neighboring city park and beach, Scripps Institution of Oceanography, San Diego State University, and other appropriate research institutions. Special plans should be formulated well in advance of storm events to document conditions at key locations during major storms.

Bluff Setbacks -- That seacliff retreat is an ongoing process should be considered when designing and placing facilities near coastal bluff edges. To provide for protection of investments in facilities and to assure public safety, it is a sound principle to establish setback zones -- both zones of exclusion, where facility development is precluded, and zones of demonstration, where facility development is allowed if stability and geological suitability can be demonstrated.

Policy: A zone of exclusion shall be established, to include the base, face, and top of all bluffs and cliffs. This zone extends inland to the intersection of the ground surface with a plane inclined 45 degrees from the horizontal from the toe of the cliff. No new structures shall be constructed within this zone unless they are either moveable or expendable. Existing facilities may remain in use subject to regular inspections by field personnel in coordination with the department's geologist. A zone of demonstration shall be established within the unit to extend inland from the zone of exclusion to the intersection of the ground surface with a plane inclined 20 degrees from the horizontal from the toe of the cliff (Figure 2).

Seismicity -- Although several faults have been mapped in the reserve and beach, none have displayed post-Eocene movement. The nearest fault with Quaternary movement is the Rose Canyon fault zone, about 2 miles offshore. However, seismic events far to the east have resulted in blockfalls along the beach.

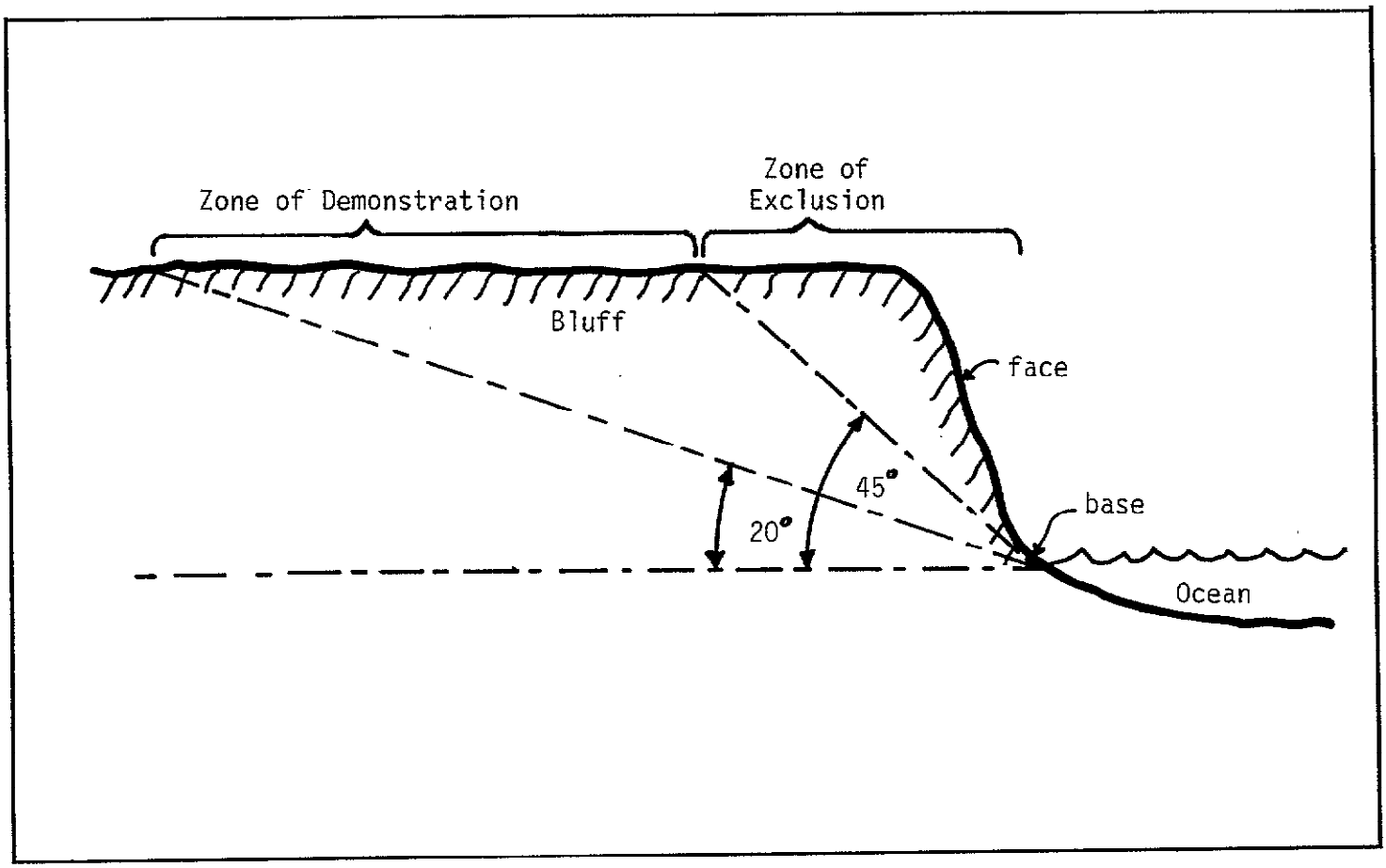
Policy: New buildings constructed in the state reserve and state beach shall be designed to withstand a Richter magnitude 6.5 earthquake, with repeatable ground acceleration of 0.33 gravity (g). The expected maximum peak horizontal bedrock acceleration for a seismic event of magnitude 6.5 would be approximately 0.5 g.

Paleontological Resources -- The fossil record contained in the rocks at Torrey Pines State Reserve is a valuable, irreplaceable natural resource. Past climatic conditions and plant and animal assemblages can provide us with clues about how the present-day scene evolved.

Policy: Permits for scientific collecting of paleontological resources shall be stringently limited, with approval required from the Resource Protection Division, to ensure coordination and protection of rare resources.

Figure 2

Zones of Demonstration and Exclusion



Plant Life

Wildfire Prevention and Suppression -- The wildfire hazard is high throughout southern California, particularly in brushy environments. Scrub and chaparral vegetation in the reserve and adjacent communities create conditions that need to be carefully managed. A plan is necessary for the protection of visitors, park resources, and adjacent property.

> Policy: A wildfire protection plan addressing wildfire prevention and suppression shall be developed in cooperation with the responsible wildfire control agencies. The plan shall identify or describe the following: equipment and facilities needed to fight wildfires and to protect the public during fires; the location and maintenance status of fuelbreaks, firebreaks, and fire access roads; procedures for visitor evacuation and safety; and fire suppression methods and strategies. This plan shall be periodically reviewed and updated.
>
> Fire suppression methods used in the units shall be those which cause the least resource damage commensurate with effective control.
>
> Post-wildfire revegetation or rehabilitation efforts shall be carried out only upon program approval by the Resource Protection Division and Region Headquarters.

Landscaping -- The planting of vegetation to restore disturbed areas or screen facilities can have a major impact not only on the visual integrity of the natural scene but also on the genetic integrity of indigenous plant populations. Maintaining this genetic integrity is one of the principal management objectives in state reserves.

> Policy: Landscaping in developed areas of the state beach shall be done with species native to the area to the extent feasible. In order to maintain genetic integrity, native plants used for landscaping or revegetation shall be propagated only from stock on site. All efforts shall be made to use species that do not require a permanent irrigation system.
>
> Landscaping in developed areas of the state reserve shall include only species indigenous to the site. The Guy Fleming house and the Torrey Pines Lodge shall be landscaped only with plants native to the area, and all efforts shall be made to remove exotic (alien) plant species now present. Landscaping around the other residences shall not include species capable of naturalizing. All landscape plans must be approved by the Resource Protection Division and Region Headquarters.

Rare and Endangered Plants -- Fourteen plant species native to Torrey Pines State Reserve are listed by the California Native Plant Society as rare or endangered. (One of them, *Dudleya brevifolia*, is also listed by the State Department of Fish and Game as endangered.) The current distribution of these species in the unit is known; however, little information is available on their ecology.

The state-listed *Dudleya brevifolia* is only found on the Lindavista Formation. In the past, its habitat has been used as a parking area in the reserve.

The only rare plant location at the state beach is threatened by possible development. Lotus nuttallianus is found in the protected zone of the median strip of the dirt beach parking lot. This parking area is proposed to be paved.

Policy: All rare and endangered plants in the units shall be protected and managed for their perpetuation. The habitats of these sensitive plants shall be enhanced where possible.

Each rare and endangered plant in the units shall be studied for the purpose of developing management criteria. Management plans shall be prepared for those species requiring special management and protection.

The known locations and potential habitat for Dudleya brevifolia shall receive no more than the lowest intensity use. Population monitoring shall be done annually to detect any adverse factors affecting the plants. Dudleya plants may not be noticed above ground seasonally or during some years when climatic conditions cause their dormancy. Documentation of these events is also important.

Any development in the beach parking area shall involve on- or off-site mitigation for the perpetuation of Lotus nuttallianus. Mitigation measures shall be developed under the direction of the Resource Protection Division.

Cultural Resources

Euroamerican

Interpretation of Flow of History -- There are several historic features worthy of interpretation: a portion of the old Pacific Coast Highway in the reserve, a coal mining shaft at Flat Rock at the base of the bluffs, and evidence of U.S. military activities during World War II. Not much information is currently provided to visitors about the historic road or military activities.

Policy: It is the policy of the department to advise visitors of the flow of history in State Park System units. Thus, in these units, information about the total flow of history, including these historic features, should be made available to the public. Current interpretation of some of these features should continue and perhaps be expanded. The portion of the coast highway is an excellent example of early vehicular transportation systems and shall be preserved as a cultural resource in Torrey Pines State Reserve.

Policy: Any additional archeological, anthropological, or historical resources relating to these units that may be discovered by department employees should be reported to the Resource Protection Division, which is responsible for maintaining a statewide inventory of the cultural resources of the State Park System. Any discoveries of physical features should be protected in situ if at all possible until they can be professionally described and evaluated.

Esthetic Resources

Natural Settings: The esthetic value of Torrey Pines State Reserve and State Beach is derived from its naturalness.

> Policy: The department shall provide a setting within Torrey Pines State Reserve and State Beach that, as much as possible, represents natural conditions, with human influence and features minimized.

Noise: The daily procession of jets passing over the units destroys the peaceful atmosphere of the state reserve and state beach, altering the natural experience gained by visitors.

> Policy: The department shall coordinate with Miramar Naval Station authorities to lessen the impact of jet noise on the esthetic and natural resources of Torrey Pines State Reserve and State Beach.

Recreation Resources

General: The classifications of state reserve and state beach designate two very different ranges of recreational use. However, the proximity of these units results in some overlap.

> Policy: Recreational activities that are allowed shall be based on the enjoyment of each unit's prime resource value. When locating and designing any new facility, conflicting recreational uses within and between the units shall be avoided.
>
> Recreational facilities that do not directly enhance the public's enjoyment of the natural, cultural, scenic, and scientific values of the reserve, or which are attractions in themselves, are inappropriate. The department shall also eliminate any recreational activity from taking place in the reserve which is an attraction in itself and which does not directly enhance the enjoyment of the reserve's primary resources.
>
> Jogging and bicycling in the state reserve is appropriate only on designated roadways and roadside shoulders.

Policies for State Reserve (Including both Natural Preserves)

Natural Resources

Hydrology

Los Penasquitos Tidal Exchange -- Activities in the Los Penasquitos area, including railroad construction in 1925, roadway development in 1909 and 1932, and upstream watershed modification, have reduced the extent of tidal exchange in the lagoon.

> Policy: To restore and maintain estuarine values, the department shall attempt to reestablish a tidal exchange regime which approximates that which existed before 1925 in Los Penasquitos Lagoon. Priority in implementing this action shall be given to nonstructural, self-flushing measures to minimize unsightliness.

Sedimentation -- Present and future development, associated soil disturbance, and stream channel alterations in the Los Penasquitos watershed will increase the rate of sediment flow and siltation in the Los Penasquitos floodplain. If not mitigated, this will eventually lead to the filling of the estuary and the loss of primary resource values in the natural preserve.

> Policy: The department shall be involved in city, county, and regional government land use regulations for the entire Los Penasquitos watershed. Measures necessary to protect water quality and natural sedimentation rates shall be vigorously recommended and supported.

Sediment Storage Areas -- With natural or accelerated erosion, sediments are carried downstream and deposited temporarily or permanently in areas where the water loses velocity due to lesser streambed gradient or wider channel boundaries. These sediment storage areas include all the riparian areas surrounding Los Penasquitos Lagoon and the alluvial fans at the base of the major tributaries. The natural storage areas are extremely important for at least temporarily preventing sediment from being deposited in the saltwater marsh and lagoon channels.

> Policy: Sediment storage areas in the Los Penasquitos floodplain, including alluvial fans at major creek mouths and riparian areas, shall be protected from any development or uses that would reduce their trapping and storage functions and increase downstream sediment movement.
>
> High management priority shall be given to maintaining existing artificial sediment basins and constructing new ones. Additional basins shall be recommended for the Los Penasquitos Wetlands Management Plan.
>
> High priority shall be given to protecting major sediment storage areas in the Los Penasquitos floodplain that are outside present unit boundaries.

Water Quality -- Deterioration of water quality in the lagoon and wetlands area, caused by runoff from the developing uplands and the industrial park adjacent to the state reserve, could seriously threaten the prime natural resources of the natural preserve. Monitoring water quality, including chemical properties and sedimentation, will detect any change in the runoff entering the wetlands ecosystem. Some monitoring of runoff from industrial developments just upstream of the wetlands is already mandated by the Water Quality Control Board.

> Policy: Responsible agencies shall be requested to monitor water quality of runoff and other discharges entering the Los Penasquitos wetlands and make pertinent information available to the department. The department shall evaluate the information for potential adverse effects on estuarine and wildlife resources, in consultation with the Department of Fish and Game.

Soils

General Erosion Control -- Soils in Torrey Pines State Reserve are generally shallow and, therefore, are a fragile resource requiring a high degree of protection from accelerated unnatural erosion.

Policy: All hiking trails shall be designed to minimize accelerated erosion and shall be reviewed and approved by persons with formal training in soil science and geology. Stabilization and revegetation of all abandoned trails shall be accomplished concurrently with the construction of any new trails.

Stabilization of all erosion in the units to levels comparable to 1920 shall be a management objective. Artificial controls and methods shall be introduced only under the most extreme circumstances and only when the conversion to a more natural condition is the objective. Where corrective measures are used, they shall be as unobtrusive as is feasible, fitting as naturally as possible into the environment.

Parking areas should be designed to minimize runoff as much as possible. Permeable surfaces should be considered to increase water percolation.

Abandoned trails in the reserve should be rehabilitated to halt unnatural erosion, which results from compaction and loss of vegetative cover. New trails shall require on-site approval of the Resource Protection Division and Region Headquarters.

Erosion Control - Extension Area -- The main drainage channel in the Extension area needs restoration. Vegetation and soils in the channel have been disturbed by increased runoff from upstream development and the installation of underground pipelines and gabion checkdams. The checkdams were installed in the mid-1970s in an effort to minimize accelerated erosion. Most failed during heavy storms in 1978 and are now compounding the erosion problem.

Policy: The department shall work to maintain and, where necessary, restore the natural condition of the Extension area.

Gabion checkdams that have failed shall be dismantled. Wire from the dams shall be removed from the area, and the rocks shall be dispersed throughout the main channel.

It is the department's goal to establish an intermittent stream channel which is as natural-looking as possible. Plants indigenous to the area shall be planted along the channel to help stabilize the easily eroded slopes.

Plant Life

General Vegetation Management -- The department's goal is to preserve and perpetuate representative examples of natural plant communities. Plant communities at Torrey Pines State Reserve have been disturbed and altered by fire suppression, planting of native species outside their natural communities, increased runoff from adjacent developed lands, invasion by exotic species, and high-intensity use. Effects include an increase in shrub cover.

Policy: The primary objective of vegetation management shall be to manage toward a natural condition with a minimum of disruption to natural processes. The secondary objective shall be to restore and perpetuate the native plant communities that prevailed in the area before Euroamerican influences.

Torrey Pines Management -- The present-day age class representation of Torrey pines in the reserve shows continuous recruitment over the past 150 years. However, natural recruitment in the past 70 years has declined to a present level near zero. The result is poor representation of the younger age classes. An obvious exception is the regeneration that occurred at the 1972 wildfire site.

Establishment of Torrey pine seedlings is hindered by dense shrub cover. Shrub cover in the Torrey pine woodland has increased in density since the exclusion of natural fires and the introduction of other disturbing factors, including human activities. We know that many seedlings appeared at the site of 1972's catastrophic fire, but data are not available on the effects of less intense ground fires on the regeneration of the pine.

> Policy: To ensure the protection and perpetuation of the Torrey pine, the department shall manage the Torrey pines medium woodland-mixed chaparral medium scrub to promote increased representation of the pine's younger age classes.
>
> Prescribed fire shall be used as a management tool to restore fire's role in the ecosystem. A multiyear prescribed fire program shall be developed to implement management objectives. This program shall include the research and funds necessary to establish desirable burn prescriptions and to assess post-fire effects. Pine recruitment in the burn area shall be compared to recruitment in an adjacent unburned area.
>
> A general Torrey pine monitoring program shall be established to determine annual recruitment and mortality of the pines in the reserve.

Exotic (Alien) Plants -- Many exotic species have become naturalized in the reserve. They are successfully competing for niches naturally occupied by native species. Perpetuation of native plant communities depends on removal of invading exotic plants.

> Policy: Exotic (alien) plants in the reserve shall be controlled and removed if possible. The greatest effort shall be directed at controlling those species that easily spread and are most conspicuous.

Revegetation and Planting of Native Species -- Over the past 60 years, ornamental plantings of Torrey pines and other native vegetation have occurred in the reserve. The addition of the Torrey pine to the chaparral in the developed areas of the reserve has altered the native plant community.

The Torrey pine is not threatened as a species; however, its natural ecosystem is limited to two locations. Ornamental planting of the pine is interfering with the department's goal of preserving this ecosystem.

> Policy: Within the state reserve, regeneration of Torrey pines shall be natural. An exception may be made for revegetation projects if scientific investigation determines that the Torrey pine was indigenous to the site. Pine seedlings used in such projects shall come from seeds collected at or close to the planting site.

Interpretive plantings shall be limited to the immediate vicinity of any interpretive or visitor center. Any other native plantings, including revegetation, shall be done only with species indigenous to the site. Plant stock shall be obtained from seeds or cuttings collected from the unit, preferably close to the planting site, in an effort to maintain genetic purity.

Vegetation Monitoring -- The impact on the resources of visitor use or major resource management manipulations can only be adequately assessed by first knowing the pristine conditions and, secondly, measuring any changes over time.

Policy: Monitoring stations shall be established as needed in select soil-vegetation combinations in the reserve to assess the effects of various uses and to develop resource management programs. Methods of monitoring may include permanent quadrants, transects, and photographic documentation to gather qualitative and quantitative data. Plant opal studies shall be conducted on representative soils to determine the pristine state of the vegetation.

Animal Life

Wildlife Management -- Protection, enhancement, and perpetuation of natural wildlife populations is a management goal in the state reserve and natural preserves.

Policy: The department shall manage wildlife habitats toward a condition that as nearly as possible simulates conditions that would have existed had natural ecological processes not been disturbed by mankind over the last 60 years.

Efforts to maintain or enhance habitats which have historically supported state and federally listed rare, endangered, or threatened species will be considered top priority.

Los Penasquitos Wetlands Management Program -- Over recent years, many studies have focused on the ecological and management problems of Los Penasquitos Lagoon and wetlands. Sufficient data is available to develop a specific management program for the natural preserve.

Policy: A specific management program shall be developed for Los Penasquitos Marsh Natural Preserve, which shall include actions necessary to reestablish reliable tidal exchange in the lagoon, minimize unnatural levels of sedimentation, protect and enhance wildlife values (particularly habitat for rare and endangered species), and minimize visitor use impacts. The program shall be approved by the Resource Protection Division and Region Headquarters.

The planning part of this program shall be completed before any major modification or development in the state reserve or state beach that could increase visitor use in the preserve or affect the preserve's important resource values.

Marine Life

Estuarine Flora and Fauna -- Historically, and periodically in recent years, the lower lagoon has supported an estuarine flora and fauna.

> Policy: A primary management objective shall be to restore to historic conditions and maintain an estuarine flora and fauna in Los Penasquitos Marsh Natural Preserve.

Cultural Resources

Native American

Excavation and Stabilization of Weathering Sites -- A number of Native American archeological sites are being severely damaged by weathering -- Sites CA:SDi:199, 200, and 4625, and Sites 11 and 28 (Museum of Man numbers). Weathering at other locations, although less severe, is occurring and must be monitored so that the same policy may be applied when appropriate.

> Policy: Surface mapping and collection and archeological excavation and analysis shall occur at these sites. Appropriate reports shall be published and distributed. Excavation will be oriented to ensure stabilization and an understanding of subsurface resources. Also, further deterioration must be impeded where practical by constructing barriers of natural materials to retard fast rainwater runoff.

> Policy: No further grading or landscape modification shall take place in the vicinity of recorded archeological sites unless the activity is determined to have no adverse effect or the effect is mitigated. Decisions on the management and protection of archeological values at sites in all units shall be made by department employees whose professional competence in cultural resource management has been recognized by the director.

Research Needs -- Inventory work has demonstrated that significant archeological and geological materials may exist in the units which could provide data that could change the currently known history of humankind. These materials are known to be associated with the Bay Point Formation and are subject to damage by weathering.

> Policy: The department shall encourage multidisciplinary research directed at a better understanding of early human history in the Torrey Pines area. Such research could be conducted through a university or foundation.

Euroamerican

Lodge Preservation -- Over the years, ideas have been suggested that would have modified the historic quality of Torrey Pines Lodge. One concept, for example, was to tear out large portions of the northern wall to install plate glass windows to better reveal the scenic view. Maintenance activities have also contributed to the degradation of the lodge's historic quality. Specifically, a glossy paint was applied to interior surfaces and the original vigas (protruding log rafters characteristic of Pueblo Indian and Spanish Colonial architecture of the American Southwest) were removed.

Policy: In conformity with commission policy, department directives, and state law to preserve the state's cultural resources and make them available to the public for its enlightenment, the lodge will be restored and preserved in its original historic character. Specifically, the vigas shall be replaced and the character of the original interior paint and texture will be restored. Any other part of this structure will be preserved or restored as needed.

Guy Fleming Residence -- This structure is an integral part of the preservation history of the Torrey Pines units.

Policy: The Guy Fleming Residence shall be appropriately maintained and rehabilitated, and information about it and its role in the units' history shall be made available to visitors.

Esthetic Resources

Scenic Intrusions: Numerous man-made features have encroached on the natural landscape. The railroad bisecting the lagoon, the sewage plant, and overhead power lines particularly mar natural scenery.

Policy: Human intrusions on the natural scene shall be minimized. Facilities shall be concentrated in specific use areas and not scattered throughout the units. Facilities shall be designed to be as unobtrusive as possible.

Although it may not be practical to immediately remove all the intrusions on the reserve's scenery, it is the department's goal to ultimately remove any artificial feature from the reserve that is unnecessary, poorly located, or irrelevant to the reserve's purposes.

All overhead utility lines serving the units should be placed underground. Trenches shall be located as close as possible to roads or in other locations where the least environmental damage will result.

Policies for State Beach Only

Natural Resources

Geology

Facility Development - Beach Level -- The units are subject to wave erosion, beach sand depletion, and coastal bluff erosion. The erosional forces from the sea are natural and are responsible for many of the scenic resources at Torrey Pines. Wave action has sculptured the seacliffs and is responsible not only for the periodic loss of beach sand but also for its supply.

Policy: Since the sandy beach is subject to vigorous wave attack, no permanent structures shall be built at beach level. The restroom at the north end of Torrey Pines State Beach is subject to direct wave attack and may eventually have to be removed. Once the restroom is structurally threatened, it shall be abandoned and dismantled. Future lifeguard towers should be moveable to accommodate changing sand levels and to

allow their temporary removal in case of severe storm wave conditions. All restrooms on the beach shall be moveable (i.e., trailers or skid-mounted, with flexible hook-ups) or expendable.

Allowable Use Intensity

California state law (Section 5019.5, Public Resources Code) requires that a land carrying-capacity survey be made before any park or recreation area development plan is prepared. As a step in determining carrying capacity, the department first determines allowable use intensity for the various parts of the unit. This evaluation serves as a general guide, indicating areas in which natural or cultural resource sensitivities will affect development planning and acceptable visitor use.

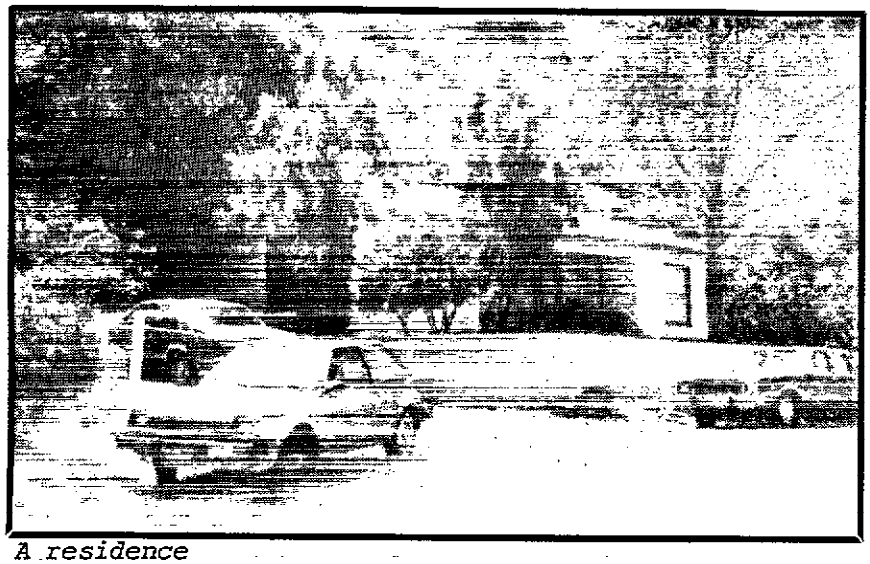
Allowable use intensity is determined by the analysis of three components: 1) management objectives, 2) visitor perceptions and attitudes, and 3) the impact of any development and use on natural and cultural resources. The management objectives for Torrey Pines State Reserve and Torrey Pines State Beach are set forth in the statutes defining a state reserve and state beach (see Classification and Declaration of Purpose sections).

The second component, visitor perceptions and attitudes, involves assessing the social objectives of the department, what recreationists perceive as an acceptable recreational environment, what degree of isolation or crowding is acceptable, and other perceptions and attitudes pertaining to the quality of visitors' recreation experiences. Although these factors are very difficult to quantify, this component's influence is extremely important.

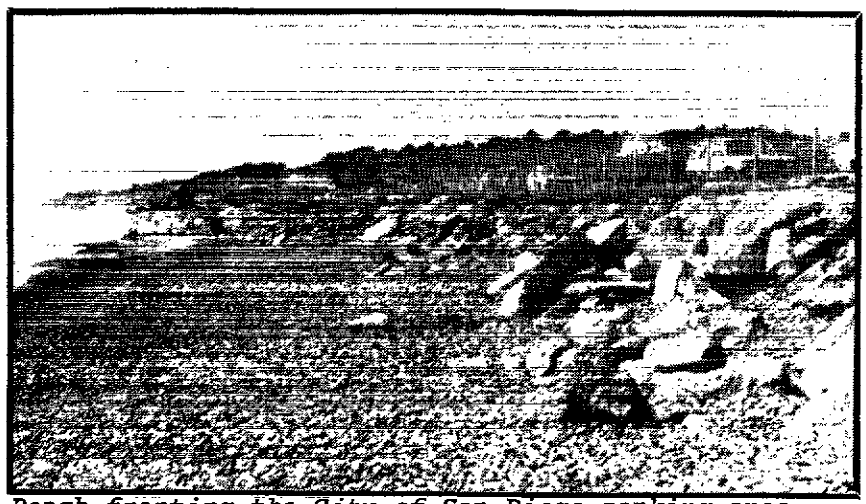
The third and most important component in determining allowable use intensity involves an analysis of the natural, cultural, and esthetic resources to determine the area's physical limitations for use and development of facilities. Basically this means determining the ability of the ecosystem to withstand human impact (ecological sensitivity). This analysis is based on a number of considerations, including: cultural and esthetic resources sensitivity; soils and their erodibility and compaction potential; geological factors such as slope stability and relief; hydrologic considerations, including the potential for pollution of surface waters and flooding; vegetation characteristics, such as durability, fragility, wildfire hazard, and regeneration rates; and wildlife considerations, such as tolerance to human activity, wildlife population levels, and stability. Additional considerations in determining ecological sensitivity are rare and/or endangered plants and animals, unique botanical features or ecosystems, and examples of ecosystems of regional or statewide significance.

Based on the preceding factors, allowable use intensity for lands in Torrey Pines State Reserve (including the two natural preserves) and Torrey Pines State Beach was determined as shown in the Allowable Use Intensity Map, Sheet 5. Four use intensity categories were established, ranging from very low to high. Representative examples of appropriate activities and facilities for each category are listed in the map legend.

Land Use and Facilities Element



A residence



Beach fronting the City of San Diego parking area damaged in 1983 storms.

South beach parking area proposed for improvement.

LAND USE AND FACILITIES ELEMENT

This general plan element provides information on current land uses occurring around the units and explains current and proposed uses for the units.

Study Areas

For purposes of this plan, two study areas (with six sub-areas) have been identified. These areas encompass locations where development is being proposed. (Additional lands that are of interest to the ultimate operation and development of the units are also indicated on the Land Use and Facilities Map and Conceptual Detail Maps, Sheets 6-11.) The study areas are:

Area 1 -- State Beach:

North Beach Area -- from the mouth of the lagoon to the north, including the sandy beach, the developed parking lot, and two comfort stations.

South Beach Area -- from the mouth of the lagoon to the south, including the sandy beach and the dirt parking lot.

Area 2 -- State Reserve:

Main Reserve Area -- including the major Torrey pine groves, the lodge, the Guy Fleming House, a maintenance area, parking lots, a comfort station, and 5.62 miles of trail.

Lower Los Penasquitos Marsh Area -- including the mouth of the lagoon and adjacent wetlands.

Upper Los Penasquitos Marsh Area -- including Los Penasquitos Creek and adjacent wetlands and employee residences.

Extension Area -- including the noncontiguous portion of the reserve in the City of Del Mar.

Land Use Patterns of the Surrounding Area

The state beach is bounded by the City of Del Mar and the state reserve. Urban development and the state reserve boundary limit any potential for significant expansion.

The state reserve is divided into three distinct entities. The main reserve is bounded on the west by the state beach and the Pacific Ocean, on the south by the undeveloped San Diego City Park and a golf course, and on the east and north by Los Penasquitos Marsh.

The second area, a part of Los Penasquitos Marsh, is bounded by the main reserve and North Torrey Pines Road on the south and west; by light industry, Highway 5, and wetlands on the east; and by Carmel Valley Road and intense residential development on the north. The Extension area is surrounded by intense residential development.

San Diego Gas and Electric Company owns most of the wetlands to the east of Los Penasquitos Marsh and has been involved in litigation with the City of San Diego over development rights.

The Atchison, Topeka, and Santa Fe Railway Company owns a right-of-way through Los Penasquitos Marsh which is currently being used by both passenger and freight trains. This right-of-way and the Highway 5 corridor are being considered for use by the proposed high-speed "Bullet Train" between Los Angeles and San Diego.

Local bus service is available along North Torrey Pines Road, with north and southbound stops at the mouth of Los Penasquitos Lagoon. During periods of heavy use, the unrestricted access to the City of San Diego day-use parking area causes many problems on North Torrey Pines Road.

Businesses in Del Mar, which are relatively convenient to the state beach, offer services that meet all user needs. A new community, North City West, is being developed east of Highway 5 and will result in an additional 40,000 local residents.

The City of San Diego has a master plan for development of the city park above the south end of the state beach, including an access stairway onto the state beach adjacent to Indian Canyon. Action on development of the park has been delayed due to concern over the 1982 landslide south of the state beach.

The City of Del Mar intends to improve the informal parking area north of the north beach comfort station. No formal access to the beach is planned.

Existing Unit Conditions

Torrey Pines State Beach is a fairly well-developed day-use facility of 69.88 acres. Visitation during the 1980-81 fiscal year was estimated at 1,561,000, which is quite heavy considering there is good access to only 25 percent of the unit's four and one-half mile length. The beach is a major recreation site for local as well as statewide visitors.

Torrey Pines State Reserve is a lightly developed day-use facility of 1,256.03 acres, including 182.65 acres in the Extension area. Visitation during fiscal year 1980-81 was 119,000, or less than 10% of beach visitation.

(Detailed ownership information is contained in DPR drawing number 15316, two sheets, Land Ownership Record, dated August 1980.)

Existing facilities at the state beach are, by area:

North Beach Area -- 550 parking spaces, two comfort stations, and three lifeguard stands

South Beach Area -- 200+ unimproved parking spaces, two portable toilets, an exposed contact station, and four lifeguard stands

Existing facilities in the state reserve are, by area:

Main Reserve Area -- 64 paved parking spaces, one comfort station, visitor center with museum and unit office, maintenance area, one employee residence, and 5.62 miles of trail

Lower Los Penasquitos Marsh Area -- none

Upper Los Penasquitos Marsh Area -- four employee residences

Extension Area -- 1.87 miles of trail

The following problems require attention:

Area 1 -- State Beach

North Beach Area

-- Continuing depletion of beach sand, although not as severe as in some other state units, is beginning to threaten some facilities during high surf and tides.

-- Bluff erosion is a potential danger to beach users.

-- The north beach comfort station is a constant target of heavy periodic vandalism due to the area's isolation and uncontrolled access.

-- Camping opportunities in the area are inadequate.

-- Public pedestrian access to the beach from the City of Del Mar parking area is inadequate and unsafe.

South Beach Area

-- Continuing depletion of beach sand, although not as severe as in some other state units, is beginning to threaten some facilities during high surf and tides.

-- Bluff erosion is a potential danger to beach users.

-- The south beach dirt parking area is inefficient and unusable during a portion of the year due to flooding.

-- Public pedestrian access to the beach and between the beach and the marsh is inadequate and unsafe.

-- Traffic on North Torrey Pines Road conflicts with parking area traffic, pedestrians, bicycles, and public transit users.

-- Control of activities at the south end of the beach is difficult due to the area's isolation from the rest of the unit.

Area 2 -- State Reserve

Main Reserve Area

-- Overflow beach access parking and traffic conflicts with reserve activities.

-- Trails are deteriorating because of inadequate design, beach traffic, joggers, and natural erosion processes.

-- Trailheads lack adequate or consistent development.

Lower Los Penasquitos Marsh Area

-- The integrity of the marsh is imperiled by upstream development, uncontrolled public access, siltation, and incomplete ownership.

-- Encroachment by people and domestic animals is endangering habitat and wildlife in the marsh.

Upper Los Penasquitos Marsh Area

-- The integrity of the marsh is imperiled by upstream development, uncontrolled public access, siltation, and incomplete ownership.

-- Trailheads lack adequate or consistent development.

-- Encroachment by people and domestic animals is endangering habitat and wildlife in the marsh.

Extension Area

-- Erosion in the main ravine is being worsened by failure of the gabion system.

-- Trails are deteriorating due to inadequate design and natural erosion processes.

-- Trailheads lack adequate or consistent development.

-- Domestic animal encroachment is endangering habitat and wildlife and is a detriment to trail use.

Facility Recommendations

The following is a listing of recommended actions for the development of Torrey Pines State Beach and State Reserve. The recommendations are organized by area as identified on the Land Use and Facilities Map (see Sheet 6).

Commission approval of the general plan will apply only to those recommendations specifically involving DPR property at the time of the commission's action. Recommendations involving land not owned or controlled by DPR are provided to coordinate DPR efforts with the appropriate owner or agency and do not constitute a commitment on the part of DPR to unilaterally implement the proposal or pursue acquisition of property.

Proposals

Area 1 -- State Beach

North Beach Area (see Sheet 7):

-- Develop contact station at north beach parking lot.

-- Modify north beach parking lot to accommodate 125 recreational vehicle family campsites that will function seasonally as either en-route or family campsites. During high day-use periods, campers may be required to vacate during daylight hours or pay day-use fees as well as camping fees. This will allow the department latitude to adjust the use based on evolving use patterns. Proposal requires development of additional comfort station and parking lot modification.

-- Rehabilitate existing north beach comfort station.

-- Rehabilitate beach access ramp. Develop pedestrian bridge across lagoon mouth. (Requires agreement with City of San Diego Public Works Department.)

-- Develop visitor center.

South Beach Area (see Sheet 7):

-- Develop north and southbound bus pull-outs, with beach access ramp and ramps to interpretive boardwalk. Develop beach access boardwalk and ramp under existing bridge. Install barrier between traffic lane and City of San Diego parking. Install barrier between north and southbound traffic lanes from south beach entry to Carmel Valley Road. Develop three beach access stairways and rehabilitate riprap wall. (Requires agreement with City of San Diego Public Works Department.)

-- Develop contact station and turnaround.

-- Develop parking for 270 cars, 15 motorcycles, and 20 bicycles, with one comfort station and beach access. (Requires off-site mitigation for endangered plant.)

-- Develop beach access at three locations.

-- Consider replenishment of beach sand.

(Proposals for this area are made on the premise that the required coordination with the cities and the Atchison, Topeka, and Santa Fe Railway Company will be accomplished as implementation progresses.)

Area 2 -- State Reserve

Main Reserve Area (see Sheet 8):

-- Develop handicap parking for 10 cars at existing informal parking area.

-- Install interpretive displays at Guy Fleming, Parry Grove, High Point, and "Beach" trailheads.

-- Maintain Guy Fleming House. Employee residence and storage area uses to continue.

-- Rehabilitate lodge for museum and operations use.

-- Rehabilitate existing trails.

-- Preserve the historic concrete road for interpretation.

-- Develop wayside trailhead at East Grove on North Torrey Pines Road, with parking for 10 cars, turnaround, interpretive display, two portable restrooms, and locking gate.

-- Develop viewpoint and trails to South Marsh Trail.

Lower Los Penasquitos Marsh Area (see Sheet 9):

-- Establish additional natural preserve area. (Requires some acquisition before implementation.)

-- Develop culvert for wetlands rehabilitation.

-- Develop tidal slough for wetlands rehabilitation.

-- Consider development of interpretive boardwalk and viewing platform adjacent to north beach parking area when preparing the Los Penasquitos Wetlands Management Program.

-- Develop interpretive boardwalk, viewing platforms, and barrier along east side of North Torrey Pines Road. (Requires agreement with City of San Diego Public Works Department.)

-- Develop South Marsh Trail from boardwalk to upper marsh trailhead.

Upper Los Penasquitos Marsh Area (see Sheet 10):

-- Rehabilitate existing entry road (Flintkote Avenue).

-- Retain employee residence area.

-- Develop trailhead for South Marsh Trail, with parking for 10 cars, interpretive display, and two portable restrooms.

-- Develop South Marsh Trail to mouth of lagoon.

-- Expand natural preserve. (Requires some acquisition before full implementation.)

Extension Area (see Sheet 11):

-- Install interpretive display at trailhead at end of Del Mar Scenic Parkway.

-- Develop trail from end of Del Mar Scenic Parkway to East Ridge (.68 mile).

-- Install interpretive display at the Mira Montana Drive end of East Ridge Trail.

-- Develop trailhead at the end of Durango Drive, with interpretive display.

-- Rehabilitate existing trails.

-- Rehabilitate eroded area in main ravine by removing failing gabions and establishing native vegetation along and in the channel.

Implementation of these proposals will substantially improve recreational opportunities at the units while reducing adverse conditions currently affecting the resources.

Table 1 summarizes key recreational facilities before and after implementation.

Table 1
Facilities Summary

Area 1 -- State Beach

Facility	Existing on DPR Property	After Implementation
Contact Station	1	2
Visitor Center	0	1
Family Campsites	0	125
Day-Use Parking Spaces	750	840
Comfort Stations	2	4

Area 2 -- State Reserve

Facility	Existing on DPR Property	After Implementation
Unit Office	1	1
Contact Station	0	1
Visitor Center	1	1
Day-Use Parking Spaces	64	94
Comfort Stations	1	1
Maintenance Area	1	1
Employee Residences	4	4
Miles of Trail	7.49	10.02

Proposals in this general plan involve the potential acquisition in Area 1 of 9.15 acres, and in Area 2 of 241.29 acres. The plan also proposes to surplus about 11 acres in Area 1 at the extreme south end of the beach to allow the City of San Diego to consolidate its interest area. Table 2 shows acreage changes if the plan is implemented.

Table 2
Acreage Changes

	AREA 1 State Beach	AREA 2 State Reserve
Current Acreage	69.88	1,256.03
Delete	- 11.00	0
Add	+ 9.15	+ 241.29
Total (approximate)	± 68.03	± 1,497.32
Net Change	- 1.85	+ 241.29

Note: "After Implementation" figures include existing facilities.

Special Considerations

The plan proposes the more effective use of local bus service by providing safe bus stops with pedestrian undercrossings located conveniently nearby. This will substantially improve beach accessibility while potentially reducing traffic congestion and traffic hazards in the units.

State law requires that projects be designed to be accessible to physically disabled persons. Torrey Pines State Beach offers outstanding beach access from three parking lots. All structures and parking areas will be designed to accommodate wheelchairs and, where appropriate, braille signing. In addition, the Guy Fleming Trail will be made available to the disabled.

Unresolved Planning Issues

Issue No. 1 -- Sand Replenishment

Area 1's loss of beach sand, caused by natural and human actions, has resulted in the gradual narrowing of the beach and the increasing exposure of shore facilities to wave and tide action. The existing comfort station at beach level, the City of San Diego parking lot, and the toe of the bluff are subject to waves. The department's interest in restoring sand to the beach is obvious because the demand for recreational beach activity exists and the past investment in facilities can be lost if action is not taken. Equally obvious is the threat to the Santa Fe Railroad track which parallels the edge of the bluff top. Other important factors include the economic impact of tourism, traffic circulation, and esthetic considerations for the citizens of the cities of Del Mar and San Diego.

Both the cities and the state have an interest in tackling the expensive, and probably repetitive, process of restoring sand to the beach in this area. A March 1982 letter from the secretary for resources to the chairman of the Legislature's Natural Resources and Wildlife Committee establishes that the Department of Boating and Waterways will coordinate beach erosion control efforts. The secretary's recommendations to the Legislature are summarized in the following quotation:

1. The amount of public benefit shall be the basis for allocation of costs between state and local sources with the state and/or the federal government providing up to 75 percent of the costs for projects with high public benefit. A minimum local share of 25 percent is recommended on any project in which the state participates. The public benefit would be determined by the amount of public property protected, public access, and public use; however, no specific funding formula is recommended because of the unique nature of each project.

2. The coordination of beach erosion control efforts of state agencies shall be the responsibility of the Department of Boating and Waterways in federal/state/local and state/local projects. Coordination of erosion control projects on state-owned and operated

property are the responsibility of the department responsible for managing the property with the Department of Boating and Waterways responsible for the final approval of plans prior to implementation.

There is no change in the longstanding policy of the Resources Agency that only in those situations where structures or areas of public use are threatened should the state resort to funding or approving remedial projects. Where remedial efforts are deemed necessary, projects should restore natural processes, retain shoreline characteristics, and provide recreational benefits to the extent feasible.

At this time, no determination has been made as to:

1. The cities' or the Atchison, Topeka, and Santa Fe Railway Company's commitment to participate financially in this effort.

2. The source of replenishment sand. The periodic cleaning out of sediment detention basins and the potential for sediment removal from the lagoon may be possibilities; however, other sources may have to be found.

3. The amount of an equitable cost sharing for the effort.

Issue No. 2 -- Acquisition Proposals

This plan proposes expanding the boundary of the state reserve at several locations (see Sheet 6). The largest area is a portion of the wetlands owned by the San Diego Gas and Electric Company on the northeast side of the railroad right-of-way. The company and the City of San Diego have been in litigation over the company's development rights for this land. The litigation ended inconclusively, and the company's long-range plans for this property have not been permanently established. The other parcels are privately owned.

These lands are needed to protect state-owned wetlands and to improve unit management potential for preservation.

At this time, no determination has been made about:

-- The San Diego Gas and Electric Company's long-range development or sale plans for its land.

-- The City of San Diego's reaction to the company's eventual plans.

-- The willingness of the private owners to sell their land to the state.

-- The availability of funds for acquisition.

Issue No. 3 -- Surplus Beach Land Proposal

The south end of the state beach is backed by the bluffs and uplands of the proposed City of San Diego City Park (see Sheet 6). The city has completed master planning for this facility, which indicates a major beach access stairway and a beach-level picnic area adjacent to Indian Canyon. In addition, a lifeguard tower is proposed on the bluff top to provide adequate safety supervision for the bluffs and the beach areas below, including the state-owned portion and the city's beach to the immediate south. Since the state beach area in front of the city park is thoroughly isolated from the rest of the unit and is difficult to supervise, it seems logical to return this area to city control. (The land was originally owned by the city.)

A major landslide occurred on the city's bluff and beach south of the state beach in 1982 and, as a result, the city has delayed indefinitely the implementation of the city park master plan.

At this time, no determination has been made about:

- The City of San Diego's intention to proceed with its city park development.
- The schedule for development of facilities should the city decide to proceed.
- The city's willingness to accept the return of the beach land fronting city park property.

Issue No. 4 -- City of San Diego Parking Area

The city's day-use parking area has been damaged by recent wave action, and access to the beach is inadequate. This general plan proposes rehabilitating the riprap wall fronting the parking area and installing traffic barriers, bus turnouts, and beach access ramps and stairways (see Sheet 7). These improvements are required for public safety and to provide adequate public access to the beach. However, at this time no determination has been made about the City of San Diego's intention or ability to participate in the development of these necessary improvements.

Local Coastal Plan Conformance

Proposals contained in this general plan are consistent with policies and designations identified in the Local Coastal Plan adopted and certified by the California Coastal Commission in 1981.

Sequence of Action

The sequence of implementing the general plan should be based on the benefit to existing resources.

The highest priority should be given to those actions that will protect and enhance Los Penasquitos Marsh Natural Preserve, including acquisition of adjacent wetlands, rehabilitation of wetlands and tidal exchange processes, restriction of human and domestic animal intrusions into prime habitat, and the control of deleterious runoff from upstream areas.

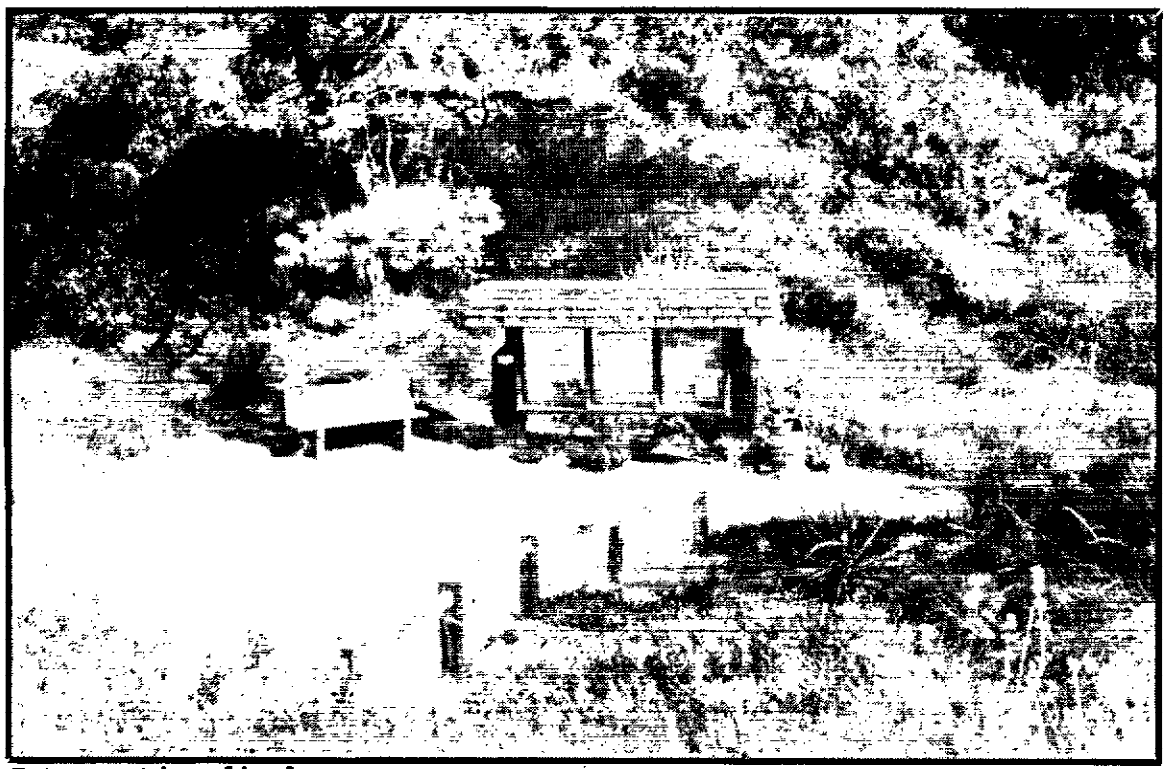
The second priority should encompass those actions which rehabilitate and protect existing resources and facilities and provide public safety (beach sand replenishment, trail rehabilitation, erosion control, vehicle and pedestrian circulation modifications, and beach access improvements).

The third priority should be given to the provision of visitor service facilities which will increase appreciation of the resources and reduce recreation deficiencies in the area. Actions include trail and trailhead development, interpretive displays, development of the visitor center, and campground development.

Interpretive Element

Interpretive trail

There is a need for expanded interpretive facilities.



Interpretive display

INTERPRETIVE ELEMENT

This general plan element outlines interpretive programs and facilities that will enhance the recreational experience available at Torrey Pines State Beach and State Reserve. (The interpretive prospectus for these units is on file with the department and contains additional information.)

Methods and Media

To fulfill the interpretive goal of enhancing the public's enjoyment, understanding, and appreciation of the natural, cultural, and recreation resources of the state reserve and state beach, the department will need to use a wide spectrum of interpretive tools. There is much to interpret and explore with the many kinds of people who come to visit these units.

Talks, guided walks, and orientation services by park personnel and docents can be highly effective interpretive techniques because they permit two-way communication and are responsive to immediate needs and situations. Off-site slide programs about the pines and their history are needed for interpretation to groups which cannot come to the units.

Orientation is the most important interpretive service. This is true from the visitor's perspective as well as from a resource and visitor protection point of view.

A walk led by a knowledgeable and inspiring guide is the most valuable on-site interpretive technique. Guided walks take advantage of two complementary interpretive pluses: two-way personal communication and having the resource available in its full environmental context.

Field seminar course offerings are very similar to guided walks except that they usually have a more focused topic to investigate, they involve a longer time commitment, and a fee may be charged. Such courses have been offered successfully for some years at Point Reyes National Seashore and Yosemite. The Torrey pines area appears to have the necessary elements to support such a program. These are: a pool of qualified teachers and docents, a local or vacationing public interested in learning, an interesting resource to study, and a nonprofit cooperating association to sponsor the program. A program of this nature would offer in-depth interpretation that cannot be offered by any present program.

Outdoor interpretive audio systems are not appropriate for use in such natural locations as the Torrey pine groves, the lagoon, or beaches. Indoor audio-visual programs are quite appropriate and effective. Movies and slide programs are excellent media for orientation purposes, for relating sequential stories, and for inspiring the visitor to go out and investigate the environment firsthand.

Indoor and outdoor exhibits and panels are useful interpretive tools for the reserve and beach if used appropriately and in moderation. They have the advantages of always being available and requiring little or no staffing.

At least one trail and most overlooks should be left uninterpreted to let people discover their own relationship with this spectacular environment.

Self-guiding nature trails, interpreted by signs or brochures, are an appropriate, effective, and enjoyable interpretive facility for use in the state reserve and state beach.

Publications such as trail guides, monthly or seasonal visitor activity guides, maps, bird and plant lists, orientation brochures, and books are highly valuable interpretive media. Publications have souvenir value and allow visitors, by way of text and bibliographies, to learn more about the park after they leave and to prepare for return visits. An updated park brochure, an important interpretive tool, is needed.

Interpretive Themes -- Torrey Pines State Reserve

Primary Theme: The Torrey Pine

The Torrey pine, being the main reason for establishment of the state reserve, is naturally the main interpretive theme. Every visitor to the reserve should go away with the understanding that this tree is unique, rare, and in need of protection.

The Biology and Ecology of the Torrey Pine

It is important to describe how the Torrey pine differs from other pines, what pines it is related to, where it grows, and how many are left. People will want to know why it has become so limited in range and numbers. Its reproductive biology and growth requirements need to be interpreted, as well as the stressful physical and biological conditions (including soil, fire, insects, and weather) under which it lives. The Torrey pine should be interpreted in its full environmental context, including the unique chaparral which harbors many rare plant species.

The Preservation History of the Torrey Pine

The preservation of the Torrey pines -- in view of the many human threats to their survival -- is a theme equal in importance to their natural history because it explains why they are still here to enjoy today. The early dedication and foresight of Parry, Lemmon, Angier, Scripps, and Fleming, as well as the more recent popular efforts of school children and local citizens to acquire the reserve Extension, are highly significant and inspirational historical themes.

Secondary Themes

Geology of the Marine Terrace Bluffs

The six geological strata exposed on the eroded bluffs are an excellent interpretive resource. The geological story of the Torrey pines area is highly visible, interesting, and relatively easy to follow.

Ecological Communities of the Torrey Pines Uplands

The mixture of coastal, desert, and chaparral plant species is of great botanical interest. The typical plant and animal species of the chaparral and coastal sage-scrub communities should be presented and interesting life histories explored. Great emphasis should be placed on presenting an integrated ecosystem approach to the natural history of the state reserve. The story of the interdependence of the life forms with each other and with their physical environment is an important interpretive step beyond the mere naming of species.

Los Penasquitos Lagoon

Like the Torrey pine theme, this important theme has two major aspects -- natural history and preservation history. Natural history interpretation of the lagoon should include: the geological formation of the lagoon basin, the dynamics of its hydrology, the plants and animals of the lagoon (including rare, migratory, and resident categories), ecological relationships, and energy cycles. Interpretation should present an overall picture of the lagoon as a scarce, economically important, and highly dynamic ecosystem made up of many interrelated plants, animals, and physical factors. The preservation history of the lagoon, its economic value, and its ecological sensitivity should be presented in the context of the loss of 90% of San Diego County's historic salt marsh lands.

The Native Americans of the Torrey Pines Area

The Native American story is an important interpretive theme at the reserve. Western civilization has dominated the area for less than 200 years, while the Native American presence goes back many thousands of years. Some of the oldest dates for human habitation in the North American continent are being suggested for the Torrey pines area -- as far back as 120,000 years B.P. (before present). Two important archeological finds were within a few miles of the reserve -- Scripps Man to the south and Del Mar Man to the north. It should be possible to interpret the great span of human occupation of the Torrey pines area without encouraging "amateur archeology" in the reserve.

The entire sequence of cultures that lived either on or near the reserve should be interpreted. These include the San Dieguito, the La Jollan, and -- the most recent group -- the Kumeyaay. The differences in material and social culture between these groups should be presented. Kumeyaay history since the arrival of European culture should be interpreted. The department should seek the participation of Kumeyaay people in interpretive planning and programs (demonstrations or festivals).

Interpretive Themes -- Torrey Pines State Beach

Staying Safe at the Beach

Interpretation should explain the dangers posed by rip currents and offer advice on how to avoid and escape them. Other beach safety tips recommended by the lifeguards should be interpreted. Current weather, tide, surf, and emergency information, fishing regulations, interpretive program schedules, and natural history information should be posted on a bulletin board.

Catching Fish at the Beach

The common saltwater sportfishes caught along the San Diego Coast and the angling techniques used to catch them should be interpreted. The grunion merits special emphasis.

The Animals of the Coast and How They Live

The varied life forms and habits of the common invertebrate and vertebrate animals of the San Diego Coast should be interpreted. Interpretive approaches could include:

"The Life Underfoot" (invertebrate life in the wave-wash zone).

"A Bill for Every Purpose" (a comparison of size, food, behavior, and bill length among common shorebirds).

"Sea-Going Mammals" (identification and interesting life history information on the San Diego Coast's common marine mammals).

Flotsam and Jetsam -- Where Did It Come From? Where Will It Go?

Beachcombers are naturally curious about things washed up on shore. Commonly found objects of plant and animal origin, such as kelp blades, seashells, crustacean shells, jellyfish, and floating shark egg cases, should be interpreted in light of their original form and lifestyle and their ultimate consumption by beach invertebrates. In contrast, human-originated flotsam, such as styrofoam, bottles, cans, fish lures, and plastic packaging, should be interpreted in light of its nonbiodegradable qualities and the hazards it poses to both humans and wildlife.

The Changing Beach and Cliffs

The local littoral cells, the factors affecting their sand supply, and the seasonal and long-term dynamics of San Diego County's beaches need to be interpreted so that visitors can better understand the changing shape and size of the beach. The geological history of the cliffs should be interpreted, as well as the ongoing processes of cliff erosion and slumping. The dangers of climbing or burrowing in the cliffs should be presented.

What Are Waves?

The little understood processes of wave generation, wind-driven currents, and "rip tides" deserve interpretation.

Visitor Facilities

The Lodge as a Visitor Center

Torrey Pines Lodge in its present state is inadequate as a visitor center. Orientation and interpretation at the lodge are handled mostly by the docents, the naturalist, and a slide program. Exhibit space is severely limited, there are no public restrooms, and the lodge's location does not allow for effective interpretation of Los Penasquitos Lagoon, the state beach, or the Extension.

Funding should be sought for a new interpretive center to fully serve these areas. Until this is realized, the lodge will continue to be the primary interpretive facility for the two units. However, even after a new center is built, the lodge should continue to serve as a small museum addressing the theme of the Torrey pine and its preservation history.

Recognizing the lodge's deficiencies, the Torrey Pines Docent Society, the Torrey Pines Association, and the staff of the unit, area, and region have been working together to upgrade exhibit interpretation in the lodge museum. This project is being financed by the department and the Torrey Pines Association. Lodge museum improvements should be coordinated with plans for the proposed visitor center.

One way to use the small museum space effectively and coordinate this development with future interpretive planning is to limit the scope of lodge exhibits to the primary theme of the Torrey pines and their preservation. Because the lodge is a historically significant structure connected with Ellen Scripps' efforts to establish the original preserve, it is a fitting environment to interpret this theme. The main room is large enough to fully present the theme and accommodate present orientation services of the docent staff. Interpretation of other themes could be accomplished through personal services, AV programs in the lodge, outdoor exhibits, self-guiding trails, and publications.

The history of the lodge building itself merits interpretation under the primary theme of the preservation history of the Torrey pines. The Pueblo-style structure was designed by the well-known architects Requa and Jackson and was apparently built in 1922 with adobe bricks made from local earth by Indian workers (reputedly Hopis). The lodge originally served as a restaurant, gift shop, and living quarters. Good photographs exist of this early period of the lodge, and some of the better ones could be made into photo-murals to be suspended above the high shelving which encircles the main room.

Exhibits should be designed to allow the lodge to remain open while unstaffed for short periods. Exhibit design for the lodge should complement its original architectural styling and maintain its warm, open, and rustic charm. A few of the original furnishings, such as the pine needle ceiling lamps and some furniture, might be reproduced to restore more of the original ambiance without interfering with needed interpretive exhibit space.

A New Visitor Center for the Reserve and Beach

The public is generally unaware that Los Penasquitos Lagoon, the Extension area, and the East Grove are part of the reserve and can be visited. Heavy use of these natural areas is not desirable, from a resource protection point of view, but increasing the public's access, awareness, and appreciation is a strong interpretive priority. A new visitor center located in the north beach parking lot would enhance public awareness of the full extent and wide spectrum of cultural and natural resources protected by the units. This location would be ideal for coordinating interpretation of the lagoon, the beach, and both upland Torrey pines areas, and for creating a more cohesive park identity.

Locating the visitor center near the beach and its heavy summer visitation would make it readily available to a large number of people who currently do not visit the main reserve. This location would allow some beach and lagoon interpretation to be carried out indoors, protected from vandalism and weathering. Environmental education facilities, such as a modest classroom/laboratory area, could aid pre- and post-field trip learning by visiting grammar, high school, and college classes and field seminar study groups.

A purpose of the center should be to encourage personal exploration of the beach, lagoon, and upland bluffs. With the primary theme of the reserve well treated at the lodge, the center can emphasize the broader, ecological themes of the reserve and beach. The center should include an audio-visual room (which could also be used for talks), a research library, study-collection storage, and a publication sales area.

With planning, such a structure could serve as an interpretive center for all the beaches within the San Diego Coast Area. This is fitting because of the similarity of natural resources on this stretch of coast, and the location of a wide spectrum of ecosystems (beach, bluffs, lagoon, and pines) at Torrey Pines. An option in this proposal would be to eventually have all visitors leave their cars at the center, visit the center and view an AV orientation program, and then be shuttled up to the main Torrey Pines State Reserve in trams or buses.

Wayside Exhibits

Wayside or outdoor exhibits can effectively interpret many outdoor resources, both natural and recreational. The great advantage of wayside exhibits for outdoor subjects is that the resource is immediately at hand.

Good locations for wayside exhibits are: the south entrance to the Extension area and the south gate into the main reserve (mostly for orientation, regulations, and reasons for rules), the north beach parking lot, the south beach parking lot, the beginning of proposed and existing trails, and near the existing west parking lot comfort station. These exhibit shelters should be designed to hold from one to four 32" x 40" panels and could include bulletin board space for changing program messages. Ideally, enough panels should be provided to allow the park staff to rotate them to interpret seasonal subjects, such as gray whale migrations, swimming, and wildflower blooming. This will present a fresher, more dynamic appearance to the public and staff alike. Panels with beach-oriented themes could be rotated among the state beaches in the area to make the most effective use of various interpretive panels planned for San Diego coast state beaches.

Outdoor exhibits can also be effectively used in the lodge area to extend the quite limited interpretive space of the museum. If the lodge's main room is used for primary theme interpretation, some of the secondary themes for the reserve could be treated on the front porch and along the patio wall at the back. These panels should be of the smaller, low-profile, trailside type and must be weatherproof.

The back patio, which can be reached through the main room of the lodge, is a very pleasant place to walk and should be made available to the public. The view includes beautiful Torrey pines growing in the Painted Gorge, expansive Los Penasquitos Lagoon, and the Extension area.

Audio-Visual Programs

Slide programs and movies about the material, cultural, and recreational resources of the reserve and beach are a high interpretive priority because they are effective at orienting visitors, present a sequential story, and are entertaining as well.

Unfortunately, the lodge is only marginally adaptable to the use of audio-visual media. Through creative use of reflected projection, a small lodge side room has been made into an audio-visual viewing area. However, it can hold only a dozen or so people, and there is little distance between the audience and the screen.

Any future visitor center design should have a carefully planned AV room. Slide programs should be created to cover the full spectrum of natural and cultural resources at the beach, lagoon, main reserve, and Extension.

Native Plant Gardens

The established small botanical garden in front of the lodge, and the Whittaker Garden being developed at the head of the Parry Grove Trail, provide an overview of the great diversity of plants found in the main reserve. It might be argued that such artificial displays of native plants do not belong in an ecological reserve. However, they do have interpretive value as representative botanical displays which are easily accessible to the disabled, the elderly, or those with little time or energy. Only those plants growing naturally in the immediate vicinity of the Whittaker Garden should be planted in that garden.

Self-Guiding Trails

Self-guiding trails with numbered stakes and a correspondingly numbered brochure would be very effective at the reserve and lagoon. This system has the advantage of guiding the visitor along the interpretive trail. Illustrations can add greatly to the appeal of the text.

The Guy Fleming Trail, being quite scenic, fairly short, and relatively level, has the greatest interpretive potential as a self-guiding trail. Broad ecological, geological, and wildlife topics could be treated if this trail were interpreted with numbered stops and an accompanying brochure.

The Parry Grove Trail might be made into a self-guiding trail to interpret Native American uses for local plants and to discuss Native American cultures. The Broken Hill Trail could be developed as a self-guiding chaparral trail. If developed, both of these trails should have moderately sized wayside exhibits at the trailheads to introduce the trails and to dispense brochures. The Beach Trail might be left undeveloped to be interpreted by guided walks.

A self-guiding geology trail with stations along the base of the beach cliffs was designed in 1972 but was never implemented. This proposal deserves renewed consideration.

Until recently, a self-guiding trail in the Extension, with an accompanying brochure, was being used by classes of the adjacent Del Mar Heights Elementary School. The trail is no longer properly marked. This trail should be renumbered and brochures made more easily available to the general public.

A self-guiding nature trail is needed in the lagoon area to encourage the public to visit and learn about this interesting ecosystem. Observation blinds, interpretive stops, and even a short boardwalk could be constructed to provide lagoon access, viewing, and interpretation.

Visitor Activities

Guided Walks

Walks led by the naturalist and docents are currently the reserve's primary scheduled visitor activity, comprising most of the interpretive effort at the unit. Because well-led walks are a highly effective interpretive method, this activity should be offered as often as demand dictates and staff are available.

Variety in interpretive themes, approaches, and trails is important to engage the interest of repeat visitors. Walks could be given at the lagoon, state beach, and Extension area on a wide variety of interesting and pertinent topics, including marsh life, chaparral and coastal scrub communities, gray whale watching, wildflowers, beach life, birds, and plant uses.

Field Seminars

A field seminar program for the state reserve and state beach would offer in-depth interpretation without substantially increasing staff workload or unit budgets. This kind of program would engage the creative and educational talents of the local community in a variety of interpretive approaches to unit resources.

This program, which would be new to the State Park System, would work as follows. A cooperating, nonprofit association would recruit a qualified teaching staff for a season's program offerings. The staff would usually be composed of graduate students, teachers, professors, artists, writers, photographers, or anyone with special knowledge or skills that would relate to the resources.

Day-long or even weekend-long courses could be offered on many popular and challenging subjects, such as nature photography, bird identification, surf fishing, nature sketching, wildflower study, and marine mammal watching. The association would print and distribute a course-offering mailer, secure course accreditation through local colleges if desired, handle enrollment and fee collection, monitor the success of the courses, and pay an agreed-upon percentage to the instructors.

In addition to supplying a new kind of quality interpretive experience at little or no cost to the department, such a program could raise funds for other interpretive efforts and greatly enhance the local public's use and appreciation of Torrey Pines State Reserve and State Beach. Office space and

a meeting place would be needed. One of the lodge's small side rooms might be used as an office, and picnic tables placed near the lodge might serve as an outdoor classroom for this and other purposes. The upper level of the Guy Fleming House is another area that might be adapted to this use.

Off-Site Talks

It is highly desirable to extend interpretive efforts beyond the state reserve and state beach and into the local community. Outreach programs can serve people who cannot come to the units, such as residents of convalescent homes. Schools and community organizations have excellent audiences for interpretive talks. Interpretive staff time should be allocated for promoting and presenting off-site talks.

Demonstrations

Topics suitable for demonstrations at the state beach include aquatic and beach safety, cliff rescue, lifesaving, and surf fishing. These demonstrations would be most practical when large numbers of people are at the beach. Aquatic safety and lifesaving demonstrations could be part of a Junior Lifeguard program -- perhaps as a competitive meet. A bullhorn would be needed to gather an audience and be heard over the noise of the surf.

Revenue-Generating Activities

It is undesirable to charge for most interpretive services at the reserve because the visitor has already paid an entrance fee. However, this does not hold true for nature trail and unit brochures which, if attractively designed and printed, can be successfully sold. Selling brochures can finance their production and raise some money for interpretive projects. This procedure is already proving successful at a number of State Park System units.

Book sales are another potential source of revenue. Publications can extend interpretation of the state beach and reserve far beyond their boundaries. The quality of all publications should be high and their subject matter accurate and pertinent to unit resources.

Field seminars could also become a steady revenue-generating program, while greatly enlarging the scope of interpretation and training for park staff and docents.

Research Needs

Because interpretation is ultimately based on information supplied by researchers in many fields, interpreters are interested in encouraging research in their particular unit and in keeping abreast of the latest findings.

The scientific value of Torrey Pines State Reserve and State Beach is considerable due to the uniqueness of the geology, early human history, plant communities, and the variety and relatively natural state of the ecosystems. Approved and monitored research at the reserve and beach should be encouraged, and efforts should be made to quickly incorporate new findings into the interpretive program. Researchers and other experts in the units' natural and

historic resources should continue to be recruited to present training and continuing education courses for volunteers and park staff. The Torrey Pines Association includes scientists in its membership who have pertinent knowledge and skills.

Interpretive Collections

Photographic collections will probably be of most use to the interpreter. A thorough photographic survey of the natural resources of the reserve and beach should be an ongoing interpretive project. Protective and easy-to-retrieve slide and print storage systems should be provided for the originals. Slides, movies, and prints for programs and exhibits should be duplicates of these originals.

A thorough, well-documented, and professionally maintained natural history photographic collection will supplant the need for specimen collections for interpretive purposes. Photographs can also show living things in their natural ecological setting. Early photographs of the units' historic and natural resources should be gathered, organized, documented, and preserved.

Recommendations

Lodge Improvements and Evaluation of Options for a New Interpretive Center

The initial evaluation of options for a new interpretive center should occur simultaneously with ongoing lodge improvements to ensure that interpretation at the lodge will fit into the long-range interpretive plan. Interpretive priorities for this first phase include:

- -- Planning, fabricating, and installing new interior and exterior exhibits at the lodge.
- -- Restoring some of the lodge's original ambiance.

Training, Staffing, and Programs

These recommendations should be put into effect as soon as possible:

- -- Increase docent training and recruitment programs.
- -- Establish new guided walks into the lagoon, beach, and Extension.
- -- Create audio-visual programs on resource themes.
- -- Evaluate the feasibility of establishing a Torrey Pines Field Seminar Program and determine staffing, funding, and facility needs. If it is feasible, initiate the program.
- -- Establish and maintain an active interpretive outreach program.
- -- Establish programs to take visitors from the beach to reserve areas.

Outdoor Interpretive Facilities, Trails, and Brochures

Most of these recommendations will require the assistance of the department's Information Office and Office of Interpretive Services:

-- Establish self-guiding trails, with accompanying brochures, at the main reserve, beach, lagoon, and Extension. Themes will vary at each location.

-- Plan, fabricate, and install wayside exhibit shelters (capable of accepting standard 32" x 40" interchangeable orientation and interpretation panels) for the Extension area, north beach parking lot (beach and lagoon shelters), south beach parking lot, south reserve entry, and the trailheads.

-- Plan, fabricate, and install 32" x 40" orientation panels showing the layout of the entire state reserve and state beach complex, recreational and interpretive opportunities, and park rules and their reasons.

-- Plan, fabricate, install, and rotate seasonally 32" x 40" interpretive panels on beach recreation and safety subjects and the natural resources of the lagoon, Extension, beach, main reserve, and offshore waters.

-- Plan, produce, and distribute a new brochure for the state reserve and state beach.

Ongoing or Long-Term Projects (not listed in priority order)

-- Research the units' historical and natural resources.

-- Establish, maintain, and improve the units' photographic, geological, and archeological interpretive collections.

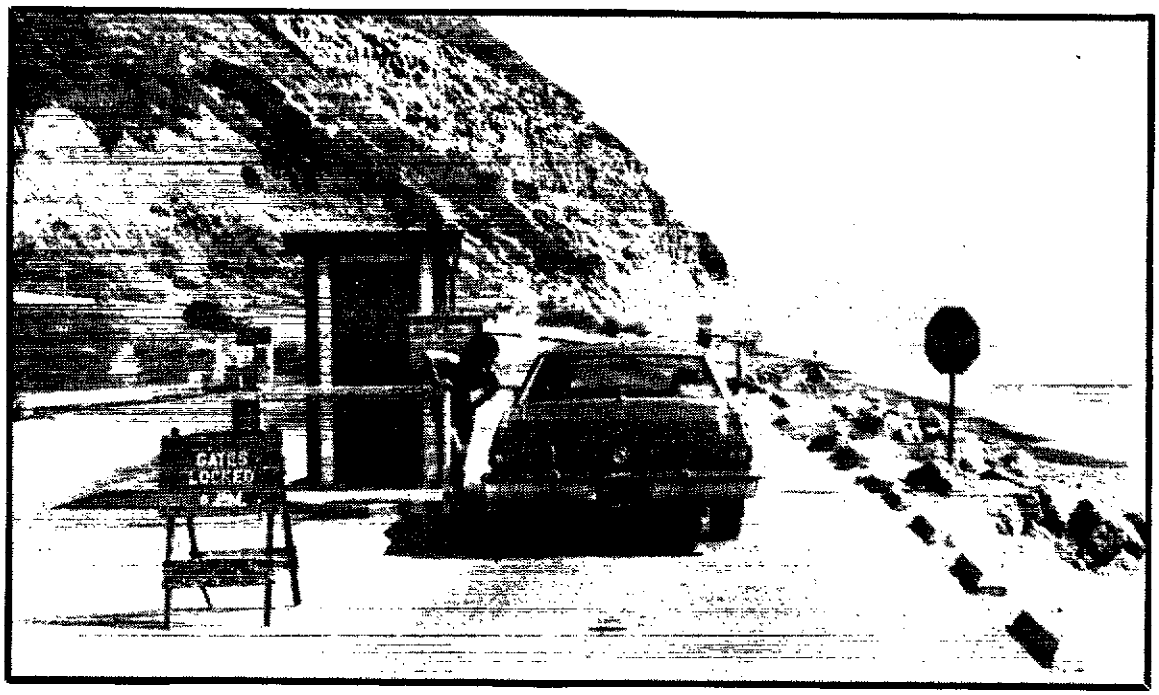
-- Provide adequate film, photographic equipment, and training to permit field staff to document unit resources and the natural and human processes affecting those resources, and to create slide shows.

-- Complete and maintain the botanical gardens.

-- Work with the State Department of Transportation (Caltrans) to provide regional orientation panels at roadside reststops along Interstates 5 and 8 in San Diego County. The panels would orient motorists and potential State Park System visitors to the diverse recreational opportunities offered in the system, and provide detailed information on the San Diego coast units.

-- Finally, the most important long-term interpretive priority is to plan, fund, and locate a new visitor center where it can effectively interpret the diverse natural and historic resources of the main reserve, the Extension area, the state beach, and the lagoon, and which will also serve as a regional interpretive center for all the San Diego coast state beaches.

Operations Element



South beach contact station

Guy Fleming House

OPERATIONS ELEMENT

Current Conditions

Torrey Pines State Beach and State Reserve are supervised by the San Diego Coast management area. Other units in this area are Carlsbad, South Carlsbad, Leucadia, Moonlight, San Elijo, and Cardiff state beaches.

At Torrey Pines State Beach, staff currently:

- -- Provides lifeguard and cliff rescue services in the north beach area, the south beach area, and at the extreme south end of the unit below the city park
- -- Provides law enforcement services
- -- Maintains two large parking lots (one paved, one dirt), one contact station, and two comfort stations
- -- Provides litter pickup

At Torrey Pines State Reserve, staff currently:

- -- Manages and protects natural and cultural resources
- -- Provides interpretive and law enforcement services
- -- Maintains the lodge (museum and unit office), Guy Fleming House, 7.49 miles of trail, two small parking lots, and one comfort station
- -- Provides litter pickup

Future Conditions

Implementation of general plan proposals will increase the staff workload by adding the following responsibilities:

Torrey Pines State Beach

- -- Campground operation, including fee collection, grounds maintenance, and interpretive services, in accordance with the park commission's directive (see resolution 14-84)
- -- Maintenance of a new comfort station
- -- Operation of one new contact station
- -- Potential increased law enforcement (but a potential decrease in lifeguard and cliff rescue services due to surplussing of property)

Torrey Pines State Reserve

-- Additional resource monitoring, management, and protection

-- Operation of new visitor center

-- Potential additional law enforcement and litter pickup (due to possible acquisitions)

-- Additional pavement maintenance

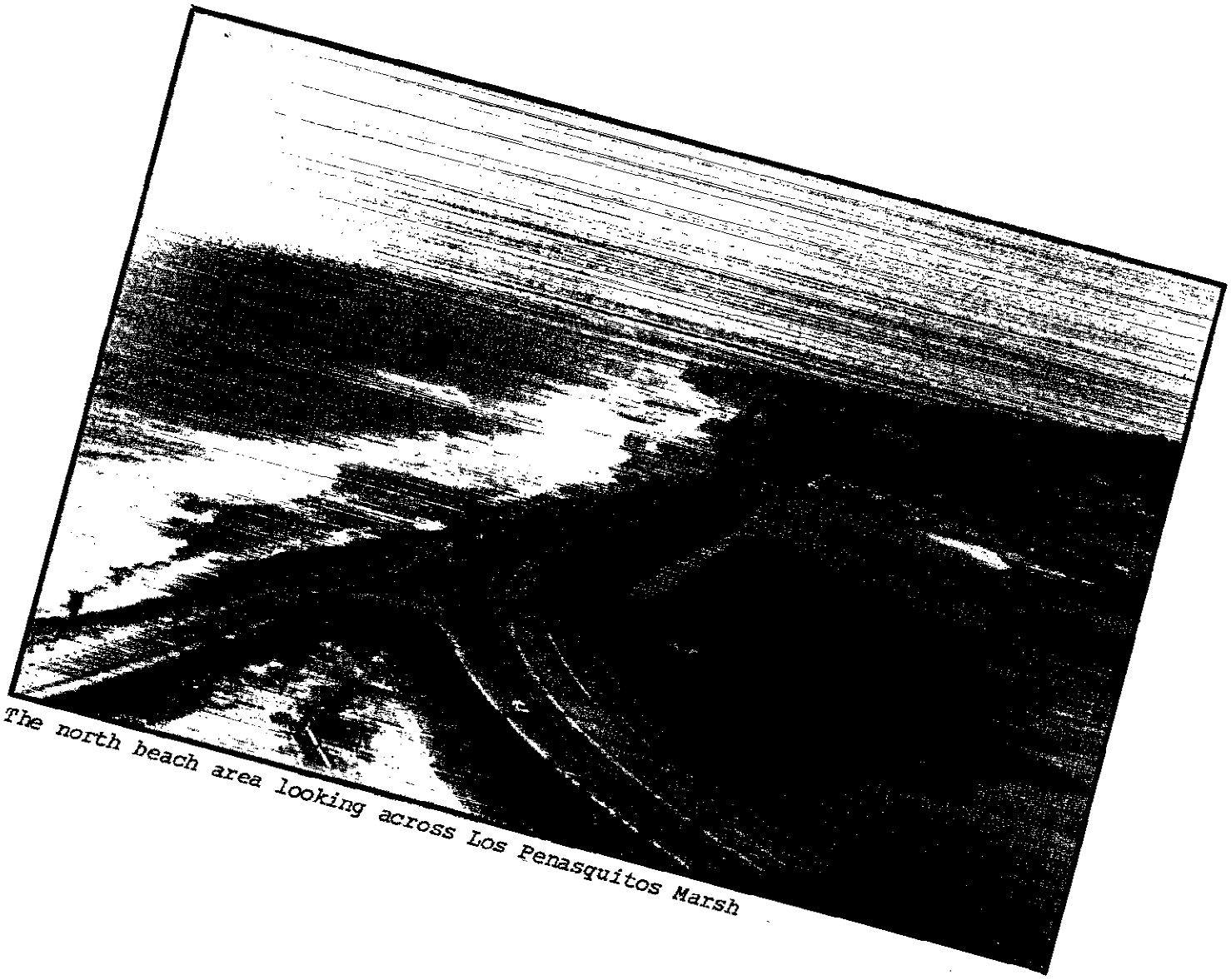
-- Maintenance of an additional 2.53 miles of trail

Revenue Generation

If developed as proposed, the units will generate additional revenue to help offset the expenses of added responsibilities.

The campground will produce the most revenue. Additional minor amounts will come from the parking meters in the lot at Carmel Valley Road and North Torrey Pines Road.

Concessions Element



The north beach area looking across Los Penasquitos Marsh

CONCESSIONS ELEMENT

Existing Conditions

At this time, there are no existing or proposed concessions at either of these units due to the proximity of commercial development in the City of Del Mar.

Environmental Impact Element

Erosion in the Extension area requires attention.

ENVIRONMENTAL IMPACT ELEMENT

Explanatory Note

In accordance with SB 1892, Chapter 615, this general plan (with this Environmental Impact Element) constitutes a report on the project for the purposes of the California Environmental Quality Act. The plan indicates management policies and development plans for Torrey Pines State Beach and State Reserve. The Draft Environmental Impact Element (or Environmental Impact Report) analyzes and reports potential impacts of these policies and plans on the environment.

Because the general plan is broad in scope, the Draft Environmental Impact Element is a broad, general assessment of environmental impacts. Should specific plans be proposed and budgeted for implementation, more detailed environmental assessments will be prepared along with documentation required by the California Environmental Quality Act. The level of detail of this Environmental Impact Element corresponds to that of the general plan (California Administrative Code, Section 15147).

This Draft Environmental Impact Element has been prepared according to the amended mandates of the California Environmental Quality Act, which call for an objective assessment of the proposed project's environmental consequences. Those aspects of the proposed project with the greatest potential to cause an adverse change in the environment have been emphasized. Existing environmental conditions and effects that are not expected to cause a substantial adverse change in the environment are briefly discussed. Also, published documents such as county general plan elements and local coastal plan elements are incorporated into this report by reference to avoid unnecessary repetition.

Pursuant to the Public Resources Code, Section 5002.2a, and the California Administrative Code, Section 15147, and also to avoid needless repetition, the Environmental Impact Element incorporates by reference all information contained in the preceeding elements of this document.

To begin the general plan process, the inventory of features of a State Park System unit (a documentation of the unit's natural, cultural, and recreational resources) is critically analyzed in terms of the purpose, philosophy, and objectives of the unit. Specific policies for the management of the unit's resources are then formulated. (The inventories of features for all units in this general plan are on file with the department's Resource Protection Division in Sacramento.) State Park System planners then work within the framework of the Resource Element to develop unit plans.

The development proposed in this plan reflects the policies presented in the Resource Element. User facilities that have been selected will promote public use and encourage enjoyment of the units without impairing or devastating the natural or cultural values. Throughout this planning process, a continuing analysis of possible impacts is made so that mitigating measures, such as decreasing use intensity, can be designed into the general plan to provide recreational opportunities to complement and preserve the units' valuable resources.

Description of the Project

Please refer to the Land Use and Facilities Element.

Description of the Environmental Setting

For information regarding the following areas, please refer to the Resource Element of this general plan: topography, climate, hydrology, geology, soils, biota, and other resources.

For information regarding land use, please refer to the Land Use and Facilities Element.

Air Quality

Torrey Pines State Beach and State Reserve are located about 10 miles northwest of the Overland Avenue Air Quality Monitoring Station and 24 miles north of the South Cleveland Air Quality Monitoring Station in Oceanside. Air quality at the state beach and reserve is probably better than that measured at the Overland Avenue Monitoring Station and similar to that of the Oceanside monitoring station.

The overall air quality of San Diego County is good. During 1981, California Air Quality Standards were equaled or exceeded for three pollutants: ozone, nitrogen dioxide, and particulate matter. The ozone standard was equaled or exceeded 192 days, nitrogen dioxide one day, and particulate matter 41 days during the year.

Ozone is the most important atmospheric contaminant in San Diego County. A major reason for the county's high ozone levels is the pollutant transport from more densely populated areas to the north in Los Angeles, San Bernardino, and Orange counties. Ozone levels are lower along the coast and increase inland.

Automobile exhaust is the major source for nitrogen dioxide, sulfur dioxide, and carbon monoxide.

Noise

The major sources of noise at Torrey Pines State Beach and State Reserve are vehicles, the railroad, aircraft, and recreational activities.

North Torrey Pines Road, a four-lane highway (two northbound and two southbound) runs parallel to the state beach and through the state reserve. Noise from this main road is in the 50-70 dBA range and can be heard in the northern portion of the state beach but not in the southern portions of the state beach or the state reserve, which are farther from the road. Noise from Carmel Valley Road is in the same range and can be heard in the reserve.

Santa Fe Railroad trains pass through the state beach and state reserve, producing noise in the 65-75 dBA range.

Miramar Naval Air Station is 7 miles southeast of the units. Takeoffs and landings usually produce noise in the 80-105 dBA range at the 1,000-foot elevation, but aircraft over the units are higher and the noise is considerably less. There is an average of 10 takeoffs and landings per hour each day.

Recreational activities produce noise in the 50-60 dBA range, and the surf is a constant source of background sound.

The following data concerns Santa Fe Railroad operations in the vicinity.

Train Type and Direction	Length (ft.)	Speed (mph)	Number Equivalent Daily Operations
Freight North	2,500	60	33
Freight South	2,500	60	23
Passenger North	655	90	16
Passenger South	655	90	7

(Source: City of Carlsbad, Draft Environmental Impact Report for the Widening and Extension of Poinsettia Lane, March 10, 1983.)

Human Community Factors

Torrey Pines State Beach and State Reserve are located in the City of San Diego, with a 1980 census population of 875,538. Of this population, 601,960 (69%) are White, 76,187 (8.7%) Black, and 130,613 (15%) of Spanish origin. Nearly half (48%) of the population is female.

The city has 201,438 families, of which 145,538 (72%) are White, 17,059 (8.4%) Black, and 26,365 (13%) of Spanish origin.

Population grew by 25% between the 1970 and 1980 census.

Public Services

Water

Water is supplied to Torrey Pines State Beach and State Reserve by the City of San Diego. As of February 1983, the water system was not at capacity, and there were no restrictions on new connections.

Sewer

Torrey Pines State Beach and State Reserve are served by the City of San Diego. City sewage treatment facilities were not at capacity as of February 1983, and there are no moratoriums on new connections.

Traffic

Access to Torrey Pines State Beach and State Reserve is via North Torrey Pines Road, a four-land highway (two northbound, two southbound). Average daily traffic (ADT) in 1982 between Carmel Valley Road and Genessee Avenue was 7,700 southbound and 7,400 northbound. Southbound peak hourly periods in 1982 started at 8:30 a.m. (940 vehicles) and 1:30 p.m. (730 vehicles). Northbound peak hours were 12:00 noon (580 vehicles) and 5:30 p.m. (1,070 vehicles).

Genessee Avenue connects North Torrey Pines Road and Highway 5. It is a four-lane highway with two eastbound and two westbound lanes. Eastbound ADT

was 7,600 vehicles, westbound was 8,100. Peak eastbound hours in 1982 were 12:00 noon (520 vehicles) and 5:30 p.m. (1,160 vehicles). Westbound peak hours were 8:15 a.m. (1,150 vehicles) and 1:30 p.m. (660 vehicles).

Combined ADT (east and westbound) on Carmel Valley Road at Del Mar Scenic Parkway on August 25, 1982 was 7,600 vehicles.

Fire/Paramedic

Fire protection is provided by the City of San Diego. Fire Station 29 is located 1.5 miles away at 13802 Mercado Drive. The response time is about three to five minutes.

Routine first-aid is administered by state park rangers and lifeguards. In cases of life-threatening injuries, paramedics are called from San Diego City Fire Station No. 9 at 7870 Ardath Lane, La Jolla. Their response time is under five minutes.

Police

Law enforcement at the units is the responsibility of state park rangers and lifeguards, who are designated as state park peace officers to perform law enforcement duties on State Park System lands. When they require assistance or back-up, the San Diego City Police are called. The closest police station is about five miles away. Response time for the police is about three to five minutes, depending on the location of the patrol unit.

Cultural Resources

For information on Native American and Euroamerican resources, please refer to the Resource Element.

Scenic and Recreational Values

Please refer to the Resource Element.

Environmental Impacts of the Proposed Project

Significant Environmental Effects

The major impacts associated with this plan will result from development of parking lots and related facilities. These facilities will require grading and site work. Vegetation will be removed and animal habitat altered. Paving of roads and parking lots will increase the quantity and velocity of surface water runoff.

During construction, dust will be released into the air. The new parking areas will cause more vehicle emissions and more traffic.

Acquisition of land for the units will involve the relocation of two businesses.

Mitigation Measures Proposed to Eliminate or Minimize Effects

1. Following construction, the disturbed areas will be revegetated with native plant species.

2. Utilities will be undergrounded to lessen the visual impact of the project.

3. Left-turn lanes will be installed at the entrance to the campground off Carmel Valley Road.

4. Energy dissipators or similar devices will be installed to reduce the velocity of surface water runoff.

5. Sedimentation reduction structures will be installed and regularly maintained.

6. Percolation strips will be used to lessen the amount of surface water runoff and improve the percolation rate.

7. Relocation assistance will be provided.

8. Additional open space is slated for acquisition, which will help mitigate the loss of open space from parking area development.

9. Impervious surfaces will be designed to disperse runoff into several small drainage structures to prevent runoff from gaining potentially destructive volume and velocity.

10. Standard dust reduction measures will be used.

Unavoidable Environmental Effects

1. Vegetation will be removed.

2. The ground surface will be modified.

3. Nonrenewable resources will be expended.

4. There will be an increase in traffic and congestion on local roads.

5. Pollutants will be added to the air during construction of parking lots.

6. Open space will be lost to recreational development.

7. Runoff from the site will increase.

8. Sedimentation will increase.

9. Pollutants will be added to surface water runoff.

10. Demand for electricity, water, and sewage disposal will increase.

11. Natural habitat will be reduced.

Alternatives to the Proposed Project

1. NO PROJECT: This alternative, which would allow the status quo to continue, was rejected because it does not allow the Department of Parks and Recreation to develop facilities to help meet public recreational demands.

2. DEVELOP A NEW CAMPGROUND: The selection of this alternative would mean considerable ground disturbance and vegetation removal. The area converted from open space for developed recreation would be considerable. There would be a need to relocate the two businesses located along Carmel Valley Road. The impacts of increased impervious surface area (increased runoff, pollution, and sedimentation) would be extensive.

   This alternative was rejected because of impacts.

3. ELIMINATE THE SOUTH BEACH DAY-USE PARKING FACILITY: The impacts identified in the general plan would occur, except that the amount of site work and pavement would be considerably less. The amount of traffic generated would be slightly less.

   This alternative was rejected because the demand for day-use parking would not be met, and the Department of Parks and Recreation would not be able to provide facilities to help meet existing recreational demand.

Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance of Long-Term Productivity

The current short-term uses of Torrey Pines State Beach and State Reserve are day-use and other types of related recreation. Current uses will be expanded by implementing this general plan. Future short-term uses will include camping, picnicking, hiking, sightseeing, and ocean-related activities. Increased use and development are based on design criteria that enhance productivity. Facilities will be developed to increase user enjoyment while minimizing deterioration of the resources.

The relationship between the short-term uses and long-term productivity will be complementary; short-term uses will retain and expand the environment's long-term productivity. The short-term uses of the land which are proposed in this general plan include measures designed to protect the resources of Torrey Pines State Beach and Torrey Pines State Reserve. The uses will therefore protect the units' long-term productivity. Project implementation will also eliminate uses that are incompatible with the resources.

Irreversible Changes and Irretrievable Commitments of Resources Which Would Be Involved Should the Project Be Implemented

If future demands or environmental priorities change, and this site is deemed more suitable for some other use, the area will not have been altered enough by project implementation to preclude changes in its use. Proposed development will utilize some undeveloped land for minimal resource-oriented recreation facilities. Some wildlife and vegetation resources will probably be lost or displaced due to development or increased visitation. Some nonrenewable resources will be lost in the form of oil, gasoline, and other products required to produce energy necessary to complete the proposed development, and in the form of construction materials.

Growth-Inducing Impacts

There will be minimal growth-inducing impacts associated with development of Torrey Pines State Beach and State Reserve. The local economy probably will be slightly stimulated by the influx of visitors and initial construction activities.

Effects Found Not To Be Significant

The development and rehabilitation projects outlined in this general plan will not have a significant adverse impact on the following: climate, population, community development, water and sewer services, police and fire services, hydrology, biota, air quality, noise, land use, cultural resources, and scenic values.

Organizations and References Consulted

California Department of Boating and Waterways
California Department of Fish and Game
California Department of Housing and Community Development
City of San Diego Department of Planning
City of San Diego Department of Traffic Engineering
City of San Diego Fire Department
County of San Diego Department of Planning and Land Use
Southern California Association of Governments

* * *

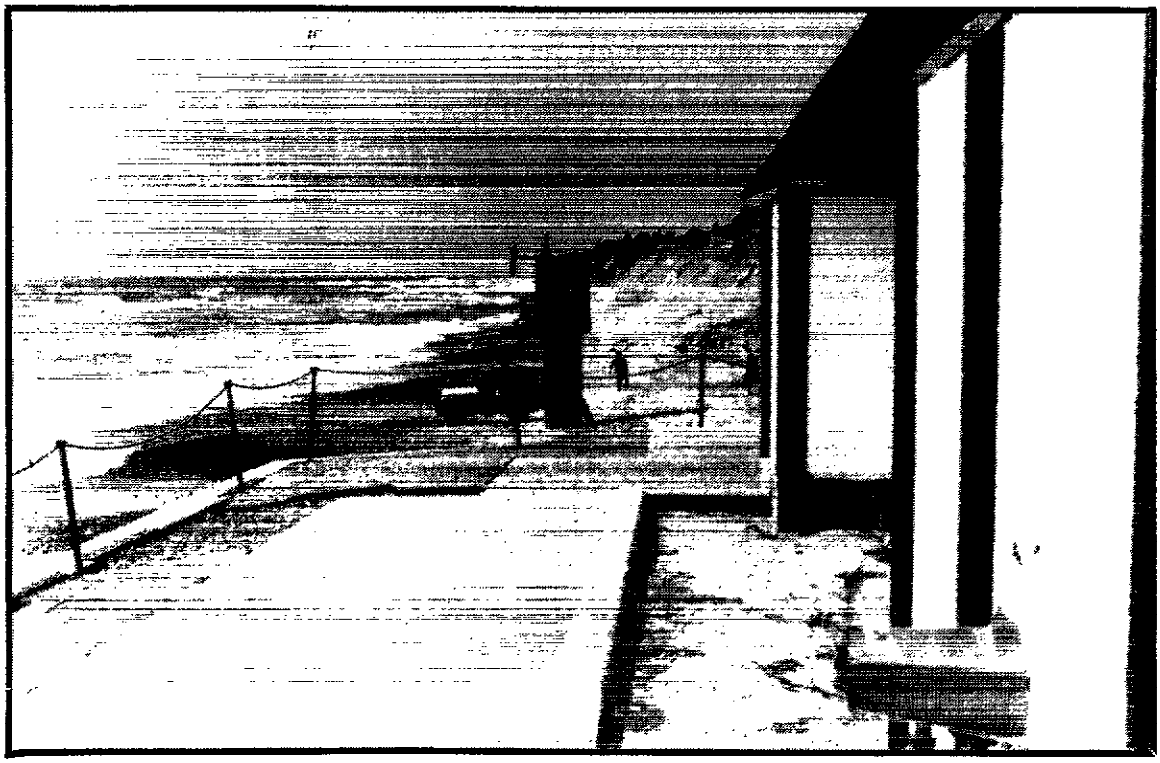
California Air Resources Board, Summary of 1979 Air Quality Data, 1980.

California Air Resources Board, Summary of 1981 Air Quality Data, 1982.

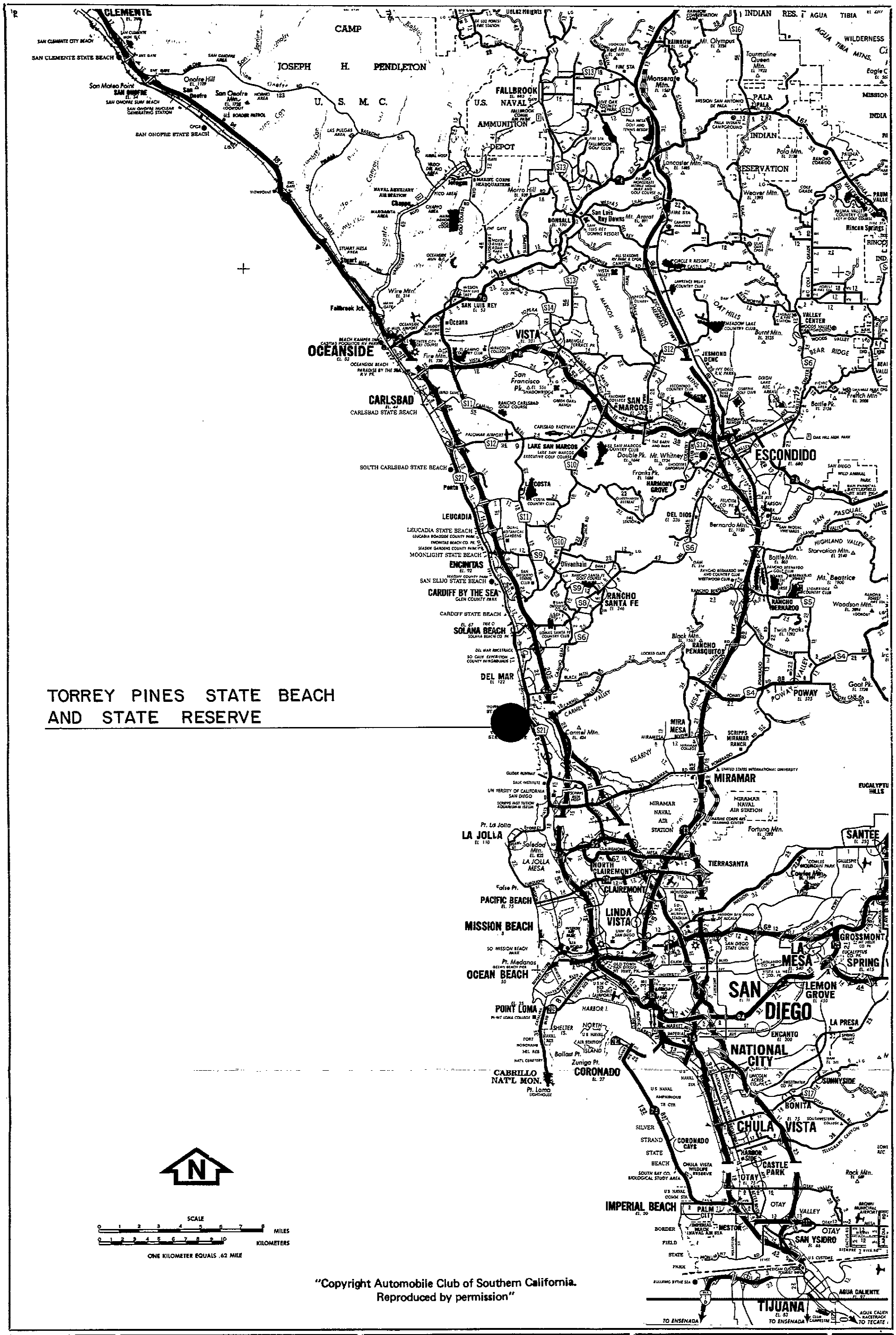
United States Department of Commerce, Bureau of the Census, 1980 Census of Population, July 1982.

I-1517L

Maps



The north beach area is popular for periodic organized recreational events.



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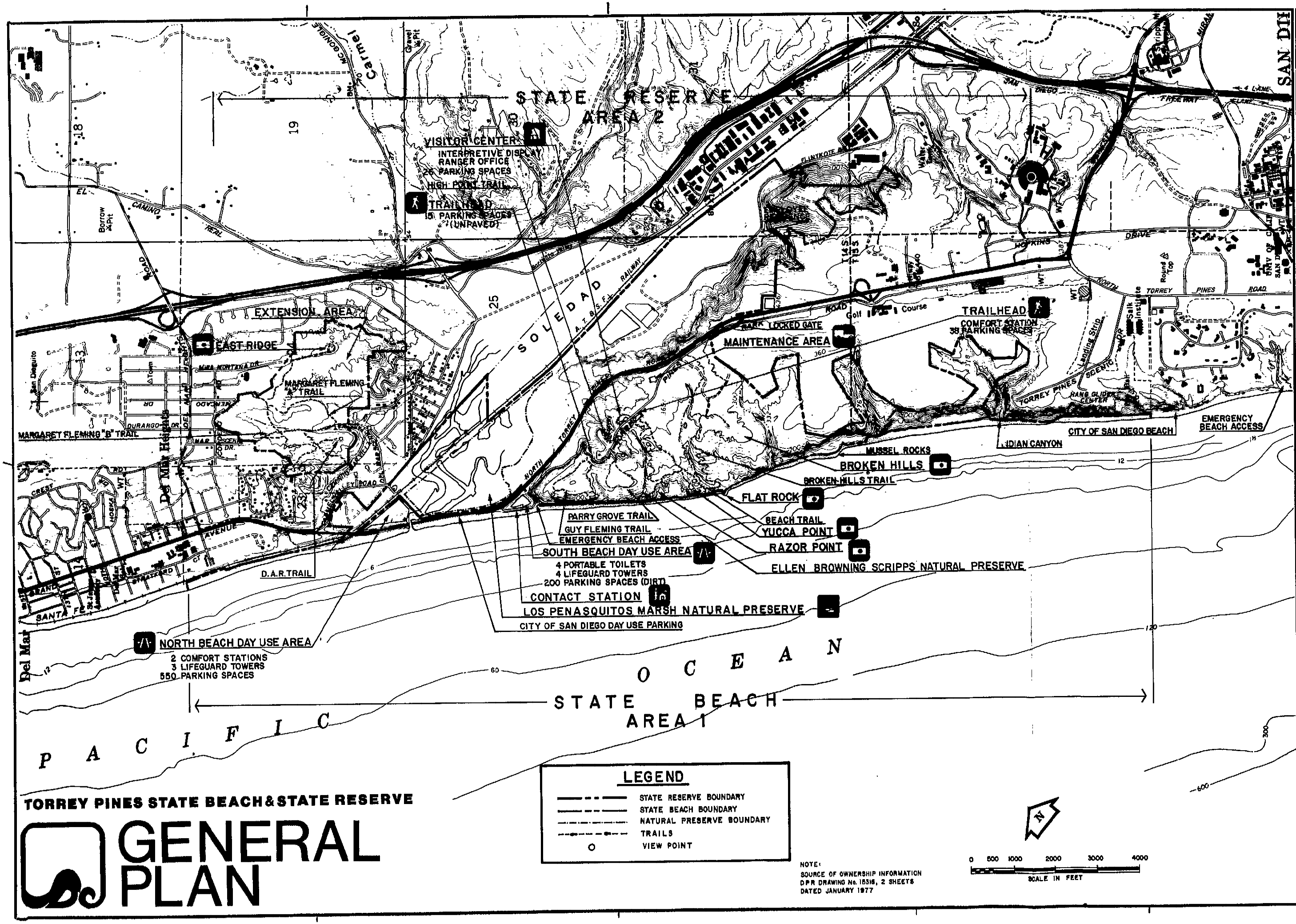
SHEET NO.	DRAWING NO.			REVISIONS	DATE	
11 of 11	19153	TORREY PINES STATE BEACH AND STATE RESERVE SAN DIEGO COAST GENERAL PLAN VICINITY MAP	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED_____ DATE_____			DESIGNED DRAWN CHECKED



TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

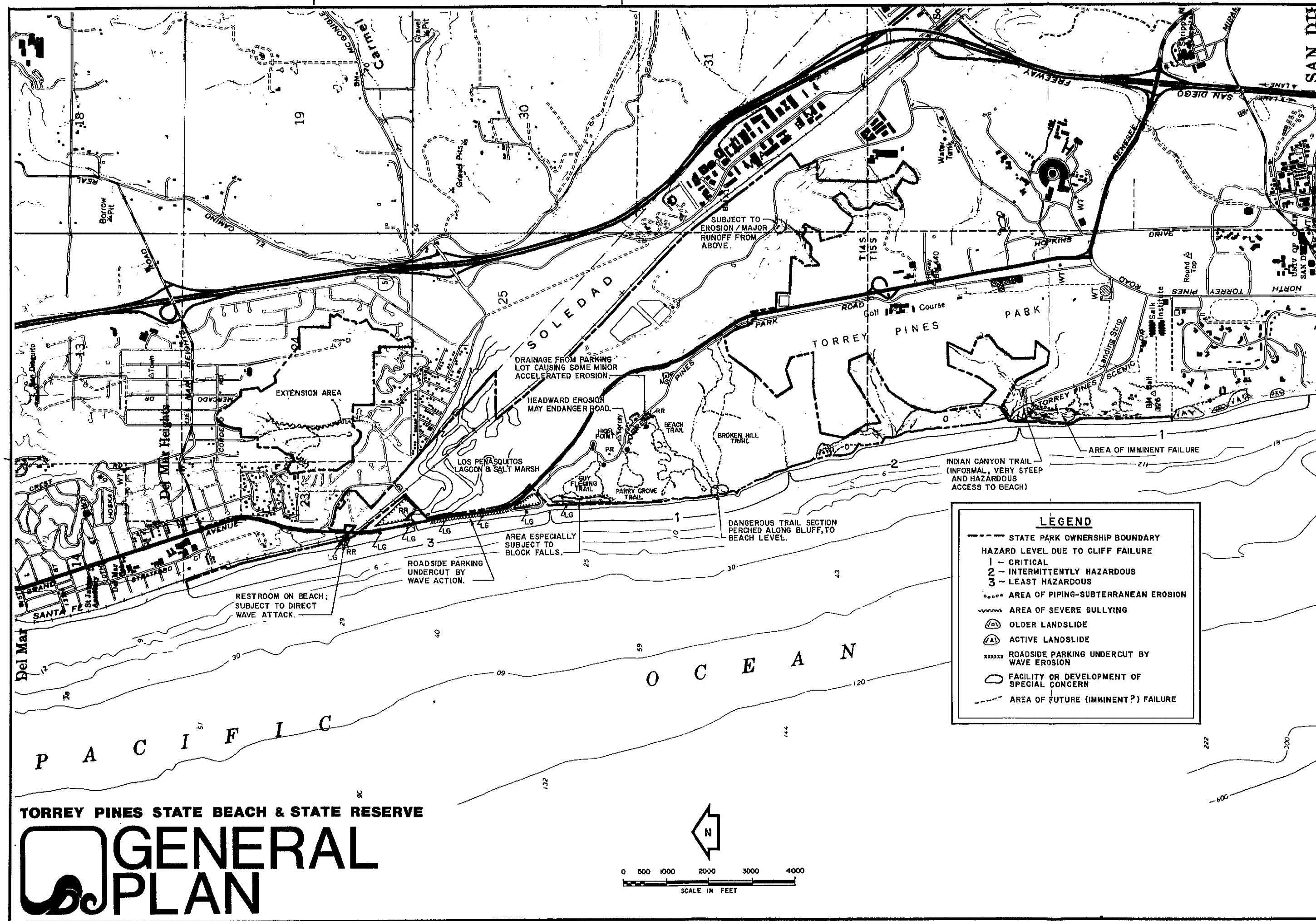
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

DESIGNED | DRAWN | CHECKED | DATE | REVISIONS | APPROVED | DATE

TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
EXISTING FACILITIES

DRAWING No. 19153

SHEET No. 2 of 2



TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

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DATE | REVISIONS

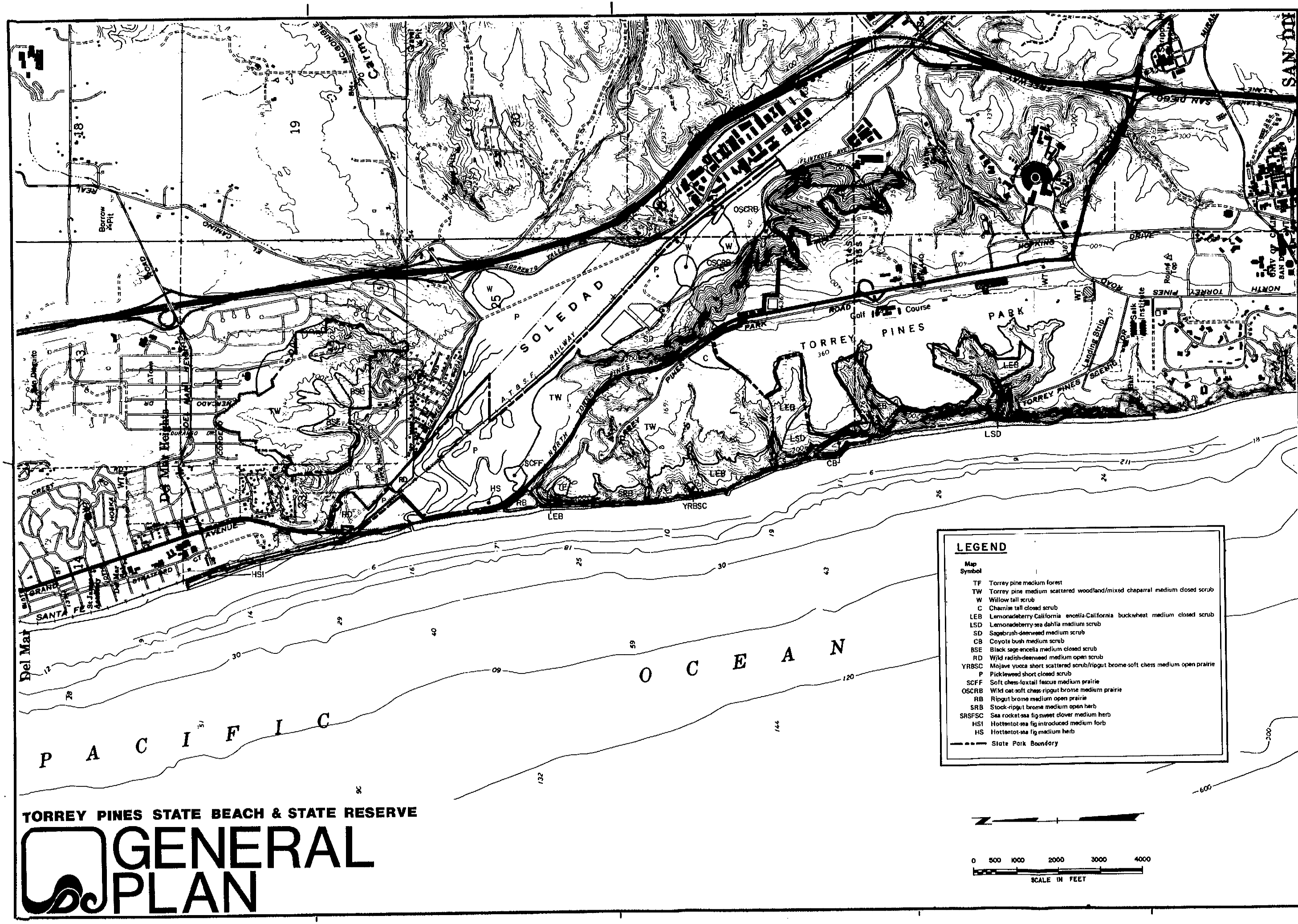
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
GEOTECHNICAL HAZARDS

DRAWING No. 19153

SHEET No. 1 of 3



TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

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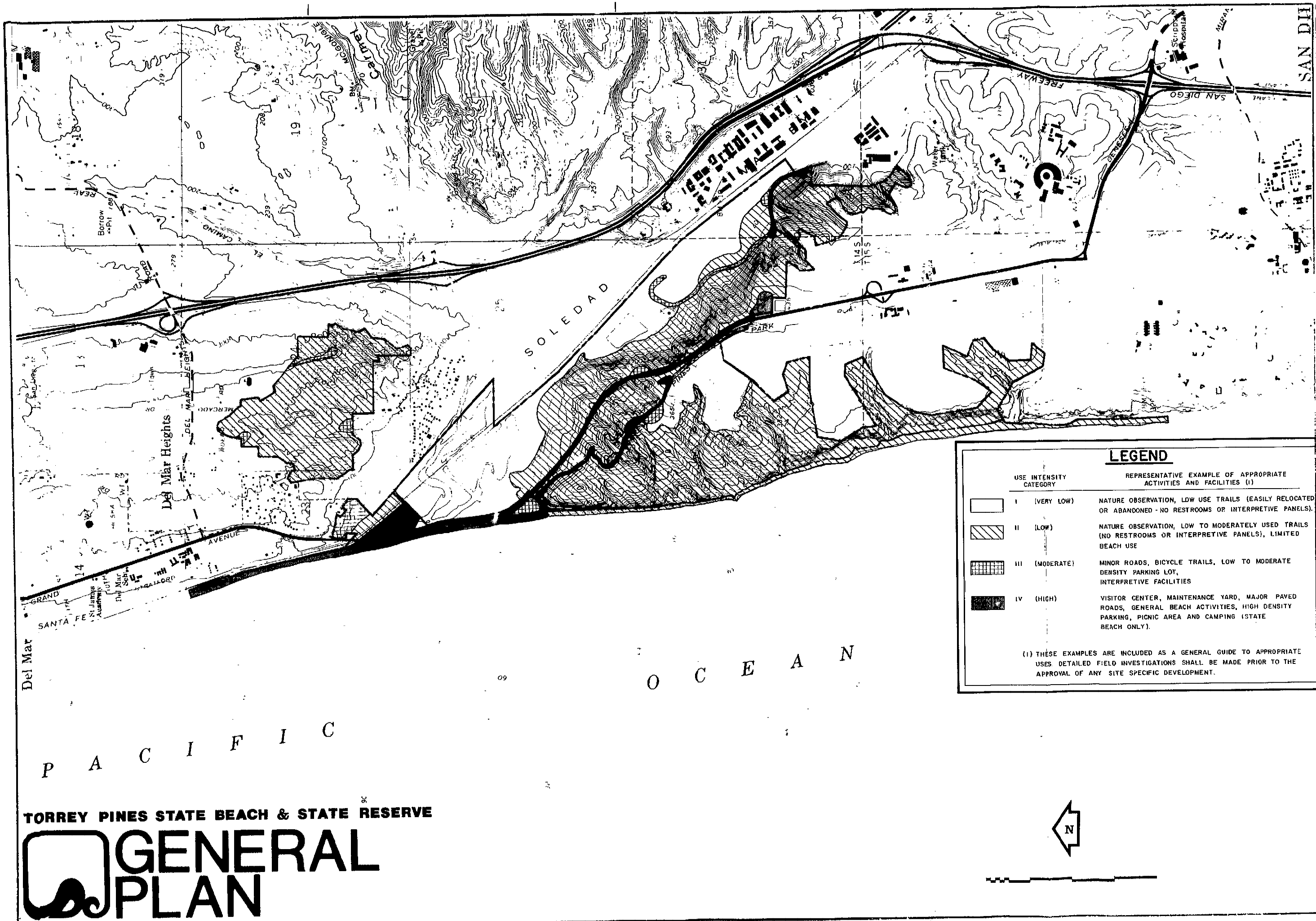
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
PLANT COMMUNITIES MAP

DRAWING No. 19153

SHEET No. 4 OF 11



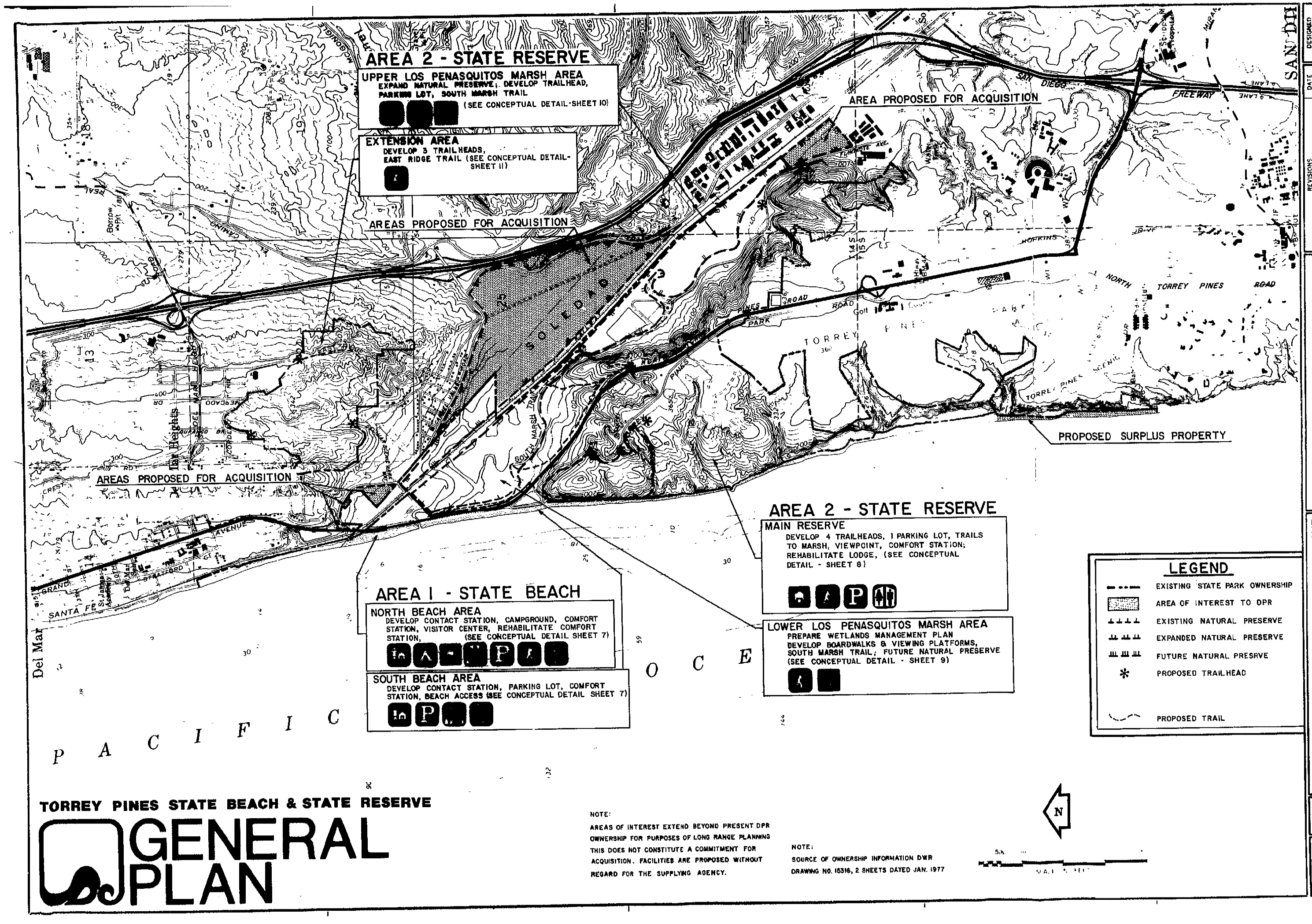
TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
ALLOWABLE USE INTENSITY

DRAWING NO 19153

SHEET NO 5 OF 11



TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

NOTE:
AREAS OF INTEREST EXTEND BEYOND PRESENT DPR OWNERSHIP FOR PURPOSES OF LONG RANGE PLANNING THIS DOES NOT CONSTITUTE A COMMITMENT FOR ACQUISITION. FACILITIES ARE PROPOSED WITHOUT REGARD FOR THE SUPPLYING AGENCY.

NOTE:
SOURCE OF OWNERSHIP INFORMATION DWR DRAWING NO. 15316, 2 SHEETS DATED JAN. 1977

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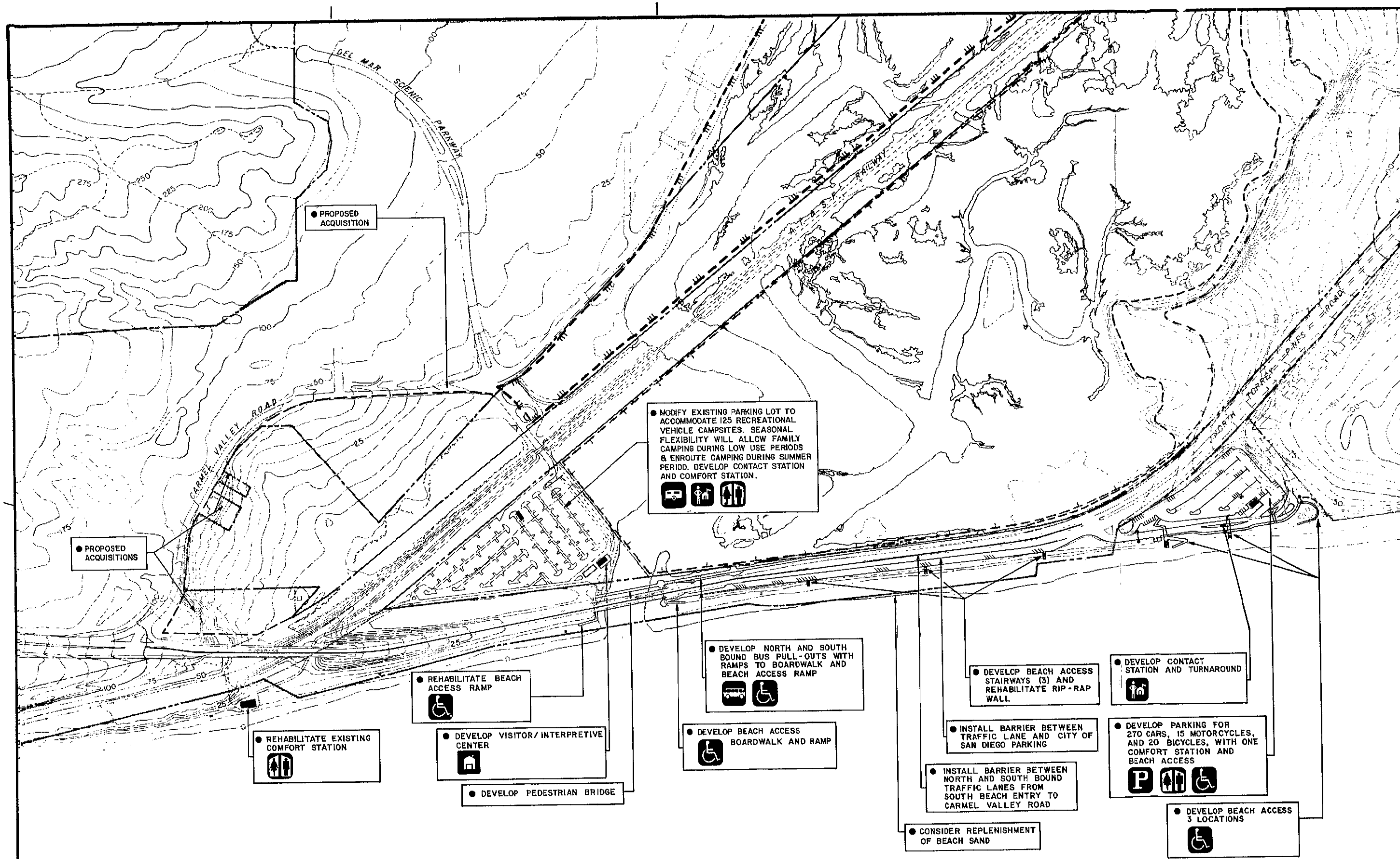
DEPARTMENT OF PARKS AND RECREATION

TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
LAND USE & FACILITIES MAP

DRAWING No 19153

SHEET No 6 OF 11



TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

NOTE:
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NOTE
SOURCE OF OWNERSHIP INFORMATION DPR DRAWING NO 15316, 2 SHEETS DATED JAN 1977

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SCALE IN FEET

NOTE:
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DEPARTMENT OF PARKS AND RECREATION
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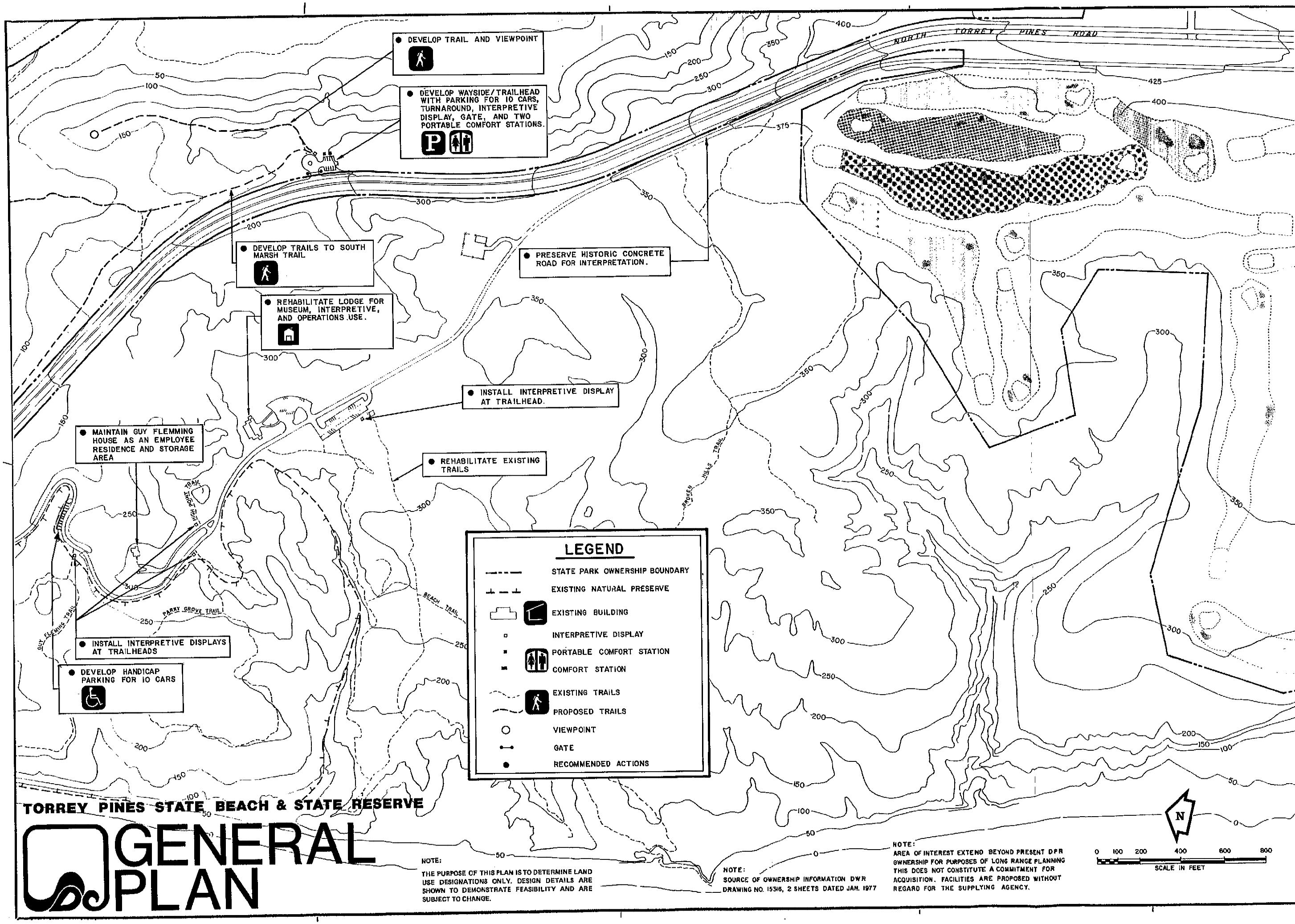
TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
CONCEPTUAL DETAIL - AREA 1 - STATE BEACH
NORTH BEACH AND SOUTH BEACH AREAS

DRAWING No. 19153

SHEET No. 7 OF 11



TORREY PINES STATE BEACH & STATE RESERVE

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TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
CONCEPTUAL DETAIL - AREA 2
MAIN RESERVE

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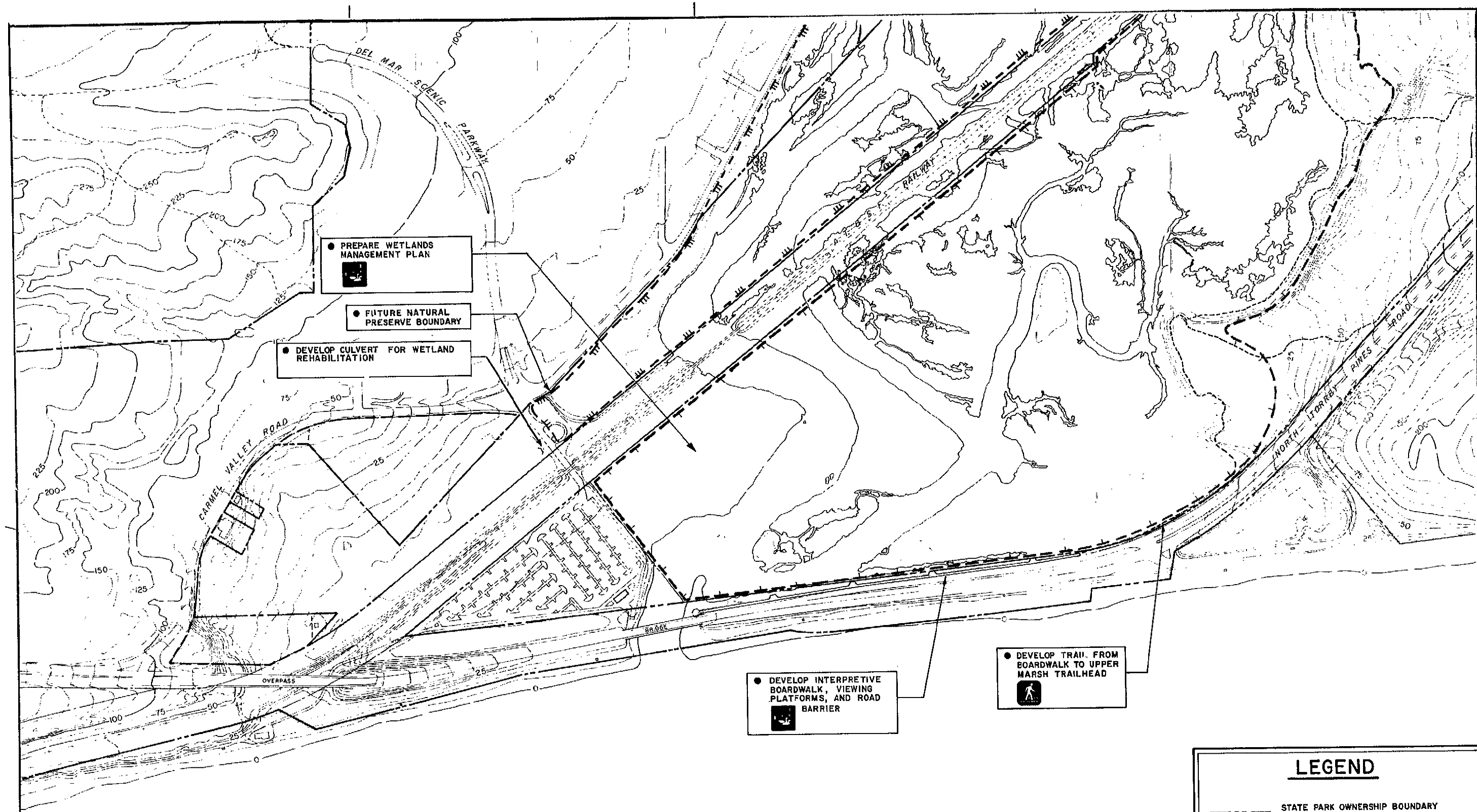
SHEET NO. 8 OF 11



LEGEND

- STATE PARK OWNERSHIP BOUNDARY
- POTENTIAL AREAS OF ACQUISITION
- EXISTING NATURAL PRESERVE
- FUTURE NATURAL PRESERVE
- TRAIL
- BOARDWALK & VIEWING PLATFORMS
- EXISTING CONTOURS (5' INTERVAL)
- RECOMMENDED ACTIONS

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SCALE IN FEET

TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

NOTE:
AREAS OF INTEREST EXTEND BEYOND PRESENT DPR OWNERSHIP FOR PURPOSES OF LONG RANGE PLANNING THIS DOES NOT CONSTITUTE A COMMITMENT FOR ACQUISITION. FACILITIES ARE PROPOSED WITHOUT REGARD FOR THE SUPPLYING AGENCY.

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TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
CONCEPTUAL DETAIL - AREA 2 - STATE RESERVE
LOWER LOS PENASQUITOS MARSH AREA

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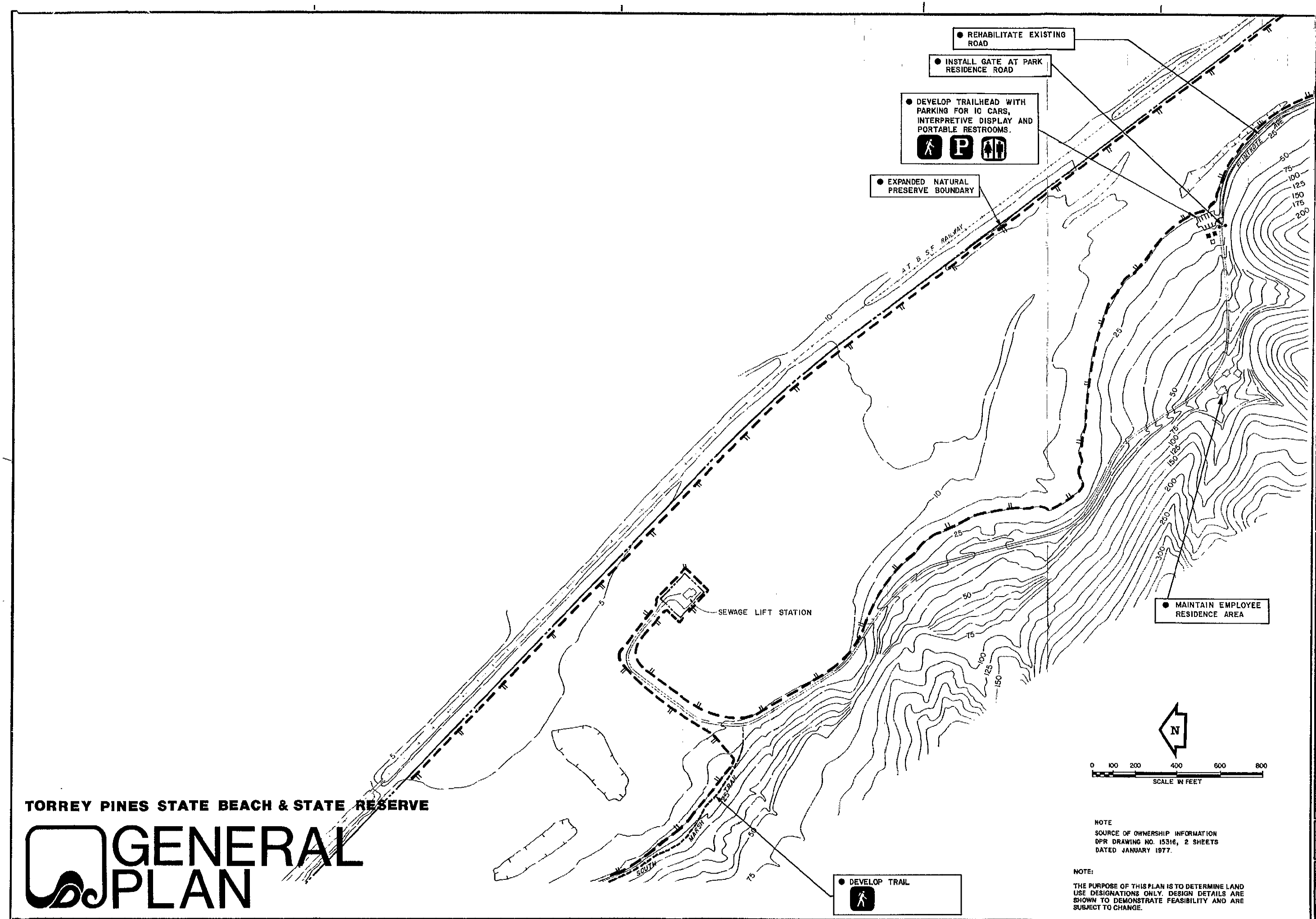
SHEET No. 9 OF 11



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SOURCE OF OWNERSHIP INFORMATION
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DATED JANUARY 1977.

NOTE:

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TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

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REVISIONS | DATE

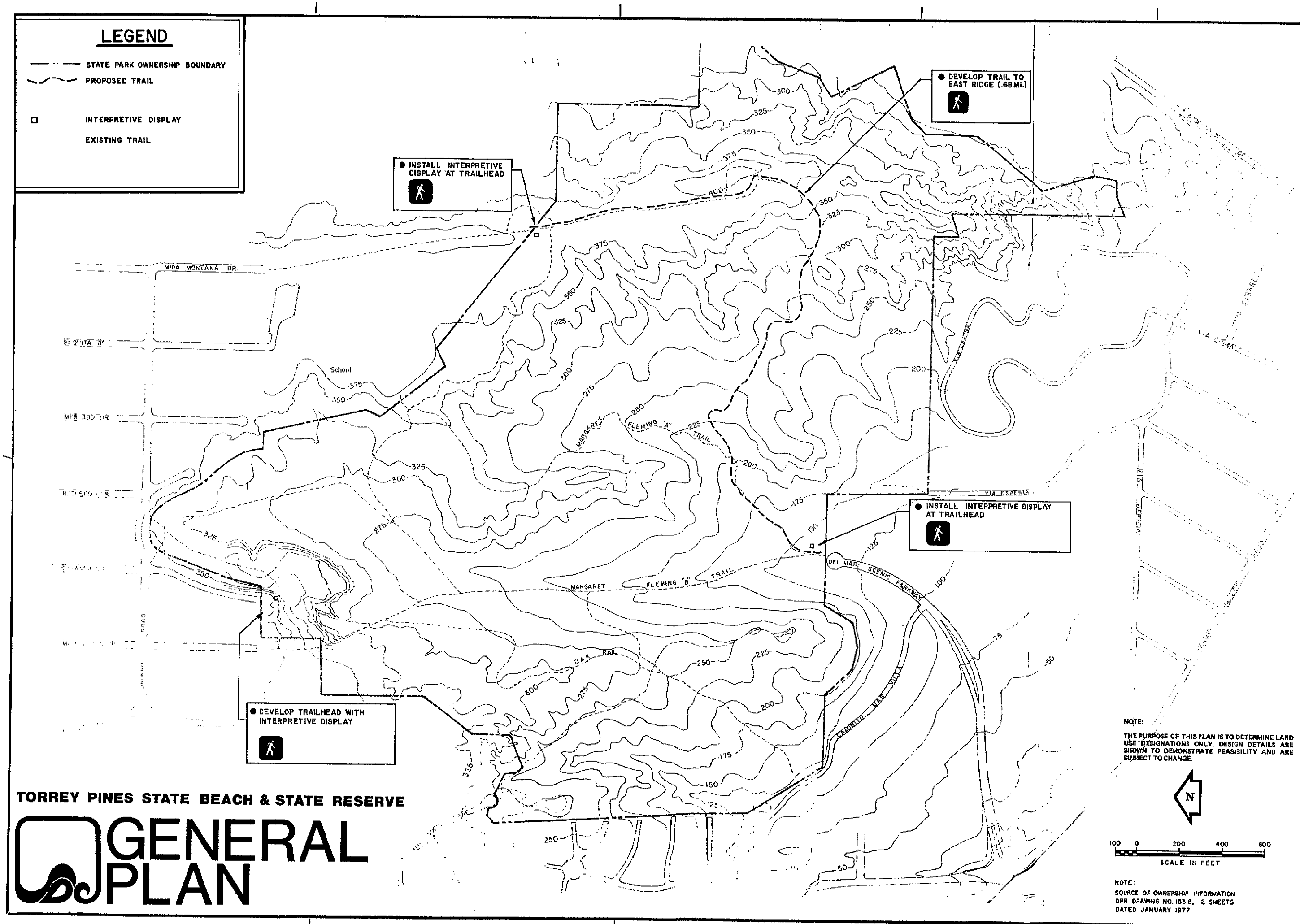
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED_____ DATE_____

TORREY PINES STATE BEACH & STATE RESERVE

SAN DIEGO COAST GENERAL PLAN
CONCEPTUAL DETAIL-AREA 2-STATE RESERVE
UPPER LOS PENASQUITOS MARSH

DRAWING NO.
19153

SHEET NO.
10 OF 11



TORREY PINES STATE BEACH & STATE RESERVE

GENERAL PLAN

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DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

TORREY PINES STATE BEACH & STATE RESERVE
SAN DIEGO COAST GENERAL PLAN
CONCEPTUAL DETAIL - AREA 2 - STATE RESERVE EXTENSION AREA

DRAWING No.
19153

SHEET No.
11 OF 11

THE SAN DIEGO COASTAL STATE PARK SYSTEM GENERAL PLAN

WRITTEN BY:

Development Division (Land Use and Facilities Elements)
Douglas Healey, Associate Landscape Architect
Jim Jackson, Associate Architect
Lester Maddox, Associate Landscape Architect
Gary Shannon, Associate Landscape Architect
Wayne Caulkins, Associate Civil Engineer

Resource Protection Division (Resource Elements/Environmental Impact Elements)
Ken Gray, Resource Ecologist
Paul Nesbitt, State Park Historian III
Dave Schaub, Resource Ecologist
George Stammerjohan, State Park Historian II
Syd Willard, Staff Geologist
Clark Woy, Park and Recreation Specialist
Jim Woodward, Archeologist II

Office of Interpretive Services (Interpretive Elements)
Robert Hare, State Park Interpreter I
Joann Weiler, State Park Interpreter II

UNDER THE SUPERVISION OF:

Alan Kolster, Project Manager and Senior Landscape Architect
Robert Acrea, Supervising Landscape Architect (acting)
H. Lee Warren, Chief, Development Division (acting)

SPECIAL ASSISTANCE FROM:

Bill Fait, San Diego Coast Area Manager
James Neal, Frontera Area Manager
Hal Ottens, Concessions Specialist

EDITED BY:

Jeff Cohen, Research Writer, Information Office/Technical Reports Section

GRAPHIC SERVICES BY:

Gary Caplener, Graphic Artist
Victoria Chandler, Delineator
Willie Yee, Delineator

TYPESETTING AND EDITORIAL ASSISTANCE BY:

Pam Brunnmeier, Word Processing Technician

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— Individuals with various local, state, and federal agencies who cooperated with the authors.