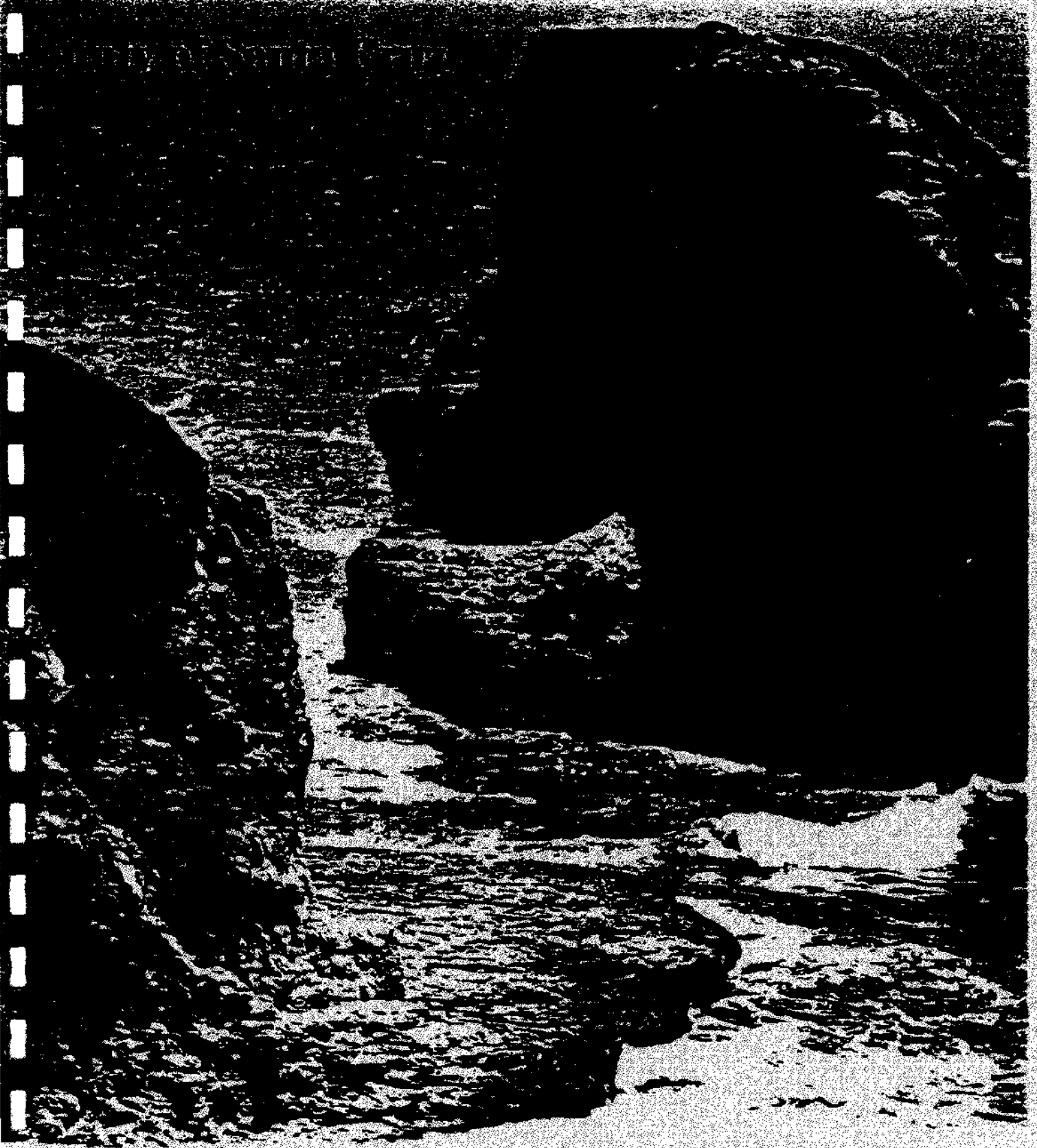


NORTH COAST BEACHES GENERAL PLAN



General Plan for the North Coast Beaches

County of Santa Cruz

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SUMMARY

This plan was completed for the County of Santa Cruz to guide the future development and management of six beaches (Scott Creek, Davenport Landing, Panther, Bonny Doon, Yellowbank and Laguna Creek) located along the North Coast of the county. It has been prepared in accordance with the General Plan standards set forth by the California Department of Parks and Recreation so that it may eventually be considered for adoption by the State Parks and Recreation Commission.

The plan contains resource management recommendations for restoring and protecting native coastal plant communities; enhancing and preserving important wildlife habitat, particularly wetlands; preventing further degradation of the coastlines' other natural, cultural, aesthetic and recreation resources and improving and expanding recreation opportunities and experiences, specifically parking and public access. It proposes to minimize private property damage; reduce public hazards; clarify liability responsibilities and provide sanitary facilities and garbage collection services. Development proposals are prioritized by beach for expected incremental funding; Bonny Doon Beach will be developed first. It is proposed that the beaches be managed at least in the short-term by the private sector; that vehicular access into the parking lots be controlled and fees charged to maintain a financially self-supporting operation.



Currently, there are no signs along Highway 1 indicating where beaches are accessible and whether or not they are available for public use. Parking areas have developed along Highway 1 both on and off the shoulders, as more and more people have discovered the beaches that are generally hidden from view. The sudden slowing of turning vehicles, uncontrolled traffic into and out of the parking areas and backing out into the relatively high speed traffic of Highway 1 are some of the problems that have resulted. During periods of peak use, parking space is insufficient, so parking occurs alongside Highway 1, magnifying normal traffic interference. Where parking occurs on the east side of the highway, auto-pedestrian conflicts also arise.

Pedestrians are further subjected to hazards as they maneuver along the coastal bluff tops, across Southern Pacific railroad tracks and down steep slopes and cliff faces. During the growing season, trail users may be exposed to toxic chemicals that are sprayed on the nearby crops. Hazards exist at the beaches as well. With years and years of use, but no regular garbage collection, most of the beaches are heavily littered with broken glass and other debris. There are also no signs at the beaches to warn users about dangerous currents or the isolation of beach segments at high tide.

There are no sanitary facilities at either the parking areas or beaches. The lack of such facilities is an inconvenience, a nuisance and a potential health hazard. Those seeking more privacy trespass on private property, causing erosion, destroying vegetation, leaving litter and frequently vandalizing fences, crops and even farm and irrigation equipment. Property damage is a major concern as all of the sites except Scott Creek Beach are privately owned.

Natural resources have also suffered greatly from uncontrolled access and lack of on-site management. This is particularly true of the sand dunes where vegetation has been trampled by foot traffic and off-highway vehicles. Coastal bluff plant communities vegetation containing rare plants have declined as well. There are two wetland areas with important wildlife, waterfowl and shorebird habitat value that are sensitive to human and dog intrusion. Endangered or important bird species which nest in the coastal cliffs and on the beach at Laguna Creek are being adversely affected by visitors.

As concern has grown regarding the increasing resource degradation of one of the more scenic stretches of coastline in California, implementation of the policies of the Local Coastal Program

(LCP) has become a top priority of the County of Santa Cruz, as well as other agencies. The LCP, adopted on November 16, 1982 by the Santa Cruz County Board of Supervisors, identifies all the units addressed herein, with the exception of Panther Beach, as primary public access points.

In Section 4.0, Shoreline Access, two objectives are stated:

- 4.0.1 **Objective:** To provide a system of shoreline access to the coast with adequate improvements to serve the general public and the coastal neighborhoods which is consistent with public safety needs, protects natural resource areas from over use, protects public rights and the rights of private property owners, minimizes conflicts with adjacent land uses, and does not adversely affect agriculture.
- 4.0.2 **Objective:** To maintain or provide access, including visual access, to every beach to which access exists or where there is a presumption of access by prescriptive rights, to ensure one access to every pocket beach and convenient, well distributed access to long sandy beaches.

The first policy under this section calls for the development of primary public access points, but only when automobile parking or an acceptable alternative can be provided, and all environmental impacts and use conflicts can be satisfactorily mitigated. The subsequent policies address vertical and lateral access, signing, conflicts with natural resources, conflicts with other land uses, garbage collection, law enforcement, hazards, transportation, parking, bicycle use and trails. This plan represents a significant attempt to implement a major portion of the LCP policies.

In order to effectively solve the North Coast problems via the policies of the LCP, there must be a comprehensive plan, involving as many of the beaches as possible, and a coordinated approach for development and management. This plan strives to serve that purpose by making recommendations for phased physical improvements, habitat restoration and protection, levels of operation and maintenance, agency cooperation, potential funding, labor resources and other implementation strategies.

Objectives of the Plan

The General Plan attempts to meet the following broad objectives:

1. Identify the land base that needs to be secured and the facilities needed to help meet current and future recreation demands along the northern Santa Cruz County coastline, without exceeding the existing low intensity use levels. This includes the provision of designated and safe access routes to the beaches for the general public and disabled persons.
2. Maintain the existing rural scenic character and perpetuate the environmental quality of the natural and cultural resources, particularly wildlife habitat and coastal vegetation, on both private and public property.
3. Provide appropriate interpretive facilities for educational and recreational purposes.
4. Promote a clean, enjoyable and well-managed recreational environment by providing sanitary/garbage collection services and facilities.
5. Promote public safety by: minimizing traffic, railroad, trail, beach, water and health hazards; reducing undesirable/criminal behavior and providing aquatic rescue services.
6. Equip the Department and other state, county and federal agencies, private organizations and individuals with a tool for coordinating their efforts to meet these objectives.

The Planning Process

A parking study issued in June 1983 by the Santa Cruz County Transportation Commission (SCCTC) was the first report of its kind to acknowledge the traffic problems along Highway 1 between the city limits of Santa Cruz and the San Mateo County line. The report also cited "rowdiness, vandalism, and excessive littering" at the beaches and parking areas.

Although none of the report's recommendations were executed, it helped bring about the formation of the North Coast Beaches Advisory Committee by resolution of the County of Santa Cruz Board of Supervisors. Comprised of 15 local citizens with a broad range of backgrounds and interests in the project, the Committee's charge was to develop specific improvement and management plans for each of the beach areas. This group met at least monthly for over a year, collecting and analyzing information about conditions at these beaches. In June 1985, they issued a report titled *The North Coast Today and Tomorrow* that describes existing conditions and problems and makes recommendations regarding natural resources, litter and sanitation, parking and transportation, access, law enforcement, preparation of a management plan and interim management. Much of their documentation is represented in this General Plan. Perhaps the greatest asset of the report is that it represents a philosophical compromise reached among a variety of landowner and beach user interests.

With technical expertise and additional agency input, the proposals contained in the committee's report have been further developed and refined as reflected in this plan. More specific and scientific resource information was assembled from existing data sources and through field observations, and analyzed to establish general policies for enhancing and protecting sensitive and important natural resources. Alternative facility types, locations and management options were evaluated based on site opportunities and constraints. Development and operational costs were estimated to assist the County in deciding how to realize the objectives of this plan.

If the Department were to consider accepting the North Coast beaches into its State Park System, a Resource Inventory and revision to this General Plan are likely to be required. The Department may also demand that certain planning procedures be adhered to, including: public participation to obtain input on issues, management policies, conceptual plan alternatives, an environmental impact report, preliminary and final General Plans. The public would be notified and kept informed of progress via a newsletter, and a series of meetings would be held. The State's full planning process generally takes one to two years to complete.

Regardless of what agency is ultimately responsible for the management of the North Coast beaches, construction drawings and documents will have to be prepared and all necessary dedications and easements will have to be in place before any physical improvements can actually be made.

Agency Coordination

A variety of agencies and organizations have been involved with or may be interested in the planning efforts of this project. Table 1 defines the roles of each.

TABLE 1

Potentially Affected or Interested Agencies and Organizations

Agency	Regulatory Approval	Implementation Assistance	Management Coordination	General Interest
California Coastal Commission	X			
California Coastal Conservancy		X		
California Conservation Corps		X		
California Highway Patrol			X	
California Youth Authority		X		
California Dept. of Fish & Game	X	X	X	
California Dept. of Parks & Recreation		X	X	
California Dept. of Transportation	X	X		
City of Santa Cruz				X
San Mateo County				X
Santa Cruz County Community Action Board		X		
Santa Cruz County Metropolitan Transit District			X	X
Santa Cruz County Planning Department	X			
Santa Cruz County Sheriff's Office			X	
Wildlife Conservation Board		X		

Portions or all of the General Plan will be made available to the above agencies for their review and use. Other organizations and individuals who may be affected by the plan will have access to it.

REGIONAL CONTEXT

The following section briefly describes the northern coastline of Santa Cruz County where all the project sites are located, with emphasis on the recreational setting.

Regional Description

The North Coast beaches, only six of which are addressed in this plan, are located along a 13-mile stretch of rocky coastline between the northern city limits of Santa Cruz to the southern boundary of San Mateo County. They are part of an incredibly scenic and rural landscape traversed by Highway 1 from near the inlet of San Francisco Bay south to Monterey Bay. The coastline is isolated from urban development to the east by the Santa Cruz Mountains, and yet is readily accessible to millions of Bay Area residents via a 1 to 1-1/2 hour drive.

The coastal uplands are generally flat, permitting intensive commercial agriculture, most of which is for the production of Brussels sprouts. Most of the land is private but undeveloped, partly because of restrictive zoning. Many of the beaches cannot be seen from Highway 1, as they are tucked into the undulating coastline where the mountain creeks flow to the sea, at the base of 40- to 80-foot bluffs. Occasionally, Highway 1 dips down to sea level where it separates a broad beach from an inland wetland area. Wildlife is diverse and abundant, and dependent on these wetlands and the shoreline for habitat. The wind frequently blows during the summer, but the North Coast beaches are not as persistently foggy as the beaches farther north along the coast.

Regional Recreation Profile

Existing Beaches

Of all the North Coast beaches, only Scott Creek, Davenport Landing, Panther, Bonny Doon, Yellowbank and Laguna Creek are addressed in this plan. These are dispersed over a distance of approximately 5-1/2 miles along Highway 1. They are located on private property, with the exception of Scott Creek Beach which is owned by the County of Santa Cruz.

There are several beaches to the south that are within the County's jurisdiction. Red, White and Blue Beach is under private ownership. It is managed as a "clothing optional" beach and fees are charged. The others are located in Wilder Ranch State Park which is essentially yet undeveloped. A General Plan for this unit was adopted in 1980 but the first improvement, a 74-vehicle capacity parking lot at the Wilder Ranch complex, will not be constructed until 1988. A second parking lot, with space for 113 vehicles, will be built a year later to serve Four Mile Beach. The park will ultimately have a variety of campgrounds and picnic areas, a hostel and an interpretive center, all connected by hiking and equestrian trails. However, no other parking lots west of Highway 1 are planned.

To the north, the Department's Big Basin Redwoods State Park includes the state owned beach at the mouth of Waddell Creek. It has a parking lot and other minimum improvements. South of this state park lies Greyhound Rock which is owned by the Department of Fish and Game but managed by the County of Santa Cruz. Existing day use facilities will soon be renovated under a grant provided by the Wildlife Conservation Board, and therefore is considered in this plan only in terms of management.

Davenport Beach is another North Coast beach, but it has been excluded from this plan because of its proximity to the Davenport community. It will be incorporated in a more comprehensive community plan at some future date.

The seven major coastal units in San Mateo County (Thornton State Beach at the north end to Ano Nuevo State Reserve at the south end) are owned and managed by the Department. They all have parking lots and sanitary facilities; several have picnic areas. Camping facilities are available at Half Moon Bay. Fees are collected at all of these units, at least during summer weekends.

The greatest number of visitors to state beaches in Santa Cruz and San Mateo Counties originate in the San Francisco Bay Area, followed by the Central Valley and Northern California, Santa Cruz and San Mateo Counties, Southern California and out-of-state (Wilder Ranch General Plan, 1980 and communication with Department personnel in the San Mateo District). The most popular activities include sight-seeing, beachcombing, wading, picnicking, taking pictures and

sunbathing. Local residents particularly enjoy fishing, surfing, windsurfing, jogging, camping, partying, playing volleyball, exercising dogs and sunbathing in the nude. Some visitors swim, fly kites, dig for mussels, observe wildlife and paint. Illegal off-highway vehicle use occurs periodically at beaches that are accessible. Very little scuba diving occurs along this stretch of coastline, as it is suspected of being a shark nursery and the water is generally rough and lacks clarity. The peak use season generally runs from May through September, although the months of March, April and October can be very popular if the weather is warm and dry.

Recreationists at the North Coast beaches are slightly different than those who visit the state beaches to the north and south; they tend to be younger and less family-oriented. This is due to (1) the close proximity of the University of California at Santa Cruz; (2) the lack of management and fee collection; (3) better weather conditions for sunbathing; and (4) more visual isolation from Highway 1 (promoting nude sunbathing).

Demand

Visitor demand differs along the coastline. Between 1981 and 1986, visitor days¹ at Santa Cruz County beaches went from an estimated 2.1 million to 3.3 million. The number of visitors at the less developed San Mateo County state beaches declined dramatically when a fee payment system based on voluntary cooperation was initiated in the early 1980s. Paid visitor attendance records indicate that use increased annually until 1985 when manned kiosks were installed to maximize the effectiveness of the fee collection system. It appears that attendance at these particular beaches has now stabilized (Planning Division, Department of Parks and Recreation).

During summer weekends and holidays when the weather is good, parking lots at all the beaches in both counties cannot meet the overwhelming demand. However, on typical summer days, existing parking lots are more than adequate. As the growth of northern California counties, particularly Santa Clara County, continues to climb as predicted (State of California Department of Finance, 1983), additional parking will be needed. This future need is further reinforced by Department visitor use projections (see Tables 2 and 3).

1 The use of an area for a total of 12 person-hours by one or more people, either continuously or spread over several visits.

TABLE 2
Projected Annual Recreation Demand
(In Participation Days)**
Santa Cruz County

Activity	1985	1990	1995	2000
Saltwater Fishing	232,829	254,496	273,201	289,001
Picnicking	805,944	859,996	904,659	947,560
Nature Appreciation	955,365	1,045,369	1,116,634	1,185,742
Visiting Scenic Areas	660,550	731,502	785,050	834,186
Ocean Swimming	486,605	524,526	550,267	569,975
Scuba and Snorkeling	52,291	59,177	64,573	69,507
Body Surfing	150,908	163,123	174,746	186,748
Board Surfing	71,308	76,987	81,094	84,231
Sunning	570,967	605,077	634,260	663,308
Beach Combing	143,402	151,401	159,464	166,488
Beach Games	249,926	263,677	272,544	281,458
Camping	609,283	653,592	692,576	727,502

* A participation day is one person engaging in recreation activity for any amount of time in one day.
 ** Totals have not been provided because recreationists frequently participate in more than one activity.

Source: California Department of Parks and Recreation, PARIS III

TABLE 3
Projected Annual Recreation Demand
(In Participation Days)*
San Mateo County

Activity	1985	1990	1995	2000
Saltwater Fishing	709,706	752,446	799,144	830,553
Picnicking	2,485,514	2,569,543	2,667,240	2,743,623
Nature Appreciation	2,355,122	2,478,521	2,599,935	2,698,667
Visiting Scenic Areas	1,491,231	1,596,333	1,683,128	1,743,336
Ocean Swimming	1,414,230	1,484,328	1,541,266	1,578,677
Scuba and Snorkeling	133,831	149,001	161,235	171,851
Body Surfing	455,572	476,394	501,809	525,884
Board Surfing	213,872	225,195	234,707	238,393
Sunning	1,694,074	1,726,466	1,774,431	1,810,966
Beach Combing	398,557	404,206	418,097	426,849
Beach Games	686,228	702,606	715,592	721,578
Camping	1,220,976	1,280,634	1,343,579	1,394,231

- * A participation day is one person engaging in a recreation activity for any amount of time in one day.
- ** Totals have not been provided because recreationists frequently participate in more than one activity.

Source: California Department of Parks and Recreation, PARIS III

Other facilities at the state beaches in the region are currently adequate even though budget requests are made annually to upgrade them. Fortunately, the beaches are large enough to accept many more visitors than they are normally now receiving, without diminishing the experience of the user, as long as equipment and staffing remains adequate.

Although there is no existing data documenting specific use patterns at the North Coast beaches, a consistent increase in visitors has been observed over the years. This may be a combined result of general population growth, increased number of University of California, Santa Cruz students and a migration of users from other beaches where fees have been instated.

Generally, off-highway parking space is either inadequate or unavailable at the North Coast units, although the carrying capacities of the beaches are generous (see Table 5). Basic facilities are sorely needed at all the North Coast beaches.

Development of the Wilder Ranch State Park parking facilities may temporarily ease some of the demand at the six North Coast beaches discussed in this plan, but it is not likely to be significant because parking fees will be charged, and certain types of social behavior will not be tolerated at the state park. Use will probably increase at unregulated, no-fee beaches until a plan for their management is implemented.

Once this plan is implemented, there will be essentially no unmanaged beaches remaining in the area. Initially, use will likely decline, and the type of user may change from young singles to family members. When visitors have become accustomed to paying for beach access parking, use will eventually rise to current levels and beyond.

RESOURCE ELEMENT

The Resource Element (1) summarizes the existing natural and cultural resource conditions of the units and (2) establishes long-range development and management policies based on the constraints and sensitivities of those resources. The appropriateness of these policies further depends on the classification of the unit, the declared purpose of the unit and the defined zone of primary interest.

In a typical planning process initiated by the Department, a detailed inventory of natural, cultural, recreation and aesthetic resources is the first task completed. From the resulting Resource Inventory, data is synthesized for the Resource Element. Since a full Resource Inventory was beyond the scope of this project, the resource summaries may lack the detail of a Department General Plan. However, enough data has been collected, particularly in the areas of wildlife and vegetation, to permit the development of preliminary resource management policies. Information not normally required in a General Plan has been provided regarding parking and access, land ownership and other legal conditions. For additional resource information, refer to the *North Coast Today and Tomorrow* report.

Policy Formation

Classification

Classification of a State Park System unit forms the foundation on which all management and development policies are based. Classification statutes contained in Article 1.7 of the Public Resources Code (PRC) specify broad management objectives and improvements appropriate to state beaches, which is how these units would likely be classified. The PRC further establishes several categories of units that can be included within the boundaries of another unit of the State Park System. At Scott Creek and Laguna Creek Beaches, the wetland areas should be designated as natural preserves to allow the natural dynamics of ecological interaction to continue without interference.

Declaration of Purpose

A declaration of purpose describes the purpose of the unit and identifies the prime resources, long-range management objectives and the relationship between the unit's resources and recreational uses.

The beach units should have a declared purpose to make available to the public, as a recreational resource, the sandy beaches, intertidal rocky shorelines and associated uplands of the six designated sites of the North Coast of Santa Cruz County. All recreational activities and support facilities would have to be consistent with the perpetuation of the beaches and related natural and cultural resources.

The purpose of the Scott Creek natural preserve, located on the inland side of Highway 1 on private property, would be to protect the wetland habitat for the perpetuation of important wildlife and fish species and interpretation for the public. This same purpose would apply to Laguna Creek where the natural preserve would be expanded to include the nesting area of the snowy plover. This would include the depressed area west of Highway 1, all of which is privately owned.

Zone of Primary Interest

The zone of primary interest is that area outside the unit in which land use (changes) could adversely affect the resources of the unit. For these units, it would include the area immediately surrounding the beaches and access trails, as well as the watersheds of the creeks that drain to the beaches.

The Department would be concerned about all activities in this zone and would take action whenever possible to minimize any negative impacts likely to be caused by them.

Resource Summaries and Management Policies

Topography

The terrain along the North Coast consists of a marine terrace that has been uplifted and eroded. The terrace varies in height along the coastline but is generally 60 feet above sea level, and separated from the ocean by steep bluffs. The beaches occur where the terrace is dissected by drainages. At Scott Creek, Davenport Landing and Laguna Creek, the valleys are broad and low; the beach is wide. Panther, Bonny Doon and Yellowbank are pocket beaches.

The main beach at Scott Creek extends over half a mile between a sloped terrace on the north and sand dunes and bluff on the south. A narrow strip of beach, again as long as the main beach, continues to the south at the base of a bluff. It is inaccessible during the winter. The river valley runs deep inland, but the main beach is separated from a wetland area by an elevated portion of Highway 1.

Davenport Landing Beach is approximately 200 yards long and 50 yards wide. It is bounded at both ends by low rocky terraces backed by vertical cliffs 30 to 40 feet high. The beach is bordered to the east by a broad low terrace.

Panther Beach is the smallest of the units and its size can vary from year to year. It is surrounded by 40-foot high cliffs. In the center of the cove there is a large pinnacle of rock, isolated from the shoreline even at low tide.

Sixty foot bluffs enclose Bonny Doon Beach on the north and south, and a large sand dune encloses it on the east. The beach is about 250 yards long and half as wide. A pocket beach at the north end is reclaimed during the winter.

Yellowbank Beach consists of a main beach 100 yards long and 70 yards wide; it is separated from a long narrow beach to the south by a small rock archway that is passable only at low or medium tides, and is otherwise inaccessible. Both beaches are bounded at either end by 30- to 40-foot bluffs. The main beach is separated from the Yellowbank Creek Canyon by a wall of railroad and highway fill.

The most distant from Highway 1, Laguna Creek Beach stretches over half a mile and is half as wide as it is long. There is a small pocket beach at the north end. A series of stepped terraces bound it on the north; the south end is cut short by an 80-foot bluff. A large lagoon and wetland area border the beach to the east.

Meteorology

The climate along the coast is mild throughout the year. The mean July maximum temperature in the Santa Cruz area is 70°F, while the January mean minimum is 38°. Summer weather is characterized by early morning and evening fog, and is generally cool and breezy. The best conditions occur in the spring and fall between low pressure systems. Annual precipitation is about 30 inches.

The North Coast beaches receive less fog than the beaches along the San Mateo County coastline north of Franklin Point. Wind conditions also tend to be less severe during most summer seasons.

All the units are highly exposed to the prevailing winds that come from the west and northwest. Scott Creek Beach is the windiest. The other beaches have northern portions or pocket beaches that are somewhat sheltered from the wind by the terrain; Bonny Doon Beach provides the most shelter. Parts of the lagoon at Laguna Creek Beach are also protected from the prevailing winds.

Hydrology

Information regarding the hydrology of the area has been limited to surface drainage.

All of the beaches have creeks draining into them, several of which are significant in size. At Scott Creek Beach, the stream flows across the length of the main beach a good portion of the year, or sometimes to one side or the other, making the beach partially inaccessible. It is joined at the south end by Molino Creek, a much smaller drainage. At Bonny Doon Beach, Liddell Creek emerges from a culvert and crosses the back part of the beach during the winter and

spring. During the wet season, Laguna Creek covers a large section of the beach, but recedes into the wetland later in the year.

The lagoons at Scott Creek and Laguna Creek have been artificially breached in the past to prevent the flooding of adjacent farmland. In wet years, the lagoons provide ideal rearing conditions for juvenile steelhead and important habitat for shorebirds, gulls, and waterfowl. Summer or fall sandbar breaching can prematurely drain the lagoons and/or reduce the water quality, killing many fish or sharply reducing their growth rates.

Flashboard dam structures exist at the mouth of a man-made tunnel at Bonny Doon Beach and on Laguna Creek at the westernmost edge of the riparian vegetation. The structure at Laguna Creek was apparently used for water diversion in the past. The drop produced by the dam represents a barrier to the movement of coast range and prickly sculpins. Adults of those fish species probably migrate to the lagoon for much of their reproduction, but juvenile and adult fish would be blocked from moving upstream for rearing. The narrow opening in the dam and sloping apron provide ideal conditions for poaching migrating adult steelhead. The structure at Bonny Doon Beach also lends itself to poaching.

Spring and summer streamflows at Scott Creek and Laguna Creek are necessary to increase and maintain lagoon levels after sandbar formation. Water diversions from Laguna Creek for agricultural and domestic water use for the City of Santa Cruz frequently do not allow sufficient inflow to provide optimum lagoon levels for fish and wildlife.

Policy: The Department shall be actively involved in any land use decisions that may have an adverse impact on the unit's water features. Measures to maintain current and natural water quality and flow shall be recommended and supported.

Policy: Artificial sandbar breaching of Scott Creek and Laguna Creek lagoons shall not be permitted. Past breaching activities, dates of breaching and inundation levels should be determined from area landowners, if possible.

Policy: Diversion dam structures and any other structure or feature that severely reduces stream flow and adversely affects the fisheries should be considered for removal after detailed analysis of their usefulness for habitat management and related impacts.

Policy: Any existing water diversions from either Scott Creek or Laguna Creek should be eliminated. The lagoons and wetlands at these units should receive consideration in future water rights hearings. New appropriations from Scott and Laguna Creeks should be opposed.

Geology

The North Coast beaches are located on the southwestern flank of the Santa Cruz Mountains, in the Coast Range Geomorphic Province. The area is part of a large structure block, bounded on the west by the San Gregorio fault and on the east by the San Andreas fault, both of which are considered seismically active. Referred to as the Salinian Block, it is composed of metamorphosed Paleozoic (greater than 225 million years old) sediments and Cretaceous (approximately 80-90 million years old) granitic igneous rocks. The overlying Santa Cruz Mudstone, exposed along the cliffs, was derived from Ben Lomand Mountain and deposited in shallow marine sequences. The dunes at Scott Creek and Bonny Doon Beaches were formed in relatively recent geologic time from sand deposited at the beaches and blown to their present sites. Sand drift is a continual problem across Highway 1 at Scott Creek Beach. Bluff erosion and sediment from downcutting by local streams are the major sources of the sand. Wave erosion accounts for as much as 5-1/2 inches of sea cliff retreat per year (Wilder Ranch State Park General Plan, 1980). Generally, winter storms carry large quantities of the sand out to sea, which is then replaced by milder wave action during the summer.

Policy: Geologic hazards should be posted. Measures should be taken to discourage people from walking near the edges of the bluffs, and particularly over the arch at Yellowbank Beach.

Soils

Due to the typical complexity of soil types, no effort has been made to interpret documentation of nearby areas for application to these particular units. On-site observations indicate, however, that the upland soils surrounding the beaches are shallow, sandy and highly erodible. Foot

traffic, and off-road vehicle use to a lesser extent, have accelerated this erosion process, causing loss of vegetation, slope instability and unsightly conditions.

Policy: Coastal access to the beaches from the parking area shall be directed and controlled to minimize random destructive erosion. Structural means that are harmonious and appropriate to the natural and rural environment shall be installed to prevent further erosion of the coastal bluffs.

Plant Life

The six beach units along the North Coast encompass a diverse assemblage of vegetation communities (see Maps 2 through 6). Several are common to all the sites, a few are unique to only a few (for a complete checklist of vascular plants, refer to Appendix 1). The plant communities are described below.

Coastal Scrub

The coastal scrub plant community dominates the bluff tops and slopes within each beach unit. Even though the vegetation is dense, and often impenetrable, beach users have developed trails throughout the plant community at many of the units. Vegetation has been especially disturbed at Bonny Doon Beach. The community is comprised of lizard tail (Eriophyllum staechadifolium), coyote brush (Baccharis pilularis ssp. cansanguinea), yellow bush lupine (Lupinus arboreus), California sage (Artemisia californica), blackberry (Rubus ursinus) and poison oak (Toxicodendron diversilobum). Herbaceous plants include several species of cudweed (Gnaphalium sp.), seaside paintbrush (Castilleja latifolia), poison hemlock (Conium maculatum), common aster (Aster chiliensis) and common yarrow (Achillea millefolium). The community is important to wildlife for food sources and cover. At Laguna Creek Beach, it is habitat for the federally listed rare San Francisco tree lupine moth.

Coastal Bluff Scrub

Adjacent to the more common and densely growing coastal scrub is a more sensitive plant community, the coastal bluff scrub. Not always distinguished by the casual observer, this plant

community inhabits the north-facing and west-facing slopes where the soil layer is extremely thin; the fractured white sandstone substrate is often visible between the plant growth. Due to the thin soil layer and exposure, plant growth is distinctly different from the dense coastal scrub; plants are low-growing, sparser and composed of different species. This community occurs at Laguna Creek, Yellowbank, Bonny Doon and Scott Creek units. Common plants include live-forever (Dudleya caespitosa), seaside daisy (Erigeron glaucus), goldfields (Baeria chrysostoma), varicolored lupine (Lupinus varicolor), seaside plantain (Plantago juncooides), sea pink (Armeria maritima), beach strawberry (Fragaria chiloensis) and buckwheat (Eriogonum latifolium). Several grasses are also present including bent grass (Agrostis densiflora), California hair grass (Deschampsia caespitosa) and farmer's foxtail (Hordeum leporinum).

Two plant species of concern were observed within this plant community; an orchid, Michael's piperia (Piperia michaelii), and a grass, Blasdale's bent grass (Agrostis Blasdalei). The orchid was observed at the Scott Creek, Yellowbank and Laguna Creek units; the bent grass only at Laguna Creek. The California Native Plant Society (CNPS) lists these species with the R-E-D code of 2-2-3, rare, and 1-2-3, occurrence confined to a few populations, respectively. Both are endangered in a portion of their ranges, and endemic to California. Neither species is listed by state or federal agencies at this time.

Coastal Dunes

The dunes at the beach units are quite extensive. Most are active, as they constantly move and change due to the forces of wind and water. These areas have little vegetation. The more stabilized dunes are protected by extreme natural influences and/or are covered in some degree by vegetation. Plants common to these dunes are yellow sand verbena (Abronia latifolia), pink sand verbena (Abronia umbellata), beach bur (Franseria chamissonia ssp. bipinnatisecta), sea rocket (Cakile maritima), silky beach pea (Lathyrus littoralis), beach strawberry, American dune grass (Elymus mollis) and western rye grass (Elymus glaucus).

Dune vegetation at Scott Creek Beach has been severely disturbed by off-highway vehicle use and foot traffic. Uncontrolled beach access has caused considerable damage to dune vegetation at Bonny Doon as well.

Coastal Cliffs

The steep coastal cliffs are a prominent feature of each of the beach units. The vegetation is limited to areas of water drainage and/or protected ledges and crevices. These areas yield "hanging gardens", islands of vegetation along an otherwise barren sandstone face. Plants common to these "gardens" include many of the species found within the coastal scrub and coastal bluff scrub: seaside daisy; pacific sanicle (Sanicula crassicaulis); live-forever; bent grass; yerba buena (Satureja douglasii); coastal monkey flower (Mimulus guttatus ssp. littoralis); seaside plantain; large-flowered sand spurry (Spergularia macrotheca); California polypody (Polypodium californicum) and short-stemmed sedge (Carex brevicaulis).

This habitat is used extensively by a variety of shorebirds and seagoing birds for roosting, breeding and foraging. Several species are listed as endangered or of special concern.

Riparian

A well-developed riparian plant community occurs within the Scott Creek and Laguna Creek Beach units. This community is the only one occurring in the study area that is composed of a tree overstory. Representative trees are red alder (Alnus oregona), red elderberry (Sambucus callicarpa), coast live oak (Quercus agrifolia), California buckeye (Aesculus californica), box elder (Acer negundo ssp. californicum) and arroyo willow (Salix lasiolepis). Associated shrubs and herbaceous plants include poison oak, blackberry, common vetch (Vicia angustifolia), coast iris (Iris douglasiana), hedge nettle (Stachys bullata), flowering currant (Ribes sanguineum) and coffee berry (Ramnus californica). Scattered occurrences of non-native wattle (Acacia decurrens) are also present. Riparian vegetation is critical to a wide array of wildlife.

Brackish Marsh/Lagoon

The marsh and lagoon community occurs at two of the beach units, Laguna Creek and Scott Creek. The vegetation is dense with cat-tail (Typha sp.), three-square (Scirpus americanus), slough sedge (Carex obnupta), pickleweed (Salicornia sp.), pacific silverweed (Potentilla sp.), dock (Rumex fenestratus), salt grass (Distichlis spicata), willow and curly dock (Rumex crispus).

A significant portion of the Laguna Creek wetland area was farmed in the past and has been further disturbed by human access and activity. Nevertheless, these wetlands are used by waterfowl and shorebirds for feeding, nesting and bathing. The six-acre Scott Creek marsh is identified as a significant natural resource by the California Natural Diversity Data Base (CNDDDB), the California Department of Fish and Game (CDFG) and the Local Coastal Plan (LCP) of Santa Cruz County.

Ruderal

The ruderal areas within the study sites (predominantly Davenport Landing and Scott Creek Beach units) are dominated by introduced, non-native plant species. Common plants include poison hemlock, sweet fennel (Foeniculum vulgare), hottentot fig (Carpobrotus edule), bristly ox-tongue (Picris eciodes), star thistle (Centaurea solstitialis), field mustard (Brassica campestris), ripgut brome (Bromus rigidus), soft chess (Bromus mollis) and English plantain (Plantago lanceolata).

Policy: Plant species listed as rare with the California Native Plant Society and observed or predicted to occur within the coastal bluff scrub habitat at the Scott Creek, Yellowbank, Laguna Creek and Bonny Doon units should be protected. New access trails should not be developed within this community. Off-trail access should be discouraged by erecting fencing and similar barriers.

Policy: For the enhancement of native plant habitat, invasive exotic plant species should be removed or reduced. Of particular concern is the control of hottentot fig/ice plant (Carpobrotus sp.), as well as acacia (Acacia sp.), broom (Cytisus sp.), pampas grass (Cortaderia selloana) and german ivy (Senecio mikanioides). An on-going maintenance program should be established to control the spread of these exotic plant species.

Policy: The coastal scrub vegetation within disturbed areas at Bonny Doon Beach should be reestablished. Access through these areas should be restricted or otherwise discouraged.

Policy: Coastal dune vegetation should be reestablished where it has been disturbed at Bonny Doon and Scott Creek Beaches. The benefits of such restoration are improved plant and animal

habitat; reduced highway maintenance due to stabilization of the sand; enhancement of a scenic resource and reduced coastal erosion. This effort should include the full or partial removal of the concrete slab at Scott Creek Beach, and rehabilitation of the gullies and old access road near the slab.

Animal Life

The North Coast is an important habitat for a diversity of wildlife, especially shorebirds, waterfowl and fish (see Maps 2 through 6). There are several rare and endangered species and many more that are of statewide special concern (see Table 4). They have been identified below by habitat (refer to Appendix 2 for a listing of observed and predicted species).

Coastal Scrub

Wrentits (Chamaea fasciata), song sparrows (Melospiza melodia), California thrashers (Toxostoma redivivum) and brown towhees (Pipilo fuscus) nest in this habitat. Black phoebe (Sayornis nigricanus), several swallow species, loggerhead shrike (Lanius ludovicianus) and northern harrier (Circus cyaneus) forage here.

The San Francisco tree lupine moth (Grapholita edwardsiana), a rare moth listed with the U.S. Fish and Wildlife Service, has been recorded at the Laguna Creek Beach unit adjacent to the railroad tracks where it utilizes yellow bush lupine as a host plant.

Coastal Bluff Scrub

Wildlife that use this plant community for cover and as a food source are similar to those which are found in the coastal scrub further inland.

Coastal Dunes

Wildlife associated with the dune habitat is diverse; the dunes within the water's reach are used by several species of shorebirds for feeding and foraging, including sanderling (Calidris alba), willet (Catoptrophorus semipalmatus) and marbled godwit (Limosa fedoa).

TABLE 4

Animal Species of Special Concern

Federal (USF&WS) Listed - Rare

<u>Species</u>	<u>Unit(s)</u>
San Francisco Tree Lupine Moth	Laguna Creek

Federal (USF&WS) and State (DF&G) Listed - Endangered

<u>Species</u>	<u>Unit(s)</u>
Peregrine Falcon	Predicted at all units but observed only at Scott Creek and Panther

State Listed - Species of Special Concern

<u>Species</u>	<u>Unit(s)</u>
Snowy Plover*	Laguna Creek
Black Swift	All units
Rhinoceros Auklet	Scott Creek
Marbled Murrelet	All units
Tidewater Goby	Scott Creek, Laguna Creek
Steelhead Trout	Scott Creek, Laguna Creek, Bonny Doon
Coho Salmon	Scott Creek

No Listing - Species of Interest

<u>Species</u>	<u>Unit(s)</u>
Pelagic Cormorant	All units

* Also a federal candidate with endangered status

The snowy plover (Charadrius alexandrinus), a candidate for federal endangered species status and a California species of special concern, was observed on the back dune areas at Laguna Creek in nesting/breeding activity. There are past records of breeding activity on Scott Creek Beach; however, due to habitat degradation, it is currently used only as a wintering area. The snowy plover nests in small depressions in bare sand. These birds are easily disturbed by nearby human use and unrestrained dogs. The eggs, well-camouflaged on the sand, can be easily overlooked by beach users and crushed.

Coastal Cliffs

Wildlife use of this habitat is extensive. Shorebirds and seagoing birds roost and breed in cavities and ledges along the cliffs. Common throughout the area are pigeon guillemots (Cepphus columba), rock doves (Columba livia), cormorants (Phalacrocorax sp.) and various gulls (Larus sp.). The American black oystercatcher (Haematopus bachmani) probably breeds in the protected tidepool areas. Ruddy and black turnstones (Arenaria sp.), surfbirds (Aphriza virgata) and wandering tattlers (Heteroscelus incanus) forage among the rocks.

Black swifts (Cypeloides niger) and peregrine falcon (Falco peregrinus), coastal species of particular interest and/or concern, were observed using these cliffs. Other bird species of special concern that utilize these cliffs include rhinoceros auklet (Cerorhinca monocerata) (northernmost cliffs of Scott Creek Beach), the pelagic cormorant (Phalacrocorax pelagicus) and possibly the marbled murrelet (Brachyramphus marmoratus). The black swift, marbled murrelet and rhinoceros auklet are state listed species of special concern; the peregrine falcon is state and federally listed as endangered.

Riparian

Riparian vegetation provides valuable habitat for wildlife and is generally heavily used, especially because riparian habitats throughout the region have been reduced considerably, as have the wildlife that depend on that habitat. Thus, there are many species of special concern present in this habitat. Breeding bird species include yellow warbler (Dendroica petechia), western flycatcher (Empidonax difficilis), warbling vireo (Vireo gilvus), black-headed grosbeak (Pheucticus melanocephalus), tree swallow (Tachycineta bicolor) and Wilson's warbler (Wilsonia

pulsilla). During migratory periods, bird species from all over North America may stop over, feed for a few days and continue on their migration. Winter residents include ruby-crowned and golden-crowned kinglets (Regulus sp.), varied thrush (Ixoreus naevius) and sharp-shinned hawk (Accipiter striatus).

Amphibians usually required free-moving water for reproduction; thus, they are most common in riparian woodland habitat. Three species of garter snake (Thamnophis sp.) are abundant throughout the Santa Cruz County coast. Other reptiles include western skink (Eumeces skiltonianus), ringneck snake (Didophis punctatus), common kingsnake (Lampropeltis getulus) and gopher snake (Pituophis melanoleucus).

Riparian woodlands are also used by many mammal species. Deer mice (Peromyscus maniculatus), brush rabbits (Sylvilagus bachmani), dusky-footed woodrats (Neotoma fuscipes), gray fox (Urocyon cinereoargenteus) and raccoon (Procyon lotor) den and forage in the streamside areas. Mule deer (Odocoileus memionus) probably browse the willows growing along the bank. Bobcats (Lynx rufus) may visit the areas from the east.

Wetlands

The use of both the marsh and open water lagoon areas by wildlife is extensive. Waterfowl such as mallard (Anas platyrhynchos), gadwall (Anas strepera) and cinnamon teal (Anas cyanoptera) use the habitat for feeding and nest in adjacent vegetation. During winter, shorebirds such as dowitchers (Limnodromus sp.), whimbrels (Numenius phaeopus) and various other sandpipers use the lagoon system for bathing, feeding and resting. Common yellowthroats (Geothlypis trichas), song sparrows and marsh wrens (Cistothorus palustris) nest in the emergent vegetation. All of these species are preyed upon by raptors such as the cooper's and sharp-shinned hawk and peregrine falcon.

Three anadromous fish streams exist within the study area. Threespine stickleback (Gasterosteus aculeatus) are probably present in Laguna, Yellowbank, Liddell (Bonny Doon Beach) and Scott Creeks. Steelhead trout (Salmo gairdneri) may be found in Laguna, Liddell, and Scott Creeks. Except in extreme drought years, such as 1976, 1977 and 1987, the lagoons at Laguna and Scott Creeks probably provide extremely valuable nursery conditions for juvenile

steelhead. Although steelhead nursery conditions have not been studied at these two locations, studies at similar lagoons indicate that a lagoon can be the most valuable rearing habitat in a watershed. Coho salmon (Oncorhynchus kisutch) are present in Scott Creek and may use the lagoon as a feeding habitat in the spring; coho apparently do not use local lagoons for summer rearing because of high summer water temperatures. Tidewater goby (Eucyclobius newberryi), a species of special concern, was observed in August, 1987 in Scott Creek. Numbers are probably small in most years, as the species had been considered to be extirpated because it had not been collected since 1939. The goby is abundant, however, in the pond on the south side of the lagoon; the pond presently serves as a refuge for the lagoon population. The tidewater goby was observed in the lagoon at Laguna Creek as recently as 1984. However, none were collected in August, 1987 from the few potholes left by the present severe drought. The species might be extirpated at the site, but it did apparently manage to survive the 1976-77 drought. Prickly sculpin (Cottus asper) and coastrange sculpin (C. aleuticus) are present in Laguna, Liddell, and Scott Creeks. Both species migrate downstream to the lagoons and lower portions of the stream for spawning, and young prickly sculpins often rear in the lagoons. Juvenile staghorn sculpin (Leptocottus armatus) and starry flounder (Platichthys stellatus) are probably occasionally present in small numbers in the lagoons at Scott and Laguna Creeks. The young of the year fish, hatched in the ocean, often enter the lagoons for rearing during their first year.

Ruderal

Wildlife use of this area includes Lesser and American Goldfinches (Carduelis sp.), House Finch (Carpodacus mexicanus) and White-crowned Sparrow (Zonotrichia leucophrys).

Policy: The habitats of all state and federally listed rare and endangered species shall be protected by posting signs restricting access. This includes all the bluff tops, at least from May through August, to protect bird species of concern. Use should be discouraged below the steep northernmost cliffs at Scott Creek Beach to protect the nesting area of the rhinoceros auklet. The southern portion and back dune of Laguna Creek Beach should be closed to the public during the snowy plover nesting season, March through possibly August. Fencing should be erected to reinforce the closure. Dogs should not be permitted at this beach. Foot traffic should be directed away from the coastal scrub habitat of the rare San Francisco tree lupine moth at the Laguna Creek unit. The endangered peregrine falcon, observed at Panther and Scott Creek

Beach has not been recorded as nesting along the North Coast. All sightings should be reported to the Predatory Bird Research Project at the University of California, Santa Cruz. Additional measures (see Hydrology) should be taken to preserve the habitat of all fish species of special concern. Tidewater gobies should be reintroduced into Laguna Creek from Scott Creek, if none are observed after this year.

Policy: The Department should consider purchasing in fee, or acquiring easements for, wetland preserves at the Scott Creek and Laguna Creek units. Consideration should be given to acquiring sufficient land for an upland buffer zone approximately 100 feet wide, and to eliminate the need for artificial sandbar breaching. At Scott Creek there may be a need for the construction of levees next to adjacent farmland to prevent flooding. In the case of Laguna Creek, protection of the nesting area of the snowy plover should also be considered.

At Scott Creek, an investigation of the degree and extent of past farmland flooding should be conducted to help determine the boundary of the natural preserve. Detailed restoration plans for these preserves should be developed to determine which levees should be constructed or removed, which channels should be excavated and where the gates should be located in order to achieve the proper mix of various wetland habitats.

Policy: Because mechanical rakers remove important shorebird food sources, they should not be used to clean refuse from the beaches more frequently than once a year.

Cultural Resources

An archaeological survey was not completed as part of this planning effort. However, because prehistoric and historic sites are common all along the coast, important cultural resources are likely to be found at the North Coast units.

Native American Resources

The Costanoan Indians, a Penutian-speaking people related both linguistically and culturally to the Coast Miwok of Marin County, occupied this area (Walter Ranch State Park General Plan, 1980). They settled at beaches where streams furnished fresh water and supplemented their food

supply of shellfish, particularly clams, and other fish. Shellfish and chert processing stations have been identified farther north at the Ano Nuevo State Reserve.

Euroamerican Resources

As early as the mid-1800s, the upland terraces were grazed by cattle and planted with row crops.

Policy: To avoid disturbing important cultural resources, an on-site investigation should be made prior to the excavation or filling of any existing material for the construction or installation of facilities or other site improvements. Should any cultural resources be discovered, the find should be promptly reported to appropriate Department personnel who will determine the validity and significance of the discovery and recommend appropriate protection or stabilization action.

Aesthetic Resources

The most visible of the units is Scott Creek Beach, as Highway 1 descends from the uplands at either end and parallels the beach at a slightly elevated level. Most of Davenport Landing Beach can be seen from the Old Coast Road with glimpses from Highway 1. The other beaches remain virtually hidden, except from vantage points around their perimeters.

Scott Creek is one of the more attractive units due to its varied terrain and composition of vegetation, sand and water. The disturbed dunes and ruderal vegetation does, however, detract from its overall scenic quality. Furthermore, the presence of vehicles parked along both sides of the highway is discordant with the otherwise harmonious coastal setting. There is a concrete slab remnant that covers 10,000 to 15,000 square feet but is not highly visible. Broken glass is especially prevalent along the bottom of the southern bluff in a former dispersed camping area.

Davenport Landing is relatively developed with several residences and a fish farm adjacent to it. The bench behind the beach is a disturbed site crisscrossed by trails and extensively littered. The roadway shoulders are in need of grading; boulders are strewn haphazardly along one side, and utility poles along the other. This beach does not have the rural quality of the other units.

The view from shore at Panther Beach is especially impressive because of a lone, pyramidal-shaped island that sits just offshore, centered in the cove. The beach itself is scenically insignificant. The parking area is essentially a wide highway turnout that extends several hundred feet along the highway.

Bonny Doon Beach has the appearance of an enclosed bowl with steep, vegetation-barren walls. It would be an attractive setting except that the vegetation on the dune, which wraps around the back portion of the bowl, has been heavily damaged by foot traffic. The entire beach is covered with litter, especially broken glass, that is far worse than any of the other beaches.

Yellowbank Beach is unique among the six beaches for it has an arched opening in its southern flank, leading to a smaller beach beyond. Similar to Bonny Doon, it is bowl-shaped, but its walls are more gently sloped and concealed by vegetation. It too has a considerable amount of litter. The parking area is only partially visible from Highway 1, and has four power poles transversing the length of it. These can be seen from the highway and the beach.

Laguna Beach is relatively pristine, probably because of its distance from the highway. It is sequentially exposed to the on-coming viewer across fields of Brussels sprouts and beyond the green wetland below. The beach is wide, open and seemingly undisturbed, except where the southern bluff is sensitive to foot traffic. In contrast, the parking area is visually obtrusive to Highway 1 because of the excavation scar at the rear.

Southern Pacific Railroad tracks pass between the parking areas and beaches at the four southern units. As part of the rural landscape, this feature is not particularly out of place, but it does reduce the viewer's enjoyment of the natural scenery.

The sound of the surf is predominant at all the beaches. Only on still days can the sound of highway traffic be heard from portions of Scott Creek Beach. The beaches do get used frequently for parties, especially Bonny Doon and Davenport Landing. It is not uncommon for users to haul generator-powered speakers to the beaches to amplify music that can be heard from one end of a beach to the other.

Because of prevailing winds, odors from garbage and sanitary use are not a significant problem.

Policy: No site improvements shall be permitted that detract from or contrast with the existing scenic quality of the area.

Recreation Resources

The North Coast beaches provide recreation opportunities unique to the interface of land and sea (refer also to Regional Recreation Profile). Almost all recreation activities occur during the day, but a limited amount of camping does take place. The peak season generally begins with spring (Easter) break and ends in October. A majority of visitors come from the San Francisco Bay Area. Visitation is on the rise. The most popular activities are strolling, sunbathing, wading, picnicking, surf fishing, windsurfing and surfing.

Because of its open exposure to prevailing winds, Scott Creek is not a popular beach for sunbathing. Surfers favor the north end where a submerged reef creates some of the best waves along the North Coast. Many people stop to take a stroll at this particular beach because it is the most accessible. Illegal off-road vehicle use occasionally occurs.

Davenport Landing has the most consistent use throughout the year. It is easily accessible from Old Coast Road, which encourages its use by families with children, the elderly and the handicapped. There is a perception that Davenport Landing is safer than the more isolated beaches. The beach is also heavily used by fishermen and surfers. Occasionally people camp and have parties on the beach.

Young and middle-aged adult sunbathers use Panther Beach most frequently. Very little water use occurs. Occasionally it is used for camping. People whale watch from the plateau above the beach. Of all the units, Panther receives the fewest number of visitors.

Bonny Doon is used primarily by young and middle-aged adult nude sunbathers. Socializing, volleyball and Frisbee throwing are the most popular activities. Water sports are uncommon because of hazardous surf conditions. Bonny Doon is inundated with revelers on holidays, particularly the Fourth of July. California Highway Patrol officers estimate that as many as

3,000 people were present at this beach on July 4, 1987, celebrating with a full arsenal of fireworks. It consistently receives more use than any of the other units.

Sunbathing is the principal activity at Yellowbank Beach, but fishing and camping are also common. Tidepool exploring is also popular. The main beach is more heavily used because of it is closer to the parking area and because the south beach is inaccessible except at high tide.

Laguna Creek Beach is used by a wide variety of people for sunbathing, fishing, musseling (in winter), surfing, picnicing and camping. The north end of the beach and inland wetland area are the most heavily used because they provide shelter from summer winds.

Policy: The level of use and types of recreational opportunities shall be consistent with existing use, unless that use is in conflict with natural resource and habitat protection policies.

Supplemental Existing Conditions and Policies

Parking and Access

The inadequacy and disorganization of parking at North Coast access sites significantly contribute to the traffic hazards along Highway 1, and are major reasons why this plan has been prepared.

Most accidents involve only cars, but occasionally pedestrians are involved. There are more accidents on weekends and holidays, and during the summer months. The four primary causes, in order of magnitude, are: (1) excessive speeding; (2) drunken driving; (3) right-of-way violations and (4) improper turning movements (communication with Officer Bill O'Neill, California Highway Patrol).

Over the past seven years, there has been an average of 52 collisions per year, some involving fatalities, along this stretch of highway between Scott Creek Beach and Laguna Creek Beach. The greatest number occur in the vicinity of the Bonny Doon and Scott Creek units respectively (O'Neill, California Highway Patrol).

At Scott Creek Beach, various conditions promote traffic hazards and cause other problems. Visitors have virtually no place to park but along the narrow elevated shoulders of the highway. During a typical summer weekend day, there are 80 to 100 cars. Pedestrians must cross the highway to reach the beach if they park on the east shoulder. There are no signs warning drivers to slow down for pedestrians. People frequently walk along the narrow bridge during those periods when the creek blocks access to portions of the beach.

Parking at Davenport Landing is along a loop section of Old Coast Road and not on the highway. Although there is space for parking, two-way traffic can be made difficult because of inadequate shoulders. Optimally, only 30 to 60 cars can presently park there. Pedestrian access to the beach is relatively easy.

The parking area at Panther Beach is hazardous because vehicles drive into or out of the dirt pull-off at any location, and sometimes back onto the highway. Approximately 55 vehicles can park here, far exceeding the carrying capacity of the beach. This parking area is used on occasion when parking at Bonny Doon Beach overflows. Beach access is also quite hazardous. Visitors must cross railroad tracks and climb down a steep, slippery path. Some side trails end in impassable drops.

The parking situation at Bonny Doon is similar to Panther Beach in that ingress and egress is uncontrolled. Because of the limited capacity of the parking area (50), in combination with the popularity of the beach, parking on the east shoulder of Highway 1 and on Bonny Doon Road frequently occurs, creating a zone of pedestrian crossings. Traffic is made more hazardous by the offset intersection of Bonny Doon Road on the east side. Visitors must then climb over a steep berm, cross railroad tracks and maneuver down the bluff on eroded trails.

Yellowbank Beach has the only off-highway parking area, accommodating approximately 80 vehicles. However, it has an inadequate turning radius for southbound traffic and cannot be easily seen from that direction. Vehicles park inefficiently because of a gully and several power poles running down the middle of the dirt strip. The principal trail to the beach crosses the railroad tracks, and drops steeply to the beach. Due to loose rocks and dirt, beach goers have selected alternative routes that have been detrimental to the vegetation.

The dirt pull-off at Laguna Creek is wide enough that few cars back onto the highway, but ingress and egress is not controlled. Traffic and pedestrian safety is a serious problem because of the combination of cars approaching rapidly over a blind hill from the north, cars turning left into the parking area or adjacent roadway and pedestrians crossing the highway. The parking area can only hold about 30 cars, but Laguna Creek Road is available and used for additional parking.

The primary access route to the beach follows a farm road and is not difficult to use, except that it leads to several eroding footpaths down the low bluffs at the north end of the beach. A second route skirts the marsh to the north but dangerously narrows to less than a foot in width across a cliff face 20 feet above the lagoon. Another pathway has developed within the wetland area from activity occurring there.

Policy: Parking lots shall be established off Highway 1 where feasible. In those cases where existing pull-offs must be utilized, vehicular access into and out of the parking areas shall be controlled.

Policy: Where feasible, parking areas shall be developed on the west side of Highway 1 to avoid auto-pedestrian conflicts. Parking areas on the east side of Highway 1 shall be eliminated unless there are no other practical alternatives. Other pedestrian hazards shall be eliminated, where possible.

Policy: Parking on the shoulders of Highway 1 shall be eliminated. This shall be enforced via signing and parking citations.

Policy: Either full left-turn channelization lanes or a widened roadway and deceleration lanes shall be provided as required by the California Department of Transportation.

Policy: Coastal access trails shall be made as safe as possible. Structural stairs and railings that are of appropriate materials and construction shall be installed where needed.

Surrounding Land Use

Except for the small amount of residential use and a commercial fishery at Davenport Landing, cultivated agriculture is the predominant land use surrounding the recreational beaches. The two uses are incompatible in that recreationists do sometimes damage crops and farming equipment. Furthermore, pesticides are applied several times during the growing season to the fields adjacent to the beaches, trails and parking lots. Many of the pesticides used in the cultivation of Brussels sprouts are extremely toxic to humans and fish. They are particularly toxic for at least several days following application.

Policy: An agreement with the local farmers should be sought to eliminate the use of the more hazardous compounds within the vicinity of the beaches, trails, parking areas and streams, or to at least reduce the quantity and/or frequency of application. Signs should be posted to warn visitors not to eat or touch the crops because of the toxic pesticides.

Land Ownership and Other Legal Conditions

Land at all the units is privately owned except at Scott Creek Beach. Here, the beach, dunes and northern terrace are owned by the County of Santa Cruz, although the wetland area and terrace at the southern end are in private ownership.

The California Department of Transportation maintains a right-of-way of variable width through each unit except Davenport Landing. The existing parking areas are located either partially or wholly within this right-of-way. The California Department of Transportation therefore has jurisdiction over any improvements made at these parking areas and has the right to require encroachment permits for proposed roads connecting with the highway.

Until July, 1987, Southern Pacific Railroad had a wide right-of-way along the railroad tracks at the Panther, Bonny Doon, Yellowbank and Laguna Creek units, that included large areas once designated for future train stations. They have since quitclaimed back to the original landowners all but a narrow strip of land encompassing just the railroad bed. Trains pass through the area several times a day hauling sand and coal to the Lone Star Cement Company, and hauling cement out.

The wetland at Scott Creek is owned by Albert Smith, who farms land adjacent to the creek. The other private landowner at this unit is Coast Dairies and Land Company, a Swiss-based firm that owns most of the farm land at all the other units, including the wetland area at Laguna Creek. At Davenport Landing there are also several other private landowners. However, improvements are planned only on the property of Lone Star Cement Company.

Policy: Because public funds cannot be used without state proprietary or fee interest, agreements must be sought with all the potentially affected landowners to lease or acquire land for developing proposed improvements, restoring natural resources, preserving important wildlife habitat and providing access.

Allowable Use Intensity and Carrying Capacity

Local citizens have expressed concern about the level of improvements that are planned for these units. It seems to be a general consensus that the desired level of development be commensurate with existing demand and facilities in the region.

Combined with the sensitivity of the resources, as evidenced by existing natural resource conditions, the allowable use intensity for all the units should be low.

In consideration of that general policy, the carrying capacities of the beaches shown in Table 5 reflect a standard of 1,000 square feet of beach per party (single person or group of people).

This is far less dense than that ordinarily employed for determining the carrying capacity of an urban beach, or even a reservoir. This standard represents a spatial distance on the beach which is socially comfortable and which should not be exceeded by the provision of too many parking spaces. It does not necessarily mean that it should be reached. Physical constraints, existing demand and management objectives determine how much of that carrying capacity should be met.

As shown in Table 5, the targeted supply meets or exceeds the existing average peak demand at all the units except Bonny Doon. Additional parking could be made available, with proper

TABLE 5**Targeted Number of Parking Spaces
Based on Beach Carrying Capacities**

<u>Name of Beach</u>	<u>Size of Beach in Sq. Ft.</u>	<u>Carrying Capacity^a</u>	<u>Average Demand^b</u>	<u>Available Space^c</u>	<u>Targeted Supply^d</u>
Scott Creek	609,000	609	90	10	110
Davenport Landing	92,000	92	35	206	90
Panther	13,320	13	15	55	30
Bonny Doon	238,514	239	100	50	80
Yellowbank	122,826	123	80	80	80
Laguna Creek	303,000	303	50	30	60

^a Optimum number of parties (and therefore vehicles) per 1,000 square feet of beach as measured between high and low tides

^b Number of vehicles based on observations made during summer weekends in 1987

^c Off-highway parking areas only

^d Represents a percentage of the physical carrying capacity, reflecting management objectives for that particular beach, as well as physical constraints

signage and flexible management, during peak use periods along Bonny Doon Road, or along the east side of the highway. Surplus parking at Panther Beach may also help relieve the need for more parking at Bonny Doon.

Recreationists, particularly surfers who use the north end of Scott Creek Beach, currently park along Highway 1 north of the bridge. They will be required to park in the designated parking lot at the south end. The northern lot will be constructed as the carrying capacity of this lot is reached, or as demand otherwise dictates.

As visitor use grows, inadequate parking space will worsen at Bonny Doon. It may also become a problem at Yellowbank and Laguna Creek. At the latter location, parking may be accommodated along Laguna Creek Road, although collecting fees would be more difficult. The parking lot could also be expanded. An additional parking lot at Bonny Doon is conceivable, located north of the existing one. Providing supplemental parking at Yellowbank is made difficult by terrain constraints to the north. Parking could be expanded to the south relatively easily, but at a greater distance from the beach.

LAND USE AND FACILITIES ELEMENT

Land Use and Facility Recommendations

This plan does not propose any changes in land use; rather, it attempts to recognize and accommodate existing and anticipated recreation use. It responds to: (1) the needs of the visitors by providing organized parking, safe access, basic visitor facilities, restored natural resources and maintenance services; (2) the needs of important and sensitive wildlife and plant species through the establishment of protective measures and long-term management, and setting aside special habitat areas as natural preserves and (3) the concerns of individuals that are being adversely affected either directly or indirectly by current unmanaged use and agencies who are currently unable to adequately assist in the proper development, management or protection of the units. The plan represents a thoughtful analysis of all these considerations.

With the exception of certain proposed improvements on county-owned property at Scott Creek Beach, no improvements can be made until necessary approvals and easements or fee titles to property on which the development/use will occur have been secured.

Following are the improvements proposed for each of the units. The natural preserves are discussed separately in the next section. Refer to Maps 7 through 11 for a geographical reference.

Scott Creek Beach

- Add a 12-foot maximum wide center turning lane for northbound traffic turning into the proposed southern parking lot.
- Add an 8-foot maximum wide shoulder turning lane for southbound traffic turning into the proposed southern parking lot.
- Develop a 110-vehicle unpaved parking lot at the south end, complete with an access road off Highway 1 and revegetation of the resulting cut slope.
- Provide a gate and tire teeth at the parking lot so that it can be closed and still permit vehicles to exit.
- Provide fee envelope dispensing and repository boxes at the parking lot.

- Provide an entrance station (kiosk) at the southern parking lot so that fees can be manually collected.
- Construct a pedestrian bridge or elevated boardwalk parallel to and preferably below the Scott Creek bridge.
- Construct a semi-portable log bridge where Molino Creek and Scott Creek meet and flow across the beach to avoid beach visitors and others from artificially breaching the lagoon and to provide access from the southern parking lot. The bridge should be constructed so that it is usable at all lagoon widths and depths, and the movement of water in the lagoon is not obstructed.
- Provide trash containers at various locations.
- Provide vault toilets at the south trailhead adjacent to the parking lot where there will be minimum impact to surrounding coastal bluff scrub vegetation.
- Provide signs (see Sign Schedule).
- Restore and protect dunes (see Habitat Enhancement Plan).
- Establish a wetland preserve (see Habitat Enhancement Plan).

A 30-vehicle parking lot and recreation facilities will be constructed at the northern end of the beach as additional parking becomes necessary. Turning and deceleration lanes on Highway 1 may be required. The lot will be visually screened from the highway with earth mounds and native landscaping.

Davenport Landing Beach

- Grade road shoulders to provide for additional, safer parking.
- Provide fee envelope dispensing and repository boxes at the trailhead.
- Provide an 8-foot wide paved trail with a slope that does not exceed eight percent and with "landings," as required for handicap access.
- Provide a vault toilet near the trailhead.
- Provide signs (see Sign Schedule).
- Provide five fire rings at the back of the beach (these will have to be removed during the winter months when the surf covers the entire beach).
- Plant large growing shrubs to screen nearby residences from the proposed facilities.

TABLE 6

Sign Schedule

Map Key	Scott Creek	Davenport Landing	Panther	Bonny Doon	Yellow-bank	Laguna Creek
A General Information (see below)	3*	1	1	2	1	1
B Coastal Access	4	2	2	2	2	2
C Warning--Hazardous Shoreline	2	2	1	1	2	2
D Warning--No Beach at High Tide			1		1	
E Access Closed						3
F ← Trail	1*					1
G Trail →	1					
H Trail to Bonny Doon Beach			1			
I Habitat Restoration/Protection-- Please Stay Out (with Interpretive Information)	5			4		3
J No Parking at Any Time	11*			7		3
K No Parking 10 p.m. to 6 a.m.	2	4		1	1	
L No Parking Beyond This Point		1	1			1
M Do Not Enter--Tires will be Punctured				1		
N Do Not Block Driveway		1				
O Pedestrian Crossing Next 1500 Feet						2
P Handicap Parking Only Between Signs		2				
TOTAL	29	13	7	18	7	18
General Information Options						
Credit for Improvements	x	x	x	x	x	x
Management Authority	x	x	x	x	x	x
No Littering	x	x	x	x	x	x
Emergency Telephone Information	x	x	x	x	x	x
Fees and Deposit Information	x	x	x	x	x	x
Stay on Trails--Surrounding Property Privately Owned		x	x	x	x	x
Stay on Trails--Help Protect Our Natural Resources	x					
Hazardous Cliffs/Shorebird Habitat	x	x	x	x	x	x
No Breaching of Beach Lagoons Permitted	x					x
Strong Currents/Swim at Your Own Risk/No Lifeguard on Duty	x	x	x	x	x	x
No Overnight Camping	x	x		x	x	
No Motorized Vehicles	x	x				
No Dogs						x

* Signs at the north end of Scott Creek Beach will only be installed if and when the northern parking lot is constructed.

Panther Beach

- Install a guard rail between the highway edge and existing parking area, leaving an opening at the south end for ingress and egress and providing space for approximately 30 vehicles.
- Provide fee envelope dispensing and repository boxes near the parking lot entrance
- Construct concrete stairs with a pipe handrail down to the beach; provide landings where possible.
- Provide trash containers at the beach and trailhead.
- Provide a vault toilet at the trailhead, or at the top of the stairs where it would be accessible by farm road.
- Provide signs (see Sign Schedule).

Bonny Doon Beach

- Add a 12-foot maximum wide center turning lane for northbound traffic turning into the parking lot.
- Add an 8-foot maximum wide deceleration lane along the shoulder for southbound traffic turning into the parking lot.
- Install a guard rail between the highway edge and existing parking area, forming an entrance road at the intersection with Bonny Doon Road and an exit at the south end.
- Expand the existing parking area southward to accommodate a total of 80 vehicles parked at 60-degree angles.
- Provide a gate at the entrance.
- Provide tire teeth at the exit.
- Provide an entrance station and fee envelope dispensing and repository boxes near the opening into the parking lot.
- Construct concrete stairs with pipe handrails at two locations near the parking lot.
- Construct a wood staircase with pipe handrails at the base of the bluff for access to the beach.
- Provide trash containers at various locations.
- Provide vault toilets near the primary trailhead; if use of the farm road for pump truck access cannot be obtained from the landowner, it should be located near the parking lot instead.

- Clean the beach and dune area to remove existing litter; this may have to be done mechanically in order to unbury debris.
- Provide signs (see Sign Schedule).
- Restore and protect dunes (see Habitat Enhancement Plan).
- Enhance fisheries (see Habitat Enhancement Plan).

Yellowbank Beach

- Add 8-foot maximum wide paved shoulders for vehicles turning into the parking lot from the north and south.
- Install a guard rail to form a parking lot entrance/exit.
- Provide a gate and tire teeth to permit closing of the parking lot without locking vehicles in.
- Relocate to one side the electrical poles that traverse the parking lot.
- Regrade the parking area for approximately 80 vehicles and provide proper drainage.
- Provide fee envelope dispensing and repository boxes and an entrance station at the opening to the parking lot.
- Construct concrete stairs with a pipe handrail between the beach and railroad tracks.
- Provide trash containers at various locations.
- Provide a vault toilet at the trailhead.
- Clean the beach of broken glass and other debris.
- Provide signs (see Sign Schedule).
- Rehabilitate a secondary trail (see Habitat Enhancement Plan).

Laguna Creek Beach

- Add 8-foot maximum wide paved shoulders for vehicles turning onto Laguna Creek Road (at the north end) to access the parking lot.
- Paint a pedestrian crossing zone on the highway surface between the trailhead and an opening in the parking lot guard rail.
- Install a guard rail between the roadway edges and the parking area and provide an opening near the rear for ingress and egress.
- Provide a gate, tire teeth, entrance station and fee envelope dispensing and repository boxes in the guard rail opening.

- Improve the access trail by widening the section between the railroad track and highway and grading the farm road evenly for pump truck access.
- Provide concrete stairs with a pipe handrail down the coastal bluff to the pocket beach at the north end.
- Install trail barriers at either end of a secondary trail that runs alongside the wetland.
- Provide trash containers at various locations.
- Provide vault toilets along the trail on the lower bench; if the right to use the farm road for pumping the toilets cannot be obtained from the landowner, the sanitary facilities should be located to the rear of the parking lot.
- Provide signs (see Sign Schedule).
- Establish a wetland preserve (see Habitat Enhancement Plan)
- Protect the snowy plover resting area (see Habitat Enhancement Plan)

All the highway improvements suggested above are subject to the discretion of the California Department of Transportation which will ultimately determine what highway improvements are needed and how they will be designed. Since there are no written policies regarding when turning lanes, widened shoulders and deceleration lanes are required, each situation will be appraised independently. No turning lane for southbound traffic at Bonny Doon will be required as part of this project, however, since it would be of no benefit to the project, and because the plan does not call for permitted parking on the east side of Highway 1 at this location. The four most important criteria used in determining the need for improvements include: (1) sight distance; (2) volume of traffic; (3) the expected number of turns per hour and (4) the speed of the roadway. This plan assumes the worst case; that all the above proposals will be required.

In an attempt to reduce highway traffic, each unit will have a designated bus stop on Highway 1 near the trailhead. To accommodate growth in recreation demand, the Bonny Doon and Laguna Creek Beach plans indicate where parking lots may be expanded in the future.

The proposed facilities will be vandal-resistant, particularly the entrance stations, vault toilets, dispensing and repository boxes, trash containers and signs.

A key aspect to the success of this plan is the sign program. All off-highway signs will have a consistent motif and minimal wording, exclusive of the interpretive signs. Following is a recommended sign schedule with options for the general information signs which will be located at the trailheads. The general information signs may, as an alternative, be posted on the entrance kiosks along with maps showing how to park in the parking lots (since none of the lots will be paved and striped) and how to reach the beaches from the parking areas. The recommended placement of the signs is indicated on Maps 7 through 11.

Overnight camping will only be permitted at Panther and Laguna Creek Beaches, the two most isolated beaches from Highway 1. Campers will be encouraged to use campstoves, and to leave the beaches without any trace of their overnight presence. Campfire grills are proposed at Davenport Landing Beach where there is a current and consistent demand by local residents for barbeque and bonfire facilities. No other picnic provisions are proposed at any of the beaches.

Habitat Enhancement Plan

The protection and enhancement of the natural resources is a critical component of the plan. The highest priorities are: (1) restoring native vegetation, especially coastal scrub and dune plant species; (2) protecting (or mitigating) rare plant and animal species and (3) preserving the habitat values of wetland areas, i.e. lagoons, marsh habitat and stream courses. The policies contained in the resource element are reflected in the following recommendations.

Before this habitat enhancement plan can be implemented, several tasks must first be accomplished. A more detailed analysis should be completed to determine precisely what land modifications or physical improvements are needed to enhance the wetland areas at the Scott Creek and Laguna Beach units, and how much acreage should be designated for the natural preserves. Specific proposals should be reviewed by the California Department of Fish and Game, and they should be given the opportunity to evaluate the importance of the wetland habitat at Laguna Creek, since this has not been done. Fee titles or easements to all affected private property must be obtained prior to the plan's implementation.

Restoration of Native Plant Species

Dune Habitat

Over three acres of coastal dune vegetation at Scott Creek Beach and one acre at Bonny Doon Beach will be reestablished (see Maps 7 and 9). The "straw planting method," a modification of broadcast seed and straw mulching, is recommended because of the ease of application, low cost, low maintenance, unnecessary irrigation and high establishment/survival rates. Bundles of straw are placed vertically into the sand at regular intervals, and the areas between the bundles seeded with a native seed mixture (Ferreira and Gray, 1987). Below is a list of plant species recommended for broadcast seeding.

	<u>SPECIES</u>	<u>% of SEED MIX</u>
Lizard tail	(<u>Eriophyllum</u> <u>staechadifolium</u>)	30
Beach bur	(<u>Franseria</u> <u>chamissonia</u>)	10
Sand verbena	(<u>Abronia</u> <u>latifolia</u>)	10
Beach pea	(<u>Lathyrus</u> <u>littoralis</u>)	5
Mock heather	(<u>Haplopappus</u> <u>ericoides</u>)	20
Coast buckwheat	(<u>Eriogonum</u> <u>latifolium</u>)	5
Saltbush	(<u>Atriplex</u> sp.)	5
Beach primrose	(<u>Camissonia</u> <u>cheiranthifolia</u>)	5
Live-forever	(<u>Dudleya</u> <u>caespitosa</u>)	5
Deerweed	(<u>Lotus</u> <u>scoparius</u>)	5
		<hr/> 100%

All seed will be collected from the North Coast area, preferably from the particular unit where it is found. This is a major cost of the revegetation project, since seed must be hand collected. Seed collection will be accomplished during the summer months, prior to the winter season of installation. Straw planting and seeding will be done from late September through December. Follow-up monitoring will occur in the following spring and summer and proceed for two seasons. Permanent photo stations and sampling transects will be established for this monitoring.

Nylon "snow fencing" will be erected around the periphery of the restoration areas at both units to restrict public access at least during the establishment period. At Scott Creek, wood bollards located near but set back from the highway shoulder will discourage access by motorized vehicles. Dune restoration efforts at Scott Creek Beach will include the removal of an expansive concrete slab which will result in the exposure of bare soil to the forces of wind and precipitation. Part of this area will have to be regraded so that it can be covered with sand and revegetated.

The eroded bluff around the west side of the dune will also be regraded. Jute netting or a similar erosion control fabric will be stapled in place and broadcast with native plant seed and straw mulch. Where hard subsoil or hard dirt road surfaces are revegetated, holes will be drilled with a jeep drill rig to a depth of three to five feet on 10-foot centers. These will be backfilled and hand seeded with native plant materials in slight depressions left one or two inches below grade, and mulched with chips.

Coastal Scrub Habitat

Much of the coastal scrub at Bonny Doon Beach also needs to be rehabilitated. On the parking lot side of the railroad berm, there are eleven eroded gullies that need check dams constructed for replanting; on the beach side there are six.

To construct the check dams, posts will be driven or pre-drilled into the slope. Heavy redwood or creosoted boards will be placed behind the posts to form stepped walls. The bottom of the uppermost check dam will be installed at the same level as the top of the lowermost check dam and backfilled with native material. Check dams will be of such height as to discourage climbing. On the beach side, backfilling may have to be accomplished manually.

The backfilled gullies will be seeded with native shrub species. Vines and thorny shrub types will be used to help hide the check dams and to further discourage access.

Revegetation with coastal scrub community plant species is also proposed at Yellowbank Beach where a secondary trail has developed, and at the two proposed parking lots at Scott Creek Beach.

The recommended plant species include the following:

Yellow bush lupine	(<u>Lupinus arboreus</u>)
Lizard tail	(<u>Eriophyllum staechadifolium</u>)
Coyote brush	(<u>Baccharis pilularis ssp. consanguinea</u>)
Blackberry	(<u>Rubus ursinus</u>)
California sage	(<u>Artemesia californica</u>)
Coffee berry	(<u>Rhamnus californica</u>)

Exotic Plant Species Control

Invasive exotic plant species will be removed. These include the hottentot fig/ice plant (Carpobrotus sp.), acacia (Acacia sp.), broom (Cytisus sp.), pampas grass (Cortaderia selloana) and German ivy (Senecio mikanioides). Of particular concern is the hottentot fig in the dune habitat. Care must be taken during the removal to prevent unnecessary dune disturbance. Holes will be cut in the ground cover plant and seeded with native plants. Within two years, this process will be repeated. The other species will be removed on a periodic basis.

Rare Plant and Animal Habitat Protection

The plant species Michael's piperia (Piperia michaelii) and Blasdale's bent grass (Agrostis Blasdalei) are listed as rare by the California Native Plant Society. The first species was observed in the coastal bluff scrub habitat at Scott Creek, Yellowbank and Laguna Creek units; the latter at Laguna Creek Beach. While not currently acknowledged as rare by state or federal agencies, protection of the two plant species is warranted. The rare San Francisco tree lupine moth is dependent on the coastal scrub habitat.

At all the units except Scott Creek and Bonny Doon Beaches, access will not be fenced or otherwise physically restricted, but visitors will be directed along designated trails to avoid habitat degradation. If there is significant off-trail use following implementation of access trails, fencing and/or other barriers may need to be erected.

At Scott Creek Beach, a parking lot is proposed within the sensitive coastal bluff scrub where the rare Michael's piperia has been sighted. Measures to mitigate this impact will include the re-establishment of comparable habitat along the newly cut face of the parking lot and the protection of the remaining coastal bluff scrub habitat at this beach unit. Prior to construction of the parking lot, seed from Michael's piperia and associated plants from the community, as well as applicable topsoil, will be collected and stockpiled and used to revegetate the newly cut slope. The remaining habitat to the north of the parking lot will be closed to public access and designated as a mitigation area.

Several bird species observed and/or predicted at the units are recognized as special species of concern by federal and state agencies, including the peregrine falcon and the snowy plover. To protect the latter, it is recommended that use of the southern portion of Laguna Creek Beach and back dune area be closed to public use with signing and seasonal fencing from March 1 possibly through August. Dogs will not be permitted on the beach at any time of the year. The nesting activity will be monitored to document the effectiveness of use limitations and the success of nesting attempts. Monitoring is recommended from March 1 through June; if nesting activity is observed in late June, monitoring will continue until activity ends. The exact location of the fence will vary depending on the location of the nesting activity, as determined by the monitoring program.

The other birds of special concern utilize the cliffs and bluffs of the coast for breeding, nesting and foraging. Access to the bluff tops, as well as the base of the northernmost bluff at Scott Creek Beach, will be discouraged.

The tidewater goby, steelhead trout and coho salmon are fish species of special concern that exist at the Scott Creek, Bonny Doon and/or Laguna Creek units. The Scott Creek and Laguna Creek habitats will be enhanced and protected through the establishment of natural preserves, and the resource policies presented in the Resource Element. At Bonny Doon and Laguna Creek, rock debris and flashboard dam structures will be removed to promote steelhead migration and minimize poaching.

Natural Preserves

The wetland areas at the Scott Creek and Laguna Creek units are of exceptional wildlife value and are therefore recommended as natural preserves.

A preliminary evaluation suggests that approximately 35 acres at Scott Creek and 50 acres at Laguna Creek be established as preserves. These acreages may be altered, depending on a more thorough analysis of necessary hydrologic modifications, the desired extent of the upland buffer zone and the feasibility of acquiring the rights to or ownership of the affected property. The preserves will require few site improvements or alterations and no facilities other than interpretive signs at overlooks. No trails are planned through them, because of potential conflicts with surrounding agricultural use and disturbance of wildlife.

At Scott Creek, the northern levee will be cut to create a channel of flowing water into the marsh and lagoon area. This streambank modification will promote tidewater goby habitat, steelhead trout rearing habitat and wildlife habitat. Either a tidal gate will be installed to regulate flows into these areas, or the levee will be notched to permit the inflow of water at a controlled elevation. New levees may be needed to prevent the inundation of adjacent farmland; other levees may be opened to achieve the proper mix of various wetland habitats.

A flashboard dam structure will be removed at Laguna Creek to improve fish migration and re-establish the wetland area. Again, either a tidal gate will be placed in the existing levee or the levee will be cut so that water can flow into the marsh area to a specified depth of six to twelve inches.

In accordance with the natural resource management policies, artificial sandbar breaching will be prohibited, additional water diversions and requests for water rights will be challenged and public access will be discouraged.

Engineering Feasibility

No proposal in this plan presents an engineering difficulty. No new utilities are required, and all highway improvements, which will be designed by an engineering consultant or the Santa Cruz County Public Works Department, will be reviewed and approved by the California Department of Transportation through the encroachment permit process. Pacific, Gas and Electric will be responsible for relocating the utility poles at the Yellowbank Beach parking lot.

A geotechnical engineer will be consulted in the design of the beach stair structure at Bonny Doon Beach, and possibly for the other staircases.

Sequence of Actions

How this plan is implemented depends heavily on available funding. Ideally, improvements would be made concurrently at all the beaches, so that they could be managed and perceived by the public as one unit rather than as individual ones.

If the improvements are developed one beach at a time, and fees are charged, recreation use will shift to the remaining free beaches, intensifying current problems at these beaches and reducing revenue at the developed sites.

However, it is not economically feasible to simultaneously implement either all or some of the proposed improvements at every beach. A significant portion of the development costs involve highway improvements which must be completed prior to any improvements made for access and beach use. Revenue, needed to offset operating expenses, also requires a certain amount of development. For example, in order to initiate a fee collection system that depends on controlled parking lot access, turning lanes, guard rails, kiosks, gates and tire teeth must first be installed.

Priorities have therefore been established based on incremental funding. The recommended action sequence is as follows:

1. Bonny Doon--All Proposed Improvements (including habitat enhancement recommendations)
2. Scott Creek, As Proposed:
 - Highway Improvements
 - Parking Improvements--South End
 - Sanitation--South End
 - Signs--Appropriate to Phasing
 - Dune Restoration/Preservation
3. Yellowbank--All Proposed Improvements
4. Laguna Creek--All Proposed Improvements
5. Davenport Landing--All Proposed Improvements
6. Panther Beach--All Proposed Improvements
7. Scott Creek--Remaining Proposed Improvements

If a large proportion of the project can be funded during an initial phase, then an alternative plan of action may be to first acquire all land and easements and make all the highway improvements, followed later by parking, fee collection and sanitary facilities. All remaining improvements would subsequently be made.

The California Conservation Corps, California Youth Authority and Santa Cruz County Community Action Board are organizations that can be utilized as a relatively inexpensive means for some development and maintenance. These groups require different levels of technical supervision, but do similar work: trail development; seed collection; plant restoration; and simple construction. Excluding highway improvements, a large portion of the development could be accomplished through the labor provided by these organizations.

Unresolved Issues

At the time of this writing, negotiations with affected landowners to purchase or lease property on which development or public use will occur had just been initiated. While the County of Santa Cruz (who would pass along control to the Department) ascertains that it has prescriptive rights to the existing parking areas, trails and beaches, the plan proposes to expand several of the parking lots onto private property. The natural preserves and restoration areas also involve privately owned land. Until these can be acquired or leased, respective components of this plan cannot be implemented.

A number of management-related issues also remain unresolved. These are discussed in the Cost/Revenue Analysis and Other Implementation Considerations.

INTERPRETIVE ELEMENT

Through an increased understanding of the surrounding environment, the public's appreciation and enjoyment of the natural and cultural aspects of that environment are enhanced.

The emphasis at the North Coast beaches will be to obtain cooperation from the public to stay away from sensitive, important plant and wildlife habitat, rather than to encourage closer inspection. Restoration efforts and the need to protect plant communities will be explained. Observation points will be developed at Scott Creek and Laguna Creek to inform the public about those species which depend on the wetland habitats for their survival. Interpretive signs will be erected at these sites. Other strategically located signs will be used to explain the beach and coastal bluff habitats of waterfowl, shorebirds and seabirds, and their susceptibility to human intrusion. Rare, endangered and special species of animals and plants will be highlighted in the information.

A secondary theme will be related to safety and management. Visitors will be warned about unstable cliffs, toxic agricultural spraying, railroad hazards, rip currents, occasional high "set" waves, slippery rocks and even sharks. The location of the nearest emergency phones will be provided. Visitors will be encouraged to respect other users, adjacent property and natural/cultural resources. A "you carry-in, you carry-out" policy will be promoted to keep the beaches clean. Where campfires and camping are restricted, signs will explain the necessity for these policies. Laguna Creek and Panther Beach campers will be encouraged to adopt environmental camping practices to minimize the impacts of their activities.

Other potential themes are geologic history, archeological resources and marine life. Interpretive information should be coordinated with that already provided or proposed for Wilder Ranch State Park and other state beaches in the region to avoid duplication.

No interpretive facilities other than signs are proposed.

OPERATIONS ELEMENT

Currently there is no management at the North Coast beaches. There is no one to collect fees or garbage, provide general information, warn visitors of hazards, help save lives or assist the injured, enforce laws or maintain order. Natural resource degradation continues to worsen.

These conditions will be changed with adequate staff assigned to the management of these beaches. (Refer to Management Options, State Parks, for further detail.)

Staffing needs include two Ranger II supervisors, six Ranger I field operators, two lifeguards and one Maintenance Worker I, all of whom would double as peace officers, and one dispatcher clerk, a half-time office assistant, six seasonal lifeguards and many seasonal park aids to supplement the staff seven days a week June through September and on weekends during the remainder of the year (Department of Parks and Recreation).

Services performed by personnel will include collecting fees, picking up refuse and carrying it up to the trash dumpsters, maintaining facilities, repairing equipment, providing office field support, supervising public safety and performing cliff and aquatic rescues.

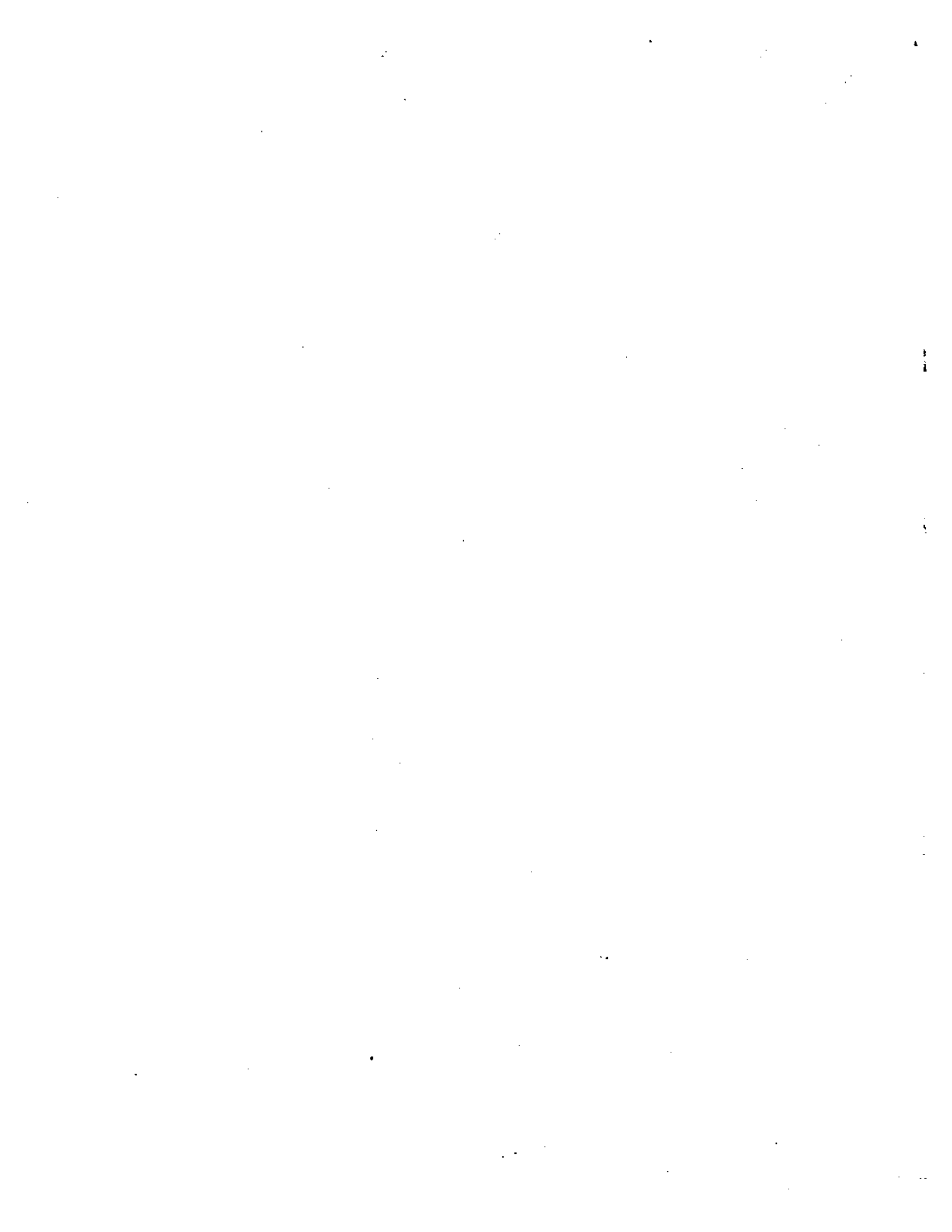
Natural resource management will also be an on-going function of the staff. (Specific monitoring needs are included in the cost estimates.) The interpretive program will not require additional personnel since the emphasis is on physical improvements rather than programs, and visitor use of the natural preserves will be limited to observation points.

Facilities will be selected for their vandal-resistant quality, but maintenance is expected to be relatively high because of reduced winter staffing and harsh climatic conditions.

Equipment needs will be extensive, particularly for communication, general public safety and aquatic safety equipment. A variety of vehicles will be necessary for emergency beach access, natural resource management, prisoner transport, first aid and rescue missions, mobile patrol and maintenance.

Some resource management and maintenance work may be provided by organizations such as the California Conservation Corps and California Youth Authority.

Appendix A



CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOWBANK	LAGUNA CREEK
* ACERACEAE							
<u>Acer negundo</u> ssp. <u>californicum</u>	Box Elder						X
* AIZOACEAE							
<u>Carpobrotus chilense</u>	Sea Fig	X	X	X	X	X	X
<u>Carpobrotus edule</u>	Hottentot Fig	X	X	X	X	X	X
<u>Tetragonia tetragonioides</u>	New Zealand Spinach						X
* AMARYLLIDACEAE							
<u>Triteleia laxa</u>	Ithuriel's Spear				X		
* AMYGDALACEAE							
<u>Osmaronia cerasiformis</u>	Oso Berry				X		X
* APIACEAE							
<u>Apiastrum angustifolium</u>	Mock Parsley						X
<u>Conium maculatum</u>	Poison Hemlock	X	X	X	X	X	X
<u>Daucus pusillus</u>	Rattlesnake Weed				X		X
<u>Foeniculum vulgare</u>	Sweet Fennel	X	X	X	X		X
<u>Sanicula crassicaulis</u>	Pacific Sanicle	X				X	X
<u>Eryngium armatum</u>	Coyote Thistle						X
<u>Aralia californica</u>	Elk Clover						X
<u>Heracleum lanatum</u>	Cow Parsnip	X		X		X	X
* ANACARDIACEAE							
<u>Toxicodendron diversilobum</u>	Poison Oak	X		X	X	X	X
* ASTERACEAE							
<u>Artemesia douglasiana</u>	California Mugwort	X			X	X	X
<u>Artemesia californica</u>	California Sage	X		X	X	X	X
<u>Baccharis pilularis</u> ssp. <u>consanguinea</u>	Coyote Brush	X		X	X	X	X
<u>Cirsium vulgare</u>	Bull Thistle	X	X		X	X	X
<u>Picris echioides</u>	Bristly Ox-tongue		X		X	X	X
<u>Silybum marianum</u>	Milk Thistle		X	X	X	X	X
<u>Achillea millefolium</u>	Common Yarrow	X	X	X	X	X	X
<u>Ambrosia psilostachya</u>	Common Ragweed						X
<u>Aster chiliensis</u>	Common Aster	X				X	X
<u>Baeria chrysostoma</u>	Goldfields						X

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	VELT BANK
<u>Baccharis douglasii</u>	Douglas' Baccharis	X			X	X
<u>Cardus</u> sp.	Italian Thistle	X			X	X
<u>Centaureum</u> sp.	Star Thistle		X			
<u>Cotula cornopifolia</u>	Brass Buttons	X	X			
<u>Cotula australis</u>	Australian Cotula					
<u>Conyza canadensis</u>	Horseweed					
<u>Eriophyllum staechadifolium</u>	Lizard Tail	X	X	X	X	X
<u>Erigeron glaucus</u>	Seaside Daisy	X	X	X	X	X
<u>Franseria chamissonia</u> ssp. <u>bipinnatisecta</u>	Beach-bur	X			X	X
<u>Grindelia latifolia</u>	Coastal Gum Plant			X	X	X
<u>Gnaphalium purpureum</u>	Purple Cudweed	X				
<u>Gnaphalium chilense</u>	Cotton-batting Plant	X		X	X	
<u>Gnaphalium ramosissimum</u>	Pink Everlasting	X				
<u>Gnaphalium californicum</u>	California Cudweed	X				
<u>Gnaphalium leuto-album</u>	Weedy Cudweed	X				
<u>Gnaphalium bicolor</u>	Bioletti's Weed				X	
<u>Haplopappus ericoides</u>	Mock Heath	X				
<u>Hypochaeris</u> sp.	Cat's Ear	X				
<u>Jaumea carnosa</u>	Fleshy Jaumea					
<u>Madia capitata</u>	Headland Tarweed					
<u>Madia sativa</u>	Coast Tarweed	X				
<u>Matricaria matricarioides</u>	Pineapple Weed	X			X	
<u>Senecio elegans</u>	Purple Ragwort				X	
<u>Senecio mikanioides</u>	German Ivy	X				
<u>Senecio minimus</u>	Coast Fireweed				X	
<u>Senecio vulgaris</u>	Common Groundsel	X			X	
<u>Solidago occidentalis</u>	Western Goldenrod	X				
<u>Sonchus oleraceus</u>	Common Sow Thistle	X			X	
<u>Wyethia angustifolia</u>	Narrow-leaved Mule Ear	X				
<u>Xanthium spinosum</u>	Spiny Clotbur					
* BETULACEAE						
<u>Alnus oregona</u>	Red Alder					
* BORAGINACEAE						
<u>Cryptantha leiocarpa</u>	Coast Cryptantha	X				
<u>Amsinckia spectabilis</u>	Fiddleneck	X			X	
* BRASSICACEAE						
<u>Brassica campestris</u>	Field Mustard	X	X		X	X
<u>Cakile maritima</u>	Sea Rocket	X			X	

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOWBANK	LAGUNA CREEK
<u>Capsella bursa-pastoris</u>	Shepard's Purse				X		X
<u>Cardamine oligosperma</u>	Bitter Cress	X			X		X
<u>Lobularia maritima</u>	Sweet Alyssum	X	X		X	X	X
<u>Nasturtium officinale</u>	Water-cress	X			X		X
<u>Rapbanus sativus</u>	Wild Radish	X	X	X	X	X	X
<u>Sisymbrium sp.</u>	Hedge Mustard	X					
<u>Thelypodium lasiophyllum</u> ssp. <u>inalienum</u>	Thelypodium				X	X	X
* CALLITRICHACEAE							
<u>Callitriche marginata</u>	Water Starwort						X
* CAPRIFOLIACEAE							
<u>Sambucus callicarpa</u>	Red Elderberry	X			X		X
* CARYOPHYLLACEAE							
<u>Spergularia macrotheca</u>	Large-flower Sand Spurry	X			X	X	X
<u>Cerastium viscosum</u>	Mouse-ear Chickweed				X		X
<u>Sagina occidentalis</u>	Western Pearlwort	X					X
<u>Stellaria media</u>	Common Chickweed				X		X
* CHENOPODIACEAE							
<u>Atriplex patula</u>	Fat Hen						X
<u>Atriplex californica</u>	California Saltbush						X
<u>Chenopodium sp.</u>	Goosefoot						X
<u>Chenopodium album</u>	Lamb's Quarter				X		X
<u>Salicornia virginica</u>	Pickleweed						X
* CONVALLARIACEAE							
<u>Smilacina racemosa</u>	Fat Solomon's Seal						X
<u>Smilacina stellata</u>	Slim Solomon's Seal						X
* CONVOLVULACEAE							
<u>Convolvulus occidentalis</u>	Western Morning Glory				X	X	X
* CORNACEAE							
<u>Cornus californica</u>	Creek Dogwood						X

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOBANK
* CRASSULACEAE						
<u>Dudleya caepitosa</u>	Live-forever	X		X	X	X
<u>Tillea erecta</u>	Sand Pigmyweed					
* CUCURBITACEAE						
<u>Marah fabaceus</u>	Wild Cucumber	X			X	
* CYPERACEAE						
<u>Carex brevicaulis</u>	Short-stemmed Sedge	X				
<u>Carex obnupta</u>	Slough Sedge					
<u>Cyperus eragrostis</u>	Umbrella Sedge				X	
<u>Scirpus cernuus</u>						
var. <u>californicus</u>	Low Club Rush	X				
<u>Scirpus americanus</u>	Three Square					
* EQUISETACEAE						
<u>Equisetum arvense</u>	Common Horsetail	X				
<u>Equisetum telmateia</u>	Giant Horsetail					
* ERICACEAE						
<u>Arbutus menziesii</u>	Pacific Madrone					
* EUPHORBIACEAE						
<u>Euphorbia pepplus</u>	Petty Spurge				X	
<u>Euphorbia lathyris</u>	Gopher Plant					
* FABACEAE						
<u>Cytisus monspessulanus</u>	French Broom					
<u>Lathyrus littoralis</u>	Silky Beach Pea					X
<u>Lathyrus vestitus</u>	Common Pacific Pea					X
<u>Lotus sp.</u>	Bird's Foot Trefoil	X				
<u>Lupinus arboreus</u>	Yellow Bush Lupine	X			X	X
<u>Lupinus bicolor</u>	Lindley's Annual Lupine					
<u>Lupinus varicolor</u>	Varicolored Lupine					
<u>Medicago polymorpha</u>	Bur Clover				X	
<u>Melilotus indicus</u>	Yellow Sweet Clover	X			X	
<u>Trifolium sp.</u>	Clover					
<u>Trifolium repens</u>	White Clover				X	

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOWBANK	LAGUNA CREEK
<u>Vicia angustifolia</u>	Smaller Common Vetch						X
<u>Vicia sativa</u>	Spring Vetch						X
<u>Vicia gigantea</u>	Giant Vetch				X		X
* FAGACEAE							
<u>Quercus agrifolia</u>	Coast Live Oak						X
* FUMARIACEAE							
<u>Eschscholzia californica</u>	California Poppy	X				X	X
* GERANIACEAE							
<u>Geranium dissectum</u>	Cut-leaved Geranium	X			X	X	X
<u>Erodium cicutarium</u>	Red-stemmed Filaree		X		X	X	X
<u>Erodium moschatum</u>	Musk Filaree				X		X
* GENTIANACEAE							
<u>Centaurium davyi</u>	Davy's Centaury						X
* GRAMINEAE							
<u>Agrostis densiflora</u>	Dense Bent Grass	X			X		X
<u>Agrostis Blasdalei</u>	Blasdale's Bent Grass						X
<u>Avena barbata</u>	Wild Oat	X	X	X	X	X	X
<u>Avena fatua</u>	Wild Oat				X		X
<u>Bromus mollis</u>	Soft Chess	X	X				X
<u>Bromus carinatus</u>	California Brome	X			X	X	X
<u>Bromus rigidus</u>	Ripgut Brome	X	X		X		X
<u>Bromus willdenowii</u>	Rescue Grass						X
<u>Cortaderia selloana</u>	Pampas Grass				X		X
<u>Deschampsia caespitosa</u> ssp. <u>holciformis</u>	California Hair Grass				X		X
<u>Distichlis spicata</u>	Salt Grass					X	X
<u>Elymus triticoides</u>	Alkali Rye Grass	X			X	X	X
<u>Elymus mollis</u>	American Dune Grass	X					X
<u>Elymus glaucus</u>	Western Rye Grass					X	X
<u>Hordeum brachyantherum</u>	Meadow Barley	X				X	X
<u>Hordeum leporinum</u>	Farmer's Foxtail		X		X	X	X
<u>Lolium perenne</u>	Italian Ryegrass		X		X		X
<u>Melica torreyana</u>	Torrey's Melica						X
<u>Poa sp.</u>	Bluegrass				X		X
<u>Polypogon monspeliensis</u>	Rabbitsfoot Grass	X			X	X	X

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELBANK
<u>Parapholis incurva</u>	Sickle Grass				X	
<u>Paspalum dilatatum</u>	Dallis Grass					
<u>Vulpia myuros</u>	Rattail Fescue	X			X	
* GROSSULARIACEAE						
<u>Ribes sanguineum</u>	Flowering Currant					
<u>Ribes divaricata</u>	Straggly Gooseberry					X
* HIPPOCASTANACEAE						
<u>Aesculus californica</u>	California Buckeye					
* HYDROPHYLLACEAE						
<u>Nemophila penduculata</u>	Meadow Nemophila	X				
<u>Phacelia distans</u>	Common Phacelia	X				
<u>Phacelia malvaefolia</u>	Stinging Phacelia					X
* IRIDACEAE						
<u>Iris douglasiana</u>	Coast Iris	X				
<u>Sisyrinchium bellum</u>	Blue-eyed Grass	X				
* JUNCACEAE						
<u>Juncus effusus</u>	Bog Rush	X				
<u>Juncus phaeocephalus</u>	Rush	X				
<u>Juncus bufonius</u>	Toad Rush					
<u>Juncus leseurii</u>	Salt Rush					
<u>Juncus patens</u>	Common Rush	X			X	
<u>Juncus xiphioides</u>	Iris-leaved Rush					X
* LABIATAE						
<u>Marrubium vulgare</u>	Common Horehound					
<u>Stachys bullata</u>	Hedge Nettle	X			X	X
<u>Satureja douglasii</u>	Yerba Buena	X				
* LAURACEAE						
<u>Umbellularia californica</u>	California B.					

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOWBANK	LAGUNA CREEK
* LILIACEAE							
<u>Chlorogalum pomeridianum</u>	Soap Plant				X	X	X
<u>Fritillaria lanceolata</u>	Mission Bells				X		X
<u>Kniphofia uvaria</u>	Red Hot Poker	X					X
* LYTHRACEAE							
<u>Lythrum hyssopifolia</u>	Lythrum						X
* NYCTAGINACEAE							
<u>Abronia latifolia</u>	Yellow Sand Verbena	X			X		X
<u>Abronia umbellata</u>	Pink Sand Verbena						X
* MALVACEAE							
<u>Malva sp.</u>	Mallow	X	X		X	X	X
<u>Sidalcea sp.</u>	Checker Bloom	X			X	X	X
* MIMOSACEAE							
<u>Acacia decurrens</u>	Green Wattle						X
* ONAGRACEAE							
<u>Camissonia cheiranthifolia</u>	Beach Primrose	X			X		X
<u>Epilobium sp.</u>	Willow Herb	X			X		X
<u>Clarkia sp.</u>	Clarkia						X
<u>Zauschneria californica</u>	California Fuschia						X
* ORCHIDACEAE							
<u>Piperia michaelii</u>	Michael's Piperia	X				X	X
* OROBANCHACEAE							
<u>Orobanche grayana</u> var. <u>violacea</u>	Gray's Broomrape						X
* OXALIDACEAE							
<u>Oxalis pes-caprae</u>	Burmuda Buttercup				X		X

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOWBANK
* PINACEAE						
<u>Pinus radiata</u>	Monterey Pine	X				
* PLANTAGINACEAE						
<u>Plantago juncooides</u>	Seaside Plantain	X		X		X
<u>Plantago coronopus</u>	Cut-leaved Plantain	X			X	X
<u>Plantago lanceolata</u>	English Plantain		X		X	
* POLYGONACEAE						
<u>Eriogonum latifolium</u>	Buckwheat	X		X	X	X
<u>Polygonum sp.</u>	Knotweed	X				
<u>Polygonum punctatum</u>	Water Smartweed					
<u>Rumex acetosella</u>	Sheep Sorrel	X			X	
<u>Rumex crispus</u>	Curly Dock	X			X	X
<u>Rumex fenestratus</u>	Dock					
<u>Rumex conglomeratus</u>	Green Dock					
<u>Rumex crassus</u>	Dock	X				X
* PORTULACACEAE						
<u>Montia perfoliata</u>	Miner's Lettuce	X			X	
* PRIMULACEAE						
<u>Anagallis arvensis</u>	Scarlet Pimpernel	X			X	
* PTERIDACEAE						
<u>Dryopteris arguta</u>	Wood Fern	X			X	
<u>Polypodium californicum</u>	California Polypody					
<u>Polystichum munitum</u>	Sword Fern	X			X	
<u>Pteridium aquilinum</u>	Bracken Fern	X				
* PLUMBAGINACEAE						
<u>Armeria maritima</u> var. <u>californica</u>	Sea Pink					X
* RANUNCULACEAE						
<u>Delphinium californicum</u>	Coast Larkspur	X				
<u>Ranunculus californica</u>	Buttercup	X			X	

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOWBANK	LAGUNA CREEK
* RHAMNACEAE							
<u>Rhamnus californica</u>	Coffee Berry	X			X		X
* ROSACEAE							
<u>Alchemilla occidentalis</u>	Dew Cup						X
<u>Fragaria chiloensis</u>	Beach Strawberry	X			X	X	X
<u>Potentilla</u> sp.	Pacific Silverweed	X					X
<u>Rubus ursinus</u>	Blackberry	X	X	X	X	X	X
<u>Rosa californica</u>	Wild Rose						X
* RUBIACEAE							
<u>Galium nuttallii</u>	Climbing Bedstraw				X	X	X
<u>Galium californicum</u>	California Bedstraw				X		X
<u>Galium aparine</u>	Cleavers	X			X		X
* SALICACEAE							
<u>Salix lasiolepis</u>	Arroyo Willow	X			X		X
<u>Salix lasiandra</u>	Yellow Willow						X
* SCROPHULARIACEAE							
<u>Castilleja latifolia</u>	Seaside Paintbrush	X			X		X
<u>Diplacus aurantiacus</u>	Sticky Monkey Flower						X
<u>Mimulus guttatus</u> ssp. <u>littoralis</u>	Coastal Monkey Flower	X	X			X	X
<u>Orthocarpus faucibarbatius</u> var. <u>albidus</u>	Smooth Orthocarpus						X
<u>Orthocarpus purpurascens</u> ssp. <u>latifolius</u>	Owls' Clover						X
<u>Scrophularia californica</u>	California Bee Plant	X			X		X
<u>Veronica persica</u>	Persian Speedwell				X		X
* SOLANACEAE							
<u>Solanum douglasii</u>	Douglas' Nightshade					X	X
* TYPHACEAE							
<u>Typha latifolia</u>	Cat-tail	X					X

CHECKLIST OF VASCULAR PLANTS OF NORTH COAST BEACHES

SPECIES	COMMON NAME	SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELI COWBANK
* URTICACEAE						
<u>Hesperocnide tenella</u>	Western Nettle				X	X
* VERBENACEAE						
<u>Verbena lasiostachys</u>	Vervain					

COST/REVENUE ANALYSIS AND OTHER IMPLEMENTATION CONSIDERATIONS

This section of the General Plan is included to provide the level of detail necessary in soliciting funding for the physical improvements and to assist the County of Santa Cruz in deciding the best course of action for management. It would not be incorporated in the final State Parks and Recreation General Plan.

Probable Cost Estimate for Development

The following probable cost estimates for developing the six units, (Tables 7 through 12) based on 1987 dollars and reflecting in-place costs at union wages, is approximately \$1,508,283, including contingency costs of approximately 15 percent and design and engineering costs of about 10 percent. With easement/in fee costs, which are unknown at this time, the overall development cost will likely be just under two million dollars.

This estimate represents a worse case scenario in that it assumes that all highway improvements will be required by the California Department of Transportation and that no free or cheap labor would be available. The California Department of Transportation is not likely to require all the proposed turning and deceleration lanes. Considerable cost savings would be achieved with the elimination or reduction in length of any of these highway improvements.

Well over \$100,000 could be saved if organizations like the California Conservation Corps, California Youth Authority and the Santa Cruz County Community Action Board were involved in the construction of access structures and natural resource restoration.

Furthermore, the estimate includes the relocation of existing electrical poles at the Yellowbank Beach parking lot. Pacific, Gas and Electric Company is currently evaluating this proposal and determining whether or not they will assume the costs of moving them. The project costs can be reduced another \$40,000 if they do.

Additional savings, although minor in comparison, would result if less vandal-resistant materials and construction methods were used. There are also cheaper but less effective and higher

TABLE 7

Scott Creek Beach Development Costs*

Item Description	Quantity	Unit	Unit Price	Total
Highway 1 Improvements				
12' wide turning lane, 600 L.F.	1	L.S.	\$100,000.00	\$100,000
8' wide shoulder, 400 L.F. (inc. grading, striping, and traffic control)	1	L.S.	40,000.00	40,000
Parking - South end				
On-site cut-and-fill, fine grading		L.S.		25,000
Revegetation w/ jute mesh		L.S.		7,500
Gate	1	Each	1,800.00	1,800
Tire teeth	1	L.S.		1,000
Dispensing and repository boxes	1	Set	300.00	300
Entrance station	1	Each	8,500.00	8,500
Access				
Pedestrian bridge (8' wide x 100' long w/ concrete piers)		L.S.		35,000
Semi-portable log bridge	Allowance			5,000
Sanitation				
Trash cans (chained to posts set in conc.)	2	Pair	250.00	500
Vault toilet (2-unit)	1	Each	27,500.00	27,500
Signs				
Highway	13	Each	50.00	650
Off highway	13**	Each	300.00	3,900
Dune Restoration/Preservation				
Removal of concrete slabs		L.S.		15,000
Erosion control and seeding (pad area and gullies)		L.S.		10,000
Site preparation, seed collection and application	3	Acre	1,400.00	4,600
Nylon fencing	1,700	L.F.	2.00	3,400
Wood Bollards (800 L.F., 5' O.C.)	160	Each	12.00	1,920
Exotic plant removal (annually for 5 years)		L.S.		8,750
Monitoring every 6 months (photo stations)		L.S.		2,100
Wetland preserve-cut channel and levee	Allowance			1,000
				<u>\$303,402</u>
15% contingency and 10% for design and engineering				<u>75,855</u>
			Total	\$379,257

* If and when the northern parking lot and the accompanying improvements are made, an additional cost of \$64,000.00 (including contingency and design costs) will be incurred.

** Three of the signs at the north end will be installed when other improvements are made.

TABLE 8
Davenport Landing Beach Development Costs

Item Description	Quantity	Unit	Unit Price	Total
Highway 1 Improvements				
None				
Parking				
Grading of shoulder (including fill)		L.S.		\$ 7,500
Dispensing and repository boxes	1	Set	300.00	300
Access				
8' wide, 200' long paved trail (including fill)		L.S.		2,500
Sanitation				
Trash cans (chained to posts set in conc.)	1	Pair	250.00	250
Vault toilet (2-unit)	1	Each	27,500.00	27,500
Signs				
Highway	8	Each	50.00	400
Off highway	5	Each	300.00	1,500
Native Vegetative screen (5 gal. shrubs)	15	Each	35.00	525
Fire rings	5	Each	200.00	1,000
				<u>\$41,475</u>
15% contingency and 10% for design and engineering				<u>10,369</u>
			Total	\$ 51,844

TABLE 9**Panther Beach Development Costs**

Item Description	Quantity	Unit	Unit Price	Total
Highway 1 Improvements				
Guard rail	600	L.F.	\$ 15.00	\$ 9,000
Parking				
Dispensing and repository boxes	1	Set	300.00	300
Access				
Concrete 5' wide stairs with pipe handrail		L.S.		40,000
Sanitation				
Trash cans (chained to posts set in conc.)	1	Pair	250.00	250
Vault toilet (2-unit)	1	Each	27,500.00	27,500
Signs				
Highway	1	Each	50.00	50
Off highway	6	Each	300.00	1,800
				<u>\$78,900</u>
15% contingency and 10% for design and engineering				<u>19,725</u>
			Total	\$98,625

TABLE 10

Bonny Doon Beach Development Costs

Item Description	Quantity	Unit	Unit Price	Total
Highway 1 Improvements*				
12' wide turning lane, 600 L.F.	1	L.S.	\$ 100,000.00	\$ 100,000
8' wide shoulder, 400 L.F.	1	L.S.	40,000.00	40,000
Guard rail	800	L.F.	15.00	12,500
Culvert Extension	20	L.F.	80.00	1,600
Off-site fill and shaping	5,000	CY	6.00	30,000
On-site cut-and-fill	3,000	CY	3.00	9,000
Parking				
On-site cut-and-fill	1000	CY	3.00	3,000
Gate	1	Each	1,800.00	1,800
Dispensing and repository boxes	1	Set	300.00	300
Entrance Station		Each	8,500.00	8,500
Tire teeth		L.S.		1,000
Access				
Concrete stairs with pipe handrail (parking lot)	2	L.S.		20,000
P.T. wood stairs with pipe handrail on concrete piers (beach)		L.S.		50,000
Sanitation				
Trash cans (chained to posts set in conc.)	3	Pair	250.00	750
Vault toilet (2-unit)	1	Each	27,500.00	27,500
Beach clean-up	Allowance			15,000
Signs				
Highway	9	Each	50.00	450
Off highway	9	Each	300.00	2,700
Dune and coastal scrub restoration/ preservation				
Site preparation, seed collection and jute mesh	2	Acre	6,000.00	12,000
Check dams, back-fill and seeding	Allowance			24,000
Nylon fencing	1,400	L.F.	2.00	2,800
Fishery enhancement				
Removal of flashboard dam and rock debris	Allowance			750
				<u>\$363,650</u>
15% contingency and 10% for design and engineering				<u>90,913</u>
		Total		\$454,563

- * This estimate assumes that CalTrans will absorb the cost of the turning lane onto Bonny Doon Road for southbound traffic.

TABLE 11

Yellowbank Beach Development Costs

Item Description	Quantity	Unit	Unit Price	Total
Highway 1 Improvements				
8' wide shoulder, 400 L.F. (including grading, striping, and traffic control)	2	L.S.	\$ 40,000.00	\$ 80,000
Parking				
Grading	46,200	S.F.	0.15	6,930
Gravel	46,200	S.F.	0.50	23,100
Gate	1	Each	1,800.00	3,600
Tire teeth		L.S.		1,000
Guard rail	400	L.F.	15.00	6,000
Dispensing and repository boxes	1	Set	300.00	300
Entrance Station	1	Each	8,500.00	8,500
Relocation of 4 electrical poles	Allowance			40,000
Access				
Concrete stairs with pipe handrail		L.S.		20,000
Sanitation				
Trash cans (chained to posts set in conc.)	1	Pair	250.00	250
Vault toilet (2-unit)	1	Each	27,500.00	27,500
Beach clean-up	Allowance			12,500
Signs				
Highway	2	Each	50.00	100
Off highway	3	Each	300.00	900
Coastal scrub revegetation	Allowance			500
				<u>\$231,180</u>
15% contingency and 10% for design and engineering				<u>57,795</u>
		Total		\$288,975

TABLE 12

Laguna Creek Beach Development Costs

Item Description	Quantity	Unit	Unit Price	Total
Highway 1 Improvements				
8' wide shoulder, 400 L.F. (including grading, striping and traffic control)	2	L.S.	\$ 40,000.00	\$ 80,000
Guard rail	280	L.F.	15.00	4,200
Culvert extension	20	L.F.	80.00	1,600
Off-site fill and shaping	2,300	C.Y.	6.00	13,800
On-site cut-and-fill (including parking area)	8,000	C.Y.	3.00	24,000
Parking				
Gate	1	Each	1,800.00	1,800
Dispensing and repository boxes	1	Set	300.00	300
Entrance Station	1	Each	8,500.00	8,500
Tire teeth		L.S.		1,000
Access				
Clear and grade	Allowance			2,500
Concrete stair with pipe handrail		L.S.		10,000
Trail barriers	2	L.S.		350
Sanitation				
Trash cans (chained to posts set in conc.)	2	Pair	250.00	500
Vault toilet (2-unit)	1	Each	27,500.00	27,500
Signs				
Highway	7	Each	50.00	350
Off-Highway	6	Each	300.00	1,800
Marsh/snowy plover preservation				
Removal of flashboard dam structure		L.S.		5,000
Levee Modification		L.S.		500
Nylon fencing	1,000	L.F.	2.00	2,000
Monitoring of nesting activity		L.S.		2,300
				<u>\$188,000</u>
15% contingency and 10% for design and engineering				<u>47,000</u>
			Total	\$235,000

maintenance stair types. If a management system is selected that depends solely on the dispensing and repository boxes, then the costs of the entrance stations, as well as the costs to operate them, can be omitted.

The development costs include the provision of entrance stations at four of the units: Scott Creek, Bonny Doon, Yellowbank and Laguna Creek. Two of the three management options require that these be constructed and manned, and one of the two revenue scenarios also depends on the use of these kiosks.

Funding Options

Several different avenues for funding the development at the North Coast beaches have been explored. The two most likely sources are the California Department of Parks and Recreation and the California Coastal Conservancy. The first depends on funding that is budgeted annually by the State Legislature. The source of this funding in the near future will be the 1988 citizen-initiated Parks and Recreation Bond Act, if it is approved by California voters during the primary election. The California Coastal Conservancy also relies upon Bond Act monies, but project funding under this alternative is more direct. The 1988 Bond Act, if approved, further provides a one million dollar grant to Santa Cruz County to acquire conservation easements on coastal terraces north of the Santa Cruz city limits. The California Department of Transportation may also be a potential source of revenue.

In light of the fact that existing units like Wilder Ranch State Park are having to compete with other projects of higher priority for limited state funding, it is not likely that the North Coast units would be allocated development monies in the near future, or in any significant quantity.

Funding can be sought more readily from the California Coastal Conservancy. Small amounts currently exist under the Enhancement Program for natural resource restoration and the establishment of preserves. If the 1988 Bond Act passes, a more significant amount of funds in the range of \$250,000 to \$500,000 will be annually available as of July 1, 1988 for developing access improvements under the Coastal Access Program.

In order to obtain these funds, the managing agency must own or have easements to the land upon which development will occur. California Coastal Conservancy money can be used to acquire land and leases for the purpose of preserving important wildlife habitat, but only with a long-term commitment by a responsible agency or non-profit organization to manage the preserve. The Department of Fish and Game would support a formal reserve status for the Scott Creek and Laguna Creek wetlands, but it has little manpower to manage them.

The wetland at Scott Creek is designated as a high acquisition priority of the Wildlife Conservation Board, but acquisition has not been successfully negotiated with the landowner. However, the landowner may be willing to provide temporary easements for making necessary land modifications and a permanent conservation easement to the Department of Fish and Game for overseeing management. The Laguna Creek wetland will be evaluated by the Department of Fish and Game for management and acquisition priority rating. Acquisition by the Wildlife Conservation Board is improbable, however, because it is already currently protected by zoning restrictions and remains undevelopable due to existing flood potential.

With the preparation of this plan, discussions with the affected landowners should be pursued with the goal of obtaining legal control (permanent or temporary) over all land to be developed or otherwise modified.

Management Options

The County of Santa Cruz approached this project with the ultimate goal of having the California Department of Parks and Recreation assume management of the beach units. This plan responds in format and content to that strategy. However, there are other alternatives, including management by its own Department of Parks, Open Space and Cultural Services and by a private management company.

The following scenarios are founded on typical 1987 salaries, and are designed to reflect the level of management required for all six of the beaches.

County Management

The annual operating expense scenario shown in Table 13 represents a staffing level that is the most realistic. It assumes that a minimum number of personnel would be made available to manage the beaches and therefore a self-pay fee system would be employed rather than hiring fee collectors. While this helps keep the number of employees down, it also means that only 40 to 60 percent of the potential revenue can be collected (communication with Department personnel).

It should be noted that county staff can be readily trained and certified as peace officers which permits them to issue parking citations and make arrests. The staffing does not, however, include the provision for any lifeguards. Signs would be posted warning visitors about shoreline and aquatic hazards.

In the event that seasonal lifeguards were to be added and posted at each beach, the associated costs are likely to be about \$145,000.00.

For the county to manage any one beach, the operating expenses would be approximately 40 percent, or about \$90,000.00 of the total shown in the table because of less efficiency and equipment needs. This assumes that two permanent maintenance workers and one seasonal employee would be needed.

Private Sector Management

If management responsibilities were given to the private sector, fees could be collected in either of two manners: (1) similar to county management, a self-pay fee system could be used; or, (2) entrance stations could be manned by fee collectors. The latter is preferred by the private sector because of the greater control over revenue collection.

The scenario shown in Table 14 represents ideal staffing, which translates into optimum management. It should be realized that upon implementation, this option has the flexibility of having the staff tightened should it become necessary to be more economically efficient.

TABLE 13

**Annual Operating Expenses
County of Santa Cruz**

<u>Personnel Type</u>	<u>Typical Annual Salary</u>	<u>Staffing</u>		<u>Total</u>
		<u>March-October</u>	<u>November-February</u>	
Supervisor	\$24,500	(1) \$16,415	(1) \$ 8,085	\$24,500
Maintenance Worker	\$21,000	(3) 42,210	(3) 20,790	63,000
Seasonal Field Crew	13,500	(2) 18,090		<u>18,090</u>
Total Labor				\$105,590
Labor Overhead (32% for permanent employees, plus \$10,000 for seasonal ones)				43,789
Equipment Amortized Over 10-Year Period*				27,000
General County Overhead (35% of Total Labor and Equipment Costs)				46,407
Sanitary Services**				<u>40,000</u>
Total				\$262,786

* 3-4 vehicles, radio equipment, tools, uniforms, etc.

** Garbage collection and vault toilet pumping by private contractors

TABLE 14

**Annual Operating Expenses
Private Sector**

<u>Personnel Type</u>	<u>Typical Annual Salary</u>	<u>Staffing</u>		<u>Total</u>
		<u>March-October</u>	<u>November-February</u>	
Manager	\$25,000	(.25) \$4,188	(.5) \$2,063	\$6,251
Supervisor	20,000	(1) 13,400	(1) 6,600	20,000
Field Crew	18,000	(4) 48,240	(4) 23,760	72,000
Seasonal Field Crew	12,500	(10) 83,616		<u>83,616</u>
Total Labor				\$181,867
Labor Overhead (30%)				54,560
Company Overhead (5%)				9,093
Equipment Amortized Over 10-Year Period*				<u>15,000</u>
Subtotal				<u>260,520</u>
Profit (20%)				52,104
Sanitary Services**				<u>40,000</u>
Total				\$352,624
County Contract Administration (10% of Total)				35,000
Total				\$387,624

* 1-2 vehicles, radio equipment, tools, uniforms, etc.

** Garbage collection and vault toilet pumping by private contractors

Similar to the county management option, this scenario does not include anyone qualified as a lifeguard. As in the case of the county management option, seasonal lifeguard costs would increase the operating expenses by another \$145,000.00. With the approval of a Board of Supervisors' resolution, staff could be trained and certified as and given the authority of peace officers (communication with Robert Wandruff, County Clerk Court Administrator).

If the private sector were to manage only one of the beaches, the operating expenses would be approximately 35 percent, or about \$123,000.00 of the total. This percentage is slightly lower than that for county management. The projection includes a manager and two permanent and two seasonal field crew employees.

State Parks Management

Of the three management options, the Department would have the highest annual operating expense. This is due in part to the large staff which includes lifeguards. Because the legal system has not consistently recognized warning signs as a sufficient aquatic safety measure, and also because of pending law suits involving liability responsibility for drownings, the Department is not likely to assume management of the units without the provision of both seasonal and permanent lifeguards. The number of lifeguards indicated in Table 15 is not necessarily ideal; some proponents of aquatic safety would argue that at least one lifeguard per beach should always be on duty, even during the winter, because of surfing activity.

Another factor attributable to the high cost of management by the state is equipment. A large portion of the equipment is needed for public safety and aquatic rescues. Four types of vehicles, fully equipped with mobile radio transceivers, light chargers, sirens, etc. would be required, as well as a rescue boat with an engine and trailer, rescue surfboards, wet suits and other equipment. The Department prefers that the entrance stations have telephones; however, telephone extension and connection costs have not been included in the development cost estimate. An alternative consideration is providing radio equipment at the entrance stations that would be accessible to the public. Another ideal facility that should be further considered, but which is not in the cost estimate, is a headquarters operation office/maintenance area.

TABLE 15

Annual Operating Expenses
Department of Parks and Recreation

Personnel Type	Typical Annual Salary	Staffing			Total	
		June-September	October-May			
Supervisor/Peace Officer	\$ 27,500	(2)	\$ 18,150	(2)	\$ 36,850	\$ 55,000
Field Crew/Peace Officer	26,500	(6)	52,470	(6)	106,530	159,000
Lifeguard/Peace Officer	24,000	(2)	15,840	(2)	32,160	48,000
Maintenance Worker	21,000	(1)	6,930	(1)	14,070	21,000
Dispatcher Clerk	19,000	(1)	6,270	(1)	12,730	19,000
Office Assistant	15,000	(5)	2,475	(5)	5,025	7,500
Seasonal Lifeguard	18,000	(6)	111,434*			111,434
Seasonal Field Crew	13,000	(11)	78,019*			78,019
Total						\$428,953
Labor Overhead (30%)						128,686
Equipment Amortized Over 10-Year Period**						30,000
Sanitary Services***						40,000
Total						\$627,639

- * Actually includes coverage for seven days a week during this period as well as for weekends throughout the remainder of the year for a total of 189 days.
- ** 12 vehicles (4-wheel drives, all terrain, compact sedans and pick-up trucks), intertidal Zodiac rescue boat, radio equipment, tools, uniforms, etc.
- *** Garbage collection and vault toilet pumping by private contractors.

Potential Revenue Scenarios

The two potential revenue scenarios presented in Tables 16 and 17 are estimates of the amounts of revenue that could be generated from all six beaches, once full development and management is in place. Under scenario 1, fee collectors would be stationed at Scott Creek, Bonny Doon, Yellowbank and Laguna Creek Beaches. Visitors would be responsible for depositing their fees in boxes at the two remaining beaches. In the second scenario, there would be no manned entrance stations; visitors would deposit their fees at all six beaches.

The number of parked vehicles at one time (column two of Table 16) reflects a percentage (shown in parentheses) of the available number of parking spaces that would be filled during various days of the year. These percentages are based on visitor use patterns at state beaches located in San Mateo County that have similarly sized parking lots and similar facilities. The turnover rates are also founded on existing use patterns. The scenarios assume a \$3.00 charge per vehicle typical of some nearby state beaches. This fee is the amount required to off-set the operating expenses under the best management option.

In addition to revenue that may be collected in fees, revenue may be generated by issuing parking citations to vehicles parked along Highway 1 and other roads where parking will be prohibited and signed accordingly. (During holidays and at other times when the parking lots fill, highway parking may have to be tolerated.) At Davenport Landing and Panther Beach, where there are no proposed manned parking lots, self-paid revenue would be supplemented by fines collected for those vehicles for which fees have not been paid. This combined amount from parking fines is treated as a separate line item in the tables, as it is difficult to determine how many tickets would may be issued during the course of a year, and because the amount will decrease over time as repeat visitors learn the consequences of not paying fees and parking illegally under the proposed management.

The first scenario estimate combines the number of parking violations that would be made near the beaches along Highway 1, Bonny Doon Road and Laguna Creek Road on weekend days during the peak use season with the fines for unpaid fees at the Panther Beach parking lot and along the Old Coast Road at Davenport Landing Beach. A small amount of potential revenue for citations issued during peak season weekdays is included in the estimate. No parking fine

revenue was estimated for the winter season due to low, transient use and the lack of manpower for regular patrolling. The estimate was further adjusted to account for uncollectable citations.

This level of parking fine revenue can only be achieved through regular patrolling, preferably several times a day, during the peak use season. Of the three management options, the private sector has the greatest incentive to ensure compliance with parking and fee regulations.

Experience at nearby state beaches demonstrates that the fee revenue of unmanned parking lots that rely on a self-pay fee system is typically 40 to 60 percent less than at manned ones, because of unregular, more infrequent patrolling and less emphasis on enforcing fee payment regulations. If entrance stations are not provided for the manual collection of fees, then the revenue scenario will be more like that shown in Table 17.

One might expect the parking fine estimate to be larger for the second scenario; if no one is present to request fee payment then visitors are more likely to avoid making that payment, subjecting themselves to possible fines. However, it is assumed that the management staff will be at a minimum and unable to check for fee compliance as frequently as a fully staffed operation. Therefore, the collection of only about half the parking fine revenue can actually be expected.

Revenue - Greyhound Rock

Greyhound Rock, located approximately 3-1/2 miles north of Scott Creek Beach, is owned by the Department of Fish and Game. It is undergoing redevelopment and will soon be managed by the County of Santa Cruz. Revenue from Greyhound Rock would go into the Santa Cruz County General Fund, but could be made eligible to financially support overall North Coast management.

Table 18 presents an estimate of revenue that could be generated at Greyhound Rock from day and overnight use. Again, the figures are based on use patterns at comparable state beach units in San Mateo County.

The estimate borrows the methodology used to project revenue in Scenario 1 to reach a figure that assumes minimum management: no manned entrance stations and no regular patrolling to

TABLE 18

Potential Revenue--Greyhound Rock

**Day Use Revenue (206 Parking Spaces)
Manned Kiosk for 8 Months**

<u>Season/Day of Week</u>	<u># of Vehicles at one time</u>	<u>Turnover Rate</u>	<u># Vehicles</u>	<u>\$/Day</u>	<u>Total</u>
Peak Use--Holiday	160 (78%)	3.0	480	\$3.00 1,440	\$12,960
Peak Use--Weekend	136 (66%)	2.0	272	\$3.00 816	52,224
Peak Use--Weekday	53 (26%)	1.5	80	\$3.00 239	41,108
Winter--Any	40 (19%)	2.0	80	\$1.50 120	14,280
Subtotal					<u>\$120,572</u>

**(RV) Overnight Revenue (25 Parking Spaces)
Manned Kiosks for 8 Months**

<u>Season/Day of Week</u>	<u># of Vehicles at one time</u>	<u>Turnover Rate</u>	<u>Fee</u>	<u>\$/Day</u>	<u>Total</u>
Peak Use--Holiday	19.5 (78%)	1.0	\$6.00	117	1,053
Peak Use--Weekend	16.5 (66%)	1.0	\$6.00	99	6,336
Peak Use--Weekday	6.5 (26%)	1.0	\$6.00	39	6,708
Winter--Any	4.75 (19%)	1.0	\$3.00	14	1,666
Subtotal					<u>\$15,763</u>

Day Revenue (with manned kiosk for 8 months)	120,572
Overnight Revenue (with manned kiosk for 8 months)	15,763
Subtotal	<u>\$136,335</u>
Less 25% use than comparable	-34,084
Subtotal	<u>102,251</u>
Less 50% of peak season day & overnight use without manned entrance station	-60,195
Subtotal	<u>42,056</u>
Less 30% for management costs	-12,617
Total	<u>\$29,439</u>

issue citations for unpaid fees. Expanding the proposed management plan to include this unit would not significantly increase the operating expenses of the other six units, but there would be costs associated with garbage and sanitary maintenance and possibly aquatic safety services. It is assumed that Greyhound Rock would receive less use than a comparable unit like San Gregorio State Beach in San Mateo County because it is less visible from Highway 1 and has more difficult trail access due to the steep terrain.

Other Variables

There are other variables that may influence these revenue figures both positively and negatively. Because it is difficult to assess how much variation may occur, they have not been quantified, but are presented here for consideration:

Higher Revenue

1. Visitor attendance records and fees at state beach units along the San Mateo County coastline were used to assist this analysis. Due to better weather conditions along the Santa Cruz County coastline, these figures may be conservative.
2. This analysis does not take into account revenue that could be charged in addition to the day use fees for overnight use and for dogs.
3. Additional revenue could also be generated by designating one beach as "clothing optional" and charging \$4.00 rather than \$3.00 for day use.
4. Overall use of the beaches will increase with population growth, particularly that of the South Bay Area.
5. Attendance often rebuilds once good visitor facilities, better law enforcement, etc. are in place.

Lower Revenue

1. If seasonal passes are sold to county residents for \$40.00, as the state now offers at some units, the total amount of revenue could be lowered by as much as 30 or 40 percent. A higher priced resident pass should be considered.
2. Parking fine revenue may decrease over time.

Revenue by Beach

Table 19 indicates how much revenue would be generated with and without manned entrance stations at each of the beach units (excluding Greyhound Rock). These figures are proportional to the number of proposed parking spaces. However, other variables must be considered. For example, the figure shown for Bonny Doon Beach, the most popular of the six beaches, is probably on the low end. In contrast, at Scott Creek Beach, actual revenue will probably be less than that projected because the design capacity of the parking lots exceed existing demand and substantial changes in current parking patterns are proposed.

TABLE 19
Potential Revenue - Each Beach

<u>Name of Beach</u>	<u>Number of Proposed Parking Spaces</u>	<u>Scenario 1</u>	<u>Scenario 2</u>
Scott Creek	110	\$106,443	\$58,152
Davenport Landing	90	87,088	47,579
Panther	30	29,030	15,860
Bonny Doon	80	77,413	42,292
Yellowbank	80	77,413	42,292
Laguna Creek	60	58,060	31,719
Total	450	\$435,447	\$237,894

Operating Expense/Revenue Summary

The following table compares the operating expenses of the three management options with the two potential revenue scenarios. The revenue figure for State Parks does not include Greyhound Rock revenue since the assumption is that the county will manage this unit with minimal staff. If Greyhound Rock were to be managed by the Department, lifeguards would probably be required, in which case all revenue would essentially be cancelled out by the costs of providing this kind of supervision.

The function of Table 20 is to permit a comparison between the operating costs and the potential revenue that would be collected under each management option, rather than between the management options themselves, each of which is defined by a different set of service/liability parameters. As can be seen in the table, both the county and the private sector could economically manage the six beaches, although the "profit margin" is greater for the latter. Furthermore, the private sector can absorb the cost of seasonal lifeguards at several of the beaches and provide a higher management profile than the county. In contrast, the state's annual operating expenses would far exceed the revenue that would be generated. This situation could be alleviated if the Department were willing to either keep the number of lifeguards to a minimum, or eliminate the permanent lifeguard positions and add a few more seasonal ones.

TABLE 20
Operating Cost/Revenue Analysis

<u>Management Options</u>	<u>Scenario 1</u>	<u>Potential Revenue</u> <u>Scenario 2</u>	<u>Expenses</u>	<u>Difference</u>
County		\$267,333	\$262,786	\$ 4,547
Private Sector	\$464,886		\$387,624	\$ 77,262
State Parks	\$435,447		\$627,639	<\$192,192>

Law Enforcement

Presently neither the California Highway Patrol or the County Sheriff's Office has the manpower to regularly patrol the North Coast section of Highway 1. Their involvement is limited to responding to emergency calls and complaints, and providing officers during holidays.

The County Sheriff's Office goal is to eventually have one sergeant and two deputies permanently on the North Coast patrol, but this is not likely to happen until voters approve a tax increase or present funding constraints are otherwise addressed.

A majority of the problems along the Santa Cruz County coastline do occur along the North Coast, foremost at Bonny Doon Beach, followed by Four Mile Beach to the south. Alcohol consumption is the primary cause of poor driving and disorderly conduct at the beaches. Transients live on the beaches and are discovered only if reported by others. Crimes occur throughout the year, but mostly at night, except for car thefts and break-ins which are most frequent during daylight hours.

Signs reading "No parking between 10 p.m. and 6 a.m." have been erected at some of the beach parking areas, but these are repeatedly removed. Anything made with wood eventually gets used as firewood.

By increasing the presence of management, many of these problems will be resolved. If the parking lots are manned, far fewer thefts will occur. With lifeguards, roving rangers and maintenance personnel on the trails and beaches, unacceptable social behavior will be reported and managed, encouraging use by more family-type visitors. The charging of fees will further alter the user type. Beaches not designated as "clothing optional" will deter nude sunbathers. Parties will be controlled by requiring special permits, if allowed at all. Overnight use will be more manageable with parking lots that may be closed and locked at dark.

A strong management presence requires a large staff which is on-site most of the time. It must be supported by an adequate number of trained peace officers and reinforced with the frequent participation of the California Highway Patrol and County Sheriff's Office. This is particularly

important when management is initially instated. Public reaction is likely to be strong and negative until existing users move on to other sites or accept the changes.

A cooperative management approach should be sought with the two law enforcement agencies, realizing that it need not be a permanent effort. Many of the North Coast management personnel, whether they are with the county, state or private sector, should be trained as peace officers.

Risk Analysis

With the extensive presence and severity of hazardous conditions, the North Coast units are ripe for liability suits. Yet it would be difficult to ascertain where ultimate responsibility lies in the event of litigation brought about by an injury or death in the water, on a beach, along the shore or trail, or at a parking area. Presently, private property owners at these units are somewhat exposed to potential litigation.

Any effort to reduce or eliminate these hazards through development and/or management implies some level of responsibility.

The California Department of Transportation will require certain highway-related improvements within its right-of-way for this very reason. The California Department of Parks and Recreation will not consider management responsibility without the provision for lifeguards because of liability exposure. A private management firm, unable to afford the high costs of insurance, would be specific about not being responsible for aquatic safety. The California Coastal Conservancy takes liability into consideration in requiring that purchase and easement agreements be acquired by a responsible agency prior to the commitment of funds for development.

In implementing this plan, the County of Santa Cruz is accepting such responsibility. The county must be sure that it is in fact willing to do so, and is taking every action necessary to provide the safest possible environment for public use.

Action Recommendations

The success of this plan can best be achieved by immediately pursuing the following:

- (1) Required approvals from:
 - California Coastal Commission
 - California Department of Transportation
 - California Department of Fish and Game
 - Santa Cruz County Planning Department
 - Pacific Gas and Electric, Co.
- (2) Necessary purchase and easement agreements from the following landowners:
 - Coastal Dairies and Land, Co.
 - Lone Star Cement, Co.
 - Southern Pacific Railroad, Co.
 - Albert Smith
- (3) Development and acquisition funds from:
 - 1988 California Bond Act Funds
 - California Coastal Conservatory
 - Wildlife Conservation Board
- (4) Labor assistance from:
 - California Conservation Corps
 - California Youth Authority
 - Santa Cruz County Community Action Board
- (5) Management cooperation from:
 - California Department of Transportation
 - California Highway Patrol
 - Santa Cruz County Metropolitan Transportation District
 - Santa Cruz County Sheriff's Office
- (6) Management contract with a private recreation management company of known competence, supplemented by contracted lifeguards for the more popular swim beaches.

Long-term development and management by the state should be pursued but not relied upon for implementation of this plan.

Appendix B



Wildlife observed (O) and predicted to occur (P) on North Coast Beaches, Santa Cruz County, California, by unit (cont'd).

Laguna Creek Yellowbank Creek Bonny Doon Panther Creek Davenport Landing Scott Creek

CLASS: AVES

ORDER: GAVIIFORMES (Loons)

FAMILY: GAVIIDAE (Loons)
 Red-throated Loon, (Gavia stellata)
 Arctic Loon, (Gavia arctica)
 Common Loon, (Gavia immer)

P P P P P P
 P P P P P P
 P P P P P P

ORDER: PODICIPEDIFORMES (Grebes)

FAMILY: PODICIPEDIDAE (Grebes)
 Pied-billed Grebe, (Podilymbus podiceps)
 Horned Grebe, (Podiceps auritus)
 Red-necked Grebe, (Podiceps grisegena)
 Bared Grebe, (Podiceps nigricollis)
 Western Grebe, (Aechmophorus occidentalis)

P P P P P P
 P P P P P P
 P P P P P P
 P P P P P P

ORDER: PELICANIFORMES (Tropichfids, Pelicans, and Relatives)

FAMILY: PELICANIDAE (Pelicans)
 Brown Pelican, (Pelicanus occidentalis)
 FAMILY: PHALACROCORACIDAE (Cormorants)
 Double-crested Cormorant, (Phalacrocorax auritus)
 Brandt's Cormorant, (Phalacrocorax penicillatus)
 Pelagic Cormorant, (Phalacrocorax pelagicus)

P P P P P P
 P P P P P P
 P P P P P P
 P P P P P P

ORDER: CICONIIFORMES (Herons, Storks, Ibises, and Relatives)

FAMILY: ARDEIDAE (Herons and Stiltnes)
 American Bittern, (Botaurus lentiginosus)
 Great Blue Heron, (Ardea herodias)
 Great Egret, (Casmerodius albus)
 Snowy Egret, (Egretta thula)
 Cattle Egret, (Bubulcus ibis)
 Green-backed Heron, (Bulorides striatus)
 Black-crowned Night Heron, (Nycticorax nycticorax)

P P P P P P
 O O P P P P
 P P P P P P
 P P P P P P

ORDER: ANSERIFORMES (Screamers, Ducks, and Relatives)

FAMILY: ANATIDAE (Swans, Geese, and Ducks)
 Canada Goose, (Branta canadensis)
 Wood Duck, (Aix sponsa)
 Green-winged Teal, (Anas crecca)
 Mallard, (Anas platyrhynchos)
 Northern Pintail, (Anas acuta)
 Blue-winged Teal, (Anas discors)
 Cinnamon Teal, (Anas cyanoptera)
 Northern Shoveler, (Anas clypeata)
 Gadwall, (Anas strepera)
 Eurasian Wigeon, (Anas penelope)
 American Wigeon, (Anas americana)
 Canvasback, (Aythya valisineria)
 Redhead, (Aythya americana)
 Ring-necked duck, (Aythya collaris)

P P P P P P
 P P P P P P
 P P P P P P
 P P P P P P
 P P P P P P
 P P P P P P
 P P P P P P
 P P P P P P

Wildlife observed (O) and predicted to occur (P) on North Coast Beaches, Santa Cruz County, California, by unit (cont.).

	Laguna Creek	Yellowbank Creek	Bonny Doon	Panther	Davenport Landing	Scott Creek
FAMILY: HAEMATOPODIDAE (Oystercatchers)						
Black Oystercatcher, (<i>Haematopus bachmani</i>)	P	P	P	O	P	P
FAMILY: RECURVIROSTRIDAE (Avocets and Stilts)						
Black-necked Stilt, (<i>Himantopus mexicanus</i>)	P					P
American Avocet, (<i>Recurvirostra americana</i>)	P	P	P	P	P	P
FAMILY: SCOLOPACIDAE (Sandpipers and Relatives)						
Greater Yellowlegs, (<i>Tringa melanoleuca</i>)	P					P
Lesser Yellowlegs, (<i>Tringa flavipes</i>)	P					P
Willet, (<i>Caloptrophorus semipalmatus</i>)	P	P	P	P	P	P
Wandering Tattler, (<i>Heteroscelus incanus</i>)	P	P	P	P	P	P
Spotted Sandpiper, (<i>Actitis macularia</i>)	P					O
Whimbrel, (<i>Numenius phaeopus</i>)		P	P	P	P	P
Long-billed Curlew, (<i>Numenius americanus</i>)	P	P	P	P	P	P
Marbled Godwit, (<i>Limosa fedoa</i>)	P	P	P	P	P	P
Ruddy Turnstone, (<i>Arenaria interpres</i>)	P	P	P	P	P	P
Black Turnstone, (<i>Arenaria melanoccephala</i>)	P	P	P	P	P	P
Surf-bird, (<i>Aphriza virgata</i>)	P	P	P	P	P	P
Red Knot, (<i>Calidris canutus</i>)	P	P	P	P	P	P
Sanderling, (<i>Calidris alba</i>)	P	P	P	P	P	P
Semipalmated Sandpiper, (<i>Calidris pusilla</i>)	P	P	P	P	P	P
Western Sandpiper, (<i>Calidris mauri</i>)	P	P	P	P	P	P
Least Sandpiper, (<i>Calidris minutilla</i>)	P	P	P	P	P	P
Pectoral Sandpiper, (<i>Calidris melanotos</i>)	P					O
Dunlin, (<i>Calidris alpina</i>)	P	P	P	P	P	P
Short-billed Dowitcher, (<i>Limnodromus griseus</i>)	P					P
Long-billed Dowitcher, (<i>Limnodromus scolopaceus</i>)	P					P
Common Snipe, (<i>Gallinago gallinago</i>)	P					P
Wilson's Phalarope, (<i>Phalaropus tricolor</i>)	P					O
FAMILY: LARIDAE (Gulls and Terns)						
Bonaparte's Gull, (<i>Larus philadelphia</i>)	P	P	P	P	P	P
Heermann's Gull, (<i>Larus heermanni</i>)	P	P	P	P	P	P
Mew Gull, (<i>Larus canus</i>)	P	P	P	P	P	P
Ring-billed Gull, (<i>Larus delawarensis</i>)	P	P	P	P	P	P
California Gull, (<i>Larus californicus</i>)	P	P	P	P	P	P
Herring Gull, (<i>Larus argentatus</i>)	P	P	P	P	P	P
Thayer's Gull, (<i>Larus thayeri</i>)	P	P	P	P	P	P
Western Gull, (<i>Larus occidentalis</i>)	P	P	P	P	P	P
Glaucous-winged Gull, (<i>Larus glaucescens</i>)	P	P	P	P	P	P
Caspian Tern, (<i>Sterna caspia</i>)	P	P	P	P	P	P
Elegant Tern, (<i>Sterna elegans</i>)	P	P	P	P	P	P
Common Tern, (<i>Sterna hirundo</i>)	P	P	P	P	P	P
Forster's Tern, (<i>Sterna forsteri</i>)	P	P	P	P	P	P
FAMILY: ALCIDAE (Auks, Murres, and Puffins)						
Common Murre, (<i>Uria aalge</i>)	P	P	P	P	P	P
Pigeon Guillemot, (<i>Coccyzus columba</i>)	P	P	P	O	P	P
Marbled Murrelet, (<i>Brachyramphus marmoratus</i>)	P	P	P	P	P	P
Ancient Murrelet, (<i>Synthliboramphus antilquus</i>)	P	P	P	P	P	P
Cassin's Auklet, (<i>Ptychoramphus aleuticus</i>)	P	P	P	P	P	P
Rhinoceros Auklet, (<i>Cerorhinca monocerata</i>)	P	P	P	P	P	P
Tufted Puffin, (<i>Pratercula cirrhata</i>)	P	P	P	P	P	P

Wildlife observed (O) and predicted to occur (P) on North Coast Beaches, Santa Cruz County, California, by unit (cont.).

Laguna Creek Yellowbank Creek Bonny Doon Panther Landing Davenport Creek Scott Creek

ORDER: COLUMBIFORMES (Pigeons and Doves)
 FAMILY: COLUMBIDAE (Pigeons and Doves)
 Rock Dove, (Columba livia) P P P O P P
 Band-tailed Pigeon, (Columba fasciata) P P P P P P
 Mourning Dove, (Zenaidura macroura) O P P P P P

ORDER: STRIGIFORMES (Owls)
 FAMILY: TYTONIDAE (Barn Owls)
 Common Barn Owl, (Tyto alba) P P P P P P
 FAMILY: STRIGIDAE (Typical Owls)
 Screech Owl, (Otus kennicottii) P P P P P P
 Great Horned Owl, (Bubo virginianus) P P P P P P
 Northern Pygmy-Owl, (Glaucidium gnoma) P P P P P P
 Burrowing Owl, (Athene cunicularia) P P P P P P
 Long-eared Owl, (Nyctalus californicus) P P P P P P
 Short-eared Owl, (Nyctalus flammeus) P P P P P P
 Northern Saw-whet Owl, (Accipiter acadicus) P P P P P P

ORDER: CAPRINIMIGIFORMES (Goatsuckers and Relatives)
 FAMILY: CAPRINIMIGIDAE (Goatsuckers)
 Common Poor-will, (Phalaenoptilus nuttallii) P P P P P P

ORDER: APODIFORMES (Swifts and Hummingbirds)
 FAMILY: APODIDAE (Swifts)
 Black Swift, (Cypseloides niger) P P P P P P
 Vaux's Swift, (Chaetura vauxi) P P P P P P
 White-throated Swift, (Aeronautes saxatilis) P P P P P P
 FAMILY: TROCHILIDAE (Hummingbirds)
 Anna's Hummingbird, (Calypte anna) P P P P P P
 Rufous Hummingbird, (Selasphorus rufus) P P P P P P
 Allen's Hummingbird, (Selasphorus sasin) P P P P P P

ORDER: CORACIIFORMES (Kingfishers and Relatives)
 FAMILY: ALCEDINIDAE (Kingfishers)
 Belted Kingfisher, (Ceryle alcyon) P P P P P P

ORDER: PICIFORMES (Woodpeckers and Relatives)
 FAMILY: PICIDAE (Woodpeckers and Wrenpecks)
 Acorn Woodpecker, (Melanerpes formicivorus) P P P P P P
 Yellow-bellied Sapsucker, (Sphyrapicus varius) P P P P P P
 Red-breasted Sapsucker, (Sphyrapicus ruber) P P P P P P
 Nuttall's Woodpecker, (Picoides nuttallii) P P P P P P
 Downy Woodpecker, (Picoides pubescens) P P P P P P
 Hairy Woodpecker, (Picoides villosus) P P P P P P
 Northern Flicker, (Colaptes auratus) P P P P P P

ORDER: PASSERIFORMES (Perching Birds)
 FAMILY: TYRANNIDAE (Tyrant Flycatchers)
 Olive-sided Flycatcher, (Contopus borealis) P P P P P P
 Western Wood-Pewee, (Contopus sordidulus) P P P P P P

Wildlife observed (O) and predicted to occur (P) on North Coast Beaches, Santa Cruz County, California, by unit (cont.).

	Laguna Creek	Yellowbank	Bonny Doon	Panther	Davenport Landing	Scott Creek
FAMILY: BOMBYCILLIDAE (Warblers)						
Cedar Waxwing, (<u>Bombycilla cedrorum</u>)	P					
FAMILY: LANIIDAE (Shrikes)						
Loggerhead Shrike, (<u>Lanius ludovicianus</u>)	P					P
FAMILY: STURNIDAE (Starlings)						
European Starling, (<u>Sturnus vulgaris</u>)	P	P	P	O	P	O
FAMILY: VIREONIDAE (Typical Vireos)						
Solitary Vireo, (<u>Vireo solitarius</u>)	P					
Hutton's Vireo, (<u>Vireo huttoni</u>)	P					
Warbling Vireo, (<u>Vireo gilvus</u>)	P					
FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and Relatives)						
Tennessee Warbler, (<u>Vermivora peregrina</u>)	P					
Orange-crowned Warbler, (<u>Vermivora celata</u>)	P					
Yellow Warbler, (<u>Dendroica patricia</u>)	P					
Yellow-rumped Warbler, (<u>Dendroica coronata</u>)	P					
Black-throated Gray Warbler, (<u>Dendroica nigrescens</u>)	P					
Townsend's Warbler, (<u>Dendroica townsendi</u>)	P					
Hermitt Warbler, (<u>Dendroica occidentalis</u>)	P					
Macgillivray's Warbler, (<u>Oporornis tolmiei</u>)	P					
Common Yellowthroat, (<u>Geothlypis trichas</u>)	P					
Wilson's Warbler, (<u>Wilsonia pusilla</u>)	P					
Yellow-breasted Chat, (<u>Icteria virens</u>)	P					
Black-headed Grosbeak, (<u>Phaeocticus melanocephalus</u>)	P					
Lazuli Bunting, (<u>Passerina amoena</u>)	P					
Rufous-sided Towhee, (<u>Pipilo erythrophthalmus</u>)	P					
Brown Towhee, (<u>Pipilo fuscus</u>)	P					
Rufous-crowned Sparrow, (<u>Ammodramus ruficeps</u>)	P	P	P			
Lark Sparrow, (<u>Chondestes grammacus</u>)	P	P	P	P	P	P
Savannah Sparrow, (<u>Passerculus sandwichensis</u>)	P	P	P	P	P	P
Fox Sparrow, (<u>Passerella iliaca</u>)	P					
Song Sparrow, (<u>Melospiza melodia</u>)	O	O	P		P	O
Lincoln's Sparrow, (<u>Melospiza lincolni</u>)	P					
Golden-crowned Sparrow, (<u>Zonotrichia atricapilla</u>)	P	P	P	P	P	P
White-crowned Sparrow, (<u>Zonotrichia leucophrys</u>)	P	P	P	P	P	P
Dark-eyed Junco, (<u>Junco hyemalis</u>)	P					
Red-winged Blackbird, (<u>Agelaius phoeniceus</u>)	P					
Western Meadowlark, (<u>Sturnella neglecta</u>)	P					
Brewer's Blackbird, (<u>Euphagus cyanocephalus</u>)	O	P	P	P	P	P
Brown-headed Cowbird, (<u>Molothrus ater</u>)	P					
Hooded Oriole, (<u>Icterus galbula</u>)	P					
FAMILY: FRINGILLIDAE (Finches)						
Purple Finch, (<u>Carpodacus purpureus</u>)	O					
House Finch, (<u>Carpodacus mexicanus</u>)	P	P	P	O	P	P
Pine Siskin, (<u>Carduelis pinus</u>)	P					
Lesser Goldfinch, (<u>Carduelis psaltria</u>)	P	P	P	P	P	P
American Goldfinch, (<u>Carduelis tristis</u>)	O	P	P	P	P	P
FAMILY: PASSERIDAE (Weaver Finches)						
House Sparrow, (<u>Passer domesticus</u>)	P	P	P	P	P	P

Wildlife observed (O) and predicted to occur (P) on North Coast Beaches, Santa Cruz County, California, by unit (cont.).

Laguna Yellowbank Boney Panther Davenport Scott
Creek Doon Creek Landing Creek

CLASS: MAMMALIA

ORDER: MARSUPIALIA (Opossums, Kangaroos, and Relatives)

FAMILY: DIDELPHIDAE (Opossums)
 Virginia Opossum, (Didelphis virginiana) P P P P P P P

ORDER: INSECTIVORA (Shrews and Moles)

FAMILY: SORICIDAE (Shrews)
 Vagrant Shrew, (Sorex vagrans) P P P P P P P
 Ornate Shrew, (Sorex ornatus) P P P P P P P

FAMILY: TALPIDAE (Moles)
 Shrew-mole, (Neurotrichus gilbsii) P P P P P P P
 Broad-footed Mole, (Scapanus latimanus) P P P P P P P

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)

Yuma Myotis, (Myotis yumanensis) P P P P P P P
 Long-eared Myotis, (Myotis evotis) P P P P P P P
 Fringed Myotis, (Myotis thysanodes) P P P P P P P
 Long-legged Myotis, (Myotis volans) P P P P P P P
 California Myotis, (Myotis californicus) P P P P P P P
 Western Pipistrelle, (Pipistrellus hesperus) P P P P P P P
 Big Brown Bat, (Eptesicus fuscus) P P P P P P P
 Red Bat, (Lasiurus borealis) P P P P P P P
 Hoary Bat, (Lasiurus cinereus) P P P P P P P
 Townsend's Big-eared Bat, (Plecotus townsendii) P P P P P P P
 Pallid Bat, (Antrozous pallidus) P P P P P P P
FAMILY: MOLOSSIDAE (Free-tailed Bat)
 Brazilian Free-tailed Bat, (Tadarida brasiliensis) P P P P P P P
 Western Mastiff Bat, (Eumops perotis) P P P P P P P

ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)

FAMILY: LEPORIDAE (Rabbits and Hares)
 Brush Rabbit, (Sylvilagus bachmani) P P P P P P P
 Desert Cottontail, (Sylvilagus auduboni) P P P P P P P
 Black-tailed Hare, (Lepus californicus) P P P P P P P

ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)
 California Ground Squirrel, (Spermophilus beecheyi) P P P P P P P
 Western Gray Squirrel, (Sciurus griseus) P P P P P P P
FAMILY: GEOMYIDAE (Pocket Gophers)
 Botta's Pocket Gopher, (Thomomys bottae) P P P P P P P
FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)
 California Pocket Mouse, (Perognathus californicus) P P P P P P P
FAMILY: CRICETIDAE (Deer Mice, Voles, and Relatives)
 Western Harvest Mouse, (Reithrodontomys megalotis) P P P P P P P
 California Mouse, (Peromyscus californicus) P P P P P P P
 Deer Mouse, (Peromyscus maniculatus) P P P P P P P

Wildlife observed (O) and predicted to occur (P) on North Coast Beaches, Santa Cruz County, California, by unit (cont.).

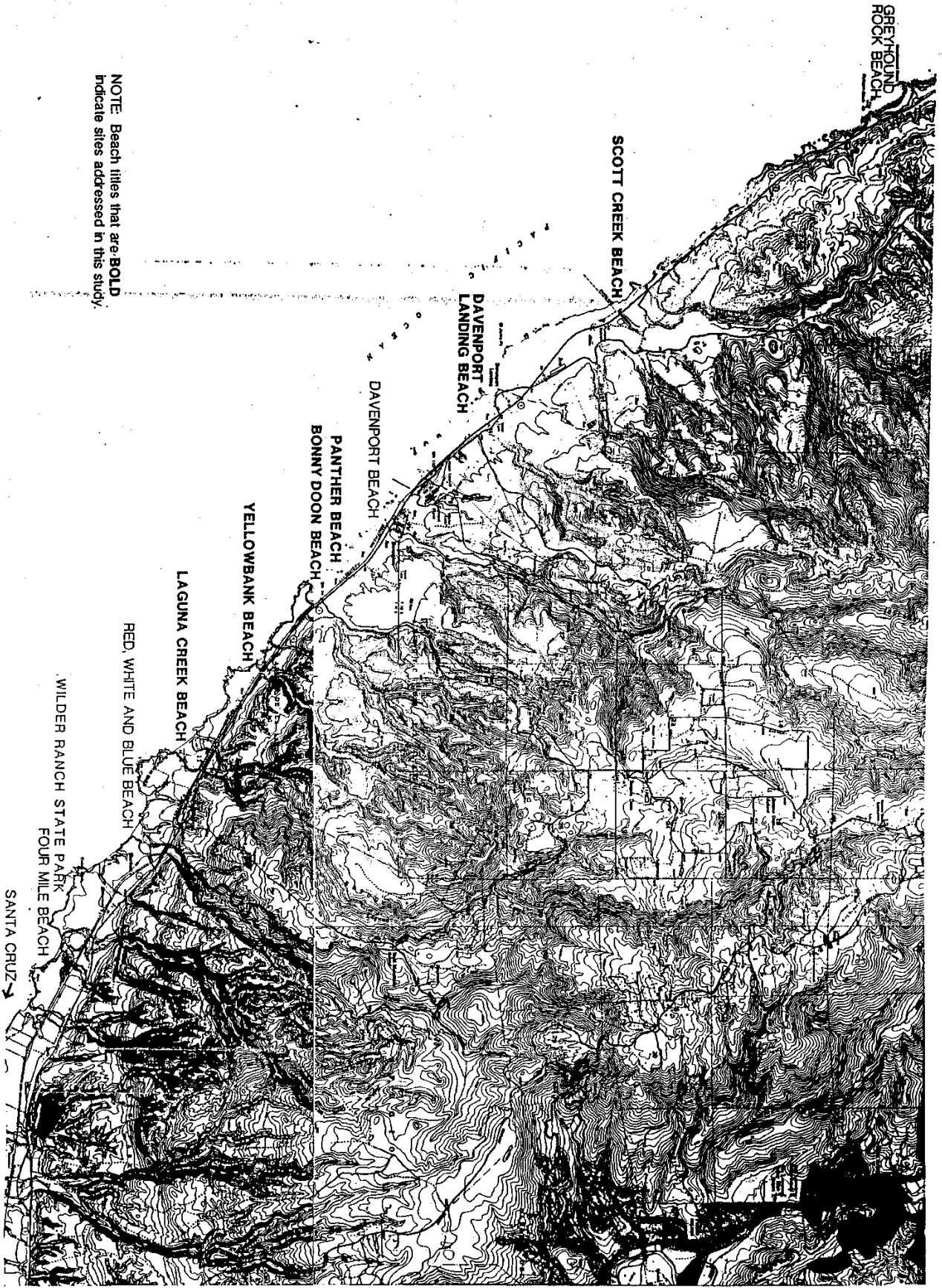
	Laguna Creek	Yellowbank Creek	Bonny Doon	Panther Landing	Davenport Landing	Scott Creek
Pinon Mouse, (<u>Peromyscus truei</u>)	P	P	P			P
Dusky-footed Woodrat, (<u>Neotoma fuscipes</u>)	P					P
California Vole, (<u>Microtus californicus</u>)	P					P
FAMILY: MURIDAE (old World Rats and Mice)						
Norway Rat, (<u>Rattus norvegicus</u>)	P	P	P	P	P	P
House Mouse, (<u>Mus musculus</u>)	P	P	P	P	P	P
ORDER: CARNIVORA (Carnivores)						
FAMILY: CANIDAE (Foxes, Wolves, and Relatives)						
Coyote, (<u>Canis latrans</u>)	P	P	P	P	P	P
Gray Fox, (<u>Urocyon cinereoargenteus</u>)	P	P	P		P	P
FAMILY: PROCYONIDAE (Raccoons and Relatives)						
Ringtail, (<u>Bassariscus astutus</u>)	P					P
Raccoon, (<u>Procyon lotor</u>)	P	P	P	P	P	P
FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)						
Long-tailed Weasel, (<u>Mustela frenata</u>)	P	P	P	P	P	P
Badger, (<u>Taxidea taxus</u>)	P	P	P	P	P	P
Western Spotted Skunk, (<u>Spilogale gracilis</u>)	P	P	P	P	P	P
Striped Skunk, (<u>Mephitis mephitis</u>)	P	P	P	P	P	P
Sea Otter, (<u>Enhydra lutris</u>)	P	P	P	P	P	P
FAMILY: FELIDAE (Cats)						
Bobcat, (<u>Lynx rufus</u>)	P	P	P		P	P
FAMILY: OTARIIDAE (Eared Seals)						
Northern Fur Seal, (<u>Callorhinus ursinus</u>)	P	P	P	P	P	P
Northern Sea Lion, (<u>Eumetopias jubatus</u>)	P	P	P	P	P	P
California Sea Lion, (<u>Zalophus californianus</u>)	P	P	P	P	P	P
FAMILY: PHOCIDAE (Hair Seals)						
Harbor Seal, (<u>Phoca vitulina</u>)	P	P	P	P	P	P
Northern Elephant Seal, (<u>Mirounga angustirostris</u>)	P	P	P	P	P	P
ORDER: ARTIODACTYLIA						
FAMILY: CERVIDAE (Deer, Elk, and Relatives)						
Mule Deer, (<u>Odocoileus hemionus</u>)	P					P

APPENDIX C

CHECKLIST OF FISH OF NORTH COAST BEACHES

		SCOTT CREEK	DAVENPORT LANDING	PANTHER	BONNY DOON	YELLOWBANK
* COTTIDAE						
<u>Cottus aleuticus</u>	Coastrange Sculpin	P				
<u>Cottus asper</u>	Pricky Sculpin	O			P	
<u>Leptocottus armatus</u>	Staghorn Sculpin	P				
* GOBIIDAE						
<u>Eucyclogobuis newberryi</u>	Tidewater Goby	O				
* GASTEROSTEIDAE						
<u>Gasterosteus aculeatus</u>	Threespine Stickleback	O			P	P
* PLEURONECTIDAE						
<u>Platichthys stellatus</u>	Starry Flounder	P				
* SALMONIDAE						
<u>Oncorhynchus kisutch</u>	Coho Salmon	P				
<u>Salmo gairdneri</u>	Steelhead	O			P	

O - observed
P - predicted



JULY, 1987

NORTH COAST BEACHES DEVELOPMENT PLAN

COUNTY OF SANTA CRUZ

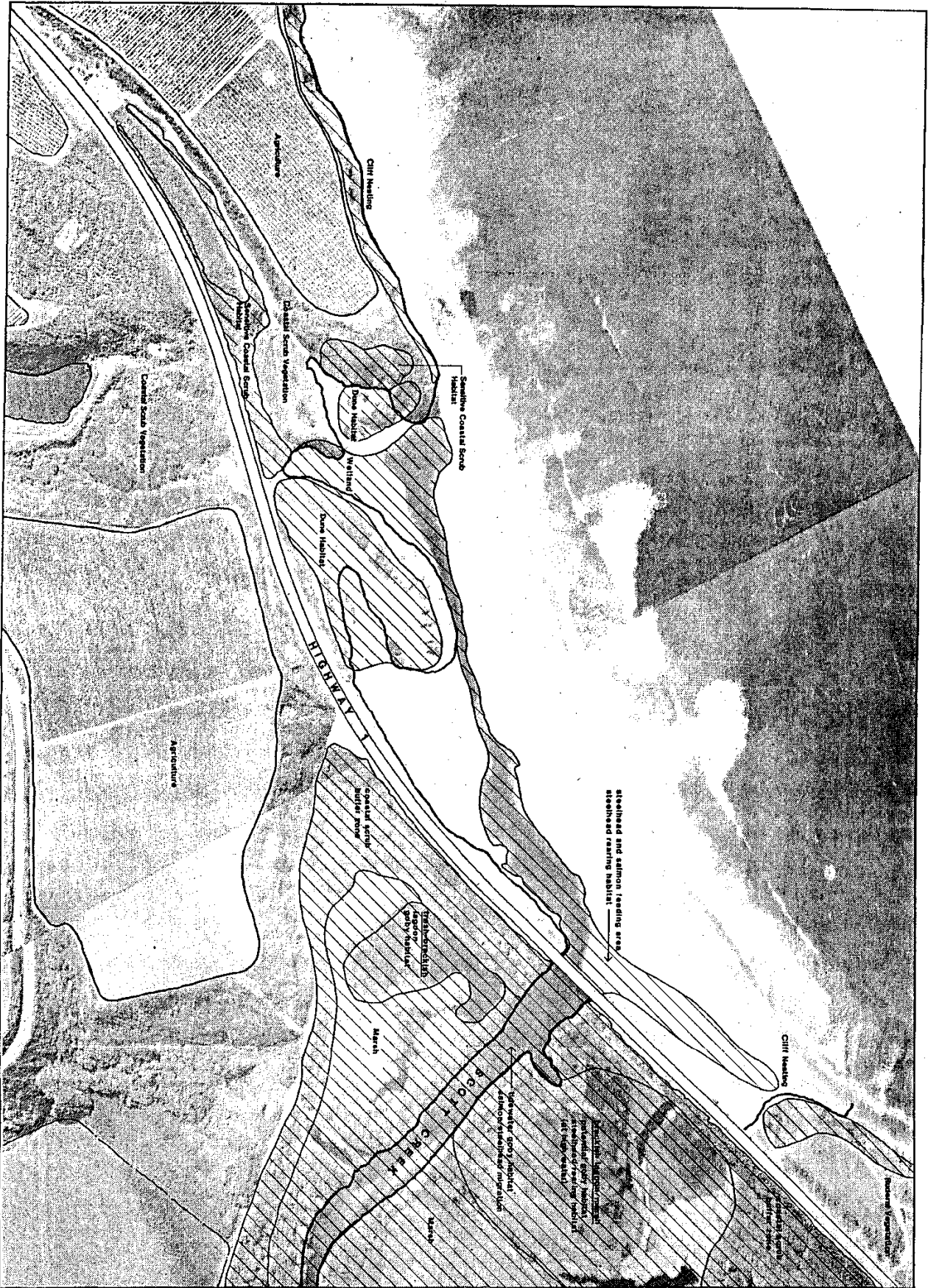
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MAP 1

VICINITY MAP

NORTH

MILES 0 1 2



JULY, 1987



NORTH

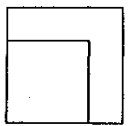
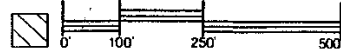
NORTH COAST BEACHES DEVELOPMENT PLAN

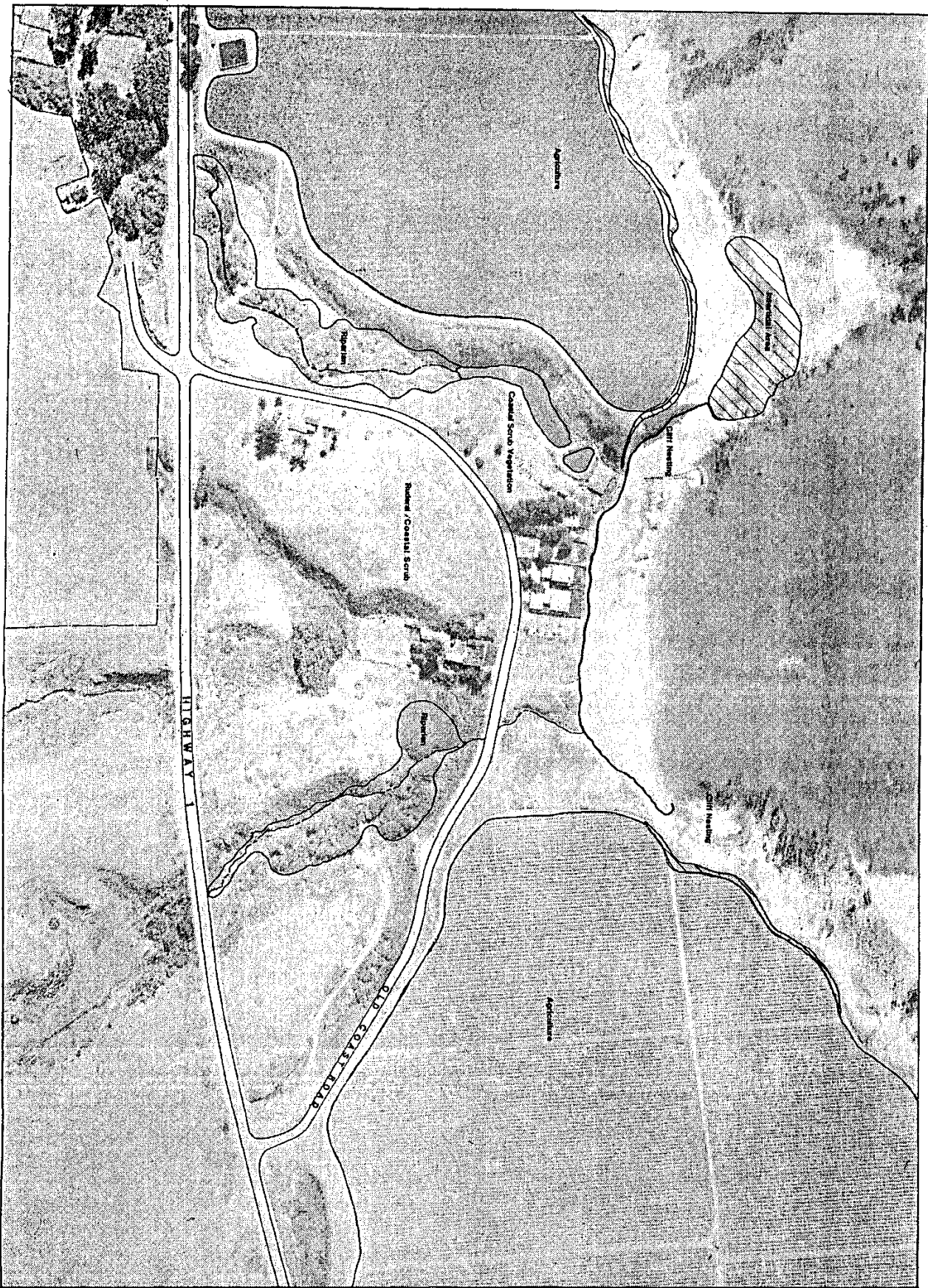
COUNTY OF SANTA CRUZ

PREPARED BY EDAW INC.

MAP 2 SCOTT CREEK BEACH VEGETATION AND WILDLIFE

Sensitive Habitat





JULY, 1987



NORTH

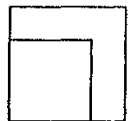
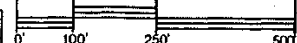
**NORTH COAST BEACHES
DEVELOPMENT PLAN**
COUNTY OF SANTA CRUZ

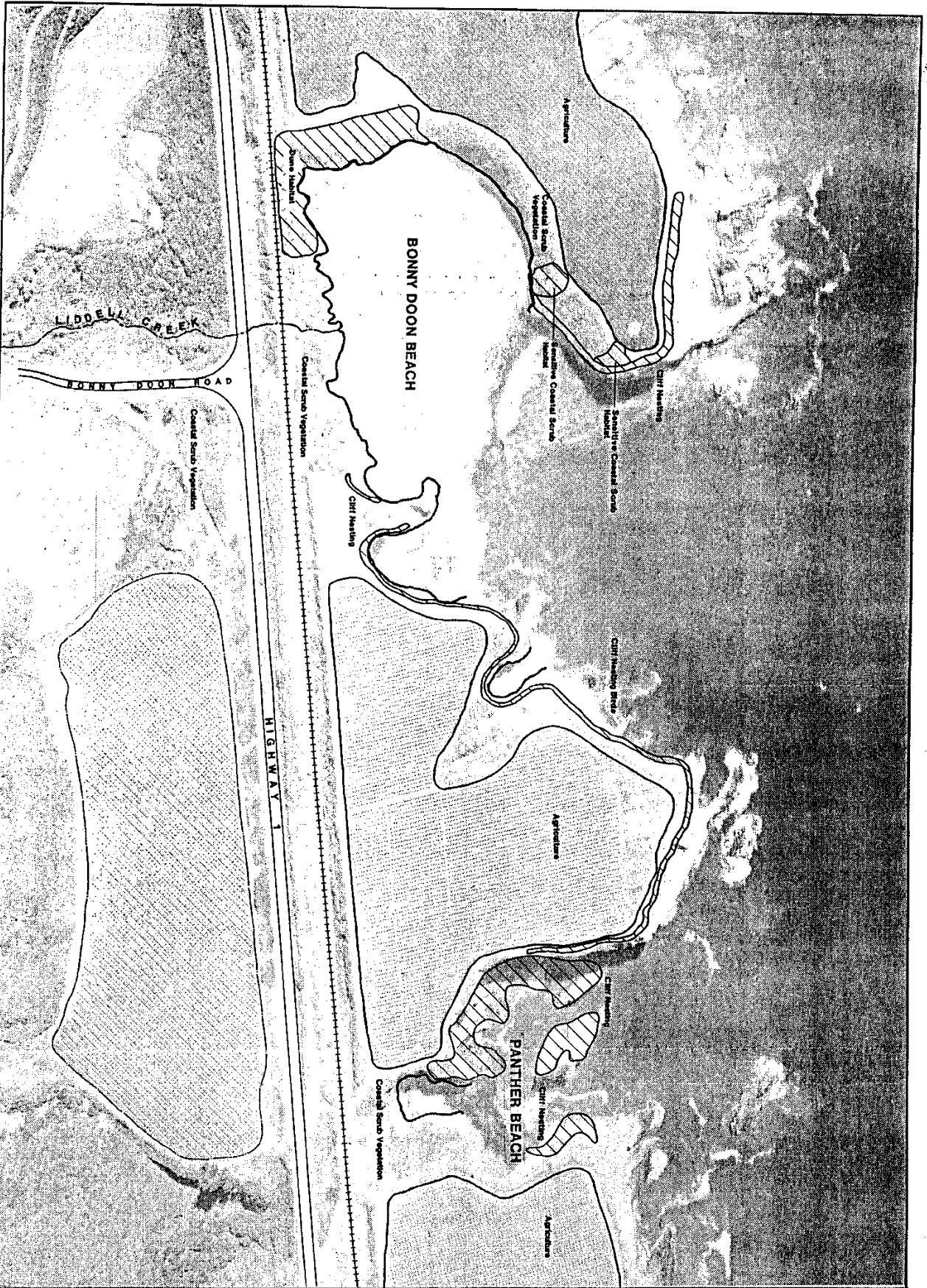
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MAP 3

**DAVENPORT LANDING
BEACH
VEGETATION AND
WILDLIFE**

Sensitive Habitat





JULY, 1987



NORTH

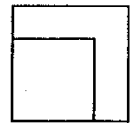
**NORTH COAST BEACHES
DEVELOPMENT PLAN**
COUNTY OF SANTA CRUZ

PREPARED BY ED AW INC.

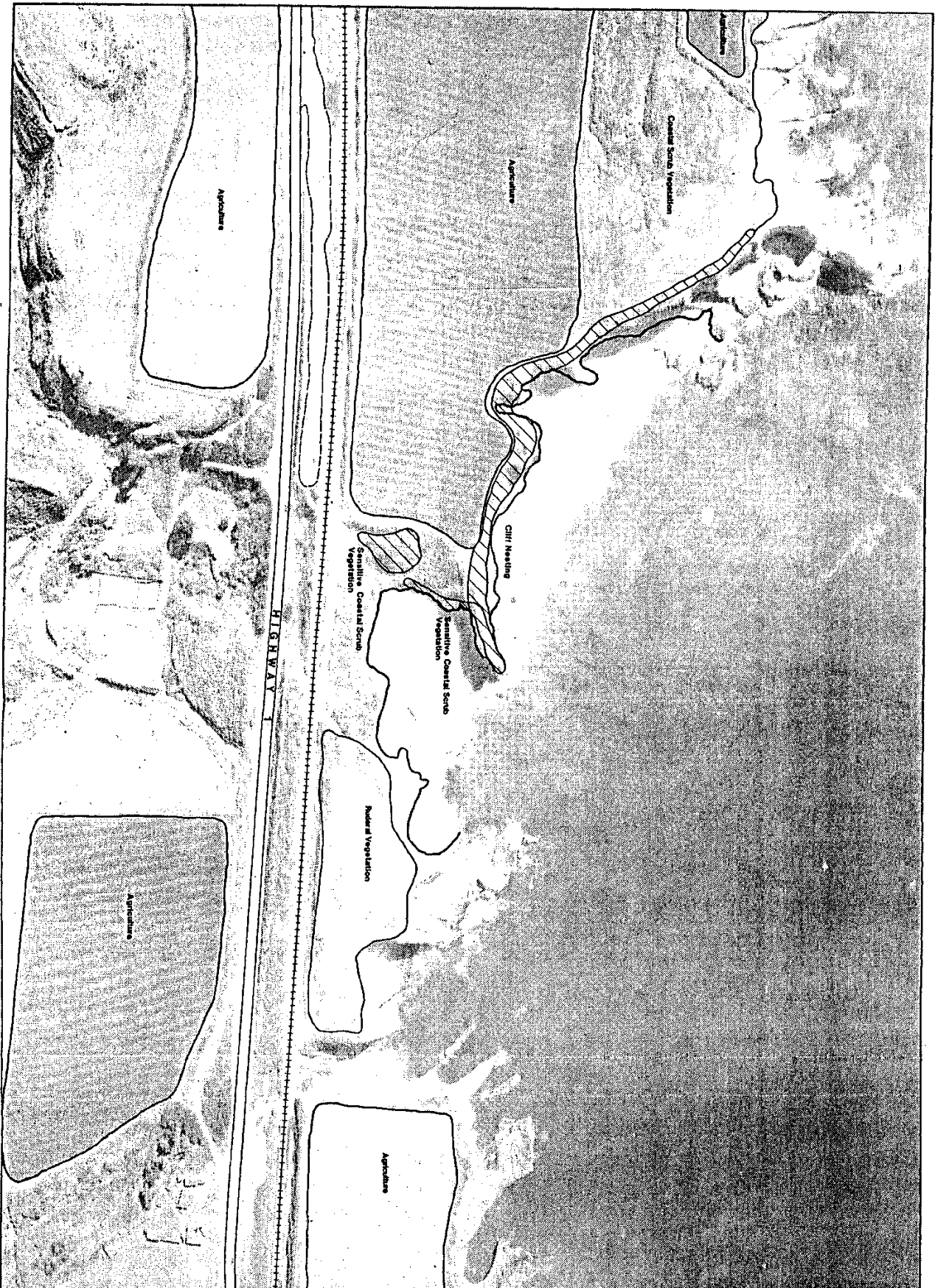
MAP 4

**BONNY DOON BEACH
AND PANTHER BEACH
VEGETATION AND
WILDLIFE**

Sensitive Habitat



1/2 ACRE 1 ACRE



JULY, 1987



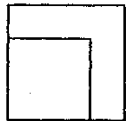
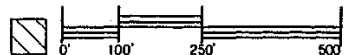
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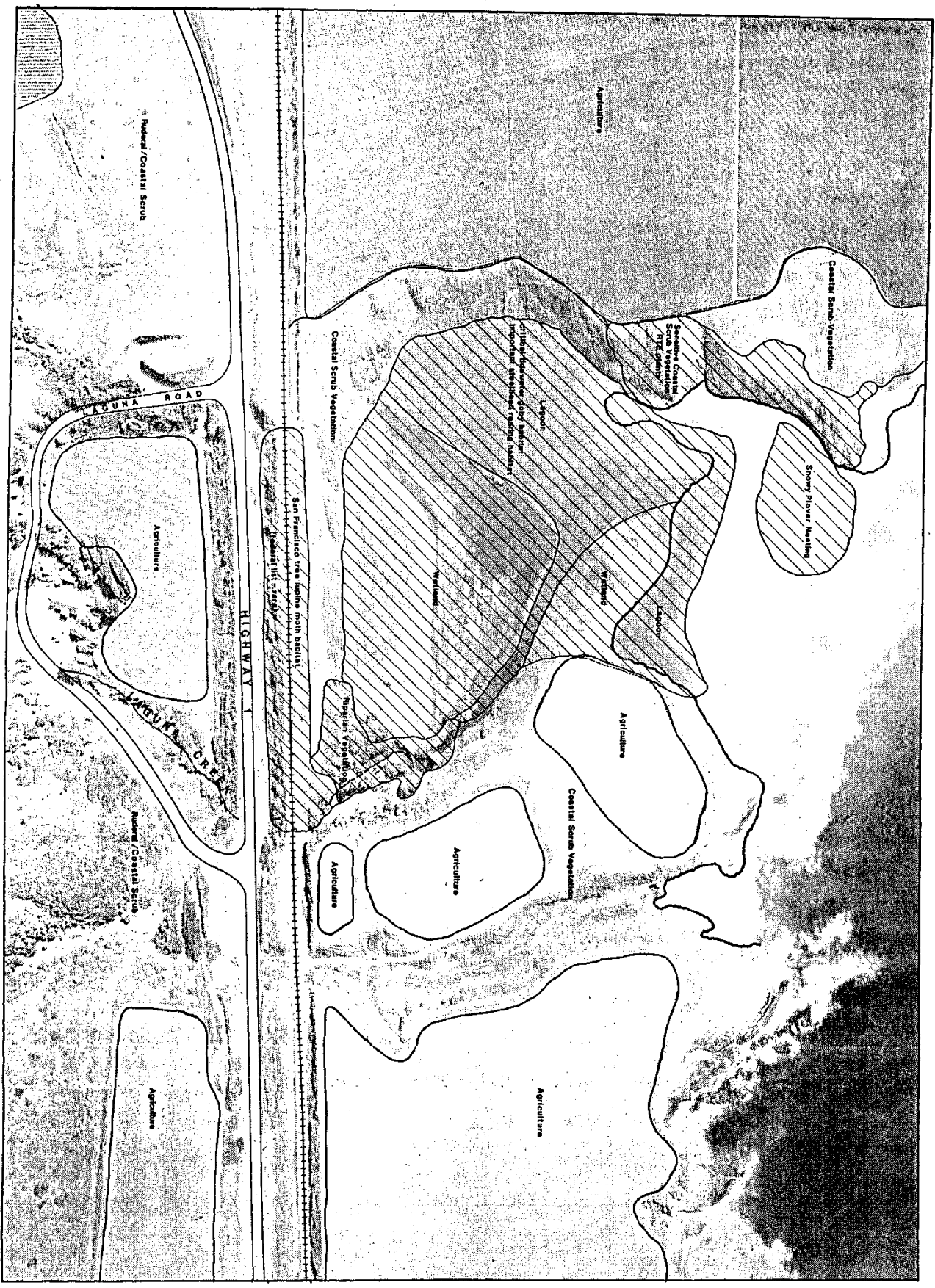
**NORTH COAST BEACHES
DEVELOPMENT PLAN**
COUNTY OF SANTA CRUZ

PREPARED BY EDWA INC.

**MAP 5 YELLOWBANK BEACH
VEGETATION AND
WILDLIFE**

Sensitive Habitat





JULY, 1987

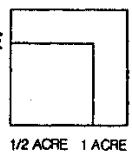
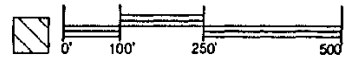


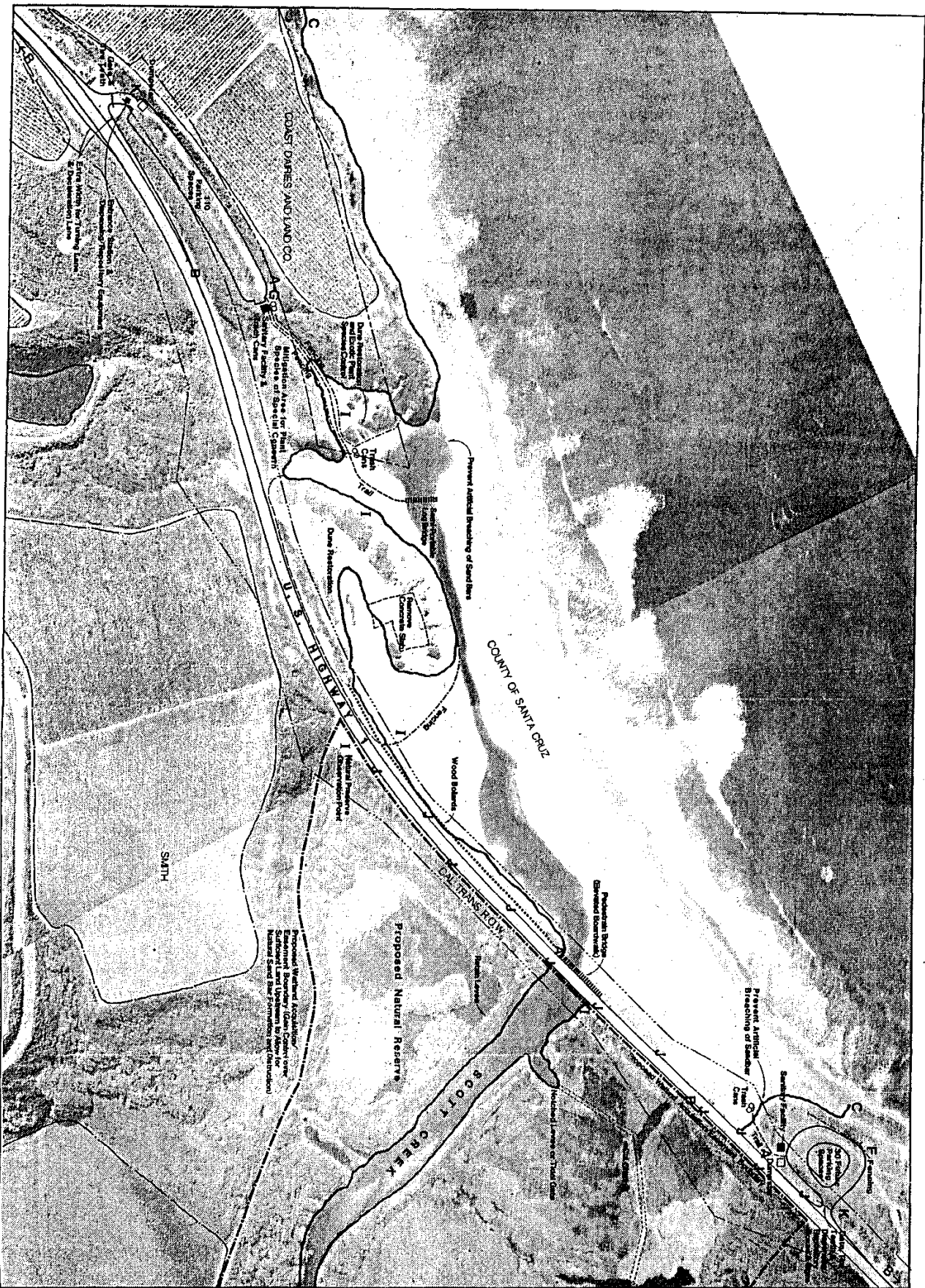
**NORTH COAST BEACHES
DEVELOPMENT PLAN**
COUNTY OF SANTA CRUZ

PREPARED BY ED AW INC.

**MAP 6 LAGUNA CREEK BEACH
VEGETATION AND WILDLIFE**

Sensitive Habitat





JULY, 1967



NORTH

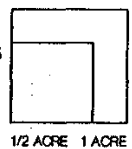
NORTH COAST BEACHES DEVELOPMENT PLAN

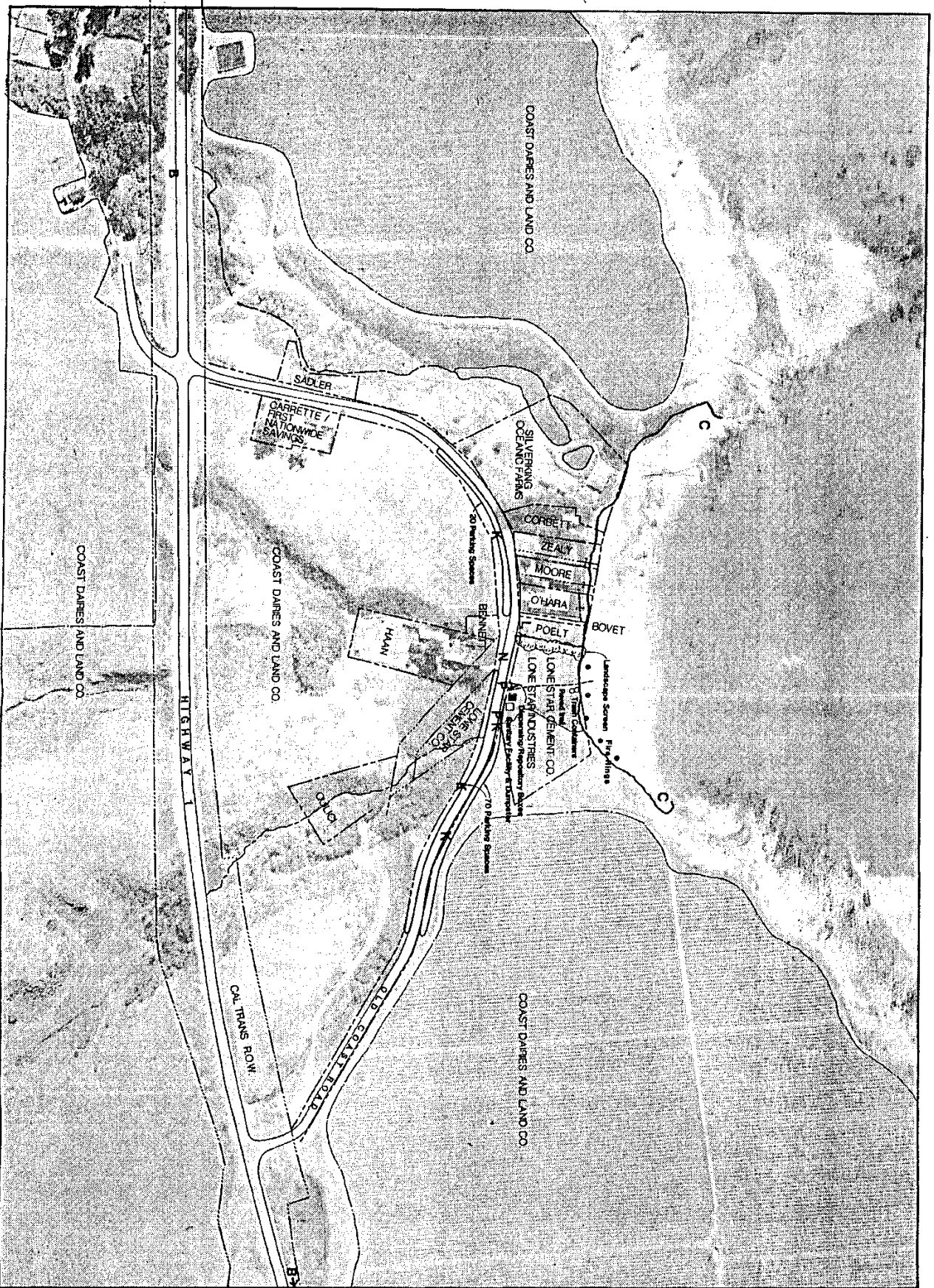
COUNTY OF SANTA CRUZ

PREPARED BY ED AW INC.

MAP 7 SCOTT CREEK BEACH

PROPOSED IMPROVEMENTS
LAND OWNERSHIP / ROW'S





JULY, 1967

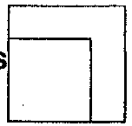


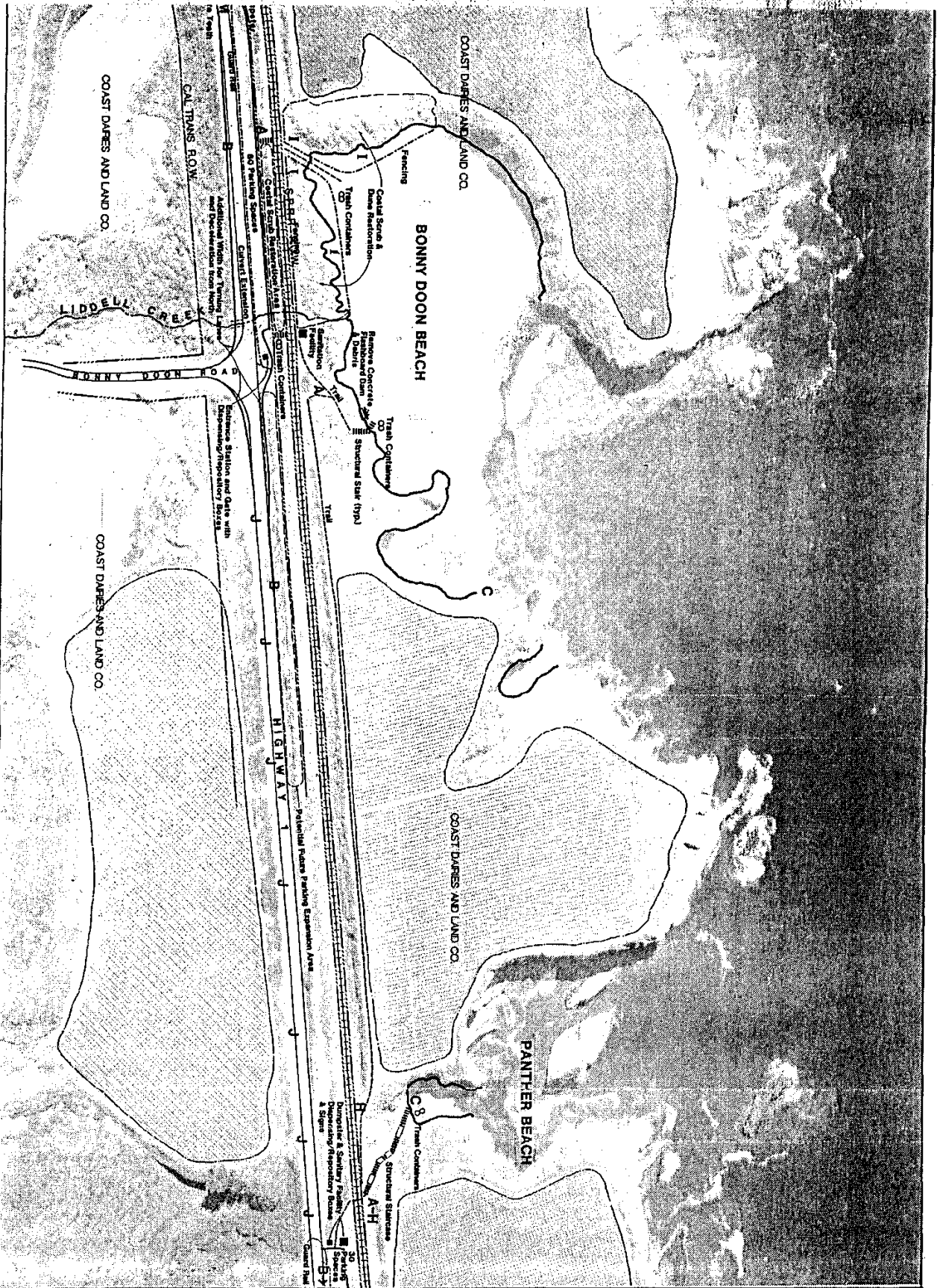
**NORTH COAST BEACHES
DEVELOPMENT PLAN**
COUNTY OF SANTA CRUZ

PREPARED BY EDAW INC.

MAP 8

**DAVENPORT LANDING
BEACH**
PROPOSED IMPROVEMENTS
LAND OWNERSHIP / ROW's





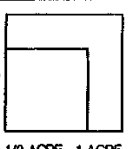
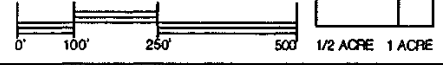
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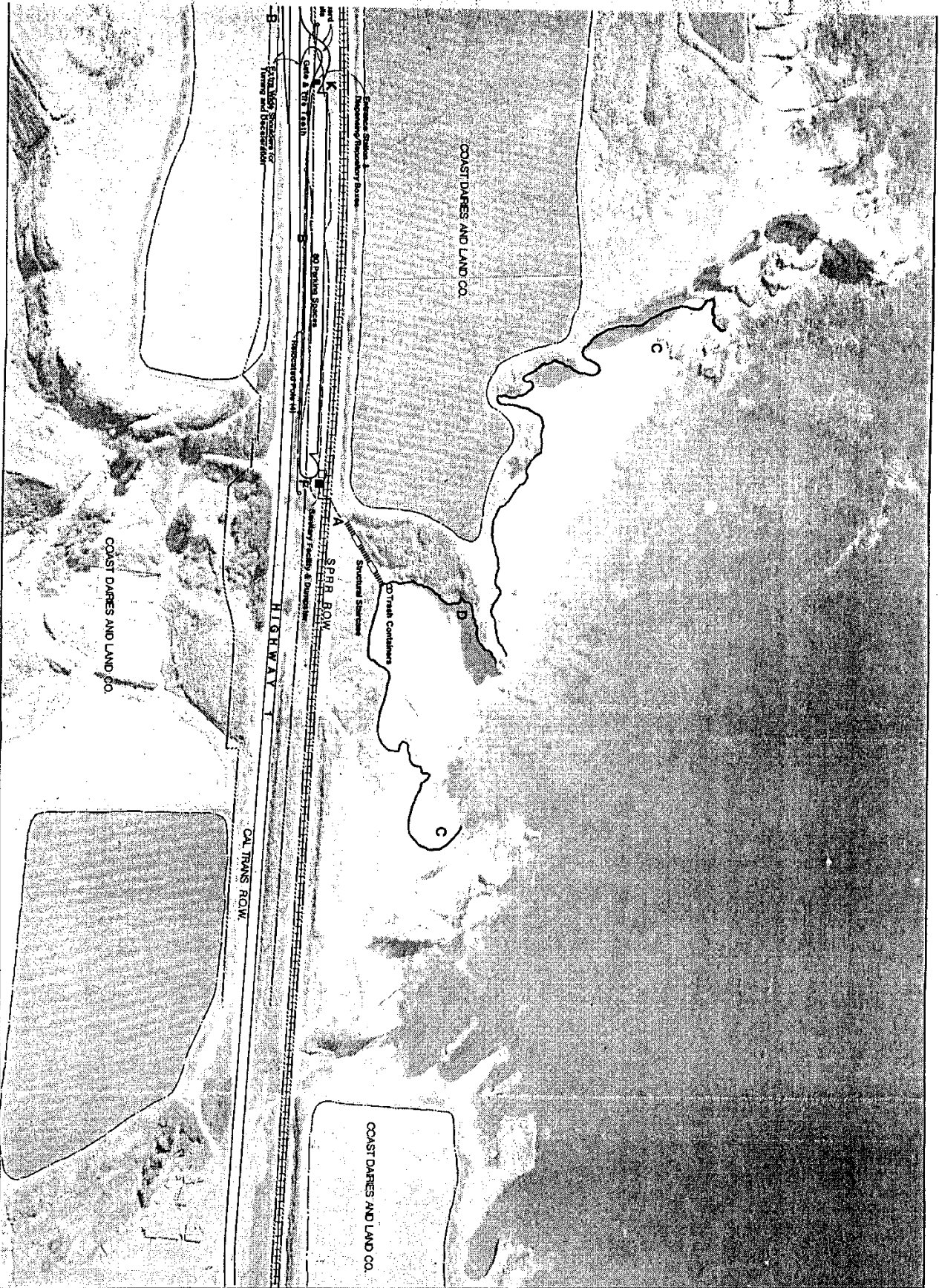
NORTH COAST BEACHES DEVELOPMENT PLAN

COUNTY OF SANTA CRUZ

PREPARED BY ED AW INC.

MAP 9 BONNY DOON BEACH AND PANTHER BEACH PROPOSED IMPROVEMENTS LAND OWNERSHIP / ROW'S





JULY, 1987



NORTH

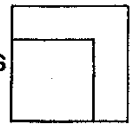
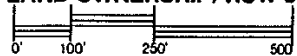
NORTH COAST BEACHES DEVELOPMENT PLAN

COUNTY OF SANTA CRUZ

PREPARED BY EDAW INC.

MAP 10 YELLOWBANK BEACH

PROPOSED IMPROVEMENTS
LAND OWNERSHIP/ROW'S



1/2 ACRE 1 ACRE

