

*Sonoma Coast State Park
Final General Plan &
Environmental Impact Report*

*Approved by the
California State Park and Recreation Commission
May 2007*



*Sonoma Coast
State Park*

*Final General Plan and
Environmental Impact Report*

SCH# 2003022116

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Governor

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Director of Parks and Recreation

Department of
Parks and Recreation
P.O. Box 942896
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May 2007



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Resolution 8-2007

Presented for adoption by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Sebastopol, California
May 4, 2007

Reclassification of Sonoma Coast State Beach as a State Park

Whereas, Sonoma Coast State Beach was acquired in 1934 and designated as a state beach in 1964, with the purpose of preserving and making available for the visitor's enjoyment a segment of the Northern California coastline, with its sandy beaches, tide pools, and rugged headlands, and

WHEREAS, with the acquisition of the 3,378-acre Upper Willow Creek property and that property's outstanding and diverse scenic, biological, cultural, and geologic resources, and its wide variety of recreational and educational opportunities was added to Sonoma Coast State Beach, increasing the size of the unit to a total of 10,286 acres; and

WHEREAS, the present size of the park and its natural values, characteristics, and resource values are more closely associated with other units currently classified as state parks, and that reclassification to a state park will provide a higher level of management and protection for this diversity of natural and cultural resources, with opportunities for traditional recreational use; and

WHEREAS, the Director of California State Parks has presented to this Commission for approval, a proposal for reclassification of the state beach to state park, as recommended by and consistent with the purpose, vision, and goals of the General Plan for Sonoma Coast State Beach, adopted by this Commission;

NOW, THEREFORE BE IT RESOLVED: That this Commission has reviewed and considered the information and analysis in the General Plan adopted for this unit and testimony received during this public hearing, as the basis for this change in unit classification from state beach to state park; and be it further

RESOLVED: that the location and custodian of the Plan and other materials which constitute the record of proceeding on which the Commission's decision is based is: State Park and Recreation Commission, P.O. Box 942896, Sacramento, California 94296-0001, phone 916/653-0524, facsimile 916/653-4458; and be it further

RESOLVED: That the California State Park and Recreation Commission hereby approves the Department of Parks and Recreation's recommendation for the reclassification of Sonoma Coast State Beach to State Park.

Attest: This Resolution was duly adopted by the California State Park and Recreation Commission on May 4th, 2007 at its duly noticed public meeting at Sebastopol, California.

By: ORIGINAL SIGNED BY Date: 5-4-07

Louis Nastro
Assistant to the Commission
For Ruth Coleman, Director
California State Parks
Secretary to the Commission



Resolution 9-2007

Presented for adoption by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Sebastopol, California
May 4, 2007

**General Plan and Environmental Impact Report
Sonoma Coast State Beach**

WHEREAS, the Director of California State Parks has presented to this Commission for approval the proposed General Plan and Environmental Impact Report ("Plan") for Sonoma Coast State Beach ("Park"); and

WHEREAS, the Park comprises a series of beaches, separated by rocky bluffs and headlands along 19 miles of the Northern California coastline in the vicinity of Bodega Bay and the Russian River, and extends inland encompassing the Willow Creek watershed and portions of the lower watershed of the Russian River; and

WHEREAS, the Park's outstanding and diverse scenic, biological, cultural, and geologic resources warrant protection and restoration, while providing a wide variety of recreational and educational opportunities to millions of visitors each year; and

WHEREAS, the Plan provides conceptual parameters and guidelines for the long-term management, development, operations, and future public use and enjoyment of these resources; and

WHEREAS, the Plan includes the Environmental Impact Report (EIR) as a part of a General Plan, pursuant to Public Resources Code (PRC) Section 5002.2 and the California Code of Regulations (CCR) Section 15166 (CEQA Guidelines), providing discussion of the probable impacts of future development, establishing goals, policies and objectives, and addressing all the requirements of an EIR; and

WHEREAS, the Plan is subject to the California Environmental Quality Act (CEQA) and functions as a "tiered EIR" pursuant to PRC 21093, covering general goals and objectives of the Plan, and that the appropriate level of CEQA review will be conducted for each project relying on the Plan;

NOW, THEREFORE BE IT RESOLVED: That this Commission has reviewed and considered the information and analysis in the Plan prior to approving the Plan, and that this Commission finds and certifies that the Plan reflects the independent judgment and analysis of this Commission and has been completed in accordance with the California Environmental Quality Act; and be it further

Continued from page 1:

RESOLVED: In connection with its review of the Plan prior to approving the General Plan, this Commission independently finds that the environmental conclusions contained in the Environmental Analysis Section of the Plan are supported by facts therein and that each fact in support of the findings is true and is based on substantial evidence in the record and that mitigation measures or other changes or alterations have been incorporated into the Plan which will avoid or substantially lessen the potential impacts identified in the Plan; and be it further

RESOLVED: That the location and custodian of the Plan and other materials which constitute the record of proceeding on which the Commission's decision is based is: State Park and Recreation Commission, P.O. Box 942896, Sacramento, California 94296-0001, phone 916/653-0524, facsimile 916/653-4458; and be it further

RESOLVED: That the California State Park and Recreation Commission hereby approves the Department of Parks and Recreation's General Plan and Environmental Impact Report prepared for Sonoma Coast State Beach, dated January 2007; and be it

FURTHER RESOLVED; that a Notice of Determination will be filed with the Office of Planning and Research within five days of this approval.

Attest: This Resolution was duly adopted by the California State Park and Recreation Commission on May 4th, 2007 at its duly noticed public meeting at Sebastopol, California.

By: ORIGINAL SIGNED BY Date: 5-4-07

Louis Nastro
Assistant to the Commission
For Ruth Coleman, Director
California State Parks
Secretary to the Commission

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EXECUTIVE SUMMARY

DESCRIPTION OF SONOMA COAST STATE PARK

Since its incorporation into the California Department of Parks and Recreation's (the Department's) State Parks system in 1934 and its classification as a state beach in 1964, Sonoma Coast State Park (Sonoma Coast SP) has become one of the most visited state parks in California. It is known for its rugged coastline, sandy coves, sweeping ocean vistas, and a variety of other natural, cultural, and recreational resources. Sonoma Coast SP stretches for 19 miles along the Sonoma County coastline from Bodega Head at the southern end to beyond the Vista Point, located 4 miles north of the coastal community of Jenner. It also extends inland, encompassing the Willow Creek watershed and portions of the lower watershed of the Russian River.

PURPOSE FOR GENERAL PLAN

Despite the heavy and increasing visitation experienced by Sonoma Coast SP, no new recreational facilities have been developed since the Pomo Canyon Campground opened in 1990. At the same time, unique and important natural and cultural resources that warrant additional levels of protection and restoration have been identified at Sonoma Coast SP. Since the adoption of the Interim Management Plan in 1984, several new properties have been added to Sonoma Coast SP and additional acquisitions are being considered. Recognition of these and other issues prompted the preparation of this General Plan (the Plan) and Environmental Impact Report (Draft EIR), which provides a long-term management approach and a planning framework with which the various management challenges facing Sonoma Coast SP today would be addressed. As an EIR, the California Environmental Quality Act (CEQA) requirements must be addressed and the Plan must also identify where these requirements are met. This information can be found in Appendix C.

APPROACH TO THE GENERAL PLAN

The Plan reflects the Department's dual mandates as the stewards of sensitive resources and the providers of recreational opportunities. The protection and restoration of natural and cultural resources are key components of the Plan. The Plan includes goals and guidelines aimed at biological resources and water quality protection, the preservation of scenic and cultural resources, recreation and interpretive opportunities, and facility improvements and potential construction of new developments in response to heavy and growing visitation, environmental constraints, and recent and expected near-term property acquisitions.

The Plan considers the appropriate carrying capacity of Sonoma Coast SP with regard to resource protection and the desired high-quality visitor experiences. It emphasizes the importance of long-term sustainability, the use of environmental indicators, and adaptive management practices. It is acknowledged that achieving the stated vision of the Plan would be realized incrementally, as funding becomes available, and would be completed over time through daily operational actions taken by Department staff.

PLANNING PROCESS

A thorough analysis of existing conditions and concerns was the first step undertaken during the planning process. A set of key planning issues was obtained through consultation with the public, interested organizations, and local, State, and federal agencies, via a survey, a public meeting, and a notice letter. The identified issues include appropriateness of various recreational activities, protection of sea mammals and other wildlife species, preservation of important archaeological resources, inadequacy of day-use and overnight recreational facilities, water quality improvement, and grassland management. At the same time, information regarding the physical characteristics of Sonoma Coast SP was collected and analyzed, including the compilation of a geographic information system (GIS) database of the natural and cultural resources present at Sonoma Coast SP with use of existing data and field survey results. The resulting data was used to help make informed decisions regarding environmental constraints to development.¹

The second step, which began with consideration of the broadest planning objective (e.g., Mission of the Department and Unit Classification) consisted of vision definition and implementation for Sonoma Coast SP. A vision was developed, and the existing declaration of purpose was revised, to reflect the updated knowledge of the resources at Sonoma Coast SP and the understood significance and value of Sonoma Coast SP with respect to recreation and educational opportunities for the region and for the State. Planning concepts, such as goals and guidelines, management zones, potential development areas, and management plans, were developed to achieve the vision. Public input regarding the vision and the planning concepts was obtained through a survey and a public meeting and incorporated into the Plan. During the course of this planning process, the inland 3,378-acre Upper Willow Creek acquisition was completed and added to the park. This addition significantly increased the size of the park, the diversity of park resources, the recreation opportunities, as well as expanded the character of the park by increasing the significance of inland areas. The planning effort incorporated this addition and refined plan concepts, goals, and guidelines as a continuation of the initial planning process. Additional public meetings were included to provide opportunities for public input on the Willow Creek area. As a result of this significant expansion of the park, the Plan recommends reclassification of this park unit from a State Beach to a State Park.

The third major step in the planning process consisted of the environmental analysis and the consideration of alternatives. The Plan includes an Environmental Impact Report that identifies the potential environmental effects of the General Plan, consistent with requirements of the CEQA. The Plan establishes resource-specific management guidelines in order to become a “self-mitigating” plan, designed to avoid, reduce, or minimize environmental impacts of proposed facilities to a less-than-significant level. Based on the environmental analyses, alternatives were developed and considered for the purpose of minimizing impacts to the extent feasible. The opportunity for public review of this Preliminary General Plan/Draft

¹ The GIS database developed for this General Plan is available for continued Departmental use.

EIR is also provided during the CEQA process. The CEQA environmental review process and the opportunity provided for written comment are described in Section 4.1 of this document.

SUMMARY AND STRUCTURE OF THE PLAN

The Plan consists of four main sections: (1) introduction; (2) existing conditions and issues analysis; (3) the “Plan” component (e.g., goals and guidelines); and the (4) environmental analysis.

Chapter 2 includes information on existing conditions, as well as issues identified through public and agency scoping efforts, as described above.

Some of the goals and guidelines comprising Chapter 3 require the preparation of specific management plans and other investigations or programs subsequent to the adoption of the Plan, including the following:

- ▶ participate in regional conservation plans (NAT-1H),
- ▶ conduct resource monitoring and condition assessments (NAT-1A, NAT-1J, NAT-2B, NAT-2C),
- ▶ conduct additional studies prior to site-specific development (REC-1G),
- ▶ explore the feasibility of developing a new visitor center (EDU-1C),
- ▶ develop a comprehensive roadway management plan (ROAD-1A),
- ▶ conduct traffic studies for proposed access points in the Willow Creek watershed (ROAD-1H)
- ▶ develop a trails management plan (TRAIL-1A),
- ▶ conduct project-specific geotechnical analyses (FAC-1H),
- ▶ conduct noise studies (FAC-1I),
- ▶ prepare erosion control plans (COAST-2C),
- ▶ conduct site-specific resource studies and further evaluate opportunities for appropriate overnight visitor facilities. (INLAND-1G),
- ▶ develop an inventory, mapping system, and database for significant resources,
- ▶ consult with local Native Americans who have traditional ties to resources within Sonoma Coast SP,

- ▶ prepare and conduct surveys and inventories of cultural resources in areas subject to development.

Preparation and implementation of the management plans and investigations or programs may be required before certain management actions may take place. Additional management plans may be prepared when determined to be necessary by the Department.

The goals and guidelines also delineate 10 potential development areas within Sonoma Coast SP (see Exhibit 3-1) that have been determined to be the most appropriate for considering future facilities development and improvements, which may include the following:

- ▶ visitor center,
- ▶ environmental campgrounds,
- ▶ campgrounds,
- ▶ alternative overnight facilities,
- ▶ day-use areas,
- ▶ administrative and operational center,
- ▶ multi-use trails and coastal access,
- ▶ inland watershed trails system,
- ▶ primary visitor access point for Inland Management Zone,
- ▶ secondary visitor access point for Inland Management Zone,
- ▶ potential or authorized visitor access for other areas in Inland Management Zone,
- ▶ bike paths and trails,
- ▶ boat launch facility,
- ▶ scenic viewpoints,
- ▶ parking areas, and/or
- ▶ staff housing near inland access points for park surveillance and security.

The Plan further includes site selection criteria (Table 3-1), that will be applied to determine specific sites within the larger potential development areas that would be most suitable for development or improvement.

The environmental analysis and the consideration of alternatives contained in the Plan were prepared in conformance with CEQA. The environmental analysis is programmatic in scope and serves as a first tier EIR as defined in Section 15166 of the CEQA guidelines. It does not contain project-specific analysis for the facilities that are considered in the Plan but analyzes broad environmental matters and is a reference for future environmental documents that will provide more detailed information and analysis for site specific developments and projects.

The Plan also includes guidelines that govern project-level environmental review of site-specific projects to avoid or minimize potential adverse site-specific effects to some resources during construction or operations of the facilities and improvements. Specific projects would also undergo subsequent CEQA review as appropriate. Because the Plan contains goals and guidelines that are designed to avoid or minimize potential adverse environmental effects, no significant program-level impacts were identified. Based on the environmental analysis, the

Preferred Alternative was determined to be the environmentally superior alternative because it allows for greatest flexibility in the consideration of environmentally superior development sites while excluding sites with the greatest environmental constraints.



Introduction

1 INTRODUCTION



Coastal Prairie below Peaked Hill, Source: EDAW 2003

1.1 INTRODUCTION TO THE PARK

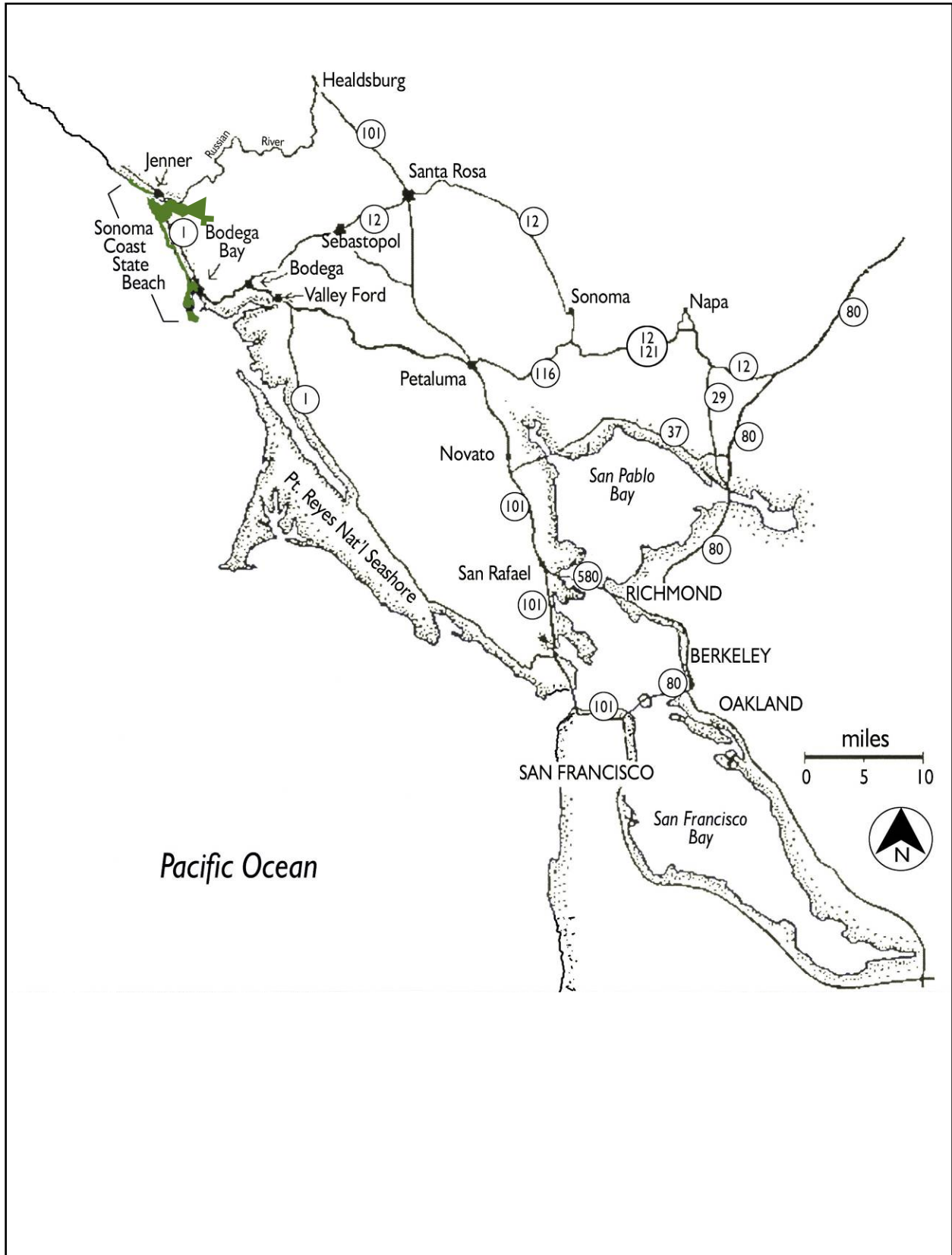
1.1.1 LOCATION AND SETTING OF THE PARK

Located approximately 70 miles north of San Francisco, Sonoma Coast State Park (Sonoma Coast SP) comprises a series of beaches, separated by rocky bluffs and headlands, and portions of two inland valleys that draw millions of visitors year-round. Sonoma Coast SP extends 19 miles from Bodega Head at the southern end to beyond the Vista Trail 4 miles north of Jenner (Exhibit 1-1) and encompasses 9,619 acres of land, 19 miles of coastline, and 667 acres of the ocean (leased from the State Lands Commission), for a total of 10,286 acres. The offshore leased areas extend from Bodega Head to Schoolhouse Beach and extend from the ordinary high water mark out to a contour line 18 feet below mean lower low water mark. A 3,378-acre acquisition of the Upper Willow Creek and lower Freezeout Creek watersheds was added in 2005 to the 2,226-acre Lower Willow Creek subunit of Sonoma Coast SP. Park ownership now encompasses approximately 80 percent of the Willow Creek watershed, a major tributary to the Russian River.

Beachcombers, fishermen, sunbathers, and picnickers can access the beaches and sea cliffs from more than two dozen points along State Route (SR) 1.

1.1.2 PURPOSE FOR ACQUIRING THE PARK

Sonoma Coast SP was acquired in 1934 and was classified as a state beach in 1964. The purpose of Sonoma Coast SP is “to make available to the people, for their inspiration and enjoyment forever, a segment of the scenic Northern California coastline in the vicinity of Bodega Bay and the Russian River, embracing sandy beaches, tide pools, and rugged headlands; together with all the scenic, historic, scientific, and recreational resources of the area” (Declaration of Purpose 1964). Since the original acquisition (approximately 600 acres), several significant adjacent properties have been purchased as additions to Sonoma Coast SP that have resulted in the current park ownership of 10,272 acres.



Source: EDAW 2003

Regional Location of Sonoma Coast State Park

P 1T114.01 08/06

EXHIBIT 1-1

This plan is prepared in accordance with CEQA guidelines (Title 14, California Code of Regulations), Article 9, Contents of EIR 15120(c) states that Draft Environmental Impact Reports (EIRs) shall contain the information required by sections 15122 through 15131. Appendix A contains a table that shows where the required items are found in this General Plan/EIR.

1.1.3 SPIRIT OF PLACE

For thousands of years, people have been captivated by the visual masterpiece and natural wonder of the Sonoma Coast. The natural resources abundant along the coast and within the inland watersheds have attracted people to come and live in this area throughout prehistoric, historic, and present times. The area leaves an intense and lingering imprint on all who have witnessed this magical realm. The rugged landscape sparks the imagination of those contemplating the awesome powers of geologic forces. For others, the dramatic scenery is the perfect backdrop for a day at the beach or a hike through shady redwood groves. Still others are intrigued by the plants and wildlife that have adapted to this unique environment over the eons.

Born of the clash between land and sea, the rivalry between the North American and Pacific tectonic plates, the forces of flowing water, and the symbiosis between living beings and the environment, the Sonoma Coast is painted with a palette of distinctive vegetation on a canvas of rolling hills, rugged cliffs, sloping prairies, and broad beaches. Inland, this fabric is expanded by forest covered hills interspersed with grassy openings and magnificent views of the coastal watershed. Sprinkled about the coast are jagged rock outcroppings and other reminders that agents of change are ever-present in the timeless ambience. Inland, the sweeping vistas have inspired names such as



Redwood Grove in Willow Creek



Willow Creek Watershed



Coastline at Arched Rock



Sunset at Sonoma Coast SP

Source: EDAW 2003

“Islands in the Sky”. Of all the agents of change that have shaped Sonoma Coast State Park, the San Andreas Fault is perhaps the most famous. But it is the impact of modern society that is most considerable.

As human use of Sonoma Coast SP increases, it will be essential to maintain a balance between preservation and protection of the natural wonders of Sonoma Coast SP and providing opportunities for people to experience and appreciate this unique place. Aesthetic quality, resource values, and recreational opportunities are inseparable characteristics that are the basis of attraction to Sonoma Coast SP. To preserve all three is to sustain the popularity of Sonoma Coast SP.

1.1.4 PARK AREA DESCRIPTIONS

COASTAL AREAS

Coastal access areas at Sonoma Coast SP are described below, starting at the southern end of the Park and extending in a northbound direction.

Bodega Head

Bodega Head located at the southern end of Sonoma Coast SP is the rocky headland that forms the entrance into Bodega Harbor. The harbor side provides a popular crabbing area along the jetty, and the many hiking trails on the ocean side allow access to small, sandy coves and spectacular scenic blufftop views. The high cliffs offer excellent vantage points for observing migrating gray whales.

Bodega Dunes

Bodega Dunes is the coastal dune peninsula that extends south to Bodega Head and forms the western and northern sides of Bodega Harbor. At the northern end of Bodega Harbor is the Bodega Dunes Campground which includes 98 campsites that can accommodate recreation vehicles. Campground amenities include hot showers, flush toilets, and a trailer sanitation dump station. The day use area includes a disabled accessible boardwalk out to a classic sandy beach. Hiking and equestrian trails provide access to dune areas. Snowy plover habitat areas are located along the coastal areas.

Salmon Creek Beach

Salmon Creek Beach includes a coastal lagoon that forms as sand closes the mouth of Salmon Creek. This beach is a popular summer destination. Nearly two miles of unbroken, scenic, sandy beach make this an excellent place for surf fishing, beachcombing, and picnicking. This area is also popular with surfers. Snowy plover habitat areas are located in this area. The existing park headquarters is located adjacent to State Highway One at this location.

Portuguese Beach and Schoolhouse Beach

Portuguese Beach and Schoolhouse Beach are beautiful sandy beaches surrounded by rocky headlands. Rock fishing and surf fishing are popular in these locations.

Duncan's Landing

Duncan's Landing is a coastal promontory point that is famous for two things: as an early-day landing for loading small coastal ships with lumber and food products and for being the most dangerous point along the Sonoma Coast due to large and unpredictable surf, the steep beach, and severe undertow. In the spring the wildflower displays are spectacular.

Wright's Beach

Wright's Beach is a broad sandy beach located approximately at the midpoint of the Sonoma Coast coastline. The name refers to the Wright family who once owned the ranch lands in this area. Dangerous surf occurs in this location. A campground consisting of 27 developed campsites is located adjacent to the beach. No showers are present at the Wright's Beach campground, but campers may use the hot showers at nearby Bodega Dunes Campground. Running water and flush toilets are nearby. When the campground is filled, the overflow area in the Wright's Beach Picnic Area can be used for self-contained vehicles.

Shell Beach

Shell Beach is a favorite location for beachcombing and tidepooling. It is used by schools as an outdoor classroom for the study of tidal pool marine life and enjoys a reputation as a prime fishing spot.

Goat Rock and Goat Rock Beach

Goat Rock and Goat Rock Beach, near the mouth of the Russian River, are known for the scenic shoreline and easily accessible sandy beach. Dangerous surf occurs in this location. Day use picnic tables and restroom facilities are available at this location. Goat Rock Beach is home to a colony of harbor seals.

Jenner Visitor Center

The park's volunteer-staffed Visitor Center is located in the coastal community of Jenner near the mouth of the Russian River.

Carrington

Carrington is a former ranch land parcel located on the inland side of State Highway One between Salmon Creek and Marshall Gulch. The western terminus of Coleman Valley Road is located at Carrington. Several ranch structures that are on the Sonoma County Historic Register are present on the Carrington parcel. No park facilities have been established here yet.

Red Hill

Red Hill is a coastal open space parcel located inland of State Highway One between Wright's Beach and the Willow Creek watershed. It consists mostly of coastal grassland. Trail access to the coastal ridgetop and the inland Pomo Canyon Environmental Camp are available from the Red Hill Parcel.

Other beaches and coastal locations at Sonoma Coast SP include Miwok Beach, Coleman Beach, Arched Rock Beach, Marshall Gulch, Carmet Beach, Gleason Beach, Furlong Gulch, Gull Rock, Arched Rock, Blind Beach, Jenner Beach, and Russian Gulch.

WILLOW CREEK WATERSHED

The Willow Creek watershed is a key natural open space connecting the Sonoma Coast and the Russian River watershed. The recent addition of the Upper Willow Creek property ensured park ownership of the major portion of the coastal watershed of Willow Creek, an important tributary to the Russian River. The Willow Creek Watershed Management Plan completed in March 2005 provides for a comprehensive and cooperative approach to resource recovery of the watershed. The Willow Creek watershed was once part of the Willow Creek Ranch, which also operated a ferry there.

Willow Creek Environmental Camp

The Willow Creek environmental camp consists of eleven primitive campsites with fire rings, picnic tables, and pit toilets. Campsites are within 1/4 mile from the parking lot and no running water is provided at the camp sites. The Willow Creek Environmental camp is the only State Park campground on the Russian River within Sonoma Coast SP. Sites are shaded by willows and are located close to a large beach for swimming and fishing. Blue heron, egrets, osprey, and occasionally river otters can be seen by the river. To protect the wildlife, no dogs are allowed.

Pomo Canyon Environmental Camp

The campground is located in the lower portion of the Willow Creek watershed. The campground consists of 20 campsites with fire rings, picnic tables, pit toilets, and running water nearby. Campsites are within 1/4 mile from the parking lot. One of the campsites is disabled accessible. Camps are set in a beautiful redwood grove among the ferns. A three mile trail to Shell Beach takes off from the campground, crossing seasonal streams, and rising up into the grassland with marvelous views of the river and finally the ocean. To protect the wildlife, no dogs are allowed.

1.1.5 REGIONAL PLANNING CONTEXT

SONOMA COUNTY GENERAL PLAN AND LOCAL COASTAL PLAN

Sonoma Coast SP is located within the planning area of the Sonoma County General Plan (County General Plan) and with the exception of the Freezeout Creek watershed Sonoma

Coast SP is located within the planning area of the Local Coastal Plan (LCP). While the County General Plan does not apply to State-owned properties such as Sonoma Coast SP, the LCP is applicable as Sonoma Coast SP lies within the designated Coastal Zone. Both the County General Plan and the LCP directly affect the surrounding land use and thereby the context of Sonoma Coast SP.

The Sonoma County LCP was most recently updated and adopted in 2001. Another update of the LCP is expected by 2007. The LCP contains the local land use zone map and the zoning ordinances, which define the land uses that may occur in the unincorporated areas of the county if the properties are not federally owned. The existing LCP, which is based primarily on data collected in 1979 for the preparation of the previous LCP, includes maps on biological, cultural, and visual resources in the coastal zone of the county, as well as geologic hazards.

The broad purpose of the County General Plan is to express policies that will guide decisions on future growth and development. Specific plans, area plans, zonings, subdivisions, local agency projects, and other local land use decisions must be consistent with the County General Plan.

The County General Plan includes many elements that guide various facets of growth and development within the county. The elements most applicable to the Sonoma Coast SP planning process include the Land Use, Open Space, Resource Conservation, and Circulation and Transit elements. The Land Use element describes where the different kinds of land uses may be established in the unincorporated areas of Sonoma County. The Open Space element designates various portions of the county in several open space classifications. The limitations on types and intensities of permissible uses and special development and permit review requirements are expressed in the text for each open space classification. In the Resource Conservation element, policies are expressed for managed production and conservation of various resources, including soils, water, forests and timber, vegetation and wildlife, fisheries and harbors, geothermal, mineral and energy, atmospheric resources, and air quality. In the Circulation and Transit element, the plans for the county's future highway and transit systems are described (County of Sonoma 1989).

Sonoma County is currently updating its General Plan, which was last updated in 1989. The new General Plan, with a planning horizon to 2020, is expected to be adopted in 2007.

NEARBY CITY GENERAL PLANS

The nearest incorporated cities are Sebastopol and Santa Rosa. The City of Sebastopol General Plan was adopted in 1994, and the City of Santa Rosa General Plan was adopted on June 18, 2002. Because the boundaries of these cities do not extend to properties in the immediate vicinity of Sonoma Coast SP, they do not directly affect Sonoma Coast SP and the surrounding land uses.

The smaller unincorporated communities within or adjacent to Sonoma Coast SP, including Bodega Bay, Duncans Mills, and Jenner, do not have their own general plans and are subject to the Sonoma County General Plan and LCP described above.

1.2 PURPOSE OF THIS GENERAL PLAN

1.2.1 GENERAL PLAN AND THE STATE PARK PLANNING PROCESS

General plans are broad-based policy documents that provide management guidelines for a park by defining a framework for implementing diverse missions of resource stewardship, interpretation, and visitor use and services. By legal mandate, every State Park in California must develop a general plan prior to approval of major developments. The general plan defines the purpose, vision, and long-term goals and guidelines for the management of Sonoma Coast SP. A general plan is not a project specific document, and typically does not define specific objectives, methodologies, and designs on how to accomplish its goals.

General planning provides opportunities to assess Sonoma Coast SP resource stewardship, its facility development and management, and its interpretation to the public. It provides guidelines for future land use management and designation, including land acquisition and the facilities required to accommodate expected increases in visitation.

The general plan provides a comprehensive framework that guides the Park's developments, ongoing management, and public use for the next 20 years or more. Because it is in effect for so long, the plan must remain consistent in the vision for the Park's future, general in its scope, and flexible in its proposed approaches for solving future management problems.

1.2.2 SUBSEQUENT PLANNING ACTIONS

Major programs and projects that will be implemented during the lifespan of the general plan will require additional planning. Future planning efforts may include the preparation of specific resource management plans to protect sensitive resources or the development of site-specific area development plans for new facilities to determine how they will relate to their surrounding.

Future planning efforts also include the preparation of project-specific environmental compliance documents for implementation of management plans and subsequent development projects. These documents should tier off and be consistent with the General Plan's Program EIR. Securing any permits required for future implementation projects would also be part of subsequent planning actions.

Finally, the general plan may need to be amended if new developments or major commitments of resources are proposed for areas not covered in this plan or if circumstances change, making facts and findings in this plan no longer accurate.

1.2.3 PUBLIC INVOLVEMENT

Public input is an important component of the general planning process. It is sought at the very beginning and throughout the planning process for a variety of reasons. State Parks are entrusted by the people of California to the Department for managing natural and cultural resources and for providing recreational opportunity. Constituency building is needed to ensure the public's support for their local Parks. A variety of methods, such as public meetings, and user surveys were used to identify stakeholders of Sonoma Coast SP and the general plan and to identify their needs and concerns for the future of Sonoma Coast SP.

Local residents and stakeholders as well as specific user group were able to provide important information about Sonoma Coast SP that is not common knowledge and not contained in Sonoma Coast SP Unit Data File.

Finally, all general plans have an amendment/revision process built into them, allowing the plans to be flexible if new situations arise.

1.3 CONTENTS OF THE GENERAL PLAN

1.3.1 EXISTING CONDITIONS

The existing conditions section of the plan describes the current physical and social conditions of Sonoma Coast SP. It includes information on land use; significant physical, biotic, cultural, aesthetic, and recreation values; and existing facilities. The existing conditions section also lists system-wide and regional planning influences affecting Sonoma Coast SP, describes its demographic resident and visitor profile, and lists issues to be addressed in the General Plan that have been identified during the early phases of the planning process. Input for the existing conditions section has been gathered through a variety of sources including:

- ▶ review of Sonoma Coast SP data file,
- ▶ review of other applicable technical documents,
- ▶ review of local and regional applicable planning documents,
- ▶ database searches,
- ▶ limited fieldwork,
- ▶ contact with agencies and other knowledgeable individuals, and
- ▶ user surveys and public meetings.

1.3.2 PLAN SECTIONS

The "Plan" component of the General Plan (Chapter 3) for Sonoma Coast SP contains the following sections:

- ▶ Purpose and Vision
- ▶ Park-wide Goals and Guidelines
- ▶ Park Carrying Capacity
- ▶ Park Management Zones

1.3.3 PROGRAM ENVIRONMENTAL IMPACT REPORT

The Program EIR contained in the General Plan (Chapter 4) includes the following sections:

- ▶ Introduction to the Environmental Analysis
- ▶ Summary
- ▶ Project Description
- ▶ Environmental Setting
- ▶ Environmental Effects Eliminated from Further Analysis
- ▶ Environmental Impacts
- ▶ Other CEQA Considerations
- ▶ Alternatives to the Proposed Project

In addition to these sections, the General Plan environmental analysis section contains a list of the organizations and persons consulted during its preparation, the report preparers, a complete list of references, a glossary of terms, technical appendices, exhibits, and tables.

Volume II of the General Plan and EIR contains all public comments received during the circulation of the draft EIR, responses to these comments, mitigation monitoring plan, and additional appendices, as applicable. (Volume II will be provided after the draft EIR is circulated to the public.)

1.3.4 PURPOSE OF THE PROGRAM ENVIRONMENTAL IMPACT REPORT

The purpose of the Program EIR is to analyze and disclose the preferred alternative's effects on the environment, in accordance with Section 15168 of the State CEQA Guidelines. It discloses any significant and potentially significant effects that may result from the implementation of the General Plan. The EIR informs decision-makers and the public about the environmental consequences of the adoption of the General Plan, consistent with the requirements of the California Environmental Quality Act (CEQA) and State CEQA Guidelines.

1.3.5 PROGRAM ENVIRONMENTAL IMPACT REPORT SCOPE

Because the EIR prepared for the General Plan is programmatic in scope, it does not contain project-specific analysis for any of the projects recommended in the General Plan. Specific projects will undergo subsequent CEQA review in the future as described above under "Subsequent Planning Actions."

The tiering process of environmental review is incorporated into this EIR. Tiering in an EIR prepared as part of a general plan allows agencies to consider broad environmental issues at the general planning stage, followed by more detailed examination of actual development projects in subsequent environmental documents. These later documents incorporate, by reference, the general discussions from the broader EIR in the General Plan and concentrate solely on the issues specific to the projects [Public Resources Code Section 21093; CEQA

Guidelines Section 15152]. This document represents the goals and guidelines for resource management, visitor use, and administration and first tier of environmental review.

Future second tier review will provide more detailed information and environmental analysis. For example, each future management plan and area development plan will be subject to further environmental review to determine if it is consistent with the General Plan and to identify any significant environmental impacts and mitigation measures that may be specific to the area development plan.

Mitigation generally requires resource specialists to evaluate the scope of work, identify the cause of the impacts, and specify measures to avoid or reduce the impacts to a less-than-significant level. More comprehensive environmental review will be possible at the more specific levels of planning, where facility size, location, and capacity can be explicitly delineated, rather than at the general plan level.



Existing Conditions

2 EXISTING CONDITIONS



Mouth of the Russian River, Source: EDAW 2003

2.1 SUMMARY OF PARK CONDITIONS AND RESOURCES

2.1.1 EXISTING LAND USE

CLASSIFICATION

Sonoma Coast SP is part of the California State Parks System and is classified as a State Recreation Unit pursuant to Section 5019.56 of the California Public Resources Code (PRC). Under this classification State Beaches are defined as “consisting of areas with frontage on the ocean or bays designed to provide swimming, boating, fishing, and other beach-oriented recreational activities.” PRC Section 5019.53 further provides for camping as a permitted activity at State Beaches and also states: “Improvements to provide for urban or indoor, formalized recreational activities are normally not permitted.” With the addition of the 3,375-acre Upper Willow Creek acquisition in 2005, the park now exceeds 10,000 acres in size and has a range of resource diversity, increased recreation opportunities, as well as expanded park character through increased significance of inland areas that extends beyond what is associated with a typical State Beach. In response to this expansion in the size and landscape character of the park unit, the Plan recommends changing the unit classification from State Beach to State Park.

SURROUNDING LAND USES

Sonoma Coast SP is bordered on its eastern side primarily by undeveloped private property. At its southern end is the community of Bodega Bay. The community of Jenner is located adjacent to Sonoma Coast SP approximately 10 miles north of Bodega Bay. Four residential subdivisions, Ocean View, Carmet, Sereno Del Mar, and Salmon Creek, are also located adjacent to Sonoma Coast SP. Two regional parks in the Bodega Bay area are managed by the Sonoma County Regional Parks Department. Doran Park is located across Bodega Harbor from Sonoma Coast SP in the community of Bodega Bay. Westside Regional Park is located east of Sonoma Coast SP on Bodega Head. Immediately north of Bodega Head along the coast is the University of California’s Bodega Marine Lab. Fort Ross State Historic Park and Salt Point State Park are located further north along the coast.

As shown in Exhibit 2-1, the land at Sonoma Coast SP is designated by the Sonoma County Local Coastal Plan (LCP) as primarily Institutional, with more recently acquired portions designated for Agriculture or Commercial Center. Most of the areas surrounding Sonoma Coast SP are designated for Agriculture, Recreation, and Rural Residential. Land in the nearby communities of Jenner, Bridgehaven, Duncans Mills, Ocean View, Sereno Del Mar, Carmet, and Salmon Creek are designated for Agriculture, Recreation, Rural Residential, and Village Commercial. Land use in the Bodega Bay community is varied, consisting of Agriculture, Open Space, Recreation, Institutional, Rural Residential, Low and Medium Density Residential, Planned Community, Commercial Center, Fishing Commercial, and Visitor Serving Commercial land uses. The properties in these communities and subdivisions have generally been developed. Because of the limited water supply in the area, future development is expected to be minimal in the surrounding areas, with the exception of 168 parcels in Sereno Del Mar. If sufficient water supply can be obtained, these parcels may be developed with single-family residences. Aside from these residential developments and potential additions to Sonoma Coast SP, the future land use pattern on the nearby properties is expected to remain mostly unchanged from existing conditions.

Offshore areas have been federally designated as a part of the California Coastal National Monument which runs the entire length of the California coast (1,100 miles) between Oregon and Mexico, extends 12 nautical miles from the shoreline, and encompasses thousands of Bureau of Land Management (BLM) administered islands, rocks, exposed reefs, and pinnacles above mean high tide.



Signage at Duncan's Landing



Visitor Center at Jenner

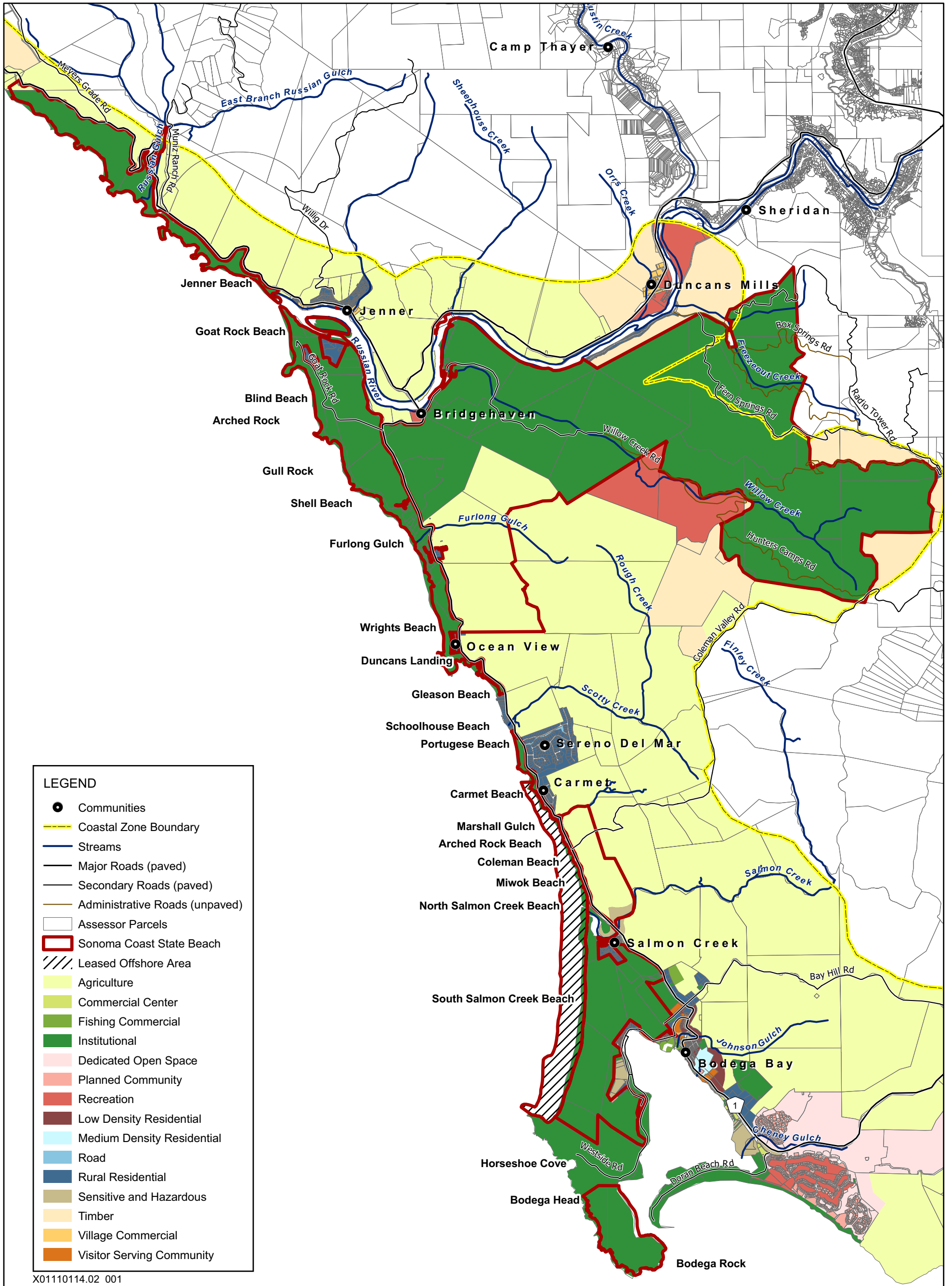


Coastline north of Jenner



Ranch House at Willow Creek

Source: EDAW 2003

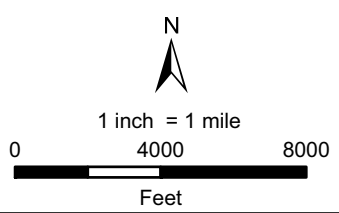


LEGEND

- Communities
- Coastal Zone Boundary
- Streams
- Major Roads (paved)
- Secondary Roads (paved)
- Administrative Roads (unpaved)
- Assessor Parcels
- ▭ Sonoma Coast State Beach
- ▨ Leased Offshore Area
- Agriculture
- Commercial Center
- Fishing Commercial
- Institutional
- Dedicated Open Space
- Planned Community
- Recreation
- Low Density Residential
- Medium Density Residential
- Road
- Rural Residential
- Sensitive and Hazardous
- Timber
- Village Commercial
- Visitor Serving Community

X01110114.02 001

Source: DPR 2003, Sonoma County 2003



May 30, 2007

Sonoma Coast State Park

EXHIBIT 2-1 Coastal Plan Land Use Designations

Cooperatively managed with other federal, state, local government, universities, and private interests, the primary purpose of the Monument designation is to protect important biological and geological values. The islands, rocks, reefs, and pinnacles provide forage and breeding grounds for significant populations of birds and sea mammals.

REGIONAL CONTEXT

Sonoma Coast SP lies in a sparsely developed area dotted with seasonal residences and resort communities. Because of its abundant natural resources, high scenic value, and mild weather throughout the year, Sonoma Coast SP is one of the primary tourist attractions in the coastal area of Sonoma County. Tourism is one of the principal economic activities in the vicinity of Sonoma Coast SP, as well as Sonoma County, which is famous for its wineries. Fort Ross State Historic Park and Salt Point State Park are located farther north along the coast, and several others, including Austin Creek State Recreation Area, are located close to the community of Guerneville. Farther south in Marin County are Tomales Bay State Park, Stinson Beach (a part of the Golden Gate National Recreation Area), and Point Reyes National Seashore. Most of these federal and State recreation areas are located on or near the same roadways that provide access to Sonoma Coast SP.

PARKWIDE LAND USES

Parkwide land uses include open space lands used for recreation and the main transportation corridors of SR 1 and SR 116.

ADJACENT LAND USES

Adjacent land uses include privately owned lands used as ranch lands, and privately owned lands managed for commercial timber production. Lands adjacent to the Willow Creek acquisition are owned and operated by the Mendocino Redwood Company, who formerly owned the Willow Creek acquisition. Two Williamson Act preserves are located adjacent to Sonoma Coast SP; one is located next to the Willow Creek area and the other is located near Schoolhouse Beach. The properties to the east of the Willow Creek area are used for timber harvesting purposes, but none of the adjacent properties are within Timber Preserve Zones.

PARK ACCESS

The primary roadways leading to and from Sonoma Coast SP are SR 1 and SR 116. SR 1, also known as the Pacific Coast Highway, is a regional attraction in itself, drawing visitors from throughout the State and beyond. SR 1 brings visitors north from San Francisco and Marin counties and south from Mendocino County to Sonoma Coast SP. SR 116 connects Sonoma Coast SP at its northern end to Duncan Mills, Guerneville, and other communities located between Sonoma Coast SP and U.S. Highway 101 (US 101). US 101 in turn provides regional access to SR 116 either directly or via SR 12.

To access the Sonoma Coast SP, visitors typically park along SR 1 and other roadways and in turnouts and parking lots off the roadways.

There are several access routes from SR 1 or SR 116 to inland Willow Creek watershed areas of the park. These include Willow Creek Road, Freezeout, and Coleman Valley Road.

2.1.2 VISITOR PROFILE

EXISTING AND POTENTIAL FUTURE PARK VISITORS

Existing Visitor Attendance

Visitor attendance surveys conducted since 1995 for all California State Parks show that Sonoma Coast SP is the fourth most visited park in the State Parks system. Sonoma Coast SP received more than 2 million visitors per year (Table 2-1). From a height of 2,460,195 visitors in the 1995–1996 fiscal year, when Sonoma Coast SP was the third most visited State Park, the estimated number of visitors to Sonoma Coast SP decreased to 2,013,574 during 2000–2001. Nonetheless, Sonoma Coast SP remains the fourth most visited State Park in the State and most visited unit in northern California.

Visitor Type	Fiscal Year ¹					
	1996	1997	1998	1999	2000	2001
Paid Day Use	33,791	40,264	42,634	50,148	49,249	51,962
Free Day Use	2,327,889	2,154,292	2,317,060	2,312,303	2,069,547	1,869,751
Overnight	98,515	96,494	89,226	83,660	92,606	91,861
Total	2,460,195	2,291,050	2,448,920	2,446,111	2,211,402	2,013,574

¹ Based on fiscal years (i.e., 1995–1996 fiscal year shown as 1996)
Source: Sullivan 2003

Visitor Type	Fiscal Year ¹					
	2000	2001	2002 ²	2003 ²	2004	2005
Paid Day Use	49,249	51,962	N/A	N/A	41,572	34,302
Free Day Use	2,069,547	1,869,751	2,273,943	2,811,892	2,476,741	2,940,163
Overnight	92,606	91,861	90,478	97,950	94,445	84,676
Total	2,211,402	2,013,574	2,364,421	2,909,842	2,612,758	3,059,141

¹ Based on fiscal years (i.e., 1999–2000 fiscal year shown as 2000)
² No Day Use Fees at coastal park units were collected in 2002 FY and 2003 FY
Source: California State Park System Statistical Reports (2000–2005)

Approximately 95% of the visitors at Sonoma Coast SP were day users and most of them were non-paying visitors. However, the number of paying day users steadily increased between 1996 and 2001. People visit Sonoma Coast SP year-round unlike many other Parks.

Seasonal Use Fluctuations

Because of the mild weather experienced at Sonoma Coast SP throughout the year, visitor attendance is high year-round. However, peak attendance occurs during holiday weekends from April to October.

Target Populations

In addition to the visitor attendance surveys, the California Department of Parks and Recreation (the Department) has collected visitor satisfaction surveys that include information on the originating counties of the visitors. A total of 270 visitor satisfaction surveys have been collected for Sonoma Coast SP since 1999. These surveys provide some insight into the demographic characteristics of some park users, as shown in Table 2-2. However, since 81% of the 270 survey questionnaires were completed by campers, survey results are not necessarily representative of the demographic characteristics of the majority of park visitors. Specifically, the results would tend to show a wider geographic origin of the visitors, whereas the majority of the park visitors, day users, would not be expected to have originated from areas more than 3 hours away from Sonoma Coast SP. The exception would be tourists to Sonoma County's wineries. An unknown percentage of these tourists, who would originate

**Table 2-2
Source of Surveyed Visitors**

	Sonoma County and Adjacent Counties		Regions in California				Outside California
	Sonoma County	Adjacent Counties ¹	San Francisco Bay Area ²	Sacramento Area ³	Other Northern California ⁴	Southern California ⁵	Other U.S. States ⁶
Surveyed Visitors ⁷	36	18	101	105	28	14	22
Percent of Surveyed Visitors	13.3	6.7	37.4	38.9	10.4	5.2	8.1

Notes:

- 1 Includes visitors from Lake, Marin, Napa, and Mendocino counties.
- 2 Includes visitors from Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties (all in Association of Bay Area Governments [ABAG] jurisdiction).
- 3 Includes visitors from El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties (all in Sacramento Area Council of Governments [SACOG] jurisdiction).
- 4 Includes visitors from Butte, Calaveras, Lake, Mendocino, Nevada, Santa Cruz, San Joaquin, and Shasta counties.
- 5 Includes visitors from Fresno, Los Angeles, Madera, Orange, San Diego, San Luis Obispo, Santa Barbara, and Tulare counties.
- 6 Includes visitors from Arizona, Connecticut, Maryland, Minnesota, New Mexico, New York, Indiana, Nevada, Virginia, and Washington states.
- 7 Based on 270 surveys of visitors between 1996 and 2001. 81% of the surveys were completed by campers; thus, survey results do not necessarily reflect the demographic characteristics of the majority of park visitors.

Source: Veliquette, pers. comm., 2003

from locations throughout the State and the country, would be expected to take day trips from the inland areas of the county to Sonoma Coast SP. Aside from these tourists, most of Sonoma Coast SP's day use visitors are believed to originate from Sonoma County and the adjacent counties of Lake, Marin, Mendocino, and Napa, as well as other counties in the San Francisco Bay area and the Sacramento area. These areas together account for 78.5% of the originating counties reported in the 270 surveys.

Overall, the target population of Sonoma Coast SP visitors would be residents from Lake, Mendocino, and Sonoma counties, as well as counties in the San Francisco Bay area and the Sacramento area. These 18 local and regional counties are all within a 3-hour driving range of Sonoma Coast SP. A secondary target population would be tourists who come to Sonoma County primarily for its wineries.

2.1.3 DEMOGRAPHIC PROFILE

Notable results of the 270 visitor satisfaction surveys were that 72% of the respondents had at least some level of college education, 73% were age 35 or older, 25% had an annual income greater than \$75,000, 63% had an annual income greater than \$30,000, and 70% of those who responded to the question on ethnicity listed themselves as white.

LOCAL AND REGIONAL RESIDENTS

Population Trends and Projections

As described above, most of the park visitors are expected to have originated from Sonoma County, the adjacent counties, and the metropolitan areas of San Francisco and Sacramento. Visitors can be expected to reflect the population trends of these areas, as shown in Table 2-3. These areas are projected to grow on an annual basis of up to 2.4% through 2010, with a lower growth rate estimated between 2010 and 2020. As such, the number of visitors to Sonoma Coast SP is expected to increase correspondingly.

Population	Sonoma County	Adjacent Counties ¹	San Francisco Bay Area ²	Sacramento Area ³	State of California
2000	464,800	522,400	6,783,760	1,886,175	34,480,300
2010 (yearly growth rate)	557,300 (2.0%)	588,200 (1.3%)	7,513,800 (1.1%)	2,340,297 (2.4%)	40,262,400 (1.7%)
2020 (yearly growth rate)	628,400 (1.3%)	641,900 (0.9%)	8,014,100 (0.7%)	2,696,205 (1.5%)	45,821,900 (1.4%)
Notes:					
1 Lake, Marin, Napa, and Mendocino counties.					
2 Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties (all in ABAG jurisdiction)					
3 El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba counties, excluding Lake Tahoe Area (all in SACOG jurisdiction)					
Sources: DOF 2003, ABAG 2003, SACOG 2001					

Demographic Diversity

Recreation demand and use are affected by changing demographic patterns of the areas served. Aside from overall population growth described above, race/ethnicity, income level, and average age are key factors that will affect the future use patterns of Sonoma Coast SP, as described below.

The Hispanic population in the target counties is increasing proportionally faster than other populations. Relatively large Hispanic populations are present locally in the Sonoma Valley and regionally in the San Francisco Bay and Sacramento areas. These population concentrations, combined with changing ethnicity patterns in California, will directly affect the pool of potential users of Sonoma Coast SP. According to the U.S. Census, in 1990 there were about 6 million Hispanics out of the total statewide population of 29.8 million (20%). By the year 2000, this increased to about 11 million out of 34 million people (32.4%). This 12% increase in just 10 years suggests that the mix of user groups, and their subsequent facility needs at Sonoma Coast SP, may be changing. For example, Hispanic visitors tend to recreate in large (often family-based) groups, and prefer developed recreation sites, particularly those with picnic tables, barbeque grills, and parking lots (Chavez 2001). Hispanic group picnics also tend to be longer in duration than those for some other ethnic groups, as many food items are prepared from scratch onsite (Carr and Chavez 1993).

Undeveloped/wilderness-type recreation tends to be sought more by people with higher income and education levels (English et al. 1993). The visitor satisfaction surveys for Sonoma Coast SP found that on average, the surveyed visitors had higher income and education levels. The median annual household income in the San Francisco Bay area in 2000 is estimated to be \$93,800 (ABAG 2000). The median household income in Sonoma County is \$53,076, with 8.1% of the population living below the poverty line. Median household income elsewhere in northern California is closer to the State median; for example, Sacramento County has a median income of \$43,816, with 14.1% below the poverty line (U.S. Census 2000). In comparison, the statewide median household income is \$47,493, with 14.2% in poverty (U.S. Census 2000). The high income levels in some of the target counties contribute to high demand for undeveloped natural areas and wilderness-type recreation.

The average age of Sonoma County residents is increasing; combined age groups of 45–65 and 65+ represented 31.3% of the total population in 1990, but are expected to comprise 42.2% of the total in 2010 (ABAG 2000). (The 65+ category alone is 12.6% of county population according to the U.S. Census.) Based on this shift, facility improvements may be needed to meet the needs of an aging, yet often still active, population. For Sonoma Coast SP, this suggests improved interpretation or more easily accessible trails and Americans with Disabilities Act-accessible camping opportunities would also help to satisfy this changing demographic pattern.

Sub-populations

As mentioned above, an unknown percentage of tourists who come to Sonoma County primarily for its popular wineries are expected to visit Sonoma Coast SP. A study of overnight visitors to Sonoma County indicated that 42% of overnight visitors to Sonoma County originate in the San Francisco Bay area; other Northern California areas, including Sacramento, accounted for another 18%. Most of these overnight visitors came to the county for leisure/pleasure purposes (SCTP 2001).

Another study of day and overnight visitors to Sonoma County indicated that the majority of the visitors to the county are affluent, educated, and without children. Approximately 61% of visitors to Sonoma County are college graduates or have attended graduate school and 58% have an annual income of \$75,000 or more. The visitors also tend to be frequent and repeat weekend visitors. Specifically, more than two-thirds (68%) of visitors to Sonoma County are repeat travelers, who are more likely to go to the coastal areas than first-time visitors (MCG 1999). According to a Sonoma County Tourism Program on-line visitor survey, after food and wine, top reasons for visiting the county include Sightseeing (22%), Nature/Wilderness (8%), and Activity/Adventure Sports (6%) (SCTP 2002). Sonoma Coast SP offers all of these activities and is in a prime position to capture the interest and participation of the returning visitor/repeat traveler to Sonoma County (MCG 1999).

Sonoma County itself contributes the largest number of day visitors of any county, providing at least 15% of the day trips. Each of the nine San Francisco Bay area counties contributes from 5%–14.9% of the total Sonoma County visitation (MCG 1999). For Sonoma Coast SP, this indicates that distance to population centers is an important factor affecting day use.

Local Market Analysis

There is a strong latent demand for outdoor recreation in Sonoma County. Studies conducted from 1988–1996 by the Sonoma County Regional Parks Department indicate that the percentage increase in visitor use for all types of outdoor recreation increased much faster than the increase in county population during the same period. Total visitor use at County-owned and operated outdoor recreation facilities increased 66%, while the county population increased 10.3%. Simultaneously, Sonoma County Regional Parks' recreation acreage increased 49%. This increase in available acreage combined with an increase in use suggests a stronger than average latent demand for outdoor recreation facilities (County of Sonoma 2000). For Sonoma Coast SP, this suggests that visitation level can increase faster than local and regional population growth.

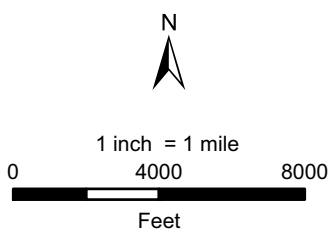
2.1.4 PHYSICAL RESOURCES

METEOROLOGY

The general climate pattern of the northern California coastal area is characterized by rainy winters with some clear sunny days and dry, cool summers with many foggy or overcast days.



Source: DPR 2003, Teale GIS Solutions Group 2001, USGS 2000



May 30, 2007



Sonoma Coast State Park

**Exhibit 2-2
Topography**

The coastal areas of Sonoma Coast SP experience more wind and fog than the upper Willow Creek watershed further inland.

As shown in Table 2-4, data on average temperature and rainfall at Sonoma Coast SP are recorded at the two nearest weather gauging stations with available data; the first is located on Bodega Head at the University of California Bodega Marine Laboratory, which is adjacent to Sonoma Coast SP. The second station is located in Fort Ross State Historic Park, approximately 10 miles north of the community of Jenner. Because Fort Ross is also located immediately on the coast, the temperatures and rainfall amounts are similar to those experienced at Sonoma Coast SP. Further inland in the Sonoma Valley, winters are slightly cooler and summers are slightly warmer than on the coast. The amount of rainfall in the Sonoma Valley is similar to the level experienced at Sonoma Coast SP. The upper Willow Creek watershed receives approximately an average annual precipitation of 55 inches.

Table 2-4													
Average Temperature and Precipitation ¹													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
UC Bodega Marine Laboratory¹													
Average Maximum Temperature (°F)	55	55	56	56	57	59	59	61	61	60	58	55	58
Average Minimum Temperature (°F)	45	46	47	48	50	51	52	53	53	51	48	44	49
Average Total Precipitation (in.)	7	6	4	2	1	0	0	0	0	2	5	6	33
Fort Ross²													
Average Maximum Temperature (°F)	57	59	59	61	63	66	66	67	68	66	62	58	63
Average Minimum Temperature (°F)	41	42	42	42	44	47	48	49	49	47	44	41	45
Average Total Precipitation (in.)	8	6	5	3	1	0	0	0	1	2	5	6	39
¹ Based on average of data from 1988 through 2001; Source: University of California Bodega Marine Laboratory 2003. ² Source: Western Regional Climate Center 2003.													

During the summer months when rainfall is scarce at Sonoma Coast SP, the frequent occurrences of fog add moisture to the State Park. The average monthly temperature experienced at Sonoma Coast SP varies by approximately 10°F throughout the year. Sunny days may be experienced in any season. For this reason, Sonoma Coast SP is considered a year-round destination.

AIR QUALITY

Air quality in the vicinity of Sonoma Coast SP is regulated by several jurisdictions including the U.S. Environmental Protection Agency (U.S. EPA), California Air Resources Board (ARB), and Northern Sonoma County Air Pollution Control District (APCD). The U.S. EPA has established primary and secondary National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead, which are referred to as criteria air pollutants. The primary standards protect the public health and the secondary standards protect the public welfare. The California ARB has established California Ambient Air Quality Standards (CAAQS) for these same pollutants, as well as sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particulates, which in most cases are more stringent than the NAAQS.

The APCD is the agency primarily responsible for assuring that national and state ambient air quality standards are not exceeded and that air quality conditions are maintained in the northern portion of Sonoma County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The APCD ensures that air quality is protected through permit approval processes and through the review of local development projects under CEQA.

Sonoma Coast SP is located in the North Coast Air Basin, which is classified by the State as non-attainment (transitional) for ozone and non-attainment for respirable particulate matter (PM₁₀). The North Coast Air Basin is in attainment or designated unclassified for all remaining CAAQS and NAAQS (ARB 2003). The nearest air quality monitoring station, located approximately seven miles to the northeast in Guerneville, collects information on particulate matter (PM₁₀). The next nearest monitoring station, located approximately twenty miles away at the Healdsburg Municipal Airport, collects data on ambient ozone concentrations. In 2002, the monitoring stations did not record any days during which the federal and the State's ambient air quality standard for ozone and particulate matter were exceeded. In comparison, there were 3 days in 1997 and 7 days in 1998 when the ambient air quality standards were exceeded (ARB 2003). Between 1997 and 2002, ambient air quality in the Air Basin has improved based on data for these two pollutants.

The primary source of air pollutants at Sonoma Coast SP is vehicular traffic; the other typical major sources of air pollutants (intensive agricultural activities and industrial uses) are rare in the vicinity. The air quality at Sonoma Coast SP is better than the rest of the North Coast Air Basin because of the coastal weather patterns and the relatively light traffic volumes in the area.

TOPOGRAPHY

The coastal landscape of Sonoma County is characterized by large, rolling hills and coastal terraces that slope down toward the Pacific Ocean. The north Coast Ranges, which trend north-south from the Oregon border to San Francisco Bay, lie immediately east of Sonoma

Coast SP and include much of the upper Willow Creek watershed. The immediate shoreline is characterized by rocky cliffs and bluffs, with sandy beaches and dune habitats in several locations. At Sonoma Coast SP, elevations range from sea level along the western edge to approximately 1,300 feet at the Red Hill and Willow Creek properties, as shown in Exhibit 2-2. The lower lying areas of Sonoma Coast SP, including the coastline along the Pacific Ocean, Bodega Bay, and the mouths of the waterways traversing Sonoma Coast SP, are at sea level and therefore are subject to the risk of tsunamis. Offshore, there are many rock formations, called sea stacks, that rise above the wave baseline. Many of these rocks are part of the recently dedicated California Coastal National Monument.

GEOLOGY

The geology of Sonoma Coast SP is characterized by two plates divided by the San Andreas Fault, the nearest segment of which runs along the coastline. A segment of the San Andreas Fault trends inland near Bodega Bay where it forms the State Park boundary between Bodega Head and the mainland (Exhibit 2-3). The San Andreas Fault and smaller parallel faults make up the approximately 1.5-mile-wide San Andreas Fault Zone, which marks the boundary between the North American Plate and the Pacific Plate. Please refer to the Glossary of Terms (Appendix I) for an explanation of fault types shown in Exhibit 2-3. Strong earthquakes are created by friction and stress as the two plates grind past one another along the San Andreas Fault. These earthquakes have included the devastating San Francisco Earthquake of 1906 and the Loma Prieta Earthquake of 1989. Because of these historic seismic disasters and the potential for more strong earthquakes in the future, the San Andreas Fault Zone is one of the best known earthquake-producing regions in the world. Surface fault rupture is a potential hazard in the San Andreas Fault Zone.

West of the fault on Bodega Head, the rocks are Cretaceous granites of the Salinia Terrane and overlaying sand and gravel, as shown in Diagram 2-1. Specifically, outcrops of Santa Lucia granodiorite, one of the oldest formations in the Coast Ranges, have weathered into the decomposed granite sand that forms much of Bodega Head (Fredrickson 1962). Granite originated by the cooling of molten igneous rock deep in the earth approximately 100 million years ago. Bodega Head was formed at least 345 miles to the south and was moved along the San Andreas Fault to the present location over the last 29 million years. It is the only part of Sonoma Coast SP located on the Pacific Plate (Wright 1999).

To the east of the fault on the North American Plate, the remainder of Sonoma Coast SP lies in the Franciscan Complex, an eclectic collection of various rock types that are mostly oceanic in nature. Marine sediments are mixed with iron-rich igneous volcanic and plutonic rocks and metamorphic rock as a result of faulting at the subduction zone where the Pacific Plate is subducted underneath the North American Plate. The resulting mixture is called a "mélange," a combination of harder and weaker rocks that erode at different rates (Wright 1999).

In northern California, the Franciscan Complex is divided into three belts; Sonoma Coast SP is located in the Central Belt, which is generally given an age range of Late Jurassic to

SONOMA COUNTY GEOLOGY

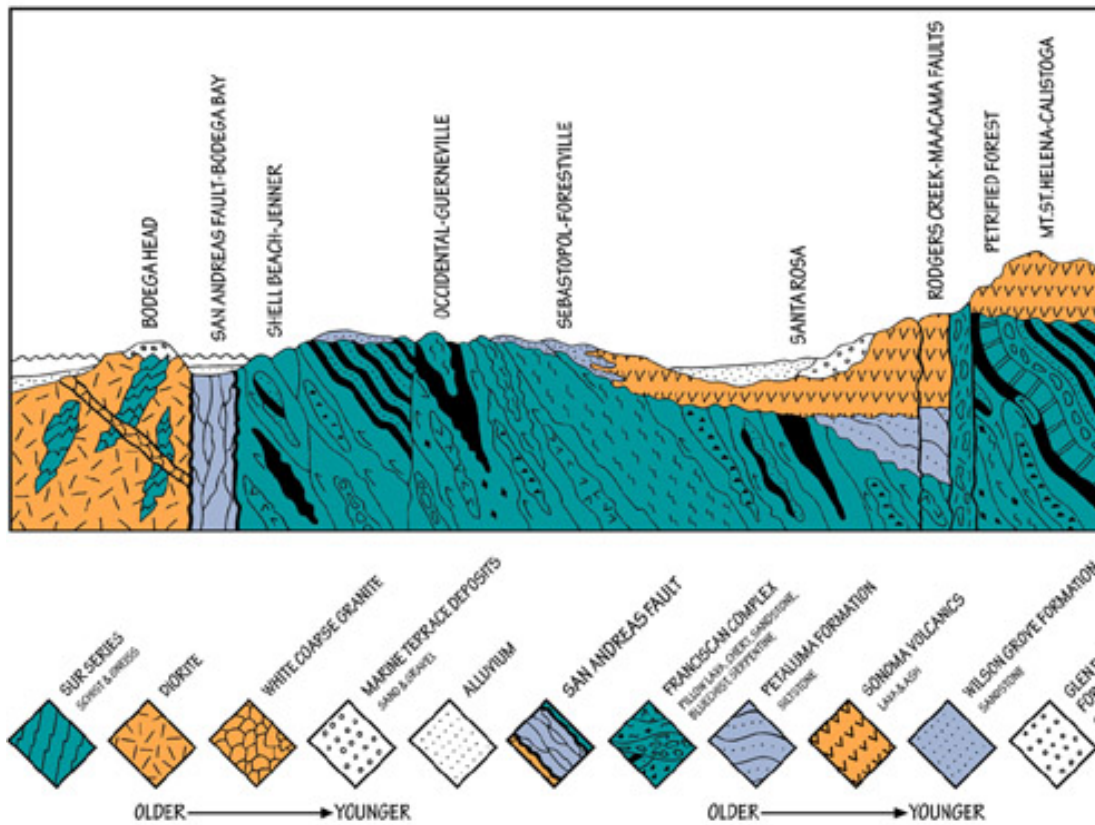


Diagram 2-1. Geologic Cross Section

Source: Wright 1999

Cretaceous time (approximately 150 million years ago). The Central Belt consists of abundant blueschist blocks enclosed in a pumpellyitic sheared matrix. Common rock types include greywacke, chert, greenstone, gabbro, serpentinite, rodingite, limestone, eclogite, and exotic blocks of other compositions (Daly 1980).

Gently sloping terraces perch above most of the coastline of Sonoma Coast SP. These are erosive surfaces with a thin covering of sand and gravel that originated beneath a shallow wave base and are pushed up by pressures along the fault (Wright 1999). Because of the seismic activities associated with the San Andreas Fault and the erosion caused by rainfall and ocean waves, many areas of Sonoma Coast SP are prone to landslides; consequently the cliffs have been retreating from the ocean because of periodic landslides. In particular, there



LEGEND

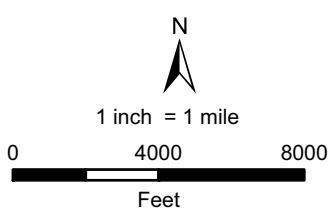
- × Summits
- Communities
- +- Historic Fault
- - - Late Quaternary Fault
- Prequaternary Fault
- Streams
- Major Roads (paved)
- - - Secondary Roads (paved)
- Administrative Roads (unpaved)
- ▭ Sonoma Coast State Beach
- ▨ Leased Offshore Area

Geologic Components

- grMz (Mesozoic granitic rocks)
- J (Jurassic marine)
- KJf (Franciscan complex)
- KJfm (Franciscan melange)
- KI (Lower Cretaceous marine)
- P (Pliocene marine)
- Q (Alluvium, Quaternary marine and nonmarine)
- Qs (Extensive sand dune deposits)
- TK (Tertiary-Cretaceous Coastal Belt rocks)
- um (Ultramafic rocks)

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Source: Department of Conservation 2000, DPR 2003, USGS 1993, USGS 2000



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Sonoma Coast State Park

**Exhibit 2-3
Geology**

are erosion problems on the marine terraces north of Jenner created by concentrated flows across SR 1. Also, portions of Goat Rock Road have suffered geologic or soil failure leaving gullies in need of repair.

Further inland, rockslides and mass wasting is present in the upper Willow Creek watershed. The sandstone mélange present in the southern portion of the watershed is generally more unstable than the conglomeratic body to the north. Abundant rockslides are present throughout the sandstone mélange, especially at higher elevations. The well consolidated and resistant nature of the conglomerate in the northern portion has resulted in fewer and smaller landslides in this area (Daly 1980). A total of 104 shallow-seated landslides (debris slides, torrents, or flows) and 43 deep-seated landslides (rock slides or earth flows) were identified and characterized in the Willow/Freezeout Creek watersheds owned by Mendocino Redwood Company (MRC) from 1969 to 2000 (MRC 2001).

PALEONTOLOGY

Research is being conducted to verify the origin of unique rock slicks on the sides of coastal outcrops, which may have been caused by Pleistocene megafauna (mammoth or bison) rubbing against the rocks (Parkman 2002). Natural artifacts, such as the possible Pleistocene animal rubs may represent a unique resource, and need to be treated as such while attempts at identification continue. These rub areas are under investigation using a number of methodologies. Samples of the rock have been taken for scanning electron microscopy analysis and residue analysis (Parkman 2002).

SOILS

A variety of soil types are found at Sonoma Coast SP (Exhibit 2-4). A description of each of the 35 soil types found at Sonoma Coast SP is included in Appendix B. The soil types, which are categorized by their compositions and slopes, differ in permeability, runoff potential, erosion hazard, and typical uses. These different soil characteristics determine the suitability of a site for various types of development. For example, soils that are generally impermeable are usually considered unsuitable for onsite wastewater disposal systems (e.g., septic tanks and leachfields). Mitigating features (e.g., detention basins, oil traps, grassy swales) may be incorporated into developments on soils with high runoff potential. Soil testing is generally performed before site development to determine compatibility of onsite soils with the proposed development.

HYDROLOGY AND WATER QUALITY

The Russian River and several creeks traverse Sonoma Coast SP on their way to the Pacific Ocean. Willow Creek is a major tributary to the Russian River. Exhibit 2-5 shows the location of these waterways and the 100-year floodplain designated by the Federal Emergency Management Agency (FEMA). The 100-year floodplain of a river or stream defines the geographic area along this river or stream that has a 1% chance of flooding in any given year. FEMA's Flood Insurance Rate Maps typically define the 100 year floodplain for larger rivers and streams only.

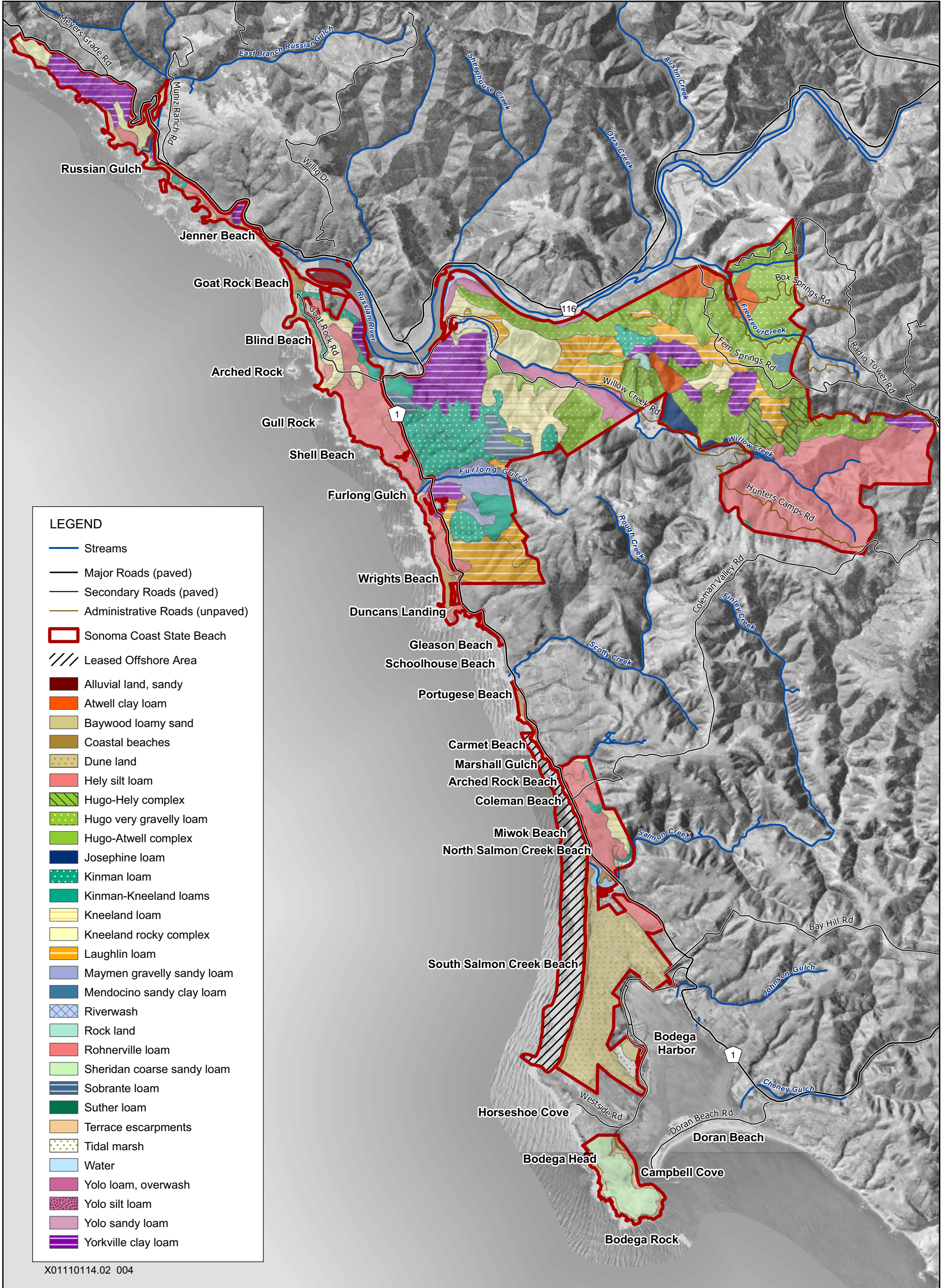
The Russian River originates in central Mendocino County, approximately 15 miles north of Ukiah; water from its 1,485-square-mile watershed drains into the 110-mile-long main channel of the Russian River, which flows into the Pacific Ocean near Jenner. The mouth of the Russian River is occasionally closed to surface flow between the ocean and the river because of the buildup of sandbar formations. Willow Creek is a major tributary of the Russian River. Willow Creek and Freezout Creek are tributaries to the lower reach of the Russian River. With the recent acquisitions of a larger portion of the Upper Willow Creek watershed, more than 80% of the watershed now lies within the boundaries of Sonoma Coast SP. Parts of the Freezout Creek watershed were also added with this acquisition.

Other streams at Sonoma Coast SP include Russian Gulch, Furlong Gulch, Scotty Creek, Marshall Gulch, and Salmon Creek. These streams originate in the hills to the east of Sonoma Coast SP and flow for a few miles before draining into the Pacific Ocean. All but Salmon Creek and Willow Creek are intermittent streams. The Salmon Creek watershed consists of 34 square miles and empties into a tidewater estuary just north of Bodega Bay. Salmon Creek and its tributaries provide habitat for anadromous fish and other aquatic organisms (e.g., steelhead, coho salmon, tidewater goby, freshwater shrimp).

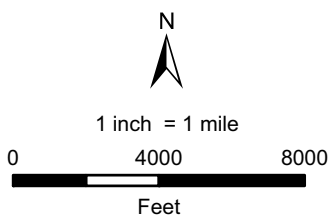
Groundwater in the vicinity of Sonoma Coast SP originates from infiltration and percolation of precipitation that occurs on the sand dunes and hills to the east. The sand dunes are highly permeable and readily absorb surface water so that little if any water drains over the ground surface during rainfall events. The underlying Franciscan geologic formation of the hills to the east is expected to contain very little to no groundwater that is available as a domestic water source. The overlying unconsolidated materials consist of recent marine sedimentary deposits of silts, clay, and sand. The sand deposits have yielded significant and reliable quantities of groundwater. The marine and sand dune materials in the San Andreas Fault Zone, which occur at Sonoma Coast SP near Bodega Head, also contain groundwater. (Todd 1986).

The Russian River is classified by the State Water Resources Control Board (SWRCB) as an Impaired Waterway for exceedances of water quality standards for temperature and sedimentation/siltation. In particular, segments of the river upstream of Sonoma Coast SP, such as the segment near Guerneville, have been identified as Clean Water Act (CWA) §303(d) Water Quality Limited Segments because water quality standards have not been met even after point sources of pollution have installed the minimum required levels of pollution control technology. The CWA requires the North Coast Regional Water Quality Board to establish priority rankings for these river segments and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality (SWRCB 2003).

The quality of the seawater along most of Sonoma Coast SP is good. The only locations at Sonoma Coast SP where health standards, based on bacterial counts of the seawater, have been exceeded are at Campbell Cove Beach, located at the tip of Bodega Head, and at Salmon Creek Beach. In 2002, "Beach Warning" signs were posted for a total of 24 days between May and November at Campbell Cove Beach; signs were posted at Salmon Creek



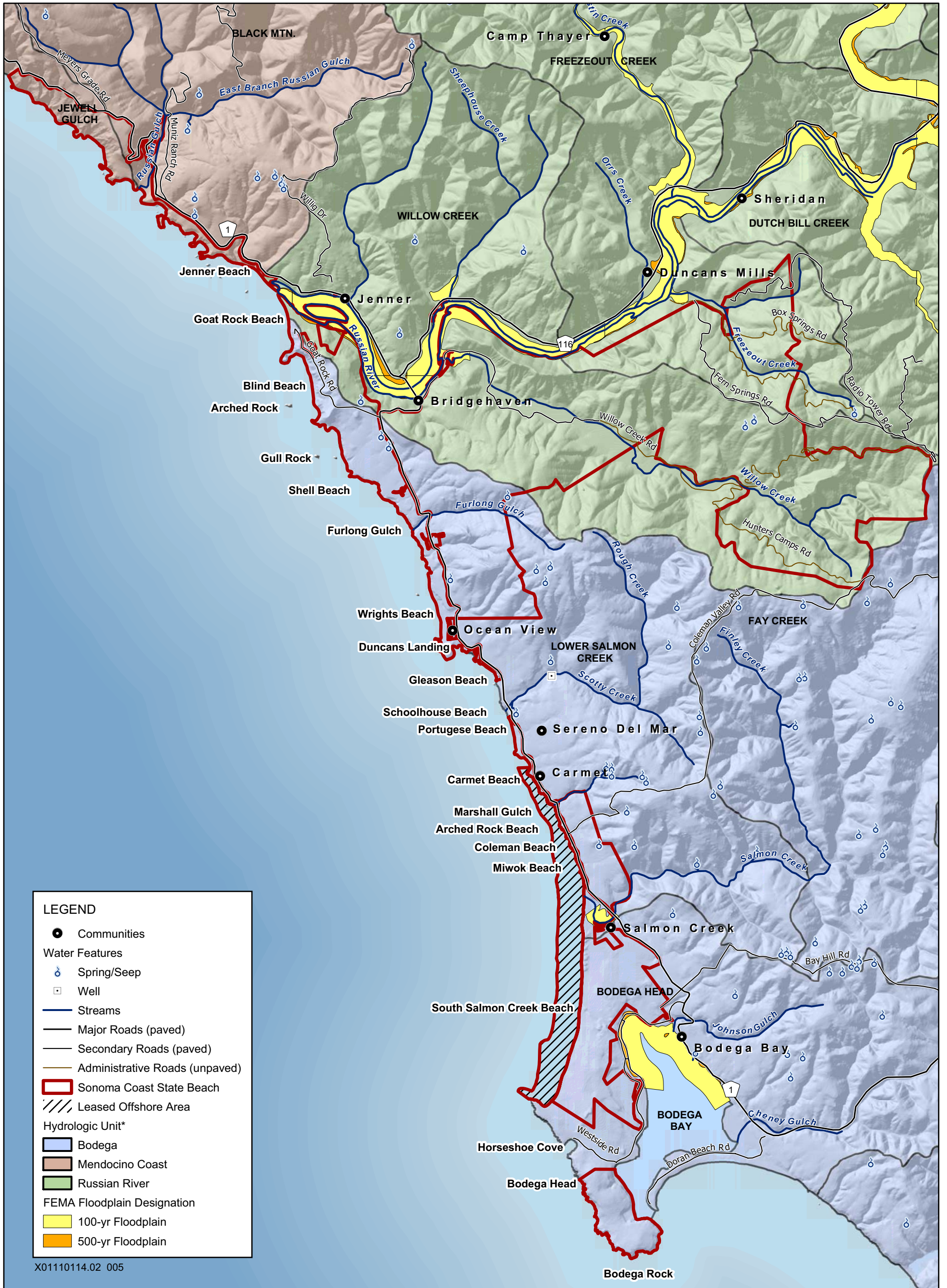
Source: USDA 2003, SSURGO 2005



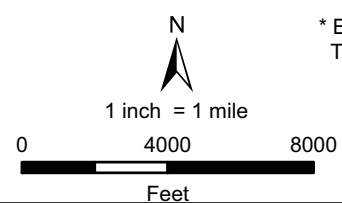
Sonoma Coast State Park

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Exhibit 2-4
Soil Types



Source: California Department of Forestry and Fire Protection 1999, DFG 1999, USGS 1997



* Each Hydrologic Unit is subdivided into Planning Watersheds. The Planning Watershed names appear on the map.



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Sonoma Coast State Park

Exhibit 2-5 Surface Hydrology

Beach for 2 days during 2002. The causes of health standard exceedance were unknown; however, wildlife sources are suspected at Campbell Cove, and Salmon Creek is suspected to be the source at Salmon Creek beach (County of Sonoma Division of Environmental Health 2002). The posting of warning signs alerts the public of a possible risk of illness associated with water contact. The State Water Resources Control Board is cooperating with other agencies on a study to identify the sources and management strategies for control of fecal bacteria at Campbell Cove Beach and in Bodega Bay (SWRCB 2003).

BIOTIC RESOURCES

A biological resource is significant if it:

- ▶ is important to the essential character of Sonoma Coast SP, and contributes, in part, to its statewide significance;
- ▶ is regionally significant, is an important component of a systemwide plan, or contributes to the preservation of regional or statewide biodiversity; or
- ▶ is documented as significant on recognized preservation or protection lists or otherwise designated with special status by a recognized authority.

Significant biotic resources in the General Plan study area were determined through a review of available documentation and consultation with biologists familiar with the local biological resources. Sources of information also include DPR's condition assessment for Sonoma Coast SP (DPR 2001d), the Department's internal database (Cal Flora and Fauna), the California Department of Fish and Game's California Natural Diversity Database (CNDDDB 2002), the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Plants of California (CNPS 2002), and a number of documents on file with the Department, as listed in Chapter 5, References.

Regulatory Background

Many biological resources in California are protected and/or regulated by laws, regulations, and policies. Key regulatory compliance issues that may need to be addressed before implementation of the General Plan are listed below. A brief description of each of the applicable laws and regulations is provided in Appendix C.

- ▶ Federal Endangered Species Act
- ▶ Marine Mammal Protection Act
- ▶ Clean Water Act
- ▶ California Endangered Species Act
- ▶ California Coastal Act
- ▶ §1602 of the California Fish and Game Code
- ▶ §3503.5 of the California Fish and Game Code
- ▶ Migratory Bird Treaty Act

Plant Life

This section contains a description of plant communities that characterize Sonoma Coast SP. Special-status plant species known or with potential to occur at Sonoma Coast SP and sensitive habitats are described as well. Finally, invasive, non-native plants that are particularly problematic at Sonoma Coast SP are discussed.

Plant Communities

In previous studies of Sonoma Coast SP, biologists have mapped plant communities using nomenclature and descriptions derived from the vegetation classifications of Holland (1986) and Sawyer and Keeler-Wolf and wetland classification of Cowardin (1979). The Department has since adopted the California Manual of Vegetation of Sawyer and Keeler-Wolf as its vegetation classification system. Therefore, plant community descriptions for Sonoma Coast SP are presented according to this classification wherever possible. In some cases, previously described vegetation types from other studies were grouped because they are not readily distinguishable in the field or on aerial photographs. In the case of coastal prairie and coastal dune vegetation, it was not possible to apply Sawyer and Keeler-Wolf categories because the level of detail required to do so was beyond the scale of the general botanical surveys and overview vegetation mapping that are part of this planning effort. The following plant communities are present in the General Plan study area:

- ▶ Arroyo willow series
- ▶ Bulrush–cattail series
- ▶ California bay series
- ▶ California annual grassland series
- ▶ Coastal dunes
- ▶ Coastal prairie
- ▶ Coyote brush series
- ▶ Douglas-fir series
- ▶ Douglas-fir–tanoak series
- ▶ Dune lupine–goldenbush series
- ▶ Eucalyptus series
- ▶ European beachgrass series
- ▶ Iceplant series
- ▶ Landscaped areas
- ▶ Mixed willow series
- ▶ Red alder series
- ▶ Redwood series
- ▶ Sand verbena–beach bursage series
- ▶ Sedge series
- ▶ Yellow bush lupine series

These plant communities are described below in alphabetical order. A map of existing plant communities was produced from reconnaissance-level field surveys and aerial photograph interpretation (Exhibit 2-6).

Arroyo Willow Series

This riparian scrub community occurs in and along drainage channels and other seasonally saturated or flooded areas at Sonoma Coast SP. This riparian scrub community can occur as a mono-specific stand of arroyo willow (*Salix lasiolepis*) or include other shrub or tree species.

For example, some portions of this series at Bodega Head are dominated by wax-myrtle (*Myrica californica*), which lacks its own series in the Keeler and Sawyer-Wolf classification. The understory varies from sparse to abundant and is generally composed of herbaceous wetland species.

Bulrush–Cattail Series

This freshwater marsh plant community occurs at the mouth of Willow Creek near its confluence with the Russian River and around the “Hole in the Head” at Bodega Head. It is dominated by emergent herbaceous plants including cattails (*Typha* spp.) and spike rush (*Eleocharis macrostachya*, also called bulrush) as well as other wetland species such as basket sedge (*Carex obnupta*), water plantain (*Alisma platago-aquatica*), and rushes (*Juncus effusus*, *J. patens*), horsetails (*Equisetum* spp.), and three square (*Scirpus pungens*). This wetland plant community occurs only in areas that are permanently flooded and qualifies as a wetland community protected under §404 of the CWA. It may also occur in roadside ditches scattered throughout Sonoma Coast SP.

California Bay Series

California bay forest occurs on moist, exposed ridges and stream margins in the Willow Creek Subunit. California bay (*Umbellularia californica*) is the sole dominant tree in the dense canopy, and there are few understory shrubs and herbs. This plant community merges with Douglas-fir–tanoak series, which is described below.

California Annual Grassland Series

This grassland plant community characterizes areas of Sonoma Coast SP that have been disturbed in the past. The native vegetation in these areas has been altered for the purpose of conversion to various land uses including farming, grazing, homesteading, and logging.

Once these land uses cease and the land is left fallow, it typically becomes dominated by introduced grasses and forbs. On coastal terraces, which formerly supported coastal prairie vegetation, California annual grassland series may contain scattered patches of perennial grasses. Non-native grass species that now dominate disturbed terraces include wild oats (*Avena* spp.), bromes (*Bromus* spp.), Italian ryegrass (*Lolium multiflorum*), velvet grass (*Holcus lanatus*), and canarygrass (*Phalaris aquatica*), which were introduced into California

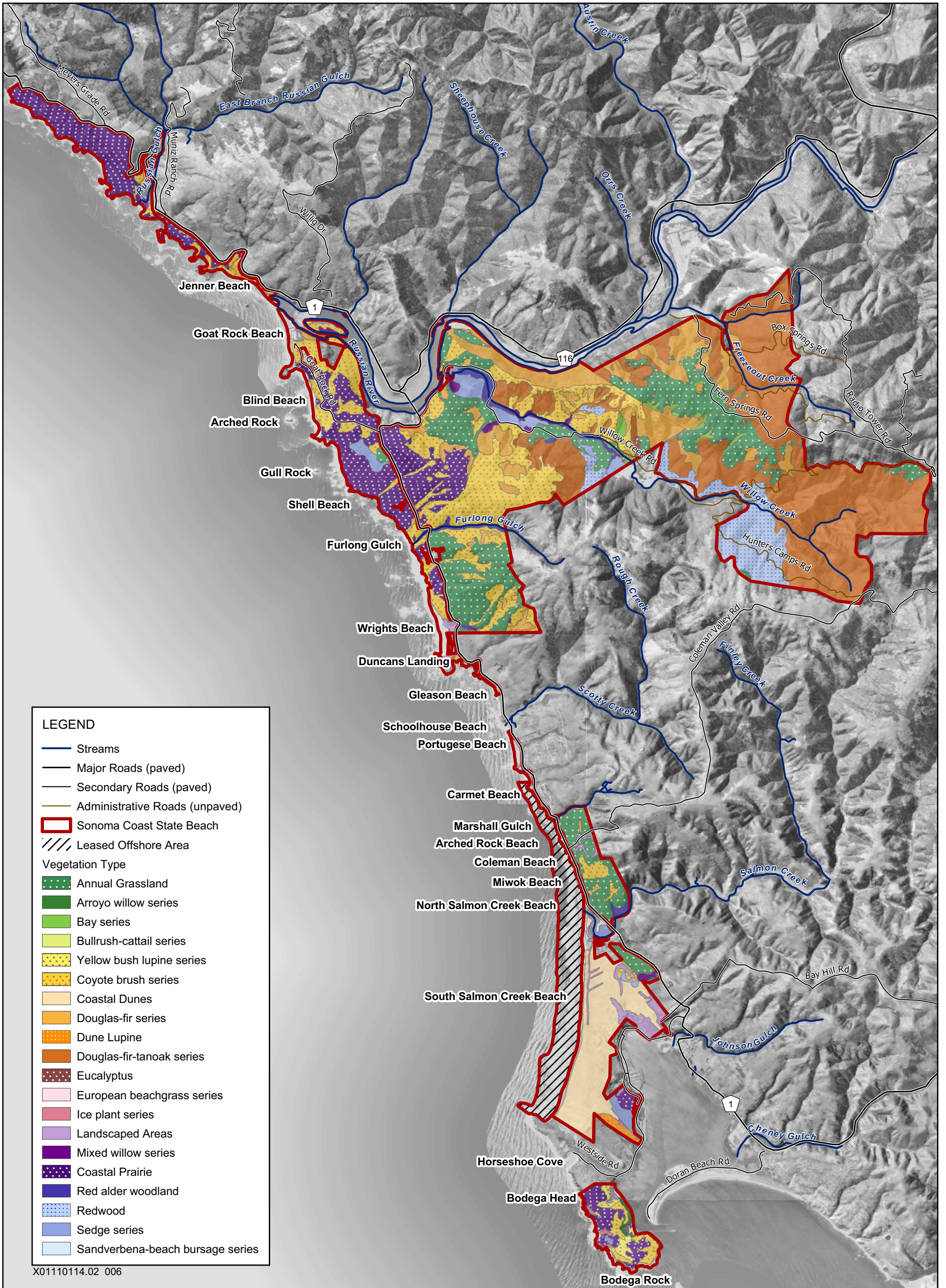
intentionally for livestock forage. Non-native, weedy forbs include wild radish (*Raphanus sativa*), bull thistle (*Cirsium vulgare*), milk thistle (*Silybum marianum*), English plantain (*Plantago lanceolata*), and filaree (*Erodium* spp.). California annual grassland series also occurs in open areas on the slopes above coastal terraces as well as openings in forested areas. Native forbs such as Douglas iris (*Iris douglasiana*), cow parsnip (*Heracleum lanatum*), yarrow (*Achillea millefolium*), California buttercup (*Ranunculus californicus*), California poppy (*Eschscholzia californica*), and blue-eyed grass (*Sisyrinchium bellum*) are also a common component of the dominant vegetation. Because of the level of mapping, the distinction between this vegetation series and coastal prairie was difficult to make. Therefore, most of the grassland vegetation on coastal terraces is mapped as coastal prairie, which is described below, and ruderal areas clearly dominated by non-native grasses are mapped as California annual grassland.

Coastal Dunes

Because of the broad level of vegetation mapping, it was not feasible to map vegetation series in coastal dunes using the Sawyer and Keeler-Wolf classification. Extensive coastal dune habitat is located in the southern end of Sonoma Coast SP at Bodega Dunes. Coastal dune plant communities are located above the high tide line where sandy beaches and sand dunes occur (Holland and Keil 1995). Coastal dunes are highly dynamic ecosystems that are shaped and influenced by persistent coastal winds. Beaches and active dune areas close to the shoreline are typically barren because of the rapid rate of sand movement. Foredune areas are similar to active coastal dunes but have less wind and/or sand and/or more abundant groundwater, which allows some patches of prostrate, herbaceous plants to establish (Holland 1986). This vegetation generally consists of sand-verbena-beach bursage series, which is described below. Native dunegrass series (areas dominated by *Leymus mollis*) can also occur along the shoreline. Areas of coastal dunes located further away from the immediate shoreline are more sheltered and have become more stabilized. They contain more established vegetation and higher species diversity. Series that occur in these areas include European beachgrass, iceplant, yellow bush lupine, and dune lupine-goldenbush, which are described below.

Coastal Prairie

Coastal prairie, also called coastal terrace prairie, is the prevalent vegetation type on coastal terraces throughout Sonoma Coast SP. As mentioned earlier, assigning Sawyer and Keeler-Wolf series to this vegetation was not possible in the mapping effort because of the overview level of the botanical surveys. However, if more detailed mapping is conducted in the future, the following series could apply to coastal prairie: Pacific reedgrass series, California oatgrass series, introduced perennial grassland series, and tufted hairgrass series. Coastal prairie is dominated by grasses such as purple needlegrass (*Nassella pulchra*), Pacific reedgrass (*Calamagrostis nutkaensis*), California oatgrass (*Danthonia californica*), tufted hairgrass (*Deschampsia cespitosa*), bromes, Italian ryegrass, and velvet grass. Native forbs found in coastal prairie include those described above under California Annual Grassland



LEGEND

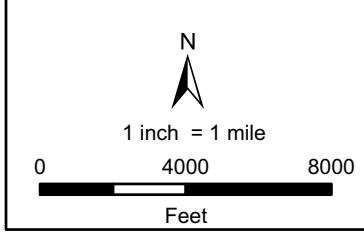
- Streams
- Major Roads (paved)
- Secondary Roads (paved)
- Administrative Roads (unpaved)
- Sonoma Coast State Beach
- Leased Offshore Area

Vegetation Type

- Annual Grassland
- Arroyo willow series
- Bay series
- Bullrush-cattail series
- Yellow bush lupine series
- Coyote brush series
- Coastal Dunes
- Douglas-fir series
- Dune Lupine
- Douglas-fir-tanoak series
- Eucalyptus
- European beachgrass series
- Ice plant series
- Landscaped Areas
- Mixed willow series
- Coastal Prairie
- Red alder woodland
- Redwood
- Sedge series
- Sandverbena-beach bursage series

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Source: DPR 2003, EDAW 2003, Teale GIS Solutions Group 1999, USGS 1993



Sonoma Coast State Park

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Exhibit 2-6 Plant Communities

Series as well as Pacific cinquefoil (*Potentilla anserina* ssp. *pacifica*, also called silverweed), seaside daisy (*Erigeron glaucus*), beach strawberry (*Fragaria chiloense*), and many-colored lupine (*Lupinus variicolor*). Coastal prairie intergrades with California annual grassland in more disturbed areas and coyote brush series on terraces undergoing succession. In addition, there are scattered wetlands associated with drainages, seeps, or natural depressions in coastal prairie. These patches are dominated by sedges (*Carex* spp.), rushes, and nutsedge (*Cyperus* spp.). Coastal prairie wetlands qualify as wetlands protected under §404 of the CWA.

Coyote Brush Series

Coyote brush series is very common throughout Sonoma Coast SP. It occurs on coastal terraces, hillsides, and bluffs. This broadly circumscribed series includes the coastal bluff scrub and north coastal scrub plant communities described by Holland (1986). This plant community is dominated by coyote brush (*Baccharis pilularis*). In some areas, coyote brush forms an almost continuous layer, whereas other areas are less dense and have an understory composed of a variety of herbaceous species characteristic of the coastal prairie and California annual grassland series.

Although some coastal bluffs at Sonoma Coast SP are bare because of natural erosion, many areas support vegetation. In these areas, coyote brush series is composed mostly of perennial herbs that are tolerant to harsh environmental factors, such as high winds, sand blast, salinity, and little or no soil development, that are typically associated with coastal bluffs. Common associated species on coastal bluffs include grasses as well as coastal buckwheat (*Eriogonum latifolium*), seaside woolly sunflower (*Eriophyllum staechadifolium*), many-colored lupine, iceplant (*Carpobrotus* spp.), beach strawberry, California buttercup, seaside daisy, and yellow bush lupine (*Lupinus arboreus*). Coyote brush series also occurs on other windy, exposed sites such as marine terraces and at the bases of slopes near the coast. Characteristic associated species on more mesic sites include a mix of shrubs such as California coffeeberry (*Rhamnus californicus*), bush lupine, California blackberry (*Rubus ursinus*), sticky monkeyflower (*Mimulus aurantiacus*), and poison oak (*Toxicodendron diversilobum*), as well as herbs including cow parsnip, hedge-nettle (*Stachys ajugoides*), and grasses. In addition, this plant community intergrades with Douglas-fir forest in less exposed areas.

Douglas-fir Series

At Sonoma Coast SP Douglas-fir forest occurs mostly on upper slopes and ridge tops. This plant community is characterized by an open to dense canopy of Douglas-fir (*Pseudotsuga menziesii*). Near the coast, Douglas-fir trees can have a stunted, windswept appearance from prolonged exposure to strong coastal winds. In these areas, an understory is typically absent, and this plant community intergrades with coyote brush series. In less exposed areas, Douglas-fir trees grow much taller and straighter, and an understory is present. Common understory plants include sword fern (*Polystichum munitum*), pink-flowering currant (*Ribes sanguineum*), California figwort (*Scrophularia californica*), twinberry

(*Lonicera involucrata*), California blackberry, coyote brush, and poison oak. On more mesic sites, Douglas-fir series vegetation can include some riparian species such as California bay, California myrtle (*Myrica californica*), red alder (*Alnus rubra*), and willows (*Salix* spp.). In some areas, distinguishing between this plant community and Douglas-fir–tanoak series can become difficult. However, in general, Douglas-fir series has a one-tiered canopy, whereas Douglas-fir–tanoak series typically has a multilayered canopy.

Douglas-fir–Tanoak Series

This forest plant community is dominated by several species of evergreen broadleaved trees and conifers such as California bay, Douglas-fir, coast live oak (*Quercus agrifolia*), madrone (*Arbutus menziesii*), and tanoak (*Lithocarpus densiflorus*). Occasional red alders and willows also occur in this plant community, particularly along Willow Creek. California bay is also commonly found along drainages within the upper Willow Creek watershed. Douglas-fir–tanoak series typically exhibits a well-developed and diverse understory. The shrub layer includes a mix of species such as California buckeye (*Aesculus californica*), silk tassel bush (*Garrya elliptica*), toyon (*Heteromeles arbutifolia*), sticky monkeyflower, pink-flowering currant, oso berry (*Oemleria cerasiformis*), salmonberry (*Rubus spectabilis*), California blackberry, coastal ceanothus (*Ceanothus thyrsiflorus*), coffeeberry, and poison oak. Common herbs in the understory include columbine (*Aquilegia formosa*), bracken fern (*Pteridium aquilinum*), sword fern, milk maids (*Cardamine californica*), wild ginger (*Asarum caudatum*), false solomon’s seal (*Smilacina racemosa*), yerba buena (*Satureja douglasii*), and fairy bells (*Disporum hookeri*). Douglas-fir–tanoak series is most well-developed in the Willow Creek area of Sonoma Coast SP and can intergrade with Douglas-fir series on drier sites and California bay series on moister sites.

Dune Lupine–Goldenbush Series

This plant community occurs on stabilized backdune areas at Bodega Dunes. It consists of a relatively dense shrub cover dominated by dune lupine (*Lupinus chamissonis*) and heather goldenbush (*Ericameria ericoides*). The understory is typically composed of herbaceous species found in sand verbena–beach bursage or coyote brush series. Yellow bush lupine and coastal buckwheat are common in this community at Bodega Dunes.

Eucalyptus Series

Eucalyptus trees have been introduced in a few scattered locations at Sonoma Coast SP. In general, the stands are small, isolated, and composed of blue gum (*Eucalyptus globulus*), a tree introduced from Australia. Allelopathic chemicals that are released into the soil from the leaves of eucalyptus species typically prohibit the development of an understory in this plant community. Eucalyptus trees are located on Penny Island, at the Willow Creek Campground, the bayside of Bodega Head, and in a few patches along U.S. 101.

European Beachgrass Series

European beachgrass (*Ammophila arenaria*), a non-native species, was planted in coastal regions of California including the North Coast and Bodega Dunes to stabilize dunes (DPR 2002, Sawyer and Keeler-Wolf 1995). It has become invasive on coastal dunes and beaches in the state, displacing native vegetation. European beachgrass series is characterized by virtually mono-specific stands of European beachgrass. At Sonoma Coast SP, it has displaced native dune vegetation at Bodega Head, Bodega Dunes, South Salmon Creek Beach, and Goat Rock Beach and occurs in association with sand-verbena–beach bursage series.

Iceplant Series

Iceplant (*Carpobrotus edulis*, *C. chilensis*), a non-native, invasive plant, is particularly extensive on the coastal bluffs in the southern half of Sonoma Coast SP, on the dunes at Goat Rock Beach, and at Duncans Landing. Iceplant was introduced to California for the purpose of erosion control and has since become extremely invasive in coastal areas. Iceplant forms dense mats and eventually chokes out native plant communities. At Sonoma Coast SP, iceplant is encroaching on coyote brush, coastal prairie, and sand-verbena–beach bursage series.

Landscaped Areas

Landscaped areas occur in scattered locations throughout Sonoma Coast SP, especially near residences, campgrounds, and other development. Common plants in landscaped areas include eucalyptus (*Eucalyptus* sp.), myoporum (*Myoporum laetum*), and iceplant (*Carpobrotus cortaderia*) or California native species that are not indigenous to Sonoma Coast SP such as Monterey cypress (*Cupressus macrocarpa*) and Monterey pine (*Pinus radiata*). Landscape plants have the potential to spread and displace native plant communities at Sonoma Coast SP. For instance, myoporum has spread into potential rare plant habitat at Goat Rock Beach (DPR 2002) as well as the occurrence of Monterey Cypress at Bodega Head.

Mixed Willow Series

Mixed willow riparian scrub occurs in drainage channels, roadside ditches, and other mesic areas at Sonoma Coast SP. It is typically dominated by one to several willow species including arroyo willow, sandbar willow (*Salix exigua*), and Sitka willow (*S. sitchensis*). The understory, if present, is composed of wetland species characteristic of the bulrush-cattail and sedge series. Mixed willow series often intergrades with red alder series, which is described below.

Red Alder Series

Red alder woodlands occur along creek banks and in many drainage channels at Sonoma Coast SP. The moderately dense canopy in this riparian plant community is dominated by red

alder (*Alnus rubra*). The open shrub layer can include willows (*Salix* spp.), California blackberry, and red elderberry (*Sambucus racemosa*). The understory varies from sparse to dense and is composed of herbaceous species such as basket sedge, bulrushes, rushes, sword fern, horsetails, and stinging nettle (*Urtica dioica*).

Redwood Series

Redwood trees (*Sequoia sempervirens*) comprise the sole or dominant species in the canopy in this series. The understory is sparse except in small openings, where characteristic species include California huckleberry (*Vaccinium ovatum*), redwood sorrel (*Oxalis oregona*), violet (*Viola* sp.), whipplevine (*Whipplea modesta*), California blackberry, strawberry (*Fragaria vesca*), hedge-nettle, sword fern, and thimbleberry (*Rubus parviflorus*). In some stands, Douglas-fir and tanoak are subdominant. In many areas, coast redwood and Douglas-fir are co-dominant, forming a two-tiered canopy. Other associated species in these transitional areas include bracken fern, California hazelnut (*Corylus cornuta* var. *californica*), and hedge-nettle.

Sand-verbena–Beach Bursage Series

This plant community occurs on sandy beaches and dunes at Sonoma Coast SP. It is most extensive in the Bodega Dunes, Wright's Beach, and Goat Rock Dunes areas. This plant community is dynamic because of the shifting substrate and is characterized by harsh growing conditions similar to those described earlier for the coastal bluff environment. Sand-verbena–beach bursage series is characterized by low-growing perennials adapted to high salinity, wind and sand blast, and sandy soils. Common species in this plant community include yellow sand-verbena (*Abronia latifolia*), sea rocket (*Cakile maritima*), beach morning-glory (*Calystegia soldanella*), beach bursage (*Ambrosia chamissonis*), coastal buckwheat, dune sagebrush (*Artemisia pycnocephala*), seashore bluegrass (*Poa douglasii*), seaside woolly sunflower, yellow bush lupine, and beach primrose (*Camissonia cheiranthifolia*).

Sedge Series

Sedge series occurs in meadows and wetlands that have developed in association with freshwater seeps, drainages, and natural depressions. It is dominated by sedges but may contain other associated herbaceous wetland species such as rushes and others listed above under bulrush-cattail series. Patches of sedges occur in scattered mesic areas in coastal prairie. Large expanses of sedges occur in marsh or swamp habitats, such as those associated with Willow Creek and Salmon Creek. The sedge series plant community qualifies as wetlands protected under §404 of the CWA.

Yellow Bush Lupine Series

This shrub-dominated plant community occurs on stabilized coastal dunes, bluffs, and terraces in the southern half of Sonoma Coast SP. It is characterized by a predominance of yellow bush lupine, but other shrubs such as coyote brush and heather goldenbush may occur as subdominant species in this series. On coastal bluffs, yellow bush lupine series intergrades

with coyote bush series. The understory varies in composition but often includes species from adjacent coastal prairie vegetation on coastal terraces. Understory herbs listed as characteristic species in this series include beach bursage, vernal grass (*Anthoxanthum odoratum*), riggut brome, and California figwort (Sawyer and Keeler-Wolf 1995). This series is not endemic to this part of California and is encroaching on native series, similar to encroachment by European beachgrass and the iceplant series.

Special-status Plant Species

Special-status plants addressed in this document include those that are federally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. These include species that are State- and/or federally listed as rare, threatened, or endangered; those considered as candidates or proposed for listing; species identified by DFG and/or USFWS as species of concern; and plants included on the CNPS' lists.

A list of special-status plant species with potential to occur at Sonoma Coast SP was compiled by performing database searches of the CNPS' Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2002) and DFG CNDDDB (CNDDDB 2002).

Forty-nine special-status plant species (including 1 lichen) have potential to occur at Sonoma Coast SP. Table 2-5 lists these species and provides information on their listing status, habitat, distribution, flowering period, and potential for occurrence. Locations of known special-status plant occurrences are shown in Exhibit 2-7. Descriptions of special-status plants that are federally or State-listed as endangered, threatened, or rare, that are known to occur at Sonoma Coast SP, are provided below. A total of 19 special-status plant species are known to occur at Sonoma Coast SP. These include: pink sand-verbena (*Abronia umbellata* ssp. *breviflora*), Blasdale's bent grass (*Agrostis blasdalei*), Franciscan onion (*Allium peninsulare* var. *franciscanum*), Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), Baker's manzanita (*Arctostaphylos bakeri* ssp. *bakeri*), California sedge (*Carex californica*), deceiving sedge (*C. saliniformis*), Sonoma spineflower (*Chorizanthe valida*), Baker's larkspur (*Delphinium bakeri*), yellow larkspur (*Delphinium luteum*), San Francisco wallflower (*Erysimum franciscanum*), short-leaved evax (*Hesperis matronalis* ssp. *brevifolia*), Perennial goldfields (*Lasthenia macrantha* ssp. *macrantha*), Tidestrom's lupine (*Lupinus tidestromii*), Marin knotweed (*Polygonum marinense*), Marin checkerbloom (*Sidalcea hickmanii* ssp. *viridis*), purple-stemmed checkerbloom (*S. malvaeflora* ssp. *purpurea*), secund jewel-flower (*Streptanthus glandulosus* var. *hoffmanii*), and Showy Indian clover (*Trifolium amoenum*). No comprehensive parkwide special-status plant surveys have been conducted at Sonoma Coast SP to date (DPR, pers. comm., 2001).

Pink Sand-verbena

Pink sand-verbena (*Abronia umbellata* ssp. *breviflora*) is a federal Species of Local Concern and a CNPS List 1B species (plants rare, threatened, or endangered in California and

Table 2-5

Special-status Plant and Lichen Species known from or with Potential to Occur at Sonoma Coast State Park

Species	Listing Status		Habitat	Distribution	Flowering Period	Potential for Occurrence in Study Area
	Fed.	State				
Pink sand-verbena <i>Abronia umbellata</i> ssp. <i>breviflora</i>	--	--	1B	Coastal dunes	Extant in Del Norte, Humboldt, Mendocino, and Marin counties and Oregon; extirpated in Sonoma County	June–October Present in the South Salmon Creek Beach area
Blasdale’s bent grass <i>Agrostis blasdalei</i>	--	--	1B	Coastal bluff scrub, coastal dunes, and coastal prairie	Mendocino, Marin, Santa Cruz, and Sonoma counties	Present in multiple locations
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	--	--	1B	Cismontane woodland, valley and foothill grassland; clay, often serpentine substrate	Santa Clara, San Mateo, and Sonoma counties	Present on roadside ocean cliffs approximately 3 miles north of Bodega Bay
Sonoma alopecurus <i>Alopecurus aequalis</i> var. <i>sonomensis</i>	FE	--	1B	Freshwater marshes and swamps, riparian scrub	Marin and Sonoma counties	Potentially suitable habitat present
Napa false indigo <i>Amorpha californica</i> var. <i>napensis</i>	--	--	1B	Openings in broadleafed upland forest, chaparral, and cismontane woodland	Monterey, Marin, Napa, and Sonoma counties	Potentially suitable habitat present
Coast rock-cress <i>Arabis blepharophylla</i>	--	--	4	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub	Contra Costa, Monterey, Marin, Santa Cruz, San Francisco, San Mateo, and Sonoma counties	Potentially suitable habitat present
Baker’s manzanita <i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i>	--	CR	1B	Broadleafed upland forest and chaparral; often serpentine substrate	Sonoma County	Potentially suitable habitat present
Bolander’s reed grass <i>Catamagrostis bolanderi</i>	--	--	1B	Bogs and fens, meadows, freshwater marshes and swamps, coastal scrub, openings in mesic forest	Humboldt, Mendocino, and Sonoma counties	Potentially suitable habitat present

Table 2-5

Special-status Plant and Lichen Species known from or with Potential to Occur at Sonoma Coast State Park

Species	Listing Status		Habitat	Distribution	Flowering Period	Potential for Occurrence in Study Area
	Fed.	State				
Thurber's reed grass <i>Calamagrostis crassiglumis</i>	--	--	2	Mesic sites in coastal scrub, freshwater marshes and swamps	Del Norte, Humboldt, Mendocino, Marin, and Sonoma counties; Washington; widespread outside of California	May-July Potentially suitable habitat present
Coastal bluff morning-glory <i>Calystegia purpurata</i> ssp. <i>saxicola</i>	--	--	1B	Coastal dunes and coastal scrub	Mendocino, Marin, and Sonoma counties	May-August Potentially suitable habitat present
Swamp harebell <i>Campanula californica</i>	--	--	1B	Bogs and fens, freshwater marshes and swamps, mesic sites in closed-cone coniferous forest, coastal prairie, meadows, and North Coast coniferous forest	Extant in Mendocino, Marin, and Sonoma counties; extirpated in Santa Cruz County	June-October Potentially suitable habitat present
California sedge <i>Carex californica</i>	--	--	2	Bogs and fens, moist areas in closed-cone coniferous forest, coastal prairie, meadows, margins of marshes and swamps	Mendocino and Sonoma counties, Idaho, Oregon, Washington, and other states	May-August Historically documented from Bodega Head
Bristly sedge <i>Carex comosa</i>	--	--	2	Coastal prairie, marshes and swamps, valley and foothill grassland, lake margins	Extant in Contra Costa, Lake, Mendocino, Shasta, San Joaquin, and Sonoma counties, Idaho, and Washington; widespread outside of California; extirpated in San Bernardino, Santa Cruz, San Francisco counties, and Oregon	May-September Potentially suitable habitat present
Deceiving sedge <i>Carex saliniformis</i>	--	--	1B	Mesic sites in coastal prairie, coastal scrub, meadows, coastal salt marshes, and swamps	Extant in Humboldt, Mendocino, and Sonoma counties; extirpated in Santa Cruz County	June Present near Russian Gulch and Meyers Grade, between SR 1 and the ocean

Table 2-5

Special-status Plant and Lichen Species known from or with Potential to Occur at Sonoma Coast State Park

Species	Listing Status			Habitat	Distribution	Flowering Period	Potential for Occurrence in Study Area
	Fed.	State	CNPS				
San Francisco bay spineflower <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	--	--	1B	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub; sandy soils	Extant in Marin, Santa Clara, San Francisco, San Mateo, Sonoma counties; extirpated in Alameda County	April–August	Potentially suitable habitat present
Woolly-headed spineflower <i>Chorizanthe cuspidata</i> var. <i>villosa</i>	--	--	1B	Coastal dunes, coastal prairie, coastal scrub; sandy soils	Marin and Sonoma Counties	May–August	Potentially suitable habitat present
Sonoma spineflower <i>Chorizanthe valida</i>	FE	CE	1B	Coastal prairie; sandy soils	Extant in Marin County, extirpated in Sonoma County	June–August	Potentially suitable habitat present; last recorded from Fort Ross area; may be extinct in Sonoma County
Franciscan thistle <i>Cirsium andrewsii</i>	--	--	1B	Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub; mesic sites, sometimes serpentine substrate	Extant in Contra Costa, Marin, San Francisco, and Sonoma counties; extirpated in San Mateo County	March–July	Potentially suitable habitat present
Round-headed chinese houses <i>Collinsia corymbosa</i>	--	--	1B	Coastal dunes, coastal strand	Extant in Humboldt, Mendocino, Marin and Sonoma counties; extirpated in San Francisco County	April–June	Potentially suitable habitat present
Point Reyes bird's-beak <i>Corydanthus maritimus</i> ssp. <i>palustris</i>	--	--	1B	Coastal salt marshes and swamps	Extant in Humboldt, Marin, and Sonoma counties, and Oregon; extirpated in Alameda, Santa Clara, and San Mateo counties	June–October	Potentially suitable habitat present
Baker's larkspur <i>Delphinium bakeri</i>	FE	CR	1B	Coastal scrub, valley and foothill grassland	Extant in Marin County; extirpated in Sonoma County	March–May	Suitable habitat may be present
Yellow larkspur <i>Delphinium luteum</i>	FE	CR	1B	Chaparral, coastal prairie, coastal scrub; rocky sites	Marin and Sonoma counties	March–May	Suitable habitat may be present

Table 2-5

Special-status Plant and Lichen Species known from or with Potential to Occur at Sonoma Coast State Park

Species	Listing Status		Habitat	Distribution	Flowering Period	Potential for Occurrence in Study Area
	Fed.	State				
Western leatherwood <i>Dirca occidentalis</i>	--	--	1B	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest and woodland; mesic slopes of rocky hills	Sonoma County	January–April Potentially suitable habitat present
Streamside daisy <i>Erigeron biolettii</i>	--	--	3	Broadleafed upland forest, cismontane woodland, North Coast coniferous forest; rocky, mesic sites	Humboldt, Mendocino, Marin, Napa, Solano, and Sonoma counties	June–September Potentially suitable habitat present
Supple daisy <i>Erigeron supplex</i>	--	--	1B	Coastal bluff scrub and coastal prairie	Extant in Mendocino and Sonoma counties; extirpated in Humboldt and Marin counties	May–July Potentially suitable habitat present
San Francisco wallflower <i>Erysimum franciscanum</i>	--	--	4	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland; often serpentine or granitic substrates	Marin, Santa Clara, Santa Cruz, San Francisco, San Mateo, and Sonoma counties	March–June Present in coastal dunes behind north Goat Rock restroom
Coast fawn lily <i>Erythronium revolutum</i>	--	--	2	Bogs and fens, broadleafed upland forest, North Coast coniferous forest; mesic sites, streambanks	Del Norte, Humboldt, Mendocino, Siskiyou, and Sonoma counties; Oregon, Washington, and other states	March–June Potentially suitable habitat present
Dune gilia <i>Gilia capitata</i> ssp. <i>chamissonis</i>	--	--	1B	Coastal dunes, coastal scrub	Marin, San Francisco, Sonoma counties	April–July Present in coastal dunes at Goat Rock
Woolly-headed gilia <i>Gilia capitata</i> ssp. <i>tomentosa</i>	--	--	1B	Coastal bluff scrub; rocky outcrops	Marin and Sonoma counties	May–July Potentially suitable habitat present
Dark-eyed gilia <i>Gilia millefoliata</i>	--	--	1B	Coastal dunes, coastal strand	Extant in Del Norte, Humboldt, Mendocino, Marin, and Sonoma counties and Oregon; extirpated in San Francisco County	April–July Potentially suitable habitat present

**Table 2-5
Special-status Plant and Lichen Species known from or with Potential to Occur at Sonoma Coast State Park**

Species	Listing Status		Habitat	Distribution	Flowering Period	Potential for Occurrence in Study Area
	Fed.	State				
Hayfield tarplant <i>Hemizonia congesta</i> ssp. <i>leucocephala</i>	--	--	3	Coastal scrub, valley and foothill grassland	Mendocino, Marin, and Sonoma counties	April–October Potentially suitable habitat present
Short-leaved evax <i>Hesperivax sparsiflora</i> var. <i>brevifolia</i>	--	--	2	Sandy sites in coastal scrub, coastal dunes	Extant in Humboldt, Mendocino, Marin, Santa Cruz, and Sonoma counties, and Oregon; extirpated in San Francisco County	March–June Present in multiple locations
Point Reyes horkelia <i>Horkelia marinensis</i>	--	--	1B	Coastal dunes, coastal prairie, coastal scrub; sandy substrates	Mendocino, Marin, Santa Cruz, and San Mateo counties	May–September Potentially suitable habitat present
Baker’s goldfields <i>Lasthenia macrantha</i> ssp. <i>bakeri</i>	--	--	1B	Openings in closed-cone coniferous forest, coastal scrub	Extant in Mendocino and Marin counties; extirpated in Sonoma County	April–October Possibly present in multiple locations, needs further analysis because of possible hybridization
Perennial goldfields <i>Lasthenia macrantha</i> ssp. <i>macrantha</i>	--	--	1B	Coastal bluff scrub, coastal dunes, coastal scrub	Mendocino, Marin, San Luis Obispo, San Mateo, and Sonoma counties	January–November Present in multiple locations
Woolly-headed lessingia <i>Lessingia hololeuca</i>	--	--	3	Broadleaved upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; clay, serpentinite substrates	Alameda, Monterey, Marin, Napa, Santa Clara, San Mateo, Solano, Sonoma, and Yolo counties	June–October Potentially suitable habitat present
Coast lily <i>Lilium maritimum</i>	--	--	1B	Broadleaved upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, freshwater marshes and swamps, North Coast coniferous forest	Extant in Mendocino, Marin, San Francisco, and Sonoma counties; extirpated in San Mateo County	May–July Potentially suitable habitat present

Table 2-5

Special-status Plant and Lichen Species known from or with Potential to Occur at Sonoma Coast State Park

Species	Listing Status		Habitat	Distribution	Flowering Period	Potential for Occurrence in Study Area
	Fed.	State				
San Mateo tree lupine <i>Lupinus eximius</i> (syn. <i>L. arboreus</i> var. <i>eximius</i>)	--	--	3	Chaparral, coastal scrub	San Mateo and Sonoma counties	April–July Potentially suitable habitat present
Tidestrom’s lupine <i>Lupinus fidestromii</i>	FE	CE	1B	Coastal dunes	Monterey, Marin, and Sonoma counties	April–July Present in coastal strand behind north restroom at Goat Rock Beach
Curly-leaved monardella <i>Monardella undulata</i>	--	--	4	Closed-cone coniferous forest, chaparral, coastal dunes, coastal prairie, coastal scrub, Ponderosa pine sandhills; sandy soils	Monterey, Marin, Santa Barbara, Santa Cruz, San Francisco, San Luis Obispo, San Mateo, and Sonoma counties	May–September Potentially suitable habitat present
Robust monardella <i>Monardella villosa</i> ssp. <i>globosa</i>	--	--	1B	Coastal scrub, cismontane woodland, openings in chaparral	Alameda, Contra Costa, Humboldt, Lake, Mendocino, Napa, San Mateo, and Sonoma counties	June–July Potentially suitable habitat present
Marin knotweed <i>Polygonum marinense</i>	--	--	3	Coastal salt or brackish marshes and swamps	Marin, Napa, Solano, and Sonoma counties	April–October Present north of Bodega Head
Point Reyes checkerbloom <i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	--	--	1B	Coastal freshwater marshes and swamps	Mendocino, Marin, and Sonoma counties	April–September Potentially suitable habitat present
Marin checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>viridilis</i>	--	--	1B	Chaparral; serpentine substrate	Marin, Napa, San Mateo, and Sonoma counties	May–June Present at Russian Gulch
Purple-stemmed checkerbloom <i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	--	--	1B	Broadleaved upland forest, coastal prairie	Mendocino, Marin, San Mateo, and Sonoma counties	May Present in multiple locations
Beach starwort <i>Stellaria littoralis</i>	--	--	4	Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps, coastal prairie; mesic sites	Extant in Humboldt, Marin, San Francisco, Sonoma counties; extirpated in Mendocino County	March–July Potentially suitable habitat present

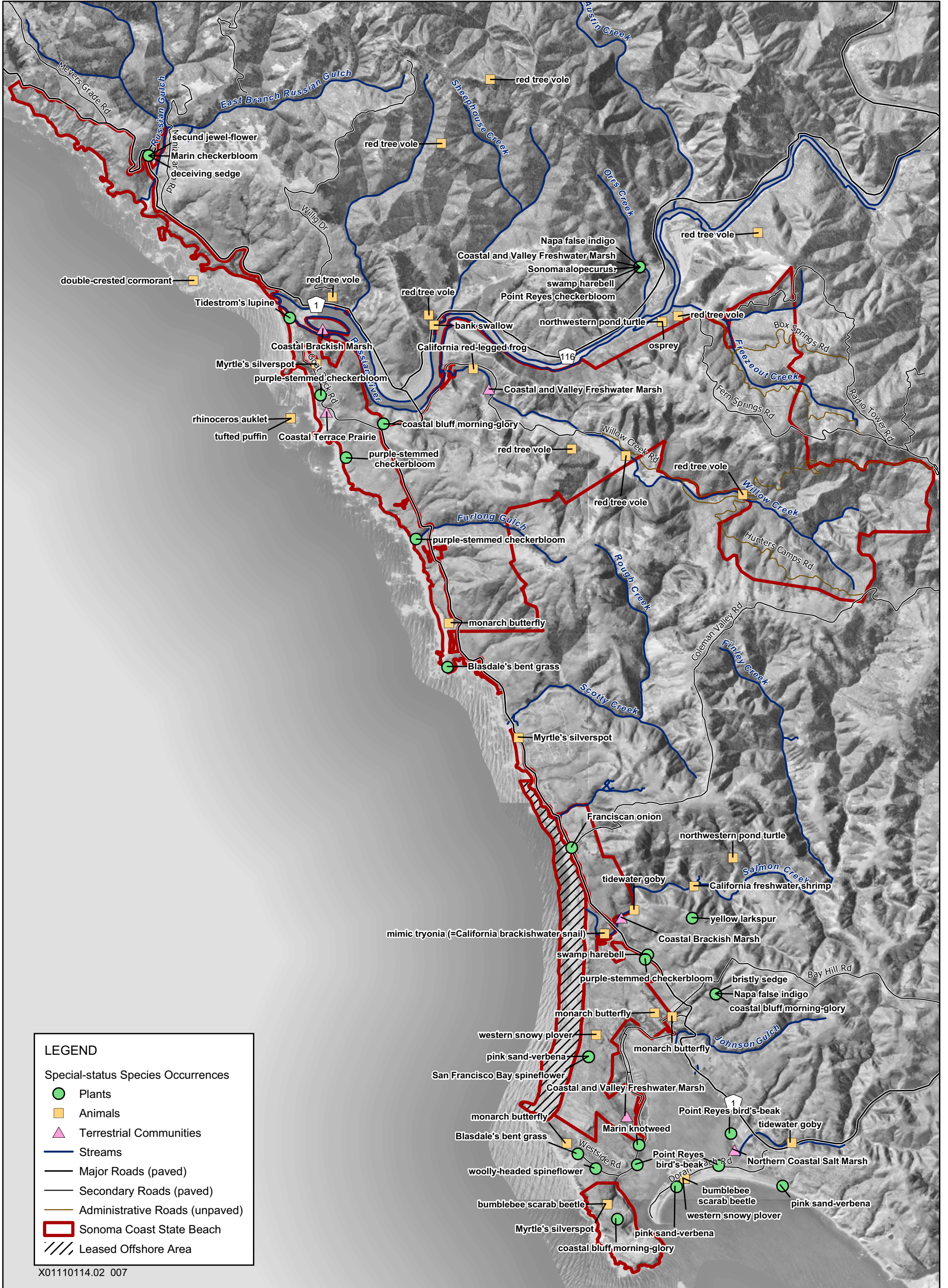
Table 2-5 Special-status Plant and Lichen Species known from or with Potential to Occur at Sonoma Coast State Park						
Species	Listing Status		Habitat	Distribution	Flowering Period	Potential for Occurrence in Study Area
	Fed.	State				
Secund jewel-flower <i>Streptanthus glandulosus</i> var. <i>hoffmanii</i>	--	--	1B	Chaparral, cismontane woodland, valley and foothill grassland; rocky sites, often serpentinite substrate	Sonoma County	March–July Present on steep rocky slopes above Russian Gulch
Showy Indian clover <i>Trifolium amoenum</i>	FE	--	1B	Coastal bluff scrub, valley and foothill grassland; sometimes serpentinite substrate	Extant in Marin and Sonoma counties; extirpated in Alameda, Napa, Santa Clara, and Solano counties	Potentially suitable habitat present
Long-beard lichen <i>Usnea longissima</i>	--	SP	*	Coastal montane coniferous forest; mesic sites	Northern California (Del Norte, Humboldt, and Sonoma counties) to Alaska, Scandinavia, and Eastern Europe	Potentially suitable habitat present

Notes/acronyms:
 U.S. Fish and Wildlife Service (USFWS) Federal Listing Categories:
 FC = Federal Candidate
 FE = Federal Endangered

California Department of Fish and Game (DFG) State Listing Categories:
 CE = California Endangered
 CT = California Threatened
 CR = California Rare
 SP = Included on Special Plants List but no official listing status (DFG 2002)

California Native Plant Society (CNPS) Listing Categories:
 1B = Plants rare, threatened, or endangered in California and elsewhere
 2 = Plants rare, threatened, or endangered in California but more common elsewhere
 3 = Plants about which we need more information—a review list
 4 = Plants of limited distribution—a watch list
 * = Included on California Lichen Society's Red List; California Lichen Society recommends a CNPS listing of 1B.

Source: NDDB 2002, CNPS 2002, Potential for Occurrence is based on information contained in the Sonoma Coast State Beach IS/MND (DPR 2001)



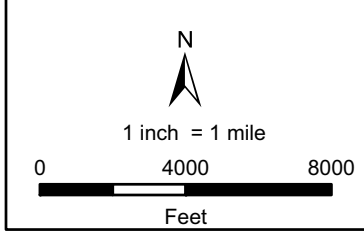
LEGEND

Special-status Species Occurrences

- Plants
- Animals
- ▲ Terrestrial Communities
- Streams
- Major Roads (paved)
- Secondary Roads (paved)
- Administrative Roads (unpaved)
- Sonoma Coast State Beach
- Leased Offshore Area

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Source: CNDDDB 2003



May 30, 2007

Sonoma Coast State Park

Exhibit 2-7 Special-status Species Occurrences (CNDDDB)

elsewhere). This perennial herbaceous member of the four o'clock family (Nyctaginaceae) produces attractive pink flowers in round inflorescences. This plant blooms from June to October but is easily identified in vegetative condition by its oblong leaves, as opposed to the common yellow sand-verbena (*Abronia latifolia*), which has thicker, round leaves (Golec and Matthews 1997). Suitable habitat consists of coastal dunes, particularly on fine, silty soils near the mouths of rivers and drainages. This species is known to occur in sand-verbena–bursage series vegetation in the South Salmon Creek Beach area (CNDDDB 2002).

Blasdale's Bent Grass

Blasdale's bent grass (*Agrostis blasdalei*) is a federal Species of Concern and CNPS List 1B species. It is a rhizomatous herbaceous member of the grass family (Poaceae). It produces small flowers in slender, compact inflorescences from May to July. Suitable habitat consists of coastal bluff scrub, coastal dunes, and coastal prairie. This species often grows in nutrient-poor gravelly or sandy soil close to rocks in areas with sparse vegetation. Blasdale's bent grass has been reported from multiple locations at Sonoma Coast SP growing on sandy slopes above bluffs (CNDDDB 2002, DPR 2001).

Franciscan Onion

Franciscan onion (*Allium peninsulare* var. *franciscanum*) is a CNPS 1B species in the lily family (Liliaceae). This species produces showy burgundy-colored flowers in umbels from May to July. Franciscan onion is a bulb-producing herb that typically grows in cismontane woodland as well as valley and foothill grassland. It is often associated with clay or serpentinite substrate. This species has been reported at Sonoma Coast SP approximately 3 miles north of Bodega Bay, growing on dry, roadside ocean cliffs (CNDDDB 2002).

Sonoma Alopecurus

Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) is federally listed as Endangered and is a CNPS List 1B species. This species is a perennial herbaceous grass that produces small flowers in stout, compact inflorescences. Its blooming period is from May to July, and suitable habitat consists of freshwater marshes and swamps and riparian scrub. Sonoma alopecurus is known from fewer than 10 occurrences statewide, and although suitable habitat is present, it has not yet been reported at Sonoma Coast SP (CNDDDB 2002).

Baker's Manzanita

Baker's manzanita (*Arctostaphylos bakeri* ssp. *bakeri*) is a federal Species of Concern, and is State-listed as Rare and a CNPS List 1B species. It is an evergreen shrub in the blueberry family (Ericaceae) that produces small, urn-shaped, white flowers and dark green, shiny leaves. The blooming period is from February to April, and suitable habitat consists of broadleafed upland forest and chaparral. Baker's manzanita often grows on serpentinite substrate. This species is not known to occur at the State Park.

California Sedge

California sedge (*Carex californica*) is a CNPS List 2 species (plants rare, threatened, or endangered in California but more common elsewhere). This rhizomatous herb is a member of the sedge family (Cyperaceae) that blooms from May to August. Like other sedges, it produces compact, brownish inflorescences with small, inconspicuous flowers and has triangular stems. Suitable habitat consists of bogs and fens, moist areas in closed-cone coniferous forest, coastal prairie, meadows, and margins of marshes and swamps. California sedge has been historically documented from Bodega Head (DPR 2001).

Deceiving Sedge

Deceiving sedge (*Carex saliniformis*) is a CNPS List 1B species that grows in mesic sites in coastal prairie, coastal scrub, meadows, coastal salt marshes, and swamps. This rhizomatous sedge blooms in June, producing small, inconspicuous flowers. Deceiving sedge has been reported near Russian Gulch, near the south end of Meyers Grade, between SR 1 and the ocean (CNDDDB 2002).

Sonoma Spineflower

Sonoma spineflower (*Chorizanthe valida*) is federally and State-listed as Endangered and is listed on CNPS List 1B. This annual herb belongs to the buckwheat family (Polygonaceae) and blooms from June to August. As its common name suggests, this plant produces spiny flowers in round clusters. The flowers are typically white to pink and small. Suitable habitat for Sonoma spineflower consists of coastal prairie with sandy soils. Although potentially suitable habitat is present at Sonoma Coast SP, this species is presumed extirpated in Sonoma County (CNPS 2002).

Baker's Larkspur

Baker's larkspur (*Delphinium bakeri*) is federally listed as Endangered, State-listed as Rare, and listed on CNPS List 1B. It is a perennial herb in the buttercup family (Ranunculaceae) with dark blue to purple flowers. The blooming period is from March to May, and suitable habitat consists of coastal scrub as well as valley and foothill grassland. At Sonoma Coast SP, potentially suitable habitat for Baker's larkspur consists of coyote brush series, coastal prairie, and California annual grassland series. This species has historically been found in only three locations: in Coleman Valley, Sonoma County; near the town of Tomales, Marin County; and approximately 6 miles east of Tomales Bay (USFWS 2003). Botanists believe that the Sonoma County and town of Tomales occurrences have been extirpated. Because of the highly imperiled status of Baker's larkspur, the U.S. Fish and Wildlife Service (USFWS) has recently designated 1,828 acres of critical habitat on two privately owned properties in Marin and Sonoma counties (USFWS 2003). Critical habitat is defined by the Endangered Species Act as an area or areas with physical or biological features that are essential to the conservation of a species and may need special management or protection.

Yellow Larkspur

Yellow larkspur (*Delphinium luteum*) has the same listing status as Baker's larkspur. As its common name implies, this species is distinguished by its bright yellow flowers. Identification may be complicated by hybridization with *D. nudicaule* (CNPS 2002). The blooming period is also March through May. In addition to coastal scrub, suitable habitat for yellow larkspur includes chaparral and coastal prairie. These plants typically grow on rocky sites and are known from only seven sites to date (CNPS 2002, USFWS 2003). USFWS has also designated 2,525 acres of critical habitat for yellow larkspur. The critical habitat is privately owned and located on four properties in Marin and Sonoma Counties. Potentially suitable habitat for yellow larkspur at Sonoma Coast SP consists of coastal scrub and coastal prairie.

San Francisco Wallflower

San Francisco wallflower (*Erysimum franciscanum*) is a CNPS List 4 species (plants of limited distribution; a watch list). This perennial herb is a member of the mustard family (Brassicaceae) that has white to yellow flowers. It blooms from March to June and grows in chaparral, coastal dunes, coastal scrub, and valley and foothill grassland, often on serpentinite or granitic substrates. San Francisco wallflower is present in the Goat Rock area (DPR 2001).

Short-leaved Evax

Short-leaved evax (*Hesper-evax sparsiflora* var. *brevifolia*) is a CNPS List 2 species in the sunflower family (Asteraceae). This annual herb produces small white flowers from March to June. Short-leaved evax grows in sandy sites in coastal scrub and coastal dunes. This species has been reported from several locations at Sonoma Coast SP (DPR 2001).

Perennial Goldfields

Perennial goldfields (*Lasthenia macrantha* ssp. *macrantha*) is a federal Species of Local Concern and CNPS 1B species. As its common name suggests, it is a perennial herb that produces gold daisy-like inflorescences. Perennial goldfields belongs to the sunflower family and blooms from January to November. Suitable habitat consists of coastal bluff scrub, coastal dunes, and coastal scrub. Perennial goldfields occurrences have been reported from multiple locations at Sonoma Coast SP (DPR 2001).

Tidestrom's Lupine

Tidestrom's lupine (*Lupinus tidestromii*) is federally and State-listed as Endangered and is listed on CNPS List 1B. It is a small rhizomatous herb in the bean family (Fabaceae) that has attractive purple flowers and silvery palmately compound leaves. This species blooms from April to July and grows in coastal dunes. Tidestrom's lupine has been included in a Recovery Plan prepared by USFWS (1998). It is presently growing in sand verbena-beach bursage series vegetation behind the north restroom at Goat Rock Beach (CNDDDB 2002, DPR 2001). In fact, the Department recently conducted a Goat Rock Dunes Tidestrom's Lupine and

Coastal Dune Enhancement Project (DPR 2002). Restoration activities were initiated to enhance approximately 4 acres of sensitive coastal dune habitat for the protection of this endangered plant species.

Marin Knotweed

Marin knotweed (*Polygonum marinense*) is an annual herb in the buckwheat family. It produces small, white to pink flowers in the axils of its leaves. The blooming period is April to October. Marin knotweed is a federal species of Local Concern and a CNPS List 3 species (plants for which more information is needed; a review list). This species is known from fewer than 20 occurrences, but its taxonomic status is uncertain (CNPS 2002). Suitable habitat consists of coastal salt or brackish marshes and swamps. One occurrence of Marin knotweed has been reported just north of Bodega Head (CNDDDB 2002).

Marin Checkerbloom

Marin checkerbloom (*Sidalcea hickmannii* ssp. *viridis*) is a federal Species of Local Concern and a CNPS List 1B species. It is a perennial herb in the mallow family (Malvaceae) that produces pale pink to pink-lavender flowers from May to June. Suitable habitat consists of serpentinite substrate in chaparral vegetation. Marin checkerbloom has been reported to occur at Russian Gulch and likely occurs within the State Park boundaries (CNDDDB 2002, DPR 2001).

Purple-stemmed Checkerbloom

Purple-stemmed checkerbloom (*Sidalcea malviflora* ssp. *purpurea*) is a rhizomatous herb that also belongs to the mallow family. It produces small, hibiscus-like flowers with purple sepals in May. Suitable habitat consists of broadleaved upland forest and coastal prairies. Purple-stemmed checkerbloom has been reported to occur in multiple locations at Sonoma Coast SP (DPR 2001). However, there is considerable confusion as these occurrences have not been confirmed and the taxonomy of this species and its' many subspecies is undetermined. The Jepson Manual (Hickman 1993) states that *S. malviflora* is a highly variable species consisting of many local variants. As such the occurrences at Sonoma Coast SP may have been misidentified (O'Neil 2003).

Secund Jewel-flower

Secund jewel-flower (*Streptanthus glandulosus* var. *hoffmannii*) is a CNPS List 1B species in the mustard family. This annual herb produces white to purple flowers from March to July. It is listed as *S. glandulosus* ssp. *secundus* in the Jepson Manual (Hickman et al. 1993). Suitable habitat for secund jewel-flower consists of chaparral, cismontane woodland, and valley and foothill grassland. This species typically grows on rocky sites and often serpentinite substrate. It has been reported from the steep rocky slopes above Russian Gulch (CNDDDB 2002).

Showy Indian Clover

Showy Indian clover (*Trifolium amoenum*) is a federally listed as Endangered and is a CNPS List 1B species. This species grows in coastal bluff scrub, and valley and foothill grassland. It has sometimes been found on serpentinite substrate. Showy Indian clover is an annual herb in the bean family that produces pink to purple flowers in rounded clusters. Its blooming period is from April to June. Suitable habitat may be present at Sonoma Coast SP but occurrence is unlikely because of its rarity (DPR 2001). This species was presumed extinct until rediscovered in 1993 and 1996 (CNPS 2002).

Sensitive Plant Communities/Habitats

Sensitive plant communities are natural communities that have been afforded special recognition and protection under local, state, and federal regulations. Many of these plant communities are documented in DFG's CNDDDB. A search of the CNDDDB (2002) identified four sensitive plant communities occurring at Sonoma Coast SP and/or surrounding areas: coastal and valley freshwater marsh, coastal brackish marsh, coastal terrace prairie, and northern coastal salt marsh. All of these sensitive plant communities except northern coastal salt marsh occur within Sonoma Coast SP. Coastal terrace prairie is located along much of the coast. Coastal brackish marsh has been documented on Penny Island and at the mouth of Salmon Creek. In addition, coastal and valley freshwater marsh has been documented at the mouth of Willow Creek.

Invasive Non-Native Plants

Non-native (exotic, alien, non-indigenous) species are those that have not evolved in a particular area, and have been introduced through human activities, either incidentally or deliberately. Many non-native plant species are not invasive and do not have adverse effects on natural plant and animal communities. Nevertheless, some non-native species have resulted in the conversion of native habitats to a non-native plant community with resultant reduction of native plants and degradation of wildlife habitat. Non-native plants that are known to be invasive or have potential to become invasive at Sonoma Coast SP are listed in Table 2-6.

Table 2-6 Weeds Known to be Invasive or with Potential to Become Invasive at Sonoma Coast State Park		
Scientific Name	Common Name	CalIPC/State Status ¹
<i>Ammophila arenaria</i>	European beachgrass	A-1/--
<i>Bellardia trixago</i>	Bellardia	B/--
<i>Brassica nigra</i>	Black mustard	B/--
<i>Carduus pycnocephalus</i>	Italian thistle	B/C
<i>Carduus tenuiflorus</i>	Slenderflowered thistle	--/C
<i>Carpobrotus chilensis</i>	Iceplant, sea fig	--/--
<i>Carpobrotus edulis</i>	Iceplant	A-1/--

**Table 2-6
Weeds Known to be Invasive or with Potential to Become Invasive
at Sonoma Coast State Park**

Scientific Name	Common Name	CallIPC/State Status ¹
<i>Cirsium arvense</i>	Canada thistle	B/B
<i>Cirsium vulgare</i>	Bull thistle	B/P
<i>Conium maculatum</i>	Poison hemlock	B/--
<i>Cortaderia</i> spp. (<i>C. jubata</i> , <i>C. selloana</i>)	Pampas grass	A-1/--
<i>Cupressus macrocarpa</i>	Monterey cypress	NMI/--
<i>Cynara cardunculus</i>	Artichoke thistle	A-1/B
<i>Echium candicans</i> , <i>E. pininana</i>	Pride of Madeira, Pride of Tenerife	NMI/--
<i>Erechtites glomerata</i>	Australian fireweed	B/--
<i>Ehrharta calycina</i>	Veldt grass	A-2/--
<i>Ehrharta erecta</i>	Upright veldt grass	B/--
<i>Eucalyptus globulus</i>	Blue gum	A-1/--
<i>Euphorbia lathyris</i>	Caper spurge	NMI/--
<i>Festuca arundinacea</i>	Tall fescue	B/--
<i>Foeniculum vulgare</i>	Fennel	A-1/--
<i>Genista monspessulana</i>	French broom	A-1/C
<i>Holcus lanatus</i>	Velvet grass	B/--
<i>Lupinus arboreus</i>	Yellow bush lupine	A-2/--
<i>Mentha pulegium</i>	Pennyroyal	A-2/--
<i>Myoporum laetum</i>	Myoporum	A-2/--
<i>Oxalis pes-caprae</i>	Bermuda buttercup	NMI/--
<i>Phalaris aquatica</i>	Harding grass	B/--
<i>Pinus radiata</i>	Monterey pine	NMI/--
<i>Potamogeton crispus</i>	Curlyleaf pondweed	B/--
<i>Rubus discolor</i>	Himalayan blackberry	A-1/--
<i>Senecio mikanioides</i>	Cape ivy	A-1/P
<i>Silybum marianum</i>	Milk thistle	NL/--
<i>Ulex europaeus</i>	Gorse	A-1/B
<i>Vinca major</i>	Periwinkle	B/--

Notes/acronyms:

¹ CallIPC Status:

A-1 = The most invasive wildland pest plants, widespread.

A-2 = The most invasive wildland pest plants, regional.

B = Wildland pest plants of lesser invasiveness.

NL = Considered but not listed.

NMI = Need more information.

State (CDFA) Status:

B = Eradication, containment, control, or other holding action at the discretion of the commissioner.

C = State endorsed holding action and eradication only when found in a nursery, action to retard spread outside of nurseries at the discretion of the commissioner, reject only when found in a cropseed for planting or at the discretion of the commissioner.

P = Proposed additions to the CDFA Noxious Weed List in the California Code of Regulations.

Source: CallIPC 1999; O'Neil, pers. comm., 2003b; DPR 2001d

The State and federal governments both have laws and regulations protecting commerce and natural lands from damages caused by invasive weeds. The State and federal government each maintain lists of noxious weeds for the purpose of eradication or control. A districtwide invasive species management plan has been prepared (O'Neil, pers. comm. 2003).

The California Invasive Plant Council (CalIPC) has developed a list of non-native plants that pose serious problems in native ecosystems and rangelands (CalIPC 1999). These species are classified into different list categories based on the level of threat and invasiveness. List A includes the most invasive wildland pest plants, which have been documented as aggressive invaders, displace natives, and disrupt natural habitat. It includes two sublists: List A-1 (widespread pests that are invasive in more than three Jepson geographic regions) and List A-2 (regional pests that are invasive in three or fewer Jepson geographic regions).

List B includes wildland pest plants of lesser invasiveness than those on the previous lists. Invasive pest plants on this list spread less rapidly and cause a lesser degree of habitat disruption and may be widespread or regional in distribution. The Red Alert List includes pest plants with potential to spread explosively; infestations are small or localized. The Need More Information List includes plants for which current information does not adequately describe nature of threat to wildlands, distribution, or invasiveness. The following two lists were not used in this discussion of invasive weeds at Sonoma Coast SP:

- ▶ Annual Grasses (not included because this is a preliminary list of annual grasses, abundant and widespread in California that pose significant threats to wildlands. Information is requested to support further definition of this category in the next list edition).
- ▶ Considered But Not Listed (not included because after a review of their status, these plants do not appear to pose a significant threat to wildlands).

Nine non-native plant species on CalIPC List A-1 (the most invasive wildland pest plants; widespread) are known to be invasive or likely to become invasive at Sonoma Coast SP: European beachgrass, iceplant, pampas grass (*Cortaderia* spp.), blue gum, fennel (*Foeniculum vulgare*), French broom (*Genista monspessulana*), Himalayan blackberry (*Rubus discolor*), cape ivy (*Delaria odorata*), and gorse (*Ulex europaeus*). These species have been documented as aggressive invaders that displace natives and disrupt natural habitats.

Plants on List A-2 (at most invasive wildland pest plants; regional) found in the study area include veldt grass (*Ehrharta calycina*), yellow bush lupine, pennyroyal (*Mentha pulegium*) and myoporum. Yellow Bush Lupine is a problem in native dune communities and at Goat Rock. Pennyroyal and myoporum are problematic in general at Sonoma Coast SP. Veldt grass is known to be problematic on the central coast, and yellow bush lupine is only known to be invasive on the north coast. Plants in the study area that are on List B (wildland pest plants of lesser invasiveness) include bellardia (*Bellardia trixago*), black mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), Canada thistle (*C. arvense*), poison hemlock (*Conium maculatum*), upright veldt grass (*Ehrharta erecta*), Australian

fireweed (*Erechtites glomerata*), tall fescue (*Festuca arundinacea*), velvet grass (*Holcus lanatus*), Harding grass (*Phalaris aquatica*), curlyleaf pondweed (*Potamogeton crispus*), and periwinkle (*Vinca major*). Species at Sonoma Coast SP on the Need More Information List include Monterey cypress, Pride of Madeira (*Echium* spp.), caper spurge (*Euphorbia lathyris*), Bermuda buttercup (*Oxalis pes-caprae*), and Monterey pine.

Other weed species without an official CallPC status that may nonetheless pose a threat to native habitats at Sonoma Coast SP are listed in Table 2-6. Several of these additional species appear on lists developed by the California Department of Food and Agriculture (CDFA) or were identified as weeds of concern by DPR resource ecologists (O'Neil, pers. comm. 2003b).

Management of European beachgrass, iceplant (including *Carpobrotus chilensis* and *C. edulis*), Yellow Bush Lupine, Monterey cypress, and myoperum is under way as part of the Department's Tidestrom's Lupine and Coastal Dunes Enhancement Project (DPR 2002). Mechanical and chemical abatement methods have been recommended for these weeds. The Department has reported that mechanical removal of iceplant has been successful in reducing infestations (Pesquanelli, pers. comm., 2001). In addition, caper spurge has been recently discovered in habitats at Sonoma Coast SP and a program of on-going control efforts has been initiated (O'Neil, pers. comm., 2003b).

Animals

Sonoma Coast SP encompasses a rugged and varied segment of dramatic California coast line. Sonoma Coast SP includes marine terraces and offshore rocks, intertidal zones, sand dunes, coastal bluffs, marshes and riparian areas, and forested canyons and ridges. The variety of terrain, aquatic ecosystems, and plant communities provides a tremendous diversity of wildlife habitats. Sonoma Coast SP supports abundant and diverse wildlife. Many of the wildlife species found at Sonoma Coast SP are common, but some of the species are considered to have significant resource value.

Special-status animals addressed in this document include those that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. These include species that are state and/or federally listed as Rare, Threatened, or Endangered; those considered as candidates or proposed for listing; and species identified by DFG and/or USFWS as species of concern.

Significant animal resources were determined through a review of existing documentation and consultation with biologists familiar with the local biological resources. Sources of information also included the CNDDDB (DFG 2003) and the Initial Study/Mitigated Negative Declaration for the Proposed Sonoma Coast Beach Trail (DPR 2001).

A list of special-status species known to occur, or that could occur, at Sonoma Coast SP is included in Table 2-7. The locations of previously documented occurrences of these species are shown in Exhibit 2-7. A site specific biological inventory has not yet been completed for

Sonoma Coast SP; such surveys are performed at the time a project is proposed. However, based on the result of a field reconnaissance and other biological studies, it has been determined that Sonoma Coast SP may provide important habitat for the following special-status animal species and that these species should be considered significant resources: (1) marine resources including nesting colonies of rhinoceros auklet (*Cerorhinca monocerata*), tufted puffin (*Fratercula cirrhata*), and double-crested cormorant (*Phalacrocorax auritus*); (2) freshwater aquatic resources including California freshwater shrimp (*Syncaris pacifica*), western pond turtle (*Clemmys marmorata*), red-legged frog (*Rana aurora*), foothill yellow-legged frog (*R. boylei*), tidewater goby (*Eucyclogobius newberryi*), coho salmon (*Oncorhynchus kisutch*), steelhead (*O. mykiss*), and chinook salmon (*O. tshawytscha*); and (3) terrestrial resources including marbled murrelet (*Brachyramphus marmoratus*), western snowy plover (*Charadrius alexandrinus nivosus*), yellow warbler (*Dendroica petechia*), purple martin (*Progne subis*), northern harrier (*Circus cyaneus*), American peregrine falcon (*Falco peregrinus anatum*), osprey (*Pandion haliaetus*), northern spotted owl (*Strix occidentalis caurina*), and red tree vole (*Arborimus pomo*).

Species	Listing Status		Habitat	Potential for Occurrence in Study Area
	Fed.	State		
INVERTEBRATES				
Myrtles silverspot <i>Speyeria zerene myrtleae</i>	FE	--	Coastal dunes, coastal prairie, and coastal scrub with presence of larval host plant (<i>Viola adunca</i>) and nectar sources for adults.	Unknown. Although several records for Sonoma Coast SP were reported in the 1960s and 1970s, northern extent of distribution is given as Marin County.
California freshwater shrimp <i>Syncaris pacifica</i>	FE	CE	Endemic to Marin, Sonoma, and Napa counties in lowland streams and pools with undercut banks, exposed tree roots, and overhanging woody debris or vegetation.	Known from Salmon Creek and tributaries to Willow Creek.
REPTILES AND AMPHIBIANS				
Northwestern pond turtle <i>Clemmys marmorata marmorata</i>	--	CSC	Ponds, marshes, streams, and irrigation ditches.	Likely to occur at Sonoma Coast SP. Known to occur in Salmon Creek and Willow Creek watersheds.
Northern red-legged frog <i>Rana aurora aurora</i>	--	CSC	Permanent or temporary water bordered by dense grassy or shrubby vegetation.	May occur in limited suitable habitat at Sonoma Coast SP. Distribution and taxonomy is unclear for subspecies of red-legged frogs.

**Table 2-7
Special-status Wildlife Species with Potential to Occur at Sonoma Coast State Park**

Species	Listing Status		Habitat	Potential for Occurrence in Study Area
	Fed.	State		
California red-legged frog <i>Rana aurora draytonii</i>	FT	CSC	Freshwater habitats including pools and backwaters within streams and creeks, ponds, marshes, springs, lagoons and stock ponds.	May occur in limited suitable habitat at Sonoma Coast SP. Distribution and taxonomy is unclear for subspecies of red-legged frogs.
Foothill yellow-legged frog <i>Rana boylei</i>	--	CSC	Generally restricted to shallow, flowing streams with some cobble-sized substrate.	May occur because suitable habitat is present at Sonoma Coast SP. No documented records.
FISH				
Tidewater goby <i>Eucyclogobius newberryi</i>	FE	CSC	Endemic to California coastline in lagoons and the lower reaches of coastal streams in brackish areas.	Known to occur in Salmon Creek.
Coho salmon (Central California Coast Evolutionary Significant Unit [ESU]) <i>Oncorhynchus kisutch</i>	FT	--	Naturally spawning populations in streams between Punta Gorda, Humboldt County and San Lorenzo River, Santa Cruz County.	Known to occur in Russian River, Willow Creek, and potentially other coastal streams.
Steelhead (Central California Coast ESU) <i>Oncorhynchus mykiss</i>	FT	--	Central coastal basins from the Russian River, south to Soquel Creek, including San Francisco and San Pablo Bay basins, but excluding the Sacramento-San Joaquin River basins.	Known to occur in Russian River, Willow Creek, and potentially other coastal streams.
Chinook Salmon (California Coastal ESU) <i>Oncorhynchus tshawytscha</i>	FT	--	Only naturally spawned coastal spring and fall chinook salmon between Redwood Creek in Humboldt County and the Russian River in Sonoma County.	Known to occur in Russian River.

**Table 2-7
Special-status Wildlife Species with Potential to Occur at Sonoma Coast State Park**

Species	Listing Status		Habitat	Potential for Occurrence in Study Area
	Fed.	State		
BIRDS				
Marbled murrelet <i>Brachyramphus marmoratus</i>	FT	CE	Old forest stands for nesting within 50 miles of foraging habitat; near shore marine habitats for foraging.	Suitable habitat present upslope from Pomo Campground in old-growth Douglas firs. Breeding has been recorded on the Richardson property in the Haupt Creek drainage. Individuals have been observed offshore of Arched Rock, Duncans Landing, and Bodega Head.
Rhinoceros auklet <i>Cerorhinca monocerata</i>	--	CSC	Nests in burrows on undisturbed offshore islands along the coast and probably in cliff caves on the mainland; forages in marine habitats.	Limited nesting habitat at Sonoma Coast SP on offshore rocks because not enough substrate exists for burrow creation. Few individuals in marine habitat reported during the breeding season in the last 30 years.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT	CSC	Sandy beaches, salt pond levees, shores of large alkali lakes; nests and forages on open, sandy, gravelly or friable soils with scattered debris and scarce vegetation.	Known to occur at Salmon Creek Beach during spring and fall, but no nesting documented. Potentially suitable habitat also occurs at Wright and Goat Rock Beach.
Northern harrier <i>Circus cyaneus</i>	--	CSC	Grasslands, marshes, and agricultural fields.	Known to nest at Bodega Head and forage throughout Sonoma Coast SP. Suitable nesting habitat likely occurs in several areas of Sonoma Coast SP including in the meadow near the Pomo Campground.
Yellow Warbler <i>Dendroica petechia</i>	--	CSC	Riparian woodland, montane chaparral, and open mixed coniferous habitats.	May occur at Sonoma Coast SP during breeding and migration. Although suitable riparian habitat present along creeks and streams, not detected breeding in coastal areas in Sonoma County.
American peregrine falcon <i>Falco peregrinus anatum</i>	--	CE	Cliffs or rocky outcrops for nesting. Forages over a variety of habitats but mostly prefers aquatic associated areas where abundant aerial prey is present.	Known to occur at Sonoma Coast SP. Suitable nesting and foraging habitat present along the coastline. Historical nest sites near Goat Rock and Vista Point.

**Table 2-7
Special-status Wildlife Species with Potential to Occur at Sonoma Coast State Park**

Species	Listing Status		Habitat	Potential for Occurrence in Study Area
	Fed.	State		
Tufted puffin <i>Fratercula cirrhata</i>	--	CSC	Nests along the coasts on islands, islets, or rarely mainland cliffs; requires sod or earth for burrowing on island cliffs or grassy island slopes; forages in marine habitats.	Limited nesting habitat at Sonoma Coast SP on offshore rocks because not enough substrate exists for burrow creation. Few individuals in marine habitat reported during the breeding season in the last 30 years.
Osprey <i>Pandion haliaetus</i>	--	CSC	Ocean shore, bays, freshwater lakes, larger streams. Nests on top of large trees or snags, rocky outcrops or man-made platforms within 15 miles of good fish-producing bodies of water.	Known to nest at Sonoma Coast SP. Suitable nesting and foraging habitat in many areas along coast, near Russian River mouth and other streams.
California brown pelican <i>Pelicanus occidentalis californicus</i>	FE	--	Coastal and estuarine waters; roosts on protected islets, sea stacks, sandbars, and piers; nests in southern California and Mexico.	Roosting and loafing sites found along coastline. Non-breeding individuals present at Sonoma Coast SP.
Double-crested cormorant <i>Phalacrocorax auritus</i>	--	CSC	Colonial nester on coastal cliffs, offshore islands, and along lake margins; nests along coast on sequestered islets, usually on ground with sloping surface or in tall trees along lake margins.	Known rookery site on "Russian River Rocks," an offshore area just north of the mouth of the Russian River.
Purple Martin <i>Progne subis</i>	--	CSC	Nests in riparian and other lowland habitats where large snags with cavities are present.	Possibly may nest near coast north of Jenner.
Bank swallow <i>Riparia riparia</i>	--	CT	Colonial nester in riparian and other lowland habitats; requires vertical banks or cliffs with fine-textured, sandy soils near streams, rivers, lakes or ocean to dig nesting holes.	Unlikely to occur. Historical nesting colony located on Russian River near Jenner. Last observed nesting activity in 1960.

**Table 2-7
Special-status Wildlife Species with Potential to Occur at Sonoma Coast State Park**

Species	Listing Status		Habitat	Potential for Occurrence in Study Area
	Fed.	State		
Northern spotted owl <i>Strix occidentalis caurina</i>	FT	CSC	Old-growth forests or mixed stands of old-growth and mature trees; occasionally in younger forests; high multistory canopy dominated by big trees with cavities or broken tops; forests with woody debris and space under canopy.	Known to nest in Willow Creek drainage.
MAMMALS				
Red tree vole <i>Arborimus pomo</i>	--	CSC	Coastal fog belt in Douglas-fir, redwood, and montane hardwood-conifer forests. Almost exclusively arboreal.	Known to occur at Sonoma Coast SP in the Willow Creek area.
Steller sea lion <i>Eumetopias jubatus</i>	FT	--	Coastal marina areas.	Known to occur at Sonoma Coast SP in the Bodega Head area.

Source: DFG 2003, DPR 2001d

Notes/acronyms:

U.S. Fish and Wildlife Service (USFWS) Federal Listing Categories:

FE = Federal Endangered

FT = Federal Threatened

California Department of Fish and Game (DFG) State Listing Categories:

CE = California Endangered

CT = California Threatened

CSC = California Species of Special Concern

Although they are not special-status species, three other resources should also be considered of significant resource value because of management concern identified by resource agencies or significant public interest. These significant resources are: abalone (*Haliotis* spp.), monarch butterfly (*Danaus plexippus*) roosts, and harbor seal (*Phoca vitulina*) or other marine mammal haul-outs. Brief descriptions of special-status species and other significant animal resources known to occur or that may potentially occur at Sonoma Coast SP are provided below.

Marine Resources

Sonoma Coast SP spans almost 19 miles of coastline, encompassing rocky shores, marine terraces, tidepools, protected coves, sandy beaches, and offshore rocks. Acreage managed by Sonoma Coast SP includes a marine area from Schoolhouse Beach to Mussel Point, which is leased from the State Lands Commission. The offshore rocks, which are under the jurisdiction of the U.S. Bureau of Land Management and designated as the California

Coastal National Monument, are managed by the Department and DFG under a cooperative agreement. The California Marine Managed Areas Improvement Act of 2000 sets forth procedures for establishing new marine managed areas and for reclassifying existing areas into the new system. Under the Draft Marine Management Area Plan, the marine managed area may be proposed to expand seaward to include up to 3 nautical miles and northward to the northern boundary of Sonoma Coast SP, with some marine areas classified as marine reserves or marine parks (Barry, pers. comm., 2003). Significant resources in these habitats include abalone, seabird colonies, and marine mammals.

Abalone Species

Of the seven species of abalone found in California, Sonoma Coast SP is likely to support three species: red (*Haliotis rufescens*), pinto (*H. kamtschatkana*), and flat (*H. walallenis*). These species are found in intertidal zones to waters up to 80 feet deep. Abalones are found in boulder and rock habitat, and are usually associated with kelp forests. All are long-lived and slow-growing species.

None of these species are given any special-listing status under the California or federal Endangered Species Acts; however, the California Fish and Game Code establishes management of abalone to recovery of their populations under §§5520–5522. DFG has drafted an Abalone Recovery and Management Plan (ARMP) in California to prevent further population declines and ensure the sustainability of current and future fisheries.

Northern California red abalone populations have supported a viable fishery, but recent studies have revealed four trends which are cause for concern: a concentration of fishery effort and increased take, evidence of poor recruitment, declines in deep-water stocks, and serial depletion (DFG 2002). Pinto and flat abalone have not been major components of the commercial or recreational fisheries and less is known about their populations. The management component of the ARMP focuses on the northern California red abalone sport fishery and establishes size and take limits and management zones based on the species biology.

Seabird Colonies

The offshore rocks at Sonoma Coast SP have potential to support nesting colonies of several seabird species that are considered California Species of Special Concern: double-crested cormorant, rhinoceros auklet, and tufted puffin. The California brown pelican (*Pelicanus occidentalis californicus*), a species that is federally listed as Endangered, forages and roosts along the coastline of Sonoma County, but does not nest in northern California. Double-crested cormorant colonies nest on the offshore rocks at the Russian River mouth. In 1989, 176 nests and 422 individual birds were counted (Burridge 1995). Double-crested cormorants also share nesting colonies with other cormorants, the pelagic cormorant (*Phalacrocorax pelagicus*), and the Brant's cormorant (*P. penicillatus*). Although the Russian River rocks are the only known locations of double-crested cormorant colonies within Sonoma

Coast SP, other cormorant species nest on rocks and smaller sea stacks along the entire Sonoma Coast SP (Burridge 1995).

Auklets and puffins nest in burrows or crevices on protected islands or cliffs. Most of the offshore rocks along Sonoma Coast SP do not have adequate sand and dirt to allow for creation of burrows, which measure 4–25 feet deep (Burridge 1995). Because habitat is so limited, nesting of these species at Sonoma Coast SP is considered very rare. In the past 30 years, there have only been a few sightings of auklets off the coastline of Sonoma County during the breeding season. At Sonoma Coast SP, they have been observed at Arched Rock, approximately 0.5 mile south of Goat Rock, and at Bodega Head (Burridge 1995, DFG 2003). Puffins were observed on the sea stacks near the Russian River mouth in the late 1970s and a pair was observed during the breeding season on Arched Rock in the 1980s (Burridge 1995).

Marine Mammals

Harbor seals are one of the most common marine mammals in California. They are nonmigratory and feed in cold water along the coast. They spend much time basking on the shoreline or on offshore rocks. They characteristically congregate onshore in groups to rest and rear their young at traditional sites that are generally used year round. Harbor seals, as well as all marine mammals, are protected under the Marine Mammal Protection Act of 1972. All activities that have the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns are prohibited under this act. Harbor seals are particularly vulnerable when they are on land, as they have limited mobility to flee from a threat. A historical haul-out of harbor seals is known from the Russian River mouth. A few elephant seals (*Mirounga angustirostris*) have been using this beach and other sheltered beaches at Sonoma Coast SP as haul-outs in recent years. California sea lions (*Zalophus californianus*) may also be found on rocky shores at Sonoma Coast SP and Steller sea lions (*Eumetopias jubatus*) have been observed around Bodega Head area (DPR 2001d). Whales are observed from Sonoma Coast SP, but are not likely to occur in the current management boundary of the State Park, because they are usually found in deeper, offshore waters.

Freshwater and Anadromous Aquatic Resources

Sonoma Coast SP includes a river and several perennial streams including the Russian River, Willow Creek, and Salmon Creek, as well as intermittent streams such as Russian Gulch, Furlong Gulch, and Marshall Gulch. These streams provide habitat for several significant freshwater aquatic resources including California freshwater shrimp, several species of herpetofauna (reptiles and amphibians), and several species of fish.

California Freshwater Shrimp

California freshwater shrimp are endemic to Marin, Sonoma, and Napa counties. They are found in lowland (below 380 feet in elevation) perennial streams and favor pools with undercut banks, exposed tree roots, and overhanging woody debris or vegetation. California freshwater shrimp are federally listed as Endangered and considered a California Species of

Special Concern. The shrimp is known from only 17 coastal streams and existing populations are threatened by introduced fish and deterioration or loss of habitat (USFWS 1998a). Salmon Creek is documented as supporting this species (USFWS 1998a, DFG 2003). The tributary streams in the lower Russian River drainage are also known to support this species; the mainstem of the Russian River is unlikely to support populations of California freshwater shrimp because of lack of suitable habitat (USFWS 1998a, DFG 2003).

Herpetofauna

Sonoma Coast SP contains habitat for one special-status reptile species, the northwestern pond turtle, and two special-status amphibians, the foothill yellow-legged frog and the red-legged frog. Each of these species is discussed below.

The northwestern pond turtle is a California Species of Special Concern. This aquatic turtle is found in a variety of habitats including lakes, rivers, streams, and stock ponds. They usually leave aquatic sites to reproduce and overwinter. Pond turtles nest in upland habitat, sometimes almost 0.25 mile from aquatic sites. Pond turtles have been reported in the Willow Creek and Salmon Creek watersheds at Sonoma Coast SP. Suitable habitat is present in meadows and annual grasslands adjacent to Willow Creek in the lower portion of the upper watershed.

The foothill yellow-legged frog is a federal and California Species of Special Concern. Foothill yellow-legged frogs require shallow, flowing streams with some cobble-sized substrate on which they deposit large masses of eggs. They have been found in streams lacking cobble and in riparian zones at various times of the year, but it is unclear how regularly these habitats are used (Jennings and Hayes 1994). Populations of foothill yellow-legged frogs are threatened by loss of habitat and introduced aquatic predators. The distribution of foothill yellow-legged frogs at Sonoma Coast SP is not known, as comprehensive surveys have not yet been conducted. However, suitable habitat is known to occur on several small streams at Sonoma Coast SP, such as Willow Creek and Furlong Gulch (DPR 2001).

Two subspecies of red-legged frog may be found along the Sonoma Coast, the California red-legged frog (*Rana aurora draytonii*) and the northern red-legged frog (*Rana aurora aurora*); however, the taxonomy of many red-legged frogs found in this area is unclear. In the listing determination for California red-legged frog, northern Marin County was established as the approximate dividing line between the two subspecies (USFWS 1996a). However, recent research based on intensive field sampling and DNA analysis has indicated that the division between the subspecies may be the Navarro River in Mendocino County (Shaffer, unpublished data, 2002). In addition, some red-legged frogs from southern Del Norte to northern Marin County along the Coast Range exhibit intergrade characteristics of both subspecies. The two subspecies and intergrades of the subspecies may occur along the Sonoma coast (USFWS 2002).

The California red-legged frog is federally listed as Threatened and is a California Species of Special Concern. Critical habitat for California red-legged frogs was designated in March

2001 (USFWS 2001a); however, the designation has been challenged in court and the status of the case has not been resolved. Although the designation has been vacated, no areas at Sonoma Coast SP were included. The California red-legged frog requires a variety of habitat elements with aquatic breeding areas typically located in a matrix of riparian and upland dispersal habitats. Breeding sites of the California red-legged frog include freshwater habitats such as pools and backwaters in streams and creeks, ponds, marshes, springs, and lagoons. Also, California red-legged frogs frequently breed in artificial impoundments such as stock ponds (USFWS 2002). Potential threats to the species include elimination or degradation of habitat from land development and land use activities, and habitat invasion by non-native aquatic species (USFWS 2002). The California red-legged frog has been extirpated from 70% of its former range and now is found primarily in coastal drainages of central California, from Marin County south to northern Baja California.

The other subspecies of red-legged frog, the northern red-legged frog, is a California Species of Special Concern and occurs along the Pacific coast, west of the Cascade ranges to northern California. Breeding habitat for the northern red-legged frog typically consists of permanent or temporary water bordered by dense grassy or shrubby vegetation. During the non-breeding season, northern red-legged frogs may be found in upland habitats that maintain significant substrate moisture, such as willow thickets and dense sedge swales (Jennings and Hayes 1994). Sonoma Coast SP contains limited suitable habitat for red-legged frogs, primarily in the Willow Creek drainage. One red-legged frog was reported in 1999 at Willow Creek (DFG 2003). Although the sighting was reported as a California red-legged frog, no details are provided regarding the classification of subspecies.

Fish

One estuarine and three anadromous special-status fish have potential to occur at Sonoma Coast SP. The Russian River, Willow and Salmon creeks, and other streams at Sonoma Coast SP support anadromous fish at various stages of their life cycles. Each of the special-status fish species with potential to occur is discussed below.

The tidewater goby (*Eucyclogobius newberryi*) is federally listed as Endangered, but has been proposed to be delisted north of Orange County because of the discovery of more populations, and additional information that threats are less severe than previously believed and that the tidewater goby has a greater ability to recolonize habitats from which it was extirpated (USFWS 2002b). Critical habitat was designated for tidewater goby on November 20, 2000, but does not include any area of Sonoma Coast SP (USFWS 2000). Tidewater gobies are found in shallow lagoons and lower stream reaches where the water is brackish to fresh. Tidewater gobies may range upstream into fresh water, up to 2 kilometers from the estuary. They prefer slow-moving but not stagnant waters, and avoid open areas with strong wave action or strong currents. Particularly important for their persistence in the lagoons is the presence of backwater, marshy habitats where they can avoid winter floodflows. At Sonoma Coast SP, tidewater gobies are known to occur in Salmon Creek, based on surveys in 1996 (DFG 2003).

The coho salmon that occur at Sonoma Coast SP are part of the Central California Coast Evolutionarily Significant Unit (ESU) or distinctive group. This ESU is federally listed as Threatened and includes all naturally spawning populations of coho salmon from Punta Gorda in northern California south to and including the San Lorenzo River in central California, as well as populations in tributaries to San Francisco Bay, excluding the Sacramento–San Joaquin River system (National Marine Fisheries Service [NMFS] 1996). Critical habitat was designated in May 1999 to include all river reaches accessible to listed coho salmon from Punta Gorda in northern California south to the San Lorenzo River in central California, including Mill Valley (Arroyo Corte Madera Del Presidio) and Corte Madera Creeks, tributaries to San Francisco Bay (NMFS 1999a). Excluded are areas above specific dams or above longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years). The coho salmon’s life cycle takes 3 years. They normally spend their first year in freshwater and their next 2 years in saltwater before returning to spawn in their natal streams. Some males, called “jacks,” return to spawn after only one season in the ocean. Spawning migrations begin after heavy, late autumn or winter rains encourage the returning adult to leave the ocean and move upstream. In California, coho salmon are found in many of the short, coastal drainages from the Oregon border south to Monterey Bay. In the larger coastal drainages, coho salmon are found primarily in the lower sections. They are known to use the mainstem and tributaries of Willow Creek for spawning and rearing habitat (Willow/Freezeout Creek Watershed Analysis 2001). Other streams at Sonoma Coast SP may be suitable spawning and rearing habitat. The Russian River at Sonoma Coast SP provides for passage to potentially suitable spawning and rearing habitat farther upstream.

The steelhead that occur at Sonoma Coast SP are in the Central California Coast ESU. This ESU was federally listed as Threatened in August 1997. This ESU includes all naturally spawning populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin (NMFS 1997). Critical habitat was designated for this ESU in 2000, but was withdrawn in 2002 under litigation that challenged the adequacy of the economic analysis. Steelhead trout exhibit a variety of life history patterns including residents (nonmigratory) at one extreme and individuals that migrate to the open ocean (anadromous) at another extreme. Steelhead along the Central California coast enter freshwater to spawn when winter rains have been sufficient to raise streamflows, generally from late-October through the end of May, but typically the bulk of migration occurs between mid-December and mid-April. Unlike other Pacific salmon, steelhead may survive after spawning and return downstream to re-enter the ocean. They are known to use the mainstem and tributaries of Willow Creek for spawning and rearing habitat (Willow/Freezeout Creek Watershed Analysis 2001). Other streams at Sonoma Coast SP may be suitable spawning and rearing habitat. The Russian River at Sonoma Coast SP provides for passage to potentially suitable spawning and rearing habitat farther upstream.

Chinook salmon at Sonoma Coast SP are part of the California Coastal ESU which includes all naturally spawning populations of chinook salmon from rivers and streams south of the

Klamath River to the Russian River. This ESU was federally listed as Threatened in September 1999 (NFMS 1999b). As with steelhead, critical habitat was designated for this ESU in 2000, but was withdrawn in 2002 under litigation that challenged the adequacy of the economic analysis. Chinook are the largest of the Pacific coast salmon. They spend most of their life in marine waters, and migrate to freshwater habitats to spawn after 2–4 years. The California Coastal ESU typically returns to its natal streams or rivers in fall to spawn. Most young typically migrate to sea in the first 3 months of emergence, but they may spend up to a year in freshwater before emigration. Chinook salmon tend to use estuaries and coastal areas more extensively than other salmon for juvenile rearing. The Russian River provides potentially suitable habitat for chinook passage and rearing.

Terrestrial Wildlife

Sonoma Coast SP includes a tremendous variety of terrestrial habitats including sandy beaches, coastal bluffs and prairies, riparian corridors along streams, and forested canyons. Significant terrestrial wildlife that potentially may occur at Sonoma Coast SP include two species of butterflies (monarch butterfly, Myrtle's silverspot), western snowy plover, two riparian bird species (yellow warbler, purple martin), several raptors (northern harrier, peregrine falcon, osprey, northern spotted owl), and two other old-forest species (marbled murrelet and red tree vole).

Butterflies

The monarch butterfly is not a special-status species or protected under local, State, or federal laws, but winter roosts of monarchs are considered a notable resource and attract significant public interest. Monarchs arrive on the coast of California in early October, migrating from the Sierra Nevada, Rockies, and Canada. They migrate from northern areas to escape the cold of northern winters. They often form roosts in groves of Monterey pine, eucalyptus, cypress, or other trees that offer protection from wind. The butterflies will form dense clusters on the trees; each animal will hang with its wings down over the one below it to form a shingle effect that gives some shelter from the rain and warmth for the group. The weight of the cluster helps keep it from whipping in the wind and dislodging the butterflies. On calm, warm days monarchs may leave the roost to feed on nectar sources, such as eucalyptus flowers. They depart in March to reproduce and to complete their life cycle. Several winter roosts of monarchs have been reported in the area, two at Sonoma Coast SP at Wrights Beach and Bodega Dunes campground, and others outside Sonoma Coast SP near Bodega Bay and the UC Davis Marine Laboratory (DFG 2003). The roost at Wrights Beach was reported in 1986, but the roost tree was not identified. The roost at Bodega Dunes campground was most recently observed in January 1996 and contained approximately 300 butterflies on eucalyptus and cypress trees.

The Myrtle's silverspot is a medium-sized butterfly that is federally listed as Endangered. Myrtle's silverspot inhabits coastal dunes, coastal prairie, and coastal scrub up to elevations of 1,000 feet and as far as 3 miles inland (USFWS 1998b). The butterflies prefer areas that are sheltered from onshore winds and that are moderated by fog, keeping temperatures mild

and providing ample moisture. Critical factors in the distribution of Myrtle's silverspot include presence of the presumed larval plant, western dog violet (*Viola adunca*), and availability of nectar sources for adults (USFWS 1998b). Historically, Myrtle's silverspot were distributed from coastal San Mateo County to Black Point in northern Sonoma County. At Sonoma Coast SP, they were reported in the 1970s from Bodega Head, Jenner, Portuguese Beach, and near Coleman Valley Road. More recently, populations were found in Sonoma County during surveys from 1991–1993 at Bodega Head and east of the town of Bodega Bay (DFG 2003, USFWS 1998b). The distribution throughout Sonoma Coast SP is unknown as comprehensive surveys have not yet been conducted, but their preferred food plant has been reported throughout the Sonoma Coast (DPR 2001).

Western Snowy Plover

The western snowy plover is federally-listed as Threatened and as a California Species of Special Concern. For nesting, they use barren or sparse vegetated marine and estuarine shorelines, and other salt-influenced areas, such as salt evaporation ponds and levees (USFWS 2001). Most nesting occurs from March through mid-August. The Pacific population of western snowy plovers historically inhabited coastal beaches along the Pacific coastline from Washington to Baja California, but the current population is fragmented throughout the range because of loss of habitat to encroachment of introduced beachgrass and urbanization, nest predation, and human disturbance (USFWS 2001b). Both the Pacific and interior populations of snowy plovers winter on the California coastline. They are found on many beaches used for nesting, and some beaches where they do not nest (USFWS 2001b). In California, the majority of wintering plovers concentrate on sand spits and dune-backed beaches from Bodega Bay southward (USFWS 2001b).

The USFWS recovery plan for western snowy plovers reports that Salmon Creek Beach has supported from 0–19 breeding individuals and 1–43 wintering individuals from 1980 to 1997 (USFWS 2001). Since 2001, the Department's resource ecologists have been conducting surveys for snowy plovers at Salmon Creek at least once a month. Snowy plovers have only been detected at Salmon Creek, but they do not appear to be successfully breeding there because individuals have been absent in May and June in recent years. Most of the detections in 2001 and 2002 were from late July to late October, with a maximum count in September of 27 and 17 individuals in each year respectively. Snowy plovers have also been reported early in the breeding season, seven individuals in late March 2001 and one individual in early April 2002 (DPR, unpublished data, 2002). There are ongoing restoration efforts for snowy plover habitat in areas identified as suitable habitat in the USFWS recovery plan (O'Neil, pers. comm., 2003b).

New policies and restrictions are implemented on State Parks to protect snowy plovers, particularly in breeding habitats. This also includes enforcement of existing regulations prohibiting dogs on State Beaches and creation of new rules that may restrict visitor use in some areas.

Riparian Songbirds

Two riparian songbirds that potentially may occur at Sonoma Coast SP are both considered California Species of Special Concern: yellow warbler and purple martin. Both species nest in riparian woodlands during spring and summer. Yellow warblers build cup nests and prefer willow and alder thickets and riparian woodlands. Although potentially suitable habitat exists at Sonoma Coast SP, especially in the Willow Creek and Russian Gulch areas, these species may be absent from riparian habitat close to the coast and no nesting was documented on the coast during breeding bird atlas surveys (Burridge 1995). Purple martins nest in cavities in snags and a possible nesting record was reported near the coast north of Jenner (Burridge 1995).

Raptors

Special-status raptors known to nest at Sonoma Coast SP include northern harrier, peregrine falcon, osprey, and northern spotted owl. The northern spotted owl is federally listed as Threatened and is a California Species of Special Concern. The peregrine falcon has been federally delisted, but the population is monitored and has the same status as a federal Species of Special Concern. Northern harrier and osprey are California Species of Special Concern. All raptors are protected under §3503.5 of the California Fish and Game Code, which prohibits the destruction of raptors and their nests. Burrowing owls and ferruginous hawk are also California Species of Special Concern, but they do not nest at Sonoma Coast SP. The California Fish and Game Commission was petitioned to list burrowing owls under California Endangered Species Act on April 7, 2003 (CBD et al. 2003). Both of these species use grasslands and agricultural fields for foraging and are considered rare on the coast in the winter.

Northern harriers nest on the ground in marshes, grasslands, or fields and forage in a variety of open habitats. During the site visit in March 2003, EDAW biologists saw them foraging above the coastal prairies and grasslands of Sonoma Coast SP and in the marsh near the Pomo campground. Suitable nesting habitat occurs throughout Sonoma Coast SP and they are reported as a rare to uncommon breeder in Sonoma County. They have been reported nesting near Bodega Head (Burridge 1995) and possibly near Blind Beach (DPR 2001).

American peregrine falcons nest on cliffs or rocky outcroppings and forage over a variety of open habitats where aerial prey are present. Two peregrine falcons were observed by EDAW biologists foraging along the coastline of Sonoma Coast SP north of Jenner in March 2003. Peregrine falcons historically nested south of Goat Rock (DPR 2001). Current nesting at Sonoma Coast SP is unknown, but suitable nesting habitat is present.

Osprey typically nest in large trees or snags near shorelines, bays, or large streams. They are commonly observed at Sonoma Coast SP foraging along the coastline and the Russian River. Suitable nesting habitat occurs throughout Sonoma Coast SP. Several osprey are known to nest at Sonoma Coast SP along the Russian River and along the coast (Burridge 1995).

Northern spotted owls typically nest in mixed conifer forests with old-growth characteristics. Although Sonoma Coast SP does not include any areas of designated critical habitat for spotted owls (USFWS 1992), suitable nesting, roosting, and foraging habitat occurs in the Willow Creek drainage, particularly along the north facing slopes, extending from the Pomo campground to the west and east (Willow Creek Ranch THP 1995). A resident pair of northern spotted owls was observed occupying a territory in this area in 1995, but did not exhibit any nesting behavior (Willow Creek Ranch THP 1995). Several other territories are known from the Willow Creek drainage (DFG 2003).

Other Old-Forest Species

The marbled murrelet is a seabird that is federally listed as Threatened and State-listed as Endangered. Marbled murrelets nest in older forest stands up to 50 miles from the coast. They forage and spend the nonbreeding season in marine environments. Nest trees must have large branches or deformities for nest platforms. Nesting occurs over an extended period from mid-April to late September along the Pacific coast from southeast Alaska and the Aleutian archipelago to south of Monterey Bay in central California. A large break in the main breeding population of murrelets in California occurs in Sonoma and Mendocino counties, where much of the old-growth coastal conifer forests have been logged (USFWS 1997). Critical habitat has been designated for murrelets in Sonoma County north and east of Sonoma Coast SP at Salt Point State Park and Austin Creek State Recreation Area, but does not include any area at Sonoma Coast SP (USFWS 1996b). The recovery plan outlines recovery goals for marbled murrelets based on conservation zones to develop landscape level strategies for each zone. The zone from the southern boundary of Humboldt County to the mouth of San Francisco Bay has a very small nesting and at-sea population of marbled murrelets. Although most of the older forests have been removed from this area, the small population is considered very important to retaining the connection between populations to the north and south and minimizing the gap in current breeding distribution (USFWS 1997). Potential suitable nesting habitat occurs in the Willow Creek drainage near the Pomo campground (DPR 2001). Nesting has been documented at one location in Sonoma County, but this location is not at Sonoma Coast SP or in its immediate vicinity (O'Neil, pers comm. 2003). However, some individuals have been observed off of Arched Rock and Bodega Head during the breeding season (Burridge 1995).

The red tree vole is a federal and California Species of Special Concern. Red tree voles live exclusively along the coastal fog belt. They are almost exclusively arboreal and prefer Douglas-fir, redwood and montane hardwood-coniferous forests. They create nests out of conifer needles that will be reused by many generations. Several red tree vole nests have been observed at Sonoma Coast SP in the Willow Creek drainage.

Exotic Animal Species

Exotic animal species such as feral pigs, feral cats, and black rats can have a substantial negative effect on native wildlife populations. Wild pigs can cause extensive damage to plant communities and wildlife habitat by rooting for acorns or other food in the understory and by

wallowing in riparian areas. Pigs can destroy native vegetation, reduce oak regeneration, affect the reproduction of native shrubs and trees, create fertile ground for invasion of exotic plant species, compete directly with native wildlife, cause extensive erosion, and destroy the habitat of sensitive amphibian and reptile species. Feral cats prey heavily on native wildlife, particularly small and medium sized birds and mammals. Black rats have been documented as the primary predators of bird nests in some riparian habitats in northern California. The numbers of invasive or problematic plant and wildlife species can be increased by incompatible management actions and visitor uses. Exotic animal species known to occur in Sonoma Coast SP include wild turkey, black rat, feral cat, bullfrog, and wild pig (DPR 2001d).

CULTURAL RESOURCES

The topography, coastal setting, presence of numerous perennial and seasonal water sources, and wide range of floral and faunal species and other natural resources made this region a prime location for human habitation and economic pursuits over thousands of years. Cultural resources at Sonoma Coast SP range from early Native American archaeological sites, including one of the oldest known sites on the West Coast, nineteenth and early twentieth century ranching complexes, and developments related to the lumber industry, fishing, and tourism. Early historic activity also includes Sir Francis Drake's possible landing site with the Golden Hind in 1579, a Russian trading company, agriculture, ranching, and recreational industries, and more modern development including a proposed but undeveloped nuclear reactor project from the 1960s.

Prehistoric Setting

In the early 1970s, Fredrickson (1973) proposed a sequence of cultural manifestations or patterns for the central districts of the North Coast Ranges, placing them in a framework of cultural periods he believed were applicable to California as a whole. The idea of cultural patterns was distinct from the concepts of previous researchers (Beardsley 1954, Meighan 1955) who tended to emphasize assemblages of material goods as the basis for their classifications. Fredrickson took a much broader view of archaeological material culture and defined the term pattern as "... an adaptive mode shared in general outline by a number of analytically separable cultures over an appreciable period of time in an appreciable geographic space" (Fredrickson 1973). These different cultural modes could be characterized by:

- ▶ similar technological skills and devices (specific cultural items);
- ▶ similar economic modes (production, distribution, consumption), including participation in trade networks and practices surrounding wealth (often inferential); and
- ▶ similar mortuary and ceremonial practices (Fredrickson 1973).

Fredrickson also recognized that the economic/cultural component of each pattern could be manifested in neighboring geographic regions according to the presence of stylistically

different artifact assemblages. He introduced the term **aspect** as a cultural subset of the pattern, defining it as a set of historically related technological and stylistic cultural assemblages. Fredrickson argued that these temporal periods should be kept separate from the dating and definition of particular patterns given the coexistence of more than one cultural pattern operating at any given point in time in California prehistory (Fredrickson 1974). This integrative framework provides the means for discussing temporally equivalent cultural patterns across a broad geographic space.

The following is a summary of these temporal periods with descriptions of the associated cultural patterns that have been identified for the region. The summaries incorporate recent taxonomic and interpretative revisions that are summarized from the recent work of White and Fredrickson (1992).

Paleo-Indian Period (10000 B.C. to 6000 B.C.)

This period saw the first demonstrated entry and spread of humans into California with most known sites situated along lakeshores. A developed milling tool technology may be present at this time, although evidence regarding this technology is scarce. The social units were not heavily dependent on the exchange of resources, with trading activities occurring on an ad hoc, individual basis.

The Post Pattern is the earliest known occupation of the North Coast Ranges. This Pattern is documented only at the Borax Lake site, and perhaps at the Mostin site (Moratto 1984). Characteristic artifacts noted in the lithic assemblages include fluted projectile points and flaked crescents. Numerous occurrences of this pattern's distinctive artifacts are reported and can be affiliated with better documented assemblages in California and throughout North America.

Lower Archaic Period (6000 B.C. to 3000 B.C.)

The beginning of this period coincides with the middle Holocene climatic shift to more arid conditions that brought about the drying up of the lakes formed by the increased precipitation of the previous climate period. Subsistence appears to have been focused more on plant foods, although hunting clearly still provided important sources of food and raw materials. Settlement appeared to be semi-sedentary with little emphasis on material wealth. Most tools were manufactured of local materials, and exchange remained on an ad hoc basis. Distinctive artifact types include large projectile points, milling slabs, and handstones.

The Lower Archaic Borax Lake Pattern has been identified in the North Coast Ranges during this period. The Borax Lake Aspect identified in the Clear Lake Basin is the southernmost of three identified cultural divisions to this pattern. The most distinctive typological feature associated with the Borax Lake Aspect is wide-stemmed projectile points.

Middle Archaic Period (3000 B.C. to 1000 B.C.)

This period starts at the end of mid-Holocene climatic conditions when weather patterns became similar to present-day conditions. Discernable cultural change was likely brought about in response to these changes in climate and accompanying variation in available floral and faunal resources. Economic systems were more diversified and likely included the introduction of acorn processing technology. Hunting remained an important source of food and raw materials, although reliance on plant foods appears to have dominated the subsistence system. Sedentism appears to have been fully developed and there was an overall growth in population and a general expansion in land use. There is little evidence for the development of regularized exchange relations. Typologically and technologically important artifacts characteristic of this period include the bowl mortar and pestle and the continued use of large projectile points.

The earliest archaeological assemblages identified in the Napa Valley have been interpreted by Bennyhoff (1994) as representing a late component of the Borax Lake Pattern. More recent analysis has included this as part of the Hultman Aspect of the Mendocino Pattern (see White and Fredrickson 1992). Bennyhoff identifies this as the Hultman Phase in the Napa Valley cultural sequence distinguished by stylistically unique obsidian drills, keeled obsidian tools, concave based projectile points and thick lanceolate projectile points. The milling assemblage is composed exclusively of milling slabs and handstones. This phase shows cultural affiliation to the central districts of the North Coast Ranges where the Mendocino Pattern persists up to the Emergent Period.

Upper Archaic Period (1000 B.C. to A.D. 500)

A marked expansion of sociopolitical complexity marks this period, with the development of status distinctions based on material wealth. Group-oriented religions emerge and may represent the origins of the Kuksu religious system that arises at the end of the period. There was a greater complexity of trade systems with evidence of regular, sustained exchanges between groups. Shell beads gained in significance as possible indicators of personal status and as important trade items. This period retained the large projectile points in different forms, but the milling stone and handstone were replaced throughout most of California by the bowl mortar and pestle.

Emergent Period (A.D. 500 to 1800)

This period is distinguished by the advent of several technological and social changes. The bow and arrow were introduced, ultimately replacing the atlatl. Territorial boundaries between groups became well established and were documented in early historic accounts. It became increasingly common for distinctions in an individual's social status to have been linked to acquired wealth. The exchange of goods between groups became more regularized with more raw materials, along with finished products, entering into the exchange networks. In the latter portion of this period (1500 A.D. to 1800 A.D.), exchange relations became highly regularized and sophisticated. The clamshell disk bead became a monetary unit of

exchange and increasing quantities of goods are transported over greater distances. Specialists arose to govern various aspects of production and exchange.

During this period, the Augustine Pattern becomes the predominant economic/cultural manifestation in the Central Valley, Bay, and southern North Coast ranges with numerous regional aspects having been identified in the archaeological record. Cultural traits that distinguish this pattern include pre-interment grave-pit burning, tightly flexed burials and cremation. Artifact assemblages include clam and Olivella shell disk beads, magnesite cylinders, and banjo type Haliotis ornaments, as well as bird bone whistles and tubes and flanged steatite pipes. The mortar and pestle were the predominant milling implements and small arrow points replaced the larger projectile point forms more commonly associated with atlatls. Also found in the tool assemblages were implements such as harpoons, bone fish hooks, and gorge hooks.

Ethnographic Setting

Sonoma Coast SP includes ethnographic territories of two Native American groups, the Kashaya Pomo (also known as the Southwestern Pomo) to the north and the Coast Miwok to the south (Alvarez and Fredrickson 1989). Because of geographic location, the Pomo appear to have had more contact with the Russian outpost at Fort Ross, and apparently appreciated the relationship as it afforded them some protection from the San Francisco and Sonoma missions, whereas many Coast Miwok were taken by missionaries as converts. Early observations were made, however, by Russian traders in the area (Farris 1998). Both groups focused on a narrow band of territory extending from the coast several miles inland. Settlements included permanent villages and smaller resource exploitation campsites (Stewart 1986).

Fish, shellfish, sea mammals, seaweed, and waterfowl were all readily accessible along the coast. Reeds, willows, and redwood bark collected along the drainages provided raw materials for baskets and nets, clothing, boats, and shelter. Berries, seeds, nuts, and game could all be collected inland. Seashells also provided a vital resource, as a source for beads. In particular, Saxidomus clamshells were cut into beads and used for exchange (Alvarez and Fredrickson 1989).

A number of prehistoric villages have been identified along the coastline of Sonoma County (Appendix D). Kroeber (1925) concluded that this was to remain closer to the more abundant resources even if the environment was more pleasant further from the shore. Native Americans were still occupying some of these villages in the early 20th century (Stewart 1986).

The Kashaya Pomo relationship with Russian traders at Fort Ross was somewhat unique in that it gave the Pomo a chance to slowly acculturate to European ways, learning and adapting them to the point that the Pomo could function in the new society to a greater degree. In addition, the Pomo were not subject to forcible removal to missions or reservations. For these reasons, they retained more of their traditional ways and knowledge

than many other California Indian groups (McLendon and Oswalt 1978). Kashaya territory extended roughly 30 miles, from Stewarts Point in the north to Duncans Point in the south and ranged 5–13 miles inland (McLendon and Oswalt 1978).

Coast Miwok territory included Marin County up to the interface with the Kashaya Pomo, Southern Pomo, and Wappo in Sonoma County (Kelly 1978). Most likely, Native Americans encountered by Drake and Sebastian Rodriguez Cermeño during their voyages would have been Coast Miwok. There are few other records of these peoples until the latter portions of the 18th century, when the enforced missionization of many of the Coast Miwok took its toll on the culture. At the beginning of the American period (ca. 1850), there were approximately 250 Coast Miwok left. By the 1930s, there were reportedly three individuals who retained predominantly Coast Miwok heritage (Kelly 1978).

Historic Setting

The earliest visitors to the Marin-Sonoma coast were English and Spanish sailors, including Juan Rodriguez Cabrillo in 1542, Sir Francis Drake in 1579, and Sebastian Rodriguez Cermeño in 1595. Cermeño's ship, in fact, was wrecked in Drakes Bay. Artifacts from his ship were recovered from Native American village sites nearby (Fredrickson 1962). The British and Spanish did not engage in overland explorations, or even thorough exploration of Drake and Bodega Bays, until the late 18th century. Russian seal and sea otter hunters from Alaska made covert poaching trips to Bodega Bay in the early 19th century. They eventually established Fort Ross in 1812. While they continued to hunt sea mammals, a small agricultural community was also established, growing fruits, grains, and livestock for settlements in Alaska. These holdings were sold to John Sutter in 1841, after the seal and otter populations had dwindled to unprofitability.

The Russians established four main ranch complexes: the Khlebnikov Ranch near Bodega, the Tschernisch Farm near Freestone, and the Kostromitinov Ranch, with headquarters located somewhere south of the Russian River, possibly on Sonoma Coast SP lands in the Willow Creek valley, and various fields and surrounding bits of the ranch north of the Russian River. Each of these complexes was sizeable and well established, including farmhouses, barracks, warehouses, Indian worker housing, kitchens, bathhouses, mills, granaries, and the like. When the Russians sold the properties to Sutter, they took some of the structures with them. Sutter likewise dismantled some buildings and took them for use in Sacramento. Haase (1952) made a study of the Russian American Holding Company in California as her master's thesis. The thesis offers many details regarding early development of the project area.

The Mexican government moved to block Russian expansion along the California coast using several methods. General Mariano Guadalupe Vallejo was sent to establish a series of settlements north of San Francisco, beginning in 1833. Rancho Bodega, which included the property of a Russian ranch near Bodega, was granted in 1844 to Captain Steven Smith, who rapidly developed the area with roads and a sawmill (Alvarez and Fredrickson 1989).

In 1862, Smith's widow sold two parcels of this property to Clementina Dougherty and Conrad Stumpf. These two parcels, totaling about 361 acres, were purchased by J. L. Gibson from Yuba County in 1877. However, it appears that Gibson never actually occupied the land and it was quickly sold to Ben Genazzi, a Swiss dairyman who had only arrived in the United States in 1864. The Genazzi family then owned and operated the ranch until the mid-1940s when it was purchased by the Carringtons (for whom the property is now named) who never lived on or operated the dairy and instead rented the land and facilities to tenants until its eventual purchase by the State of California for inclusion in the Sonoma Coast SP.

The Carrington Ranch is of particular significance in that not only is it the best and most complete surviving example of a 19th to early 20th century ranch on the Sonoma coast, but it was also one of the earliest Euro-American enterprises established in Sonoma County with some of the surviving buildings on the ranch possibly dating to as early as 1857. This ranch also exemplifies the type of residence and accompanying agricultural facilities that dominated the Sonoma landscape during the late 1800s and well into the 1900s when dairying was the mainstay of Sonoma County's economy.

Another grant, made to Manuel Torres, covered the area from the Russian River up to Fort Ross. The Willow Creek Watershed contains the first recorded commercial logging operation in California (1846) (Parkman, pers. comm., 2001). Samuel Duncan's mill followed in 1860, as well as chute landings along the coast to transfer the lumber to waiting ships. The attendant town of Duncansville was centered outside of Sonoma Coast SP, although some structures may well have been on what is now Sonoma Coast SP property. A coastal railroad, the North Pacific and San Francisco, soon followed. The Knowles family acquired much of the property south of the Russian River in the 1850s or 1860s, using it for lumber, cattle, and sheep (Stewart 1986). The surrounding area has been used for lumber, agriculture, and recreation ever since.

Background Research

Background research began with an interview with the District's archaeologist Breck Parkman, who provided an overview of Sonoma Coast SP archaeology, historic documentation, and copies of the Department site record forms for most of the prehistoric and historic-era archeological resources at Sonoma Coast SP. Almost the entire Sonoma Coast SP has been surveyed archaeologically. However, the Carrington, Redhill, and Willow Creek parcels have been subject to very limited surveys since the 1970s. The Sonoma Coast has been the subject of field and documentary cultural resources investigations since the early 20th century, by both professional and vocational researchers, and in varying formats as archaeological and historical research methodologies and standards developed over the years.

An information request was submitted to the Northwest Information Center (NWIC) in Rohnert Park, California, for Sonoma Coast SP as a whole. The purpose of the NWIC search was to determine the nature and distribution of previously recorded prehistoric and historic-era resources and whether archaeological surveys historical research had been performed within

or in the vicinity of Sonoma Coast SP. The NWIC had records of more than 20 archaeological surveys that have been conducted at Sonoma Coast SP. These survey areas have included Sonoma Coast SP, the very southern edge of the Carrington Parcel, the northeastern corner of the Red Hill Parcel, and portions of the north, south, west, and central areas of the Willow Creek Parcel. A list of cultural resource sites documented at Sonoma Coast SP is included in Appendix D. Maps depict previous survey coverage but locations of known archaeological and above-ground historic-era resources are confidential and available for limited distribution only.

The NWIC also had site record forms pertaining to resources identified during those surveys. The NWIC search included examination of sources consulted for this General Plan such as:

- ▶ Office of Historic Preservation Historic Property Directory
- ▶ California Inventory (1996)
- ▶ California Historic Landmarks (1996)
- ▶ National Register of Historic Places (1996 and 2000)
- ▶ California Points of Historical Interest (1992 and updates)
- ▶ Thompson and West Historical Atlas (1878)
- ▶ Illustrated Atlas of Sonoma County, California (1898)
- ▶ General Land Office Plat Maps
- ▶ A. B. Bowers Map of Sonoma County, California (1867)
- ▶ Thos. H. Thompson and Co. Historical Atlas Map of Sonoma County, California (1877)
- ▶ Bell and Heymans Map of Sonoma County, California (1888)
- ▶ The Kenyon Co. Map of Sonoma County, California (1896–1897)
- ▶ Official Map of the County of Sonoma, California (1908)
- ▶ Official Map of the County of Sonoma, California (1934)
- ▶ U.S. Army Corps of Engineers Tactical Map, Duncans Mills Quadrangle, Grid Zone 6 (1921)
- ▶ Dufлот De Mofras “Carte Detailee Des Etablissements Russes” n.d.
- ▶ Carte detailee du mouillage du Fort Ross et du Port de la Bodega ou Romanzoff.

The historic maps and records cited above depict a number of roads and buildings within the Sonoma Coast SP, and the names of many of the early property owners. Some of these sources provide locations of existing historic buildings, structures, and historic-era residential and commercial complexes in the project area. In addition, to ensure that unrecorded prehistoric sites or areas of particular cultural importance to present-day Native Americans were recorded, the senior state archaeologist provided a list of Native American contacts for consultation purposes (Parkman, pers. comm., 2003). Repeated attempts were made to reach the provided contacts but no responses were received.

Documented Cultural Resources at Sonoma Coast State Park

More than 100 prehistoric and historic-era cultural resources have been identified at Sonoma Coast SP, mostly prehistoric sites including lithic or shell deposits and villages, as well as historic-era structures (Table 2-8). Other resources that have not been pinpointed but may

Site Type	Number of Sites
Shell midden	28
Shell scatter/lithic scatter	26
Historic-era	12
Prehistoric occupation	4
Unknown	34
Petroglyph	1

* The majority of sites marked as unknown were recorded over 50 years ago and could not be relocated during more recent efforts; they may have been either destroyed or covered by dune deposits.
Source: EDAW 2003

well be found at Sonoma Coast SP property include the site or the remains of the historic Koistromitinov Ranch possibly situated within the Willow Creek area, and the more difficult to identify resources such as remnants of the original Russian road network laid through the area. Campbell Cove was also a major Russian port in California, visited by many ships and described by many travelers. Drakes’s landing point in 1579 may well lie somewhere at Sonoma Coast SP as well, including remnants of a fort that his men built during their 36-day stay while they repaired the Golden Hind. One possible location for this is near the Pacific Gas & Electric Company (PG&E) excavations for a reactor in the 1960s, now known as the Hole in the Head. Debris removed from the excavations may cap Drake’s fort, as well as prehistoric sites in the vicinity. Limited remote sensing investigations of several possible structures and areas (Jewett and Lightfoot 2000) documented the existence of possible cultural resources at the sites, however, their exact nature remains unknown.

Another interesting area of investigation has been initiated by University of California, Davis student Michael Kennedy. Kennedy has collected mussel shells, using them to derive dates for various midden layers, especially in the Duncans Landing Rockshelters. These shells are then also submitted for oxygen isotope analysis which indicates changes in sea level over time.

The density of early Native American sites along the coastline, waterways, and lower-lying landforms demonstrates that the area was used fairly heavily during prehistoric periods. The heaviest use and major sites appear concentrated along the coast, especially near river mouths. The favorable topography, presence of stream courses, and diversity of floral and faunal resources made these coastal zones highly attractive for prehistoric occupation. Consequently, numerous sites have been found in these areas. However, it is important to note that the concentration of sites along the coast may not necessarily reflect the entire range of prehistoric patterns of land use in the region. While beaches and near-beach areas were clearly important locations for early Native American populations, the density of recorded sites along the coast may also reflect the relative ease with which such sites can be discovered and recorded by researchers. Nearby springs provided other incentives for site

location. Conditions at Sonoma Coast SP vary from more open valley floors to steep, dense, brushy slopes and ridges.

The large number of prehistoric village sites identified at Sonoma Coast SP demonstrates its importance in the local prehistoric history of the area. One site in particular, CA-Son-348/H, is of particular significance. This site is a rockshelter located near Duncans Landing that was listed on the National Register of Historic Places in 1971. Deeply stratified deposits in the rockshelter span at least 9,000 years of use (Schwaderer 1992, Parkman, pers. comm., 2002) beginning in the Lower Archaic Period. Site CA-Son-299 dates to the Middle Horizon. Historic components from the latter portion of the 19th century are associated with a ship loading dock for lumber (Stewart 1986).

Apart from the prehistoric and early historic-era archaeological resources typically documented in subsurface contexts, a number of above-ground buildings, structures, and districts have been identified as well. These include, but are not limited to, the Carrington Ranch which has been determined to be eligible for listing on the National Register of Historic Places as a historic rural landscape district, the Willow Creek ranch complex, the Wright Ranch, and a farm or ranch complex on Penny Island. Such resources are fairly recent in terms of the length of Euro-American occupation and activities in the Sonoma Coast SP and vicinity. They are, however, important in that they are largely intact surviving example of the kind of complexes that resulted from the farming and ranching enterprises that were commonly active in the region from the latter decades of the 1800s and well into the 20th century.

Cultural and resources at Sonoma Coast SP have been subjected to a number of impacts that have caused damage or destruction. Chiefly, the natural process of coastal and drainage erosion has washed away site components, and apparently caused the total destruction of several prehistoric sites (Appendix D). Other factors, such as rock climbing, grazing, foot and equestrian traffic, looting, natural weathering, deferred maintenance, and construction or maintenance of Sonoma Coast SP facilities, have caused cumulative damage to some cultural resources. Ongoing efforts are made to assess this damage (Lindahl, pers. comm., 2003) and correlate sites in terms of their data potential and risk factors.

Interpretation and Educational Resources

Topics

The following interpretive topics and themes were suggested by park rangers, based on an interpretive prospectus written in 1973 (Royer, pers. comm., 2003). The development and adoption of an interpretive master plan incorporating these and other topics and themes have been suggested.

- ▶ Ecological Relationships between Marine and Terrestrial Life
- ▶ Comparisons of Individual Biomes
- ▶ Cultural Aspects
 - Native American

- Russian
- Early Explorers
- Development of the Area and Modern Inhabitants
- ▶ Geological Evolution
 - San Andreas Fault
 - Theory of Continental Drift
 - Coastal Shelf Formation

In addition, the following topics for educational programs are important (DPR, pers. comm. 2001):

- ▶ Surf safety
- ▶ Tide pool ecology
- ▶ Whale and seal watching
- ▶ Campfire education/story-telling
- ▶ Natural history
- ▶ Cultural history

Programs and Special Events

Many interpretation and educational programs are conducted by the Department. Bodega Bay is a major focus for marine education by schools from all over Northern California. While some of these groups are unscheduled, others are led by State Park Staff, volunteers from the State Park's programs (e.g., volunteers in Parks Program), and from organizations such as the Stewards of the Coast and Redwoods. Group visits have a significant impact on various areas, particularly the tide pools. Education provided by the Stewards of the Coast and Redwoods and other volunteer organizations, including the use of teacher manuals, on-site activities, and follow-up lessons, can help to reduce the impact on tidepools and other natural resources at Sonoma Coast SP.

AESTHETIC RESOURCES

Visual Resources and Scenic Characteristics

An abundance of visual resources exist in and around Sonoma Coast SP. Among these are coastal cliffs and bluffs, sea stacks (e.g., Arched Rock, Gull Rock) and rock formations, hillsides, inland valleys, coastal terraces, meadows, forests, beaches and dunes, the Pacific Ocean, tidepools, the Bodega Bay, the streams and estuaries, the Russian River and the sandbar. In addition, many areas covered by vegetation, such as woodlands, grasslands, wetlands, and riparian corridors, also have scenic value. The abundance of aesthetic resources at Sonoma Coast SP has attracted amateur and professional artists of all kinds (e.g., painters, sketchers, photographers, sculptors, film makers, and video artists), and Sonoma Coast SP is a regular destination for many painting, drawing and photography groups and classes. Visual resources also include cultural resources such as buildings, bridges, barns, outbuildings, fences, etc.

Viewsheds

Viewshed is the area visible from a particular point of view. The juxtaposition of the visual resources forms a dramatic array of viewsheds surrounding Sonoma Coast SP. The range of elevations available at Sonoma Coast SP provides numerous viewing angles; at each of the many vantage points, separate viewsheds may be appreciated as one looks seawards, landwards, or along the coast. Most visitors view Sonoma Coast SP as they travel on SR 1. This results in highly dynamic views from a continuously changing perspective. As such, most of the areas west of the ridgeline is contained in the viewshed.

Seaward views offer the Pacific Ocean as the backdrop. The coastal cliffs offer uninterrupted views of the Pacific Ocean. The scenic quality is particularly dramatic at sunsets, during which visitors may gaze on the sun as it slowly dips below the painted horizon.

The sea stacks and the irregular coastline are the main attraction as one takes a longitudinal survey of the coast. On a clear day, a visitor standing at Sonoma Coast SP can see past Bodega Bay toward San Francisco.

The rolling pastures lead to a background of hills as one looks landwards to the east. Ridgeline and mountain-top locations in the upper Willow Creek watershed offer views of the Coast Range, Willow Creek valley, and the Pacific Ocean.

Viewshed Classification and Protection

Viewshed classification and protection are vital in preserving the aesthetic and recreational value of Sonoma Coast SP. Viewshed classification as well as the establishment of a recommended review process and evaluation methodology are needed. Aesthetic evaluation is needed for some projects and the associated CEQA review process, as well as for agency review of projects proposed for development outside of Sonoma Coast SP for potential impacts to the viewshed (as seen from at Sonoma Coast SP).

While agencies such as the Bureau of Land Management have established aesthetic evaluation methodologies that may be used for Sonoma Coast SP, the Department has not officially adopted an aesthetic evaluation methodology. The only aesthetic evaluation done in and near Sonoma Coast SP was prepared for the Sonoma County Local Coastal Plan, and this study classifies viewsheds by three categories based on the scenic character and view enclosure levels, as shown in Table 2-9. Scenic character is a measure of the harmony or compatibility of the various elements of the landscape and also a measure of how distinctive the viewshed elements are. These elements include water features, landform types, vegetation types, and modifications such as buildings and bridges. View enclosure is a measure of how visually unobstructed are the views (Sonoma County 1987).

Most of the Sonoma Coast SP acreage that is visible from roadways is classified as having Outstanding Views or Above Average Views. A large proportion of the viewsheds visible from at Sonoma Coast SP is outside its boundary.

Designated Scenic Areas and Routes

The Local Coastal Plan also identifies several scenic corridors, including three that are located in the boundaries of Sonoma Coast SP. Two of these are also eligible or designated State scenic highways. A highway may be designated scenic by Caltrans depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler’s enjoyment of the view. The purpose of scenic highway designation is to help preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways.

SR 1 is an eligible state scenic highway. From SR 1, visitors can appreciate the scenic quality of Sonoma Coast SP and the surrounding areas and can view the ocean.

SR 116 is a State-designated Scenic Highway. While most of SR 116 is located outside Sonoma Coast SP, SR 116 provides vantage points to the Willow Creek Parcel of Sonoma Coast SP, as well as the Russian River as it flows into the Pacific Ocean.

Table 2-9 View Ratings		
View Category	Visual Character	View Enclosure
Outstanding	High	Open
	High	Partially Enclosed
Above Average	High	Enclosed
	Medium	Partially Enclosed
	Medium	Enclosed
Average	Low	Partially Enclosed
	Low	Enclosed

Source: Sonoma County 1987

None of the roadways at Sonoma Coast SP have been designated as National Scenic Byway; and none of the rivers and creeks at Sonoma Coast SP has been classified as a “wild and scenic river” under the federal and state Wild and Scenic River acts. Although it has no official scenic designation, Coleman Valley Road is a popular scenic route for motorists, motorcyclists, and bicyclists.

NOISE

Noise is often defined as unwanted sound. The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are Leq, Ldn, and CNEL. The energy- equivalent noise level, Leq, is a measure of the average energy content (intensity) of noise over any given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The day-night

average noise level, Ldn, is the 24-hour average of the noise intensity, with a 10-dBA “penalty” added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to Ldn but adds an additional 5-dBA penalty for evening noise (7 p.m. to 10 p.m.). Regarding increases in noise levels, knowledge of the following relationships will be helpful in understanding this report (EPA 1971):

- ▶ Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.
- ▶ Outside of the laboratory, a 3-dB change is considered a just-perceivable difference.
- ▶ A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- ▶ A 10-dB change is subjectively heard as approximately a doubling in loudness and would almost certainly cause an adverse change in community response.

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3.0 to 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver.

The average ambient noise level is generally low within Sonoma Coast SP. Vehicular traffic is the primary source of ambient noise generated by human activities. Because noise level decreases as the distance from the roadways increases, traffic noise at Sonoma Coast SP is restricted to areas immediate along the roadways and in the parking areas. Human speech and laughter, dogs barking, music from radios, and other recreation-related noises may be heard sporadically on trails, parking areas, beaches, and camp grounds. Visitors can experience times when little or no human activity-related noise is apparent in areas of Sonoma Coast SP that are not near roadways.

RECREATIONAL RESOURCES

Recreational Activities

A variety of recreational activities are available at Sonoma Coast SP. Table 2-10 below shows the recreational activities that may occur at various locations at Sonoma Coast SP. Other recreational activities, such as rock stacking, coastal vista viewing, and rock climbing, also occur at Sonoma Coast SP. Camping is the primary overnight recreational activity at Sonoma Coast SP; in addition, there are campfire programs offered on Saturday nights at the Bodega Dunes Campground from Memorial Day through Labor Day. Other night-time recreational activities that are known to occur include night fishing and gatherings of young adults and teenagers.

**Table 2-10
Recreational Opportunities**

	Hiking	Cycling	Horseback Riding	Mountain Biking	Tidepooling	Whale Watching	Seal Watching	Ocean Fishing	Freshwater Fishing	Surfing	Scuba or Snorkeling	Sea Kayaking	Camping	Beachcombing	Rock Climbing
Bodega Head	✓				✓	✓		✓		✓	✓			✓	✓
Campbell Cove	✓							✓				✓		✓	
Bodega Dunes	✓		✓					✓		✓			✓	✓	
South Salmon Creek Beach	✓							✓		✓		✓		✓	
North Salmon Creek Beach						✓		✓		✓		✓		✓	
Miwok Beach						✓		✓						✓	
Coleman Beach					✓	✓		✓						✓	
Arched Rock Beach					✓	✓		✓						✓	
Marshall Gulch					✓	✓		✓			✓				
Carmet Beach					✓	✓		✓			✓			✓	
Schoolhouse Beach					✓	✓		✓						✓	
Portuguese Beach					✓	✓		✓						✓	
Gleason Beach								✓							
Rock Point								✓							
Duncans Landing						✓		✓			✓			✓	
Wrights Beach	✓					✓		✓					✓	✓	
Furlong Gulch	✓					✓		✓			✓	✓		✓	
Shell Beach	✓				✓	✓		✓		✓	✓			✓	✓
Blind Beach	✓					✓		✓		✓	✓	✓		✓	
Goat Rock Beach							✓	✓		✓		✓		✓	
Jenner/Jenner Beach							✓	✓	✓	✓	✓	✓		✓	
Willow Creek	✓	✓	✓	✓					✓			✓	✓		
Pomo Canyon	✓												✓		
Vista Point	✓													✓	
Russian Gulch	✓							✓			✓	✓		✓	
North Jenner Marine Terraces	✓							✓			✓			✓	✓
Cliffs north of Meyer Grade Road	✓							✓			✓			✓	

Source: Hinch 1998, Royer 2003, DPR 1984, and EDAW 2003

Other late afternoon to late night activities include: watching the sunset; watching the night sky (in an area free of the glare and masking of urban lights); evening walks along the beach; evening meditation; gatherings of groups for celebrations, drumming, ceremonies, prayer, group meditation, thanksgiving especially at the times of seasonal and natural significance (e.g., the solstices, the equinoxes, full moons, eclipses, Mayday, Halloween, other holidays, and others).

Existing Recreation Facilities

Sonoma Coast SP contains a variety of recreational facilities, including both developed facilities and natural features. These facilities support a variety of recreational activities and provide accessibility to people with disabilities at 4 locations in Sonoma Coast SP. Table 2-11 below and Exhibit 2-8 shows the existing facilities at various locations of Sonoma Coast SP.

The primary developed recreational facilities at Sonoma Coast SP are the visitor center, the campgrounds, the trails, and the day-use areas. The existing day parking capacity is for approximately 2,000 vehicles, including 1,700 vehicles in approximately 30 paved parking lots and undeveloped turnout areas located throughout the Sonoma Coast SP (Alexander, pers. comm. 2003; Shannon, pers. comm. 2003).

Trails

Trails are an important component of Sonoma Coast SP for a variety of reasons. Trails provide recreational opportunities for a variety of user groups. Trails also provide an alternative to the automobile for transportation at Sonoma Coast SP, particularly if they are connected to other local and regional trail networks. Trails also provide access to areas of Sonoma Coast SP without roadways for limited-mobility user groups such as families with small children, people with disabilities, seniors, and others who would not be inclined to take cross-country treks. Trails with interpretive panels also provide interpretive opportunities and positive outdoor environmental experiences that are educational for the visitors. In terms of the resource protection role of trails, the California Recreational Trails Plan (DPR, 2002a) states the following:

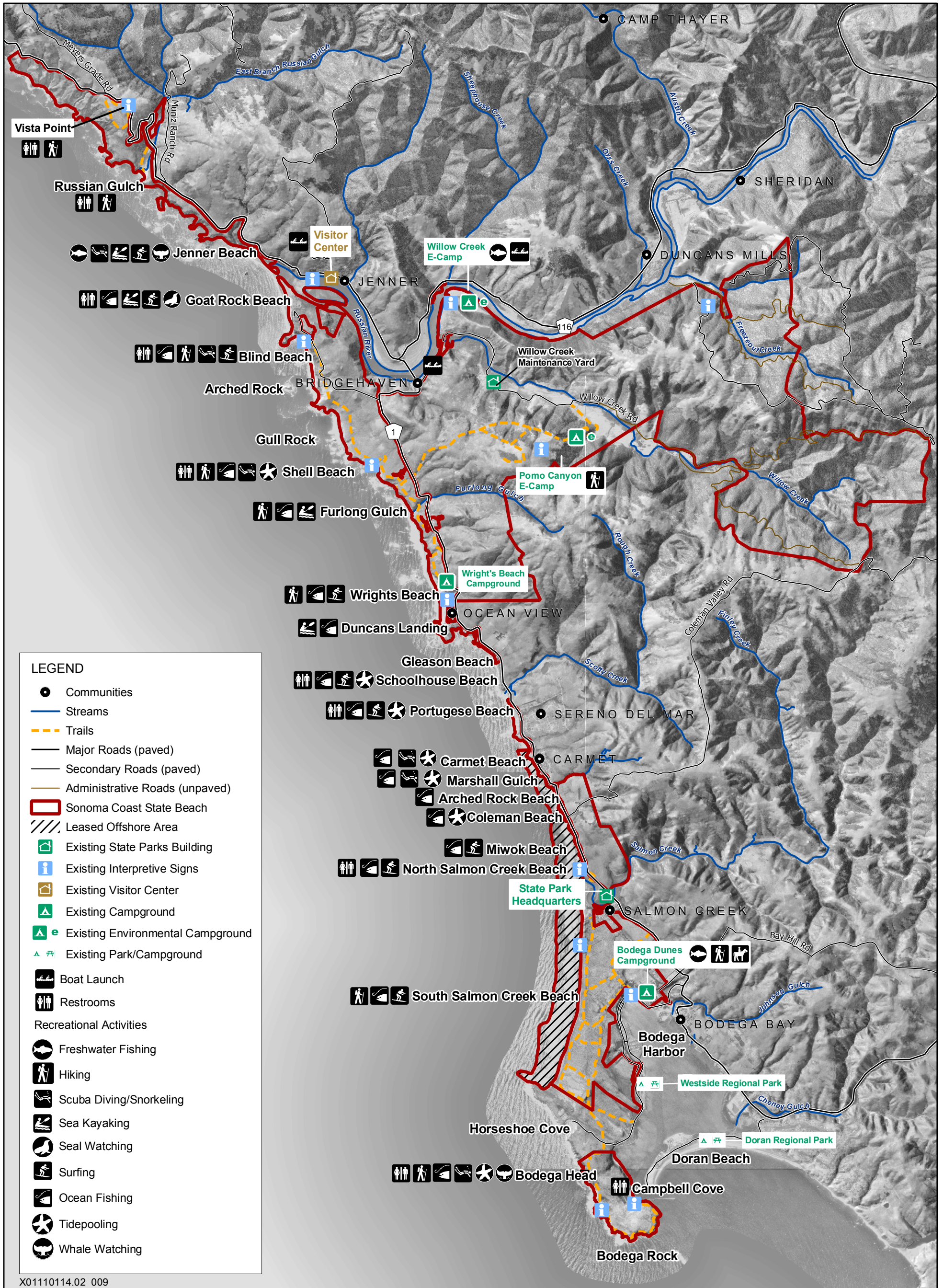
Trails can be used as a tool for resource protection. When properly designed, trails mitigate damage by controlling public access when they route visitors through or around sensitive resource areas. Vernal pools, unique riparian habitats, archeological sites, and threatened or endangered species habitats are examples of resources that can benefit from well designed and managed trails. (DPR 2002a)

Sonoma Coast SP contains 45 separate trails, totaling over 21 miles. The majority of trails at Sonoma Coast SP are for hiking only. Trails in the dunes south of Salmon Creek and north of the Bodega Bay Marine Lab, are also available for equestrian use. Because trails have not been fully assessed for appropriate bicycle use, bicycles are currently not permitted on trails at

**Table 2-11
Existing Recreation Facilities**

	Developed Camping	Environmental Camping	Restrooms	Showers	Trailer Sanitary Station	Telephone	Picnic Area	Visitor's Center	Beach Access	Trail Access	Disabled Access	Paved Parking Area	Potable Water	Cartop Boat Launch
Bodega Head			✓				✓		✓	✓	✓	✓		
Campbell Cove			✓				✓		✓	✓				
Bodega Dunes	✓		✓	✓	✓	✓	✓		✓	✓	✓		✓	
South Salmon Creek Beach			✓				✓		✓	✓				
North Salmon Creek Beach			✓				✓		✓	✓		✓		
Miwok Beach									✓	✓		✓		
Coleman Beach									✓			✓		
Arched Rock Beach									✓			✓		
Marshall Gulch									✓	✓		✓		
Carmet Beach									✓	✓		✓		
Schoolhouse Beach			✓				✓		✓	✓		✓		
Portuguese Beach			✓				✓		✓	✓		✓		
Gleason Beach									✓					
Rock Point							✓		✓					
Duncans Landing			✓				✓		✓	✓		✓		
Wrights Beach	✓		✓			✓	✓		✓	✓	✓	✓	✓	
Furlong Gulch									✓	✓		✓		
Shell Beach			✓						✓	✓		✓		
Blind Beach			✓						✓	✓		✓		
Goat Rock Beach			✓				✓		✓	✓		✓		
Jenner/Jenner Beach			✓			✓	✓	✓	✓					✓
Willow Creek		✓	✓				✓		✓	✓				
Pomo Canyon		✓	✓				✓			✓	✓			

Source: Hinch 1998 and Royer 2003



Sonoma Coast SP. However, the newly acquired upper Willow Creek property contains a network of legacy logging roads that are used as an unauthorized multi-use trail system for hikers, mountain bikers, and equestrians.

Hiking Trails

The more popular trails are the numerous vertical access trails that provide direct connections from the many parking areas to the beaches. These vertical access trails are situated along the coastal bluffs. They require constant maintenance because of ongoing coastal influences and their high level of use. Other popular trails are the lateral access trails that run along the bluff, parallel to the coastline. These include the Bodega Head Loop Trail, the Overlook Trail, Lower Dunes Trail, Salmon Creek Trail, and the Kortum Trail. All of these lateral trails make up a portion of the California Coastal Trail. Similar to other areas of the State, the California Coastal Trail is not continuous through Sonoma Coast SP because of various private property configurations and a precipitous coastline.

In addition to the two types of coastal trails, there are inland trails at Sonoma Coast SP. Pomo Canyon Trail allows visitors to traverse Sonoma Coast SP from the interior of Willow Creek to the Kortum Trail near the Shell Beach. The acquisition of the upper Willow Creek property included an unofficial 3½ mile trail that leads to The Islands in the Sky Vista in the upper Willow Creek watershed. Additionally, a network of legacy logging roads is used as ununauthorized trail system in the upper Willow Creek watershed. The trails are shown in Exhibit 2-8.

Mountain biking Trails

While mountain biking has not been allowed on the primarily coastal trail system at the Sonoma Coast SP, mountain biking has historically occurred in the newly acquired upper Willow Creek watershed. In addition to the trail that accesses the Islands in the Sky Vista, mountain biking has occurred on a network of legacy logging roads are used as an unauthorized trail system in the upper Willow Creek watershed.

Bike Routes

SR 1 and SR 116 are designated Class III bikeways, on which cyclists share the road with pedestrians and motor vehicles (Sonoma County 1989). Willow Creek Road, from Bridgehaven to Occidental, and Coleman Valley Road, from the Coast to Occidental, are popular but undesignated bikeways that pass through and adjacent to the Willow Creek Parcel of Sonoma Coast SP. The development and improvement of bikeways must be done in collaboration with the County and/or Caltrans.

Equestrian Trails

Horses are permitted on the trails in Bodega Dunes from the day use boardwalk, on the north end, to Mussel Point on the south. An equestrian staging area with limited parking is available off of Bay Flat Road, adjacent the Bodega Dunes Campground. East of SR 1 and

south of Salmon Creek, there is a private horse operation at the Chanselor Ranch. In addition to the trail accessing The Islands in the Sky Vista, horseback riding has occurred on a network of legacy logging roads that are used as an unofficial trail system in the upper Willow Creek watershed.

Patterns and Levels of Recreational Use

For the over two million annual park visitors, the most popular forms of recreation are beach related activities, such as visiting the tide pools and watching the ocean from vehicles. Other popular ocean-related activities include surfing, fishing, whale watching, seal watching, and, to a lesser degree, scuba diving and abalone sport diving. Another popular activity is kayaking on the Russian River. Visitors can access the river from the boat launch ramp at the Jenner Visitor Center. Popular land-based activities include hiking, mountain biking, horseback riding, camping, and picnicking. These land-based activity patterns and levels of use particularly apply as traditional uses on recently added Willow Creek watershed lands. General Plan examinations of the Willow Creek area indicate that these uses seem to be the majority and most appropriate uses for the inland watershed area. The addition of Upper Willow Creek property that results in most of the Willow Creek watershed to be included in the park expands inland recreation opportunities. Traditional recreational uses of the property have been hiking, equestrian and mountain biking trail use by primarily local visitors. It is anticipated that this will continue to be the primary recreation activity. Possible new uses may include overnight recreation opportunities.

Because of the abundance of recreational opportunities throughout Sonoma Coast SP, recreational activities occur throughout Sonoma Coast SP. Most of the visitors are day users, and the majority of activities occur along the ocean frontage. Typically the heaviest level of recreational activities will occur on the southern end of Sonoma Coast SP, with the visitor concentration spreading northward as the numbers of visitors increase. The Salmon Creek area is normally the first to reach capacity. Shell Beach and the Goat Rock area are also popular and fill to capacity early. Use levels often fluctuate with the weather patterns. Visitors tend to migrate to the coast during ideal conditions and as the interior areas heat up. Weekends and holidays always bring increased visitation.

In addition to the popular day use activities, visitors can enjoy the four campgrounds at Sonoma Coast SP. The Wrights Beach and Bodega Dunes campgrounds are open year-round. Wrights Beach Campground, with 27 camp sites, is the most popular and is well-liked by visitors with trailers and recreational vehicles (RVs). Bodega Dunes Campground, the largest campground at Sonoma Coast SP with 98 sites, is popular for all forms of camping. The Willow Creek and Pomo Canyon Environmental Campgrounds, with 11 and 21 sites respectively, are only open during the primary use season, from April to November. These campgrounds are primarily used for tent camping, because of the requirement that visitors walk to the campsites from the remote parking lots. Of these two environmental campgrounds, the Pomo Campground is the most popular.

Operational Facilities

The two main categories of facilities at Sonoma Coast SP are those used primarily by visitors and those that support the operation of Sonoma Coast SP. The major visitor-serving facilities include the Jenner Visitor Center, day use restroom buildings, entrance stations, and campgrounds, including the associated restrooms. Operational facilities include the Salmon Creek Ranger Station and maintenance facility, Willow Creek maintenance shop, and park staff residences. A shooting range for DPR and State agencies staff use is located in the Willow Creek Gulch area not far from the Pomo Canyon environmental camp.

Visitor Center

A small Visitor Center, with a small boat ramp available for public use, is located along the Russian River in Jenner. The Jenner Visitor Center is staffed by volunteers during the summer months only. It floods regularly during high flows of the Russian River associated with winter storms. While potential sites for a new visitor center are studied, flood-proofing measures, such as raising the visitor center, may be implemented in the interim.

Entrance Stations

There are two entrance stations in the Sonoma County SP: one is located at Wrights Beach Campground and the other at Bodega Dunes Campground. The Wrights Beach Entrance Station was constructed as a temporary structure in the early 1990s. During the summer, both entrance stations are currently staffed everyday. During the rest of the year, these two entrance stations are staffed only during weekends and holidays. Day use fees and camping fees are collected at both entrance stations. When the entrance stations are unstaffed, visitors are required to self pay. There are also camp host(s) information kiosks at the campsites available for reservation check-ins. The current fee schedule may be found at the Department's website (www.parks.ca.gov).

Restrooms

The Bodega Dunes Campground has four combination restrooms with flushing toilets and showers located throughout the campground. A trailer sanitation station is also located near the park entrance. The Wrights Beach Campground has two restroom buildings without showers. Showers have not been developed because of insufficient water and waste disposal capacities. The Willow Creek primitive campground has two pit toilet buildings, and the Pomo Campground has five pit toilet buildings.

Restrooms serving the day visitors are located throughout the coastline of Sonoma Coast SP. With the exception of Duncan's Landing and Goat Rock, which contain flushing toilets, these 17 buildings contain only pit toilets, and are at following locations (building type and approximate year of construction):

- ▶ Vista Point Trailhead (concrete, 2004);
- ▶ Russian Gulch (wood, 1989);

- ▶ Jenner Visitor Center (concrete, 2004);
- ▶ Blind Beach (concrete, 2005)
- ▶ Shell Beach (concrete, 2003),
- ▶ Duncans Landing (concrete block, 1976 or older);
- ▶ Portuguese Beach (concrete, 2005);
- ▶ Schoolhouse (concrete, 2005);
- ▶ Bean Ave. (concrete, 2003);
- ▶ Bodega Dunes Day Use area (wood, 1989);
- ▶ Goat Rock north lot building (concrete block, 1976 or older);
- ▶ Goat Rock south lot building (concrete, 2002);
- ▶ Salmon Creek, with 2 buildings (concrete, 2003);
- ▶ Bodega Head west lot (concrete, 2003);
- ▶ Bodega Head east lot (concrete, 2003); and
- ▶ Bodega Head at Campbell Cove (wood, 1989).

The development and/or improvement of restrooms must consider the availability of water supplies, water pipelines, power lines, and sewer lines, as well as the compatibility and capacity of the sites for vaults, septic systems, and/or leach fields. Other considerations include roadway access for installation and maintenance operational needs.

Ranger Station and Maintenance Facilities

Sonoma Coast SP contains two primary maintenance facilities. One is located at Salmon Creek, and the other at Willow Creek. The Salmon Creek facility complex includes a ranger station and the original park facilities and residence.

The original park facilities at Salmon Creek were built in 1948, and included a park residence, ranger station, and maintenance shop occupying two separate buildings. The original ranger station has been converted to serve as an office for the maintenance supervisor. One of the two shop buildings houses a small shop for carpentry, metal work, and plumbing purposes and an associated storage area. The other shop building is used for storing building materials and lifeguard equipment. Materials and equipment, such as a table saw, are stored outside the buildings because of the limited space capacity of the shop buildings. The house remains a park residence. In 2000 a modular office building, with a bathroom and a shower, was constructed to serve as office space for the ranger staff and lifeguards. A gas pump and a trailer for seasonal staff are also located at Salmon Creek facilities complex. The complex is also used as the staging area for marine mammal rescue. Proximity to wetlands, potential significance as a historic resource, building maintenance (e.g., roofing), inadequate space (e.g., lack of lunchroom, showers, lockers, office, etc.), aesthetic compatibility, corrosion to unsheltered equipment and materials, and equipment safety (i.e., separation of plumbing, carpentry, and metal shops) are some of the perceived problems of this facility.

Several buildings at the Willow Creek Ranch are used to support much of Sonoma Coast SP's heavy equipment and vehicle maintenance functions. Because of its central location in the

District and the lack of more appropriate space and equipment elsewhere in the District, the Willow Creek Ranch facilities also provide maintenance services for other parks in the District. The barn and a number of outbuildings are used for the storage of materials, supplies and tools. The ranch maintenance shop houses the equipment repair facility, as well as office space for a maintenance supervisor and an equipment mechanic. Willow Creek Ranch is also used to store heavy equipment and vehicles for the District. Two trailer pads have been developed in the Willow Creek Ranch to provide residence for maintenance staff. The primary concerns expressed regarding the Willow Creek Ranch facilities include historic significance, inadequate space, proximity to wetlands, and equipment safety. In addition, the existing historic ranch house, which remains vacant and unused, is in deteriorating conditions.

Concessions

There are no permanent structures at Sonoma Coast SP that are used for concession purposes. There is one existing concession, a small mobile food concession that currently operates at the Goat Rock parking lot on weekends from April to September.

Employee Housing

Based on the District's policy, the employee housing units are assigned to staff based on program needs, such as the need for onsite staff to respond to emergency calls and maintenance calls. There are 9 full-time employee housing units at Sonoma Coast SP, and all of the employee housing units are occupied by existing staff. It is estimated that there is a shortage of 6 full-time employee housing units, based on existing staffing level. There is also a shortage of housing for seasonal staff and volunteer camp hosts, who are limited by the Department policies to a stay of no more than 9 months at Sonoma Coast SP. Because of the high housing costs in the area, it is difficult finding staff willing to relocate to Sonoma Coast SP. Depending on job title, some of the staff qualify for and receive housing subsidy from the Department (Eckstrom 2003, Shannon 2003).

CIRCULATION

Regional Highways

SR 1 is the main road traversing the entire length of Sonoma Coast SP from north to south. In Sonoma County, SR 1 is a conventional two-lane highway with substandard widths and significant horizontal and vertical curvature, and the accident rate at this segment of SR 1 is higher than the State-wide average. Because the geology of the coastline is unstable and is subject to landslide activities, sections of SR 1 are occasionally closed for repair. Roadway maintenance activities often necessitate closures of one lane, causing traffic delays.

The vehicular trips on this segment of SR 1 are largely recreational in purpose. Near Sonoma Coast SP, SR 1 accommodated approximately 1,250 vehicular trips during the peak hour at the junction with Eastshore Road near Bodega Bay in 2000 (Table 2-12). During periods of high recreational activity, the level of service on SR 1 may deteriorate to level of service

(LOS) F, indicating severe traffic congestion. For the planning period of 1985–2005, Caltrans has prepared the Route Concept Report Summary for SR 1. This report recommended shoulder widening, slow moving vehicle lanes on significant vertical grades, channelization at connections with major traffic generators to enhance safety, improvements at intersections with major beach access points (e.g., left turn lanes), provisions of parking facilities in areas where people routinely park along SR 1, and prohibition of all but emergency parking along SR 1. A bypass of Bodega Bay was suggested for consistency with Sonoma County planning. No additional lanes were recommended, consistent with the California Coastal Commission’s decree that SR 1 remain a scenic two-lane road in rural areas of the coastal zone (Caltrans 1985). All future improvements to SR 1 and other Caltrans-maintained highways (e.g., new pullouts and new connecting driveways) must be designed according to the agency’s Highway Design Manual, which addresses structural integrity, drainage, noise, safety, and a number of other issues (Caltrans 2001). An encroachment permit from Caltrans may also be required (Caltrans 2002).

**Table 2-12
Traffic Counts on State Highways**

Route	Roadway Segment	Peak Hour		Peak Day		Average Day	
		2000	2002	2000	2002	2000	2002
SR 1	North of Jenner	220	150	2,650	1,550	2,200	1,250
	South of Jenner	300	320	3,600	3,400	2,950	2,750
	North of SR 116 Junction	300	320	3,600	3,400	2,950	2,750
	South of SR 116 Junction	410	230	2,950	2,850	2,350	2,100
	North of Eastshore Road	820	650	6,300	7,400	5,000	5,900
	South of Eastshore Road	1,250	650	10,000	7,200	8,000	5,900
SR 116	East of SR 1 Junction	340	380	4,000	3,650	2,750	2,850

Source: Caltrans Traffic and Vehicle Data Systems Unit All Traffic Volumes on CSHS (Caltrans 2003).

Access to Bodega Head is provided primarily by Westshore Road. When the weather is nice on weekends throughout the year and especially during the summer, SR 1 can become congested with traffic generated by visitors. There is a collaborative effort between the County, Sonoma County Transit, Caltrans, and local organizations to improve bicycle access on SR 1 and other local roads in the Bodega Bay area, such as Bayflat Road (Robertson, pers. comm. 2003).

Access to Willow Creek and the Russian River is provided via Willow Creek Road, a County-owned and -maintained road. Currently, there are no plans to expand or improve Willow Creek Road, aside from regular maintenance and drainage improvements (Robertson, pers. comm. 2003). Access to the upper Willow Creek watershed is provided by Willow Creek Road, Coleman Valley Road and Freezeout Road.

SR 116, while it is not located at Sonoma Coast SP, provides east-west regional connection to SR 1. The section of SR 116 near the coast is a recreational and commuter route that connects the coastal towns and towns along the Russian River to Sebastopol, SR 12, and SR 101. This two-lane highway starts just outside Sonoma Coast SP's boundary at SR 1 near Jenner and the bridge over the Russian River. Traffic volume on SR 116 is heaviest during the holidays and weekends because of visitors who flock to the Russian River and the coast. For the planning period of 1985–2005, Caltrans has prepared the Route Concept Report Summary for SR 116. This report states that Sonoma County suggested rerouting of SR 116 to River Road or SR 181 to avoid congestion in Sebastopol (Caltrans 1985).

Other major roadways used by visitors traveling to the portions of Sonoma Coast SP near Bodega Bay are Bodega Highway and Petaluma-Valley Ford Road, which provide connection to U.S. 101 at Santa Rosa and Petaluma, respectively.

State Park Roads and Parking Areas

Sonoma Coast SP contains both paved and unpaved roads and parking areas. The primary unpaved roads and parking areas are the Pomo campground access road and parking area; Bodega Head east and west parking areas as well as the access road to the east lot; a portion of the access road to the south Goat Rock parking area; Russian Gulch access road and parking area; Jenner Visitor's Center parking area; Salmon Creek Ranger Station/Maintenance shop parking; and the Wrights Beach day-use parking area. Other unpaved service roads and parking areas include the access road to the Willow Creek environmental camp sites (near the Russian River); access road and parking at the Willow Creek firing range; the access road and parking at the Willow Creek maintenance shop; the Freezeout Flat access road and parking off of Freezeout Flat Road in the northeast section of the Park; and Hunters Camp Road in the southeast section of the Park.

In terms of road/pavement design criteria, the vast majority of the roads at Sonoma Coast SP are considered to be lightly loaded, low-speed, and low-volume roads. From a structural standpoint, both paved and unpaved roads are appropriate for most park use. The minimum pavement design criteria for most park roads is similar to that for minor residential streets, which in the coastal area of Sonoma County is, by rule-of-thumb, 2-inches of asphalt concrete over 6-inches of base rock. Except for portions of the recently reconstructed Bodega Head entrance road, only a few roads at Sonoma Coast SP meet this minimum standard.

Almost all of the existing paved park roads, campground loop roads and parking lots are multiple layers of penetration and other asphaltic treatments and/or chips seals on native material. Only a few park roads have an underlying compacted base rock foundation or a structurally significant asphalt concrete surfacing (1.5 inches or thicker). Many park roads are a mix of asphalt concrete patches, overlays, chip seals and pot holes. Major repairs, if not total reconstruction, may be appropriate for nearly all roads and parking areas at Sonoma Coast SP.

A factor that adversely affects the condition and longevity of the roads at Sonoma Coast SP is the large amount of winter rainfall and the high water table(s), which combine to create nearly continuous surface water runoff and saturated subsurface conditions. Both of these conditions weaken the structural strength and accelerate the deterioration of the road pavements. In this geographic/climatic area, the key to road longevity and economy is appropriate road drainage design. Pitched or crowned pavement surfaces, functional interceptor and roadside ditches, culverts, subsurface drainage lens, edge and under-drains, as well as porous "open-graded" bases, are features that can be used to greatly improve both surface and subsurface drainage.

Portions of the heavily used entrance roads to both Bodega Head and to Goat Rock are in failure mode due, in part, to their locations in areas of near continuous soil saturation. Use of techniques to drain and control subsurface water will be needed for the reconstruction of both of these important roads.

Overall, approximately 2,000 parking spaces are available for day use and overnight visitors to Sonoma Coast SP. Because most of the parking spaces at Sonoma Coast SP are not paved or striped, the number of parking spaces is based on estimates provided by the District staff. There are approximately 100 parking spaces in the paid day use areas (40 at Bodega Dunes and 60 at Wrights Beach) and approximately 130 parking spaces in the four camping areas. There are 1,500 free designated parking spaces in other Sonoma Coast SP designated and maintained parking areas (e.g., lots and pullouts along SR 1) between the Vista Trail and Bodega Head. The pullouts located just outside Sonoma Coast SP and along the state routes, managed by Caltrans, provide an addition of approximately 250 parking spaces. Many of the Caltrans-maintained pullouts are located north of Jenner (Alexander, pers comm., 2003; Shannon, pers. comm., 2003).

Public Transportation

Mendocino Transit Authority provides daily public bus service with stops near the Sonoma Coast SP at Jenner and Bodega Bay. Route 95 Bus, also known as the South Mendocino Coast Bus, runs along SR 1 between Point Arena in Mendocino County and Bodega Bay and continues along Bodega Highway and SR 12 to Santa Rosa. One bus trip per day is scheduled in each direction. Continuing public transportation services to regional locations are available via buses operated by Amtrak, Greyhound, Mendocino Transit Authority, and Sonoma County Transit (MTA, 2003).

UTILITIES AND SERVICES

Wastewater Systems

Wastewater generated by the onsite bathrooms is processed and treated by 25 separate septic systems serving the North Goat Rock restroom, Wrights Beach restrooms, Bodega Dunes combination buildings, 3 camp host sites, R.V. dumpstation and kiosk, Willow Creek yard restroom with 2 trailer hookups, Salmon Creek ranger station, Salmon Creek maintenance shop and office with 1 trailer hookup, and all residences. In addition, there are

24 toilets in that are self contained. These vault toilets are periodically pumped out by a sanitation contractor, based on need.

To determine whether septic tanks can be efficiently constructed, operated, and maintained in a given area, knowledge of the soil and topographic characteristics of that area is essential. Physical factors, such as soil type, soil depth, ground slope, and presence of ground water, have bearing on the siting of septic tanks and leach fields. Directional factors, such as distance to property lines, cuts, fills, water wells, and bodies of water also are important.

The physical factors are, perhaps, the most critical in the determination as to whether a septic tank system can be placed in a particular site. Soil permeability which is the measure of the ability of the soil to absorb and transmit fluids is one of the most important factors. Soils with low permeability may not absorb fluids and would not be compatible with septic systems. Generally, soils with a rate of percolation of up to 60 minutes per inch (mpi) or 25 minutes per centimeter (m/cm) have adequate permeability to accept and transmit effluent (Ford 1975). Based on this rule of thumb, some of the soil types at Sonoma Coast SP may be considered to be incompatible with septic systems. Site-specific soil and geotechnical investigations would be required to determine the suitability of each site for septic systems.

The depth of soil cover is also important for a leach field system because there must be sufficient soil mantle underlying the leach field area to filter and purify effluent. A great number of the bacteria contained in sewage effluent are effectively removed by downward percolation through several feet of soil (Ford 1975).

Because of the critical nature of the percolation rates of soils, it is important that percolation tests be performed for each development project. Tests should be carried out during the most adverse time of the year (i.e., when soils are wet and standing water is at its highest level) (Ford 1975).

Water Systems

Because of the underlying geologic formation, groundwater is available in limited supply throughout most of Sonoma Coast SP and its vicinity. The relative scarcity of water supplies, coupled with the rights owned by local water purveyors over most available water sources, makes water supply a major constraint to development at Sonoma Coast SP.

West of the San Andreas Fault, an area of intrusive granitic rocks is exposed along the western side of Bodega Head. Wells drilled into this rock mass may be able to produce limited quantities of potable ground water from fractures, shears, and deeply weathered zones. In this area is a spring-fed pond, named the "Hole-in-the-Head," which is located at the site of the Bodega Atomic City, where construction of a PG&E nuclear power plant was begun but never completed. The pond is formed from ground water entering the foundation excavation area. The water level in the pond stands about 20 feet (6 meters) above sea level, and there is a constant outflow from the pond into Bodega Bay of from 10 to 20 8pm (38 to 76 l/m) (Ford 1975).

East of the San Andreas Fault, ground water is present in the Franciscan formation as indicated by the great number of springs in the areas of outcrop. Excellent quality water is found at a number of cold springs which issue from these rocks. However, the rocks in the Franciscan formation are not considered water-bearing; ground water is not present in primary openings, as with most water-bearing materials, but rather in secondary openings such as joints, fractures, and shear zones. Wells drilled in these rocks frequently are completed as "hard rock" wells; that is, they usually are uncaged. Well yields generally are low and range from less than 1 to at most 3.8pm (<4 to 12.1/m). These meager yields, however, may be sufficient for domestic purposes if water storage facilities of at least 1,000 gallons (3.78 cubic meters) are available (Ford 1975).

Groundwater is most abundant at Sonoma Coast SP at the San Andreas Fault zone, including the Bodega Dunes. In areas of relatively nonwater-bearing rocks, such as those found at the either side of the San Andreas Fault, faults can create shattered zones which could act as conduits for ground water movement. Ground water along some faults may contain slightly higher amounts of certain mineral constituents, such as fluoride and boron (Ford 1975).

Except at Bodega Dunes, there is usually a shortage of potable water available to visitors and staff at other locations at Sonoma Coast SP; potable water is regularly trucked into Sonoma Coast SP. The main source of water supply in the vicinity of Sonoma Coast SP is groundwater (via springs, seeps, wells, and infiltration galleries) and, to a lesser extent, the creeks. There are 12 separate water systems in and near Sonoma Coast SP, each with its own distribution system. The sources or suppliers of the water systems are shown below:

- ▶ 6 water systems purchase water from a local utility.
- ▶ 9 water systems obtain water from either a well, a spring or a creek.
- ▶ 2 water systems are surface water treatment facilities and are regulated by the California Department of Health Services.

Most of the localized wells are controlled by the local water agencies. The potable water available at Bodega Dunes, which is located at Sonoma Coast SP, is owned and extracted by the Bodega Bay Public Utility District (BBPUD), from which Sonoma Coast SP obtains some of its water at market rate. There are 6 storage tanks associated with these water systems (Alexander, pers comm., 2003).

High Voltage Power Lines

PG&E owns electrical transmission lines at Sonoma Coast SP, including 12kv pole lines roughly parallel to SR 1 along the marine terraces and through the Willow Creek Parcel of Sonoma Coast SP. Electricity used at Sonoma Coast SP is also transmitted by PG&E.

Other Utilities

The source of heat for residences, offices, shops and restrooms with showers is propane.

EMERGENCY SERVICES

Fire Protection

Fire protection service for Sonoma Coast SP is provided by the California Department of Forestry and Fire Protection and the Bodega Bay Fire Protection District in the southern portion of Sonoma Coast SP to as far as Wright Beach. The Monte Rio Fire Protection District provides fire protection services in the northern portion of Sonoma Coast SP, from Shell Beach in the south to the Vista Point in the north and Willow Creek in the east.

Park Security

Park security is provided by the park rangers, as well as the Sonoma County Sheriff's Office and the California Highway Patrol.

Medical Aid

Emergency medical response is provided in three phases. The first phase consists of first response, which is provided by park rangers, lifeguards, and two fire protection districts mentioned above. The second phase consists of medical transport. If it is determined that the patient must be treated at a health care facility, then the patient is taken either by ambulance or by helicopter to the nearest hospital. Ambulance services are provided at Sonoma Coast SP by the Bodega Bay Fire Protection District, or the Monte Rio Fire Protection District. Medical air transport is provided by Henry 1 and Cal Cord. The nearest hospital is the Palm Drive Hospital in the City of Sebastopol. Other hospitals that may serve patients from Sonoma Coast SP are the Santa Rosa Kaiser Hospital, Santa Rosa Memorial Hospital, and Sutter Medical Center of Santa Rosa. The nearest trauma centers are the Queen of the Valley Hospital, which is located in the City of Napa, and the Santa Rosa Memorial Hospital (Alexander, pers comm., 2003).

2.2 PLANNING INFLUENCES

2.2.1 SYSTEM-WIDE PLANNING

CALIFORNIA STATE PARKS MISSION STATEMENT

The Department's mission statement is to "provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation."

STATEWIDE TRAILS PLAN

The California Recreational Trails Plan addresses the mission and overall role of the California State Parks Statewide Trails Office as well as providing guidelines for future actions of the Statewide Trails Office. The mission and vision of the Statewide Trails Office is as follows:

Establish and maintain a system of trails and greenways that serves California's diverse population while respecting and protecting the integrity of its equally diverse natural and cultural resources. The system should be accessible to all Californians for improving their physical and mental well-being by presenting opportunities for recreation, transportation and education, each of which provides enhanced environmental and societal benefits.

This plan serves as a guideline for establishing and maintaining parks in California and integrates the state parks trail programs with the local and private organizations that operate and maintain the trails. Moreover, it will serve as a planning and maintenance guide for the existing segment of the California Coastal Trail that runs through Sonoma Coast SP, the existing points of coastal access, and future trails at Sonoma Coast SP.

CALIFORNIA COASTAL TRAIL PROJECT

The California Coastal Trail is a proposed multi-use trail that would stretch 1,300 miles along or near the coastline from Oregon to Mexico. Pursuant to Senate Bill 908, the California Coastal Conservancy, in partnership with the Department and other federal, state, local, and private organizations, has released a draft of the Completing the California Coastal Trail report, which includes goals and objectives, general standards, recommendations for action, and maps of the conceptual alignment of the California Coastal Trail.

At Sonoma Coast SP, the report recommends the extension of the Kortum Trail between Wrights Beach and North Salmon Creek Beach for the purpose of providing safe pedestrian access off of SR 1. South of Salmon Creek, the report recommends the completion of a design plan for pedestrian and bicycle access through the State Park and the community of Bodega Bay, including specific land acquisition and improvements needed to alleviate the current safety problems along SR 1. North of Sonoma Coast SP, the report recommends working with private landowners to design a public trail.

INVENTORY, MONITORING, AND ASSESSMENT PROGRAM

As indicated by its name, the purpose of the Department's Inventory, Monitoring, and Assessment Program (IMAP) is to inventory, monitor, and assess the condition of natural resources in the State Park System. The goal of the program is to prepare IMAP plans for each of the state parks using the Environmental Condition Assessment (ECA) process. ECA is a multi-level process for establishing long-term monitoring that uses "environmental indicators" as a primary tool to assess current resource conditions and to detect change in these conditions over time.

The natural resources that may be included in the ECA are wildlife, vegetation, and physical assets. The ECA process is used to identify the significant resources that will be inventoried and monitored. The resulting data is then used to modify and update the monitoring program, in adaptive management of the park, and for proactive planning. ECA emphasizes scientifically based resource management practices and allows park staff to understand how

the resource condition of the park affects the visitor experience and the health of ecosystems outside of the park.

The level of ECA (i.e., preliminary, reconnaissance, baseline, comprehensive, intensive) implemented at each park depends on the priority of issues identified during the preliminary-level ECA and Department resource availability. Baseline assessments are performed for new property acquisitions. Limited funding has been obtained since 2000 to initiate the development of IMAP plans for each of the parks in the system (DPR 2001e). The ECA process for Sonoma Coast SP began in 2000.

STATE PARK SYSTEM BASELINE WATERSHEDS

Willow Creek has been identified as one of the baseline watersheds in the SPS. These priority watersheds, including their aquatic and riparian habitats, represent the ecological values of their region and are capable of being protected from land conversion, including the non-SPS lands. These watersheds receive priority consideration for natural resource management actions (including prescribe burning, road maintenance, monitoring, exotic species control.), DPR and non-DPR acquisition, research and interpretation.

EMPLOYEE HOUSING POLICIES

Employee housing policies for Sonoma Coast SP is set by both the Department and by the Russian River District. The employee housing policies were being updated by the Department during the preparation of this Plan, and upon completion of the Department's updated Employee Housing policy, the district's policies will be revised and clarified by the district superintendent as necessary.

SYSTEM-WIDE PARK OPERATIONS AND CONCESSIONS POLICIES

The concessions program provides a very important part of the visitors' experience. Concessionaires offer the facilities, services, and goods that the State could not otherwise provide, ranging from traditional food services and campground grocery stores, to Jeep tours and rafting trips. In the system's historic parks, concessionaires help the Department achieve its educational mission by providing educational programs, known in the park profession as "interpretation." These programs add vitality, interest, and excitement to the State's fascinating heritage as preserved and protected by the Department.

The Department partners with a variety of businesses, non-profits, and public agencies through concession contracts, co-operative agreements, and operating agreements to offer the public these goods and services. The method through which these opportunities are made available to the public is regulated by the California PRC, §§5080 et seq.

AMERICANS WITH DISABILITIES ACT AND ACCESS TO PARKS GUIDELINES

The Americans with Disabilities Act (ADA), the federal law that prohibits discrimination on the basis of disability, is applicable to all actions by the states, including the preparation of state

park general plans. In compliance with the ADA, the Department published the *Access to Parks Guidelines*, which was first issued in 1994 and last revised in 2001. The *Access to Parks Guidelines* details the procedure to make state parks universally accessible while maintaining the quality of park resources. Also included in the guidelines are recommendations and regulations for complying with the standards for accessibility. The Department has also published the *All Visitors Welcome: Accessibility in State Park Interpretive Programs and Facilities (2003a)*, which provides guidance on developing accessible interpretive programs and facilities.

The Department's *Transition and Trail Plans for Accessibility in State Parks (2001)* outlines the Department's commitment to achieve programmatic access throughout the State Park System and in each of the parks. The visions of these guidelines and plan are embodied in this General Plan.

CALIFORNIA HERITAGE TASK FORCE

Established in 1981 by the California state legislature, the California Heritage Task Force (CHTF) was created to develop a set of policies and programs for the State's cultural heritage resources. As a result of a Cultural Heritage Resources Summit in Los Angeles November, 2002, a report was published updating a 1984 CHTF Report. The updated report is used as a guide to cultural resource management legislation writing.

CALIFORNIA COASTAL ACT

The California Coastal Act (CCA) (California PRC §30000 et seq.) was enacted in 1976 to provide long-term public access and protection of California's 1,100-mile coastline for the benefit of current and future generations. The CCA created a partnership between the State (acting through the California Coastal Commission) and local government (15 coastal counties and 58 cities) to manage the conservation and development of coastal resources through a comprehensive planning and regulatory program. Sonoma Coast SP is located in the Coastal Zone, and management activities with Sonoma Coast SP must be consistent with the Sonoma County Local Coastal Plan (LCP). In addition, the Department is responsible for complying with the CCA by maintaining public access to the coast via trails, roads, and parking facilities.

CALIFORNIA STATE LANDS COMMISSION

The California State Lands Commission (CSLC) was created in 1938 to manage and protect the important natural and cultural resources on certain public lands in California and the public's rights to access these lands. These lands include the beds of California's naturally navigable rivers, lakes and streams, as well as the State's tide and submerged lands along the State's coastline, extending from the shoreline out to three miles offshore.

The Department has a current lease, to the year 2039, with the State Lands Commission for offshore areas to be a part of Sonoma Coast SP. This area (667 acres) consists of the entire

length of the Sonoma Coast SP coastline from the mean lower low water line westward to the 18-foot bathymetric contour line. This is approximately 600 feet from the shoreline.

MARINE MANAGED AREAS IMPROVEMENT ACT

The Marine Managed Areas Improvement Act of 2000 established a uniform classification system for state marine managed areas and set forth a schedule for reclassifying and renaming the existing special marine managed areas. Under this Act, the current lease area along Sonoma Coast SP will need to be reclassified because “State Park” is not one of the six classifications of marine areas in the new state system. As of this writing, there are several unresolved issues with regard to both the process and schedule for reclassifying the existing marine areas, including the offshore areas within Sonoma Coast SP. The most likely classification for the Sonoma Coast SP offshore area under the new system is State Marine Conservation Area or State Marine Park. Both the State Park and Recreation Commission and the Fish and Game Commission would have to concur in order to approve either of these classifications (DPR 2001b).

CALIFORNIA UNDERWATER PARKS AND RESERVES PLAN

The draft California Underwater Parks and Reserves Plan is a cumulative and comprehensive summary of laws, policies, documents, studies, and surveys concerning the marine areas of the California State Park System. The draft plan addresses issues and makes recommendations in regard to establishing a more manageable marine classification system; lists existing state park marine units as well as proposed additions; identifying natural, cultural, and recreational features; identifying management and enforcement within designated areas; and improving public education, research, monitoring, and evaluation activities. The draft plan is consistent with Assembly Bill 993, the Marine Life Protection Act. The act establishes a uniform classification system for state marine managed areas to be used by state agencies.

PUBLIC RESOURCES CODE

The California PRC vests certain powers and responsibilities to the Department. For example, PRC §5024 defines the requirements regarding the treatment of historic, recreational, and other types of resources. PRC also grants the Department the authority to enter into agricultural leases, contract for concession or operating agreements, operate hostels, and pursue other management activities.

PRC §5019.50–5019.80, Classification of Units of the State Park System, provides guidelines for the designation of state park units and guiding principles for state park improvements. The PRC classifies different types of state park units and provides guidelines for the upkeep and improvements of park units. The PRC will be used as a reference to plan appropriate park improvements at Sonoma Coast SP.

CALIFORNIA COASTAL NATIONAL MONUMENT

The California Coastal National Monument (CCNM) was created by President Clinton in January of 2000 and was proclaimed a biological and geological treasure that is extremely rich in biodiversity and provides essential habitat for many species of scientific interest. The California Coastal National Monument consists of all unappropriated or unreserved islands, rocks and outcroppings along the coast of California that are above the mean high tide line and not contiguous to the shore in a distance of 12 nautical miles offshore. The monument includes more than 11,500 islands, rocks and outcroppings, totaling approximately 900 acres. The designation as a National Monument mandates the protection of historic and scientific objects, particularly wildlife species which normally inhabit the monument area.

The BLM was originally charged with managing the monument. In June 2000 the DFG signed a Memorandum of Understanding (MOU) with the BLM to collaborate in the management of the Monument. The Department also signed an MOU with the BLM, as approximately 25% of California's coastline is under management.

The BLM (with DFG and DPR as partners) completed a Resource Management Plan for the Monument in September 2005. The plan is comprehensive in nature and addresses issues in the monument area only. The plan integrates, where possible, the numerous related management issues of the various coastal partners involved in the planning effort. Key implementation priorities for management include protecting CCNM resources and resource values; developing and maintaining partnerships; and CCNM site characterization (specifically identifying and understanding CCNM resources). Key specific actions include establishing CCNM gateways (Sonoma Coast is identified as a potential gateway location); seabird conservation; and CCNM connections with tidepools and the intertidal zone.

CLEAN WATER ACT AND PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities, and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is California's statutory authority for the protection of water quality. The CWA and Porter-Cologne Act sets forth the obligations of Regional Water Quality Control Boards (RWQCB) pertaining to the adoption of water quality control plans (Basin Plans), in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. Sonoma Coast SP is in the North Coast Basin.

CLEAN AIR ACTS

The federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) authorizes the establishment of ambient air quality standards. Locally, the Northern Sonoma County Air Pollution Control District (APCD) is responsible for preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations about sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, and monitoring ambient air quality and meteorological conditions.

2.2.2 REGIONAL PLANNING INFLUENCES

Aside from the Sonoma County General Plan and Local Coastal Plan, the following planning documents and conservation plans are relevant for future management of Sonoma Coast SP.

DRAFT SONOMA COUNTY OUTDOOR RECREATION PLAN

The Draft Sonoma County Outdoor Recreation Plan (Sonoma County 2003) is prepared by the Sonoma County Regional Parks Department to guide parkland planning, acquisition, improvements and management to meet the needs of Sonoma County through the year 2010. It also establishes a framework for agency coordination to meet parkland and recreation needs on a countywide basis. The Draft Outdoor Recreation Plan identifies existing and future parkland and recreation needs, recommends specific projects that could address these needs, and identifies policies and financing options to assist with implementation of the recommended projects.

In Sonoma County there are twelve park management bodies that provide a variety of parklands for County residents as well as for visitors from outside the County: two Districts, the U.S. Army Corps of Engineers Lake Sonoma Recreation Area, the County Regional Park System, five city parks and recreation department, and three special parks districts.

Sonoma Coast SP is located in the Sonoma Coast planning area designated in the Draft Outdoor Recreation Plan. Several recommended projects identified in the plan, area listed below, would be coordinated with trail development and improvement projects that would be implemented by the Sonoma Coast SP. (The preceding numbers correspond to the numbers in the recommended projects for the Sonoma Coast planning area in the Draft Outdoor Recreation Plan.)

- ▶ 1. Develop a Community Park to serve residents of the Bodega Bay Area. This proposed community park would be located on part of an existing 17-acre publicly owned property next to the Community Center. This community park would meet the needs of local residents for active and some passive recreation as identified through Outdoors Recreation Plan Workshops and acreage/population needs assessment.
- ▶ 5. Coastal Trail. The proposed trail extends from Black Point southward to the Estero Americano, is consistent with California State Coastal Plan policy 145 which calls for establishment of a coastal trail system statewide. When completed, this trail will connect: Estero Americano, Bodega Bay, Doran Ranch Regional Park, State Beaches, proposed Bodega Bay-Sebastopol Trail (AA), Willow Creek [parcel of Sonoma Coast SP], proposed Willow Creek Trail (AP), proposed Monte Rio to Coast Trail (AZ), Fort Ross State Park, Stillwater Cove Regional Park, Salt Point State Park, proposed Coastal Ridge trail (AB), and proposed Sonoma Coast Trail 2 (AT).
- ▶ 6. Bodega Bay to Sebastopol Trail. This proposed trail begins at Bodega Bay and ends at the West County Trail. This trail connects Bodega Bay, Salmon Creek Beach, State and/or County Park property, Finley Creek preserve (Sonoma Land Trust property),

Coleman Valley Road, Willow Creek Road, Occidental, and the West County Trail at Occidental Road. The existing West County Trail continues south to Sebastopol.

- ▶ 7. Willow Creek Trail. This proposed trail begins at Willow Creek [parcel of Sonoma Coast SP] and ends at Coleman Valley Road. This trail connects Willow Creek, Monte Rio to Coast Trail, Willow Creek Road, proposed state-park expansion, Finley Creek Preserve-Willow Creek Connector, and the Bodega Bay – Sebastopol Trail.
- ▶ 10. Coleman Valley-Willow Creek Trail. This proposed trail begins at the Willow Creek Trail and ends at the proposed Bodega Bay – Sebastopol Trail near the Finley Creek Preserve.
- ▶ 13. Russian River Waterway Trail. The Russian River is a navigable waterway from Cloverdale to the coast and as such, public access is protected by Article XV, §2 of the California Constitution.
- ▶ 14. Monte Rio to Willow Creek Trail. This proposed trail begins at Willow Creek [parcel of Sonoma Coast SP] and ends at Monte Rio. This trail will connect Willow Creek, proposed Willow Creek Trail, proposed state park expansion, the town of Duncan Mills, Dutch Bill Creek Bikeway, and Monte Rio.

In addition to the trails mentioned above, the draft Sonoma Outdoor Recreation Plan included references to “Other Lands.” This includes projects that are assumed to be implemented by other state, federal, and local agencies. They are included in the plan because they are intended to protect habitat and/or contribute to public recreation in Sonoma County. “Other Lands” mentioned in the plan that pertain to Sonoma Coast SP are listed below.

- ▶ 16. Acquisitions of additional land for the expansion of Willow Creek [parcel of Sonoma Coast SP]. The expansion of the Willow Creek area is intended to expand the State’s resource management of the watershed area. The area would be available for passive recreational use. This need has been identified in recreation plans, coastal plans, and restoration plans in addition to the Outdoor Recreation Plan workshops.
- ▶ 18. Acquisition of land for a preserve in the Salmon Creek Area (P3). This preserve is intended to be of sufficient size to protect one or more of the following biotic resources: the estuary, salmonid habitat, and fairy shrimp habitat of Salmon Creek.

RUSSIAN RIVER ACTION PLAN

In March 1997, Sonoma County Water Agency published the first edition of the Russian River Action Plan in response to the listing of coho salmon in the Russian River as “threatened” under the ESA. The Plan provided a detailed listing of actions needed to protect listed fish species, and identified opportunities to coordinate and cooperate with federal, state and local agencies to gain federal and/or state funding for projects. The Russian River Action Plan was updated in 2003 (SCWA 2003).

DRAFT RUSSIAN RIVER BASIN FISHERIES RESTORATION PLAN

As part of its Russian River Watershed Planning and Restoration program, the California Department of Fish and Game has made stream assessments and improved habitat for those areas where re-introductions of coho salmon will occur. The DFG is currently developing a Russian River Basin Fisheries Restoration Plan, which identifies limiting factors for native salmon and recommends habitat improvement and other land management changes (DFG 2002b).

RUSSIAN RIVER WATERSHED ADAPTIVE MANAGEMENT PLAN

The Russian River Watershed Adaptive Management Plan (WMP) is currently being prepared by the Russian River Watershed Council for the purpose of preventing further degradation and developing a healthy and sustainable Russian River watershed. The WMP will evaluate water quality, water quantity and the physical, hydrologic, and biological health and functions of the watershed. The WMP will provide measurable goals and recommendations to implement improvements and continue watershed assessment for the 50-year planning period (RRWC 2003).

WILLOW CREEK WATERSHED MANAGEMENT PLAN

The Willow Creek Watershed Management Plan (Prunuske Chatham, Inc. 2005) is a natural resource management plan that was developed in response to public and agency concerns for the future of the Willow Creek watershed. The four-year planning effort was completed in March 2005 as the State's acquisition of the Upper Willow Creek property was being completed. This partnership effort included two major landowners, the California Department of State Parks and Mendocino Redwoods Company (MRC), as well as the Stewards of the Coast and Redwoods, Prunuske Chatham Inc., Trout Unlimited, LandPaths, and members of the Technical Advisory Committee.

The purpose of the plan is to provide a comprehensive management plan to guide management and restoration activities for the recovery of the Willow Creek watershed, particularly its salmonid habitat. Goals identified for the watershed include:

- ▶ Improve Habitat for Indigenous Wildlife Species
- ▶ Increase Populations of Salmon and Steelhead to Sustainable Levels
- ▶ Reduce Sediment Input into Willow Creek
- ▶ Resolve Sedimentation Issues at the Second Bridge
- ▶ Manage Vegetation for Habitat Diversity
- ▶ Manage Recreation for Conservation of Natural Resources

The final "Willow Creek Watershed Management Plan" document can be viewed online at: <http://www.stewardsofthecoastandredwoods.org/WC%20Plan%20Final.pdf>. A hardcopy of the Plan is on file at the Department's District office.

SONOMA COUNTY LANDMARKS COMMISSION

The Landmarks Commission designates historic landmarks, reviews development proposals involving historic properties, and administers a historic resources preservation program for Sonoma County.

ORGANIZATIONS DEDICATED TO OPEN SPACE PRESERVATION

Sonoma County Agricultural Preservation and Open Space District

The Sonoma County Agricultural Preservation and Open Space District permanently preserves the diverse agricultural, natural resource and scenic open space lands of Sonoma County for future generations. To this end, the District conserves greenbelts between cities (community separators), farmland, biological resources, wildlife habitat and land for public recreation.

Sonoma Land Trust

The mission of the Sonoma Land Trust (SLT) is to provide permanent protection of Sonoma County Land, its natural beauty and its biotic resources, and to offer stewardship, education, and guidance for the preservation and enhancement of agricultural, natural, scenic, and open space lands.

Stewards of the Coast and Redwoods

Stewards of the Coast and Redwoods (Stewards) is a nonprofit public benefit corporation that has been working in partnership with the Department since 1985 to provide volunteer opportunities for Parks in the Russian River District, including Sonoma Coast SP. Ongoing programs include Seal Watch, Whale Watch, a visitor center in Jenner, tidepool education, watershed education in Willow Creek for adults and children, trail maintenance, water quality monitoring in the Willow Creek watershed, and beach cleanups. The Russian River District Volunteers in Parks program depends on Stewards to provide funding for educational and interpretive facilities. Stewards obtained funding for and managed development of the Willow Creek Watershed Management Plan and the Sustainable Channel Development in Lower Willow Creek, Sonoma County, California (Prunuske Chatham, Inc. 2005). Future projects in Sonoma Coast SP include continued planning and implementation of restoration efforts in the Willow Creek watershed, development of an Environmental Living Program for students, the development of new trails and signage, ongoing docent-led outings, and the development of Mounted Assistance Units. Funding has been secured from the California State Coastal Conservancy to support many of these efforts.

Land Partners through Stewardship (LandPaths)

LandPaths is a nonprofit organization that assists landowners in defining and implementing practices which maximize resource conservation, insuring protection for ecologically fragile areas, while promoting managed public access. LandPaths provided important support and participation in the acquisition of the Upper Willow Creek watershed as well as being a project partner and technical advisory committee member for the *Willow Creek Watershed*

Management Plan. Furthermore, through an innovative non-profit/State Parks management partnership, LandPaths continues their involvement by overseeing permitted public access to the Upper Willow Creek watershed area for hiking, biking, and horseback riding use. Landpaths also promotes and conducts on-site environmental education programs to involve the community in preserving the diverse natural communities of the region while undertaking watershed restoration activities.

2.2.3 PUBLIC CONCERNS AND COMMENTS

Public input is an important component of the general planning process. Input for public concern and comment for this general plan and EIR was solicited in the following ways:

- ▶ Release of the Notice of Preparation (NOP) for Sonoma Coast SP General Plan and EIR on February 27, 2003;
- ▶ Development of a comprehensive mailing list of park stakeholders;
- ▶ Announcement of the start of the planning process by Newsletter No. 1;
- ▶ Public scoping meeting at Bodega Marine Lab on March 13, 2003;
- ▶ Hardcopy and on-line visioning surveys available with Newsletter No. 1, at the scoping meeting, and through the Department website;
- ▶ Public meeting at the Bodega Grange on August 28, 2003;
- ▶ Public meeting at the Veteran’s Memorial Building in Sebastopol on February 15, 2006; and
- ▶ Public meeting at the Veteran’s Memorial Building in Sebastopol on September 13, 2006.

Summaries of the public meetings are included in Appendix D, and a summary of all hardcopy and online surveys received to date is included in Appendix E. In addition, the NOP and letters received from public agencies in response to the NOP are included in Appendix F.

2.3 ISSUES ANALYSIS

This section summarizes key issues addressed in the General Plan prepared for Sonoma Coast SP. These issues were identified during the early phases of the planning process through a public scoping process, agency consultation, and the circulation of visitor surveys. They are grouped by the following topics:

- ▶ Local and Regional Planning;
- ▶ Infrastructure and Operations;
- ▶ Natural Resource;
- ▶ Cultural Resources;

- ▶ Recreational Opportunities;
- ▶ Visitor Experience, Interpretation, and Education; and
- ▶ Future Land Acquisitions.

2.3.1 LOCAL AND REGIONAL PLANNING

Key Issues:

- ▶ Coordination with other local and regional planning efforts.

COORDINATION WITH OTHER LOCAL AND REGIONAL PLANNING EFFORTS

The desire for coordination with other local and regional planning efforts was expressed during the public scoping process. The General Plan is consistent with other local and regional planning efforts. Relevant local and regional plans include the Sonoma County General Plan and Local Coastal Plan, the Draft Sonoma County Outdoor Recreation Plan, and the U. S. Bureau of Land Management’s California Coastal Monument Resource Management Plan (RMP).

2.3.2 INFRASTRUCTURE AND OPERATIONS

Key Issues:

- ▶ Public safety
- ▶ Shooting range at Willow Creek
- ▶ Roads and trails
- ▶ Visitor center
- ▶ Operations facility at Salmon Creek
- ▶ Maintenance yard at Willow Creek
- ▶ Water and sewer services
- ▶ Staffing
- ▶ Grazing on parklands

PUBLIC SAFETY

Sonoma Coast SP is the fourth-most visited state park in the system with over two million visitors each year, and the high use levels include some activities that present public safety concerns. SR 1 is a popular bicycle route. Currently, bicycles must share the pavement with motor vehicles, because of the absence of bicycle paths and adequate road widths for bicycle lanes. Bicycle and traffic safety are key issues. Unpredictable ocean currents are prevalent off the coast and there have been approximately 90 aquatic drownings since 1986. Sonoma Coast SP relies on one permanent lifeguard to cover all 19 miles of coastline. Surfing is a popular activity at Sonoma Coast SP, so swimming and surfing safety are key issues. In addition, Sonoma Coast SP is open to the public 24 hours per day. Night access results in frequent night-time gatherings on the beach, sometimes with large numbers of visitors, which results in litter on the beach, visitor injuries resulting from falls off of rocks or cliffs, some

unruly visitors, and traffic safety issues. Park rangers have issued hundreds of citations and arrested an average of 60 to 90 people annually in recent years. Teenage party groups account for less than 10% of the visitors but account for approximately 50% of enforcement actions and trash (Stevenson pers. comm. 2003).

The General Plan evaluates operational measures to improve public safety. Potential measures initially identified included the evaluation of consistency with County Park operations, parking lots, limiting hours of use, postings that differentiate pullouts from parking lots to prevent accidents, addressing bicyclist safety along SR 1, and expanding public education on safety hazards. Priority is given to law enforcement solutions to crime and other public safety issues that are creative, visitor-friendly, and appropriate to the mission of Sonoma Coast SP in that they expand and enhance opportunities for visitor use and enjoyment as well as safety.

SHOOTING RANGE AT WILLOW CREEK

During the scoping process members of the public expressed concern about the Willow Creek shooting range, including use of lead bullets and firearms noise. An effort to investigate the potential to implement a lead bullet recovery system is currently underway. Noise associated with the shooting range detracts from the Willow Creek “environmental camping” experience. Several northern spotted owl territories are known to occur in this area (DFG 2003) and could potentially be affected by noise disturbance from the shooting range. There is a general interest in relocating the shooting range, but no alternative site has been identified.

ROADS AND TRAILS

Road- and trail-related erosion and the integrity and stability of trails and roads at Sonoma Coast SP have been identified as major concerns. Beach access trails receive heavy use and are subject to the forces of coastal erosion. The level of maintenance necessary to maintain safe and sound conditions for these trails is greater than for most trails. The road leading to Goat Rock is built on a landslide and continues to erode, thus requiring continued maintenance in order to provide safe public access. SR 1 is experiencing erosion as it traverses the marine terraces north of Jenner. Willow Creek Road, which provides access to the maintenance yard at Willow Creek and two environmental camps, is a narrow road that experiences regular flooding and occasional slippages, and may cause adverse effects on the riparian habitat associated with Willow Creek. The road receives heavy use; however, it is not recommended for use by RVs and vehicles with trailers. Legacy logging roads in the upper Willow Creek watershed have been identified as a major concern for erosion and sediment delivery into the stream network (Prunuske Chatham, Inc. 2005). Erosion damage repair, erosion control and potential realignment of trails are addressed in the trails section of the General Plan.

During the public scoping process the need for clear trail signage for equestrians in the Bodega Dunes area was identified. The overall need for more interpretive signs and trail

markers throughout Sonoma Coast SP was identified, as well as the desire for regular patrol of the trails, possibly by volunteers.

The Kortum trail at Sonoma Coast SP is part of the Statewide coastal trail and there is a common desire by multiple agencies to close gaps in the trail through construction of additional segments.

The acquisition of the upper Willow Creek property created the opportunity for additional Park access points and the potential for an inland trail network. An access study was conducted in 2006 to determine potential access points in the upper Willow Creek watershed. The existing trail system in the upper Willow Creek watershed is made up of legacy logging roads, but needs to be evaluated and a trail system plan needs to be developed. These concerns are addressed in the trails section of the General Plan.

On a broader scale, the General Plan addresses user conflicts and improvements that can be made to reduce impacts to sensitive resources resulting from trail use and erosion. For example, trails may be considered for use as a mechanism for resource protection. Well designed and maintained unpaved roads in areas of low-volume use may be economical and serviceable, and may be considered more appropriate than paved roads in the natural setting of Sonoma Coast SP. Objectionable dust and sediments, which may be generated by the use of unpaved roads, can be greatly reduced with the use of appropriate dust palliatives and other treatments.

VISITOR CENTER

The current visitor center is located in a boat house on the Russian River in Jenner. It is a very small wood structure (10 feet x 40 feet) constructed on wood pilings. The Jenner Visitor Center is only seasonally open and staffed with volunteers. Recurrent flooding during high river stages continues to be a problem, as does the deterioration of the supporting structure. The need for a new visitor center is apparent. Siting factors include a focal location and present themes related to visitor orientation to Sonoma Coast SP, natural and cultural history, and public safety. A multiple-agency visitor center created through partnership with other agencies may also be considered. The location and general size and character of the visitor center are important considerations. The General Plan provides for the consideration of alternative locations within the potential development areas.

OPERATIONS FACILITY AT SALMON CREEK

The operations facility at Salmon Creek does not meet the current needs of Sonoma Coast SP. The facility contains a small maintenance shop, park office, and ranger residence. The maintenance facilities were built in 1948 and have not been upgraded since. The park office was replaced in 2000 and is considered adequate for the visitor services function. Because these facilities are located adjacent to the Salmon Creek Estuary and on top of an archaeological site, expansions and upgrades of the maintenance facility at this location may not be compatible with the protection of natural and cultural resources. The General Plan identifies potential development areas that may be considered for alternative locations for the

maintenance station and park office that would be able to accommodate current and future needs. The location of the existing station could be used for public access in the future. Issues to be considered for the siting of the new maintenance facilities include the protection of vehicles from the corrosive marine environment and viewshed protection. The preferred location would be on the east side of SR 1 at a higher elevation and further from the ocean than the current facility.

MAINTENANCE YARD AT WILLOW CREEK

The maintenance yard at Willow Creek is located in a building complex known as the Willow Creek Ranch, which consists of a ranch house and associated buildings of potential historic significance. While the vacant ranch house is not used for the operations of Sonoma Coast SP, its condition has deteriorated because of neglect. The adaptive reuse of the other Willow Creek Ranch buildings is considered to be inadequate for the needs of the operations of Sonoma Coast SP and the District. Limitations associated with modification of historic structures, funding, and available space contribute to inefficiencies and difficulties for staff responsible for maintaining district-wide and park maintenance services. The access road to the maintenance yard is located in the floodplain of Willow Creek floods annually and occasionally inhibits access to the maintenance yard. The continued frequent use of the road may also adversely affect the riparian habitat associated with Willow Creek.

The maintenance facility at Salt Point State Park will serve as a model of what is needed for Sonoma Coast SP, with the exception that the facility for Sonoma Coast SP needs to be larger and more complete. An ideal new facility should encompass space and facilities for fleet maintenance, heavy equipment repair, sheltered parking, and vehicle storage. It should also include a large yard for materials storage and stockpiling and gasoline and diesel fuel storage and dispensing. Shops need to include spaces for heavy equipment and fleet vehicle repair, routine service, and maintenance; parts; supplies; an air compressor; a tool crib; lubes and oil; a carpenter shop with storage for wood, tools, and hardware; a plumber shop with storage for water and wastewater pipe, fittings, valves, pumps, meters, hardware, tools, and instruments; and an electricians shop. The ideal new facility should also include space for a lunchroom, restrooms, showers, a meeting room, and offices.

WATER AND SEWER SERVICES

Water supply and septic system issues exist at several of the campgrounds. Current systems are insufficient to meet user demands and the sites that have flush toilets needs to be pumped regularly. Inadequate septic capacity results in excessive maintenance effort and cost. Some restrooms potentially date back to the CCC era and there is a concern that sewer leakage may enter local waterways. Several facilities have water trucked in from offsite locations. The General Plan sets a framework for facility upgrades, replacements or additions which may include upgrades of the systems at Salmon Creek and Wrights Beach, including new restrooms, and the addition of showers and restrooms at Bodega Dunes. Compatibility of proposed facilities with the underlying soils and rock formations, as well as the availability

and transport of potable water, will need to be addressed during the planning process for site-specific development.

The General Plan also addresses water quality issues in the Russian River and its tributaries.

STAFFING

As the fourth-most visited Park in the State Park System, demands on Sonoma Coast SP's staff are considerable. The land within Sonoma Coast SP is spread along the coast and has many possible entry points. Beach activity occurs 24 hours a day. The overall ranger, maintenance, and operations staffing level at Sonoma Coast SP is about half of the level of other parks among the top ten most visited parks in California. Staffing for resource ecology, landscape architecture, cultural resources, and interpretation are also very limited. The need for additional staff is an important issue in addressing operational needs and to manage the high number of unique and sensitive resources. In addition, housing for current and future staff is extremely limited at Sonoma Coast SP and the General Plan addresses future staff housing.

GRAZING ON PARKLANDS

The Redhill Parcel, which was recently added to Sonoma Coast SP, was grazed under a pre-existing lease that expired in June 2006. Any future grazing considerations must be consistent with DOM (Section 0316.3.5). Also see Environmental Analysis, 4.6.2 Agricultural and Timber Resources (pages 4-10 and 4-11)

2.3.3 NATURAL RESOURCES

Key Issues:

- ▶ Control of invasive weeds
- ▶ Use of herbicides
- ▶ Protection of western snowy plover
- ▶ Protection and management of other special-status species
- ▶ Marine mammals
- ▶ Tide pools
- ▶ Watershed protection and restoration
- ▶ Habitat fragmentation
- ▶ Anadromous fish passage
- ▶ Sudden Oak Death Syndrome
- ▶ Protection of Rocks below Peaked Hill

CONTROL OF INVASIVE WEEDS

Various stakeholders have identified the control of invasive weeds as an important issue. Species specifically mentioned include Pampas grass, European beachgrass and iceplant, but other invasive plants have also been documented at Sonoma Coast SP.

USE OF HERBICIDE

During the scoping process some members of the public expressed strong feelings about herbicide use at Sonoma Coast SP and would like to see an effort to control invasive weeds without the use of herbicides. Others supported the use of herbicide as a management tool.

PROTECTION OF WESTERN SNOWY PLOVER

Snowy plovers have been documented at Salmon Beach and the beach is included in the draft recovery plan for the species prepared by the USFWS. Management of snowy plover habitat at Salmon Beach is addressed in the General Plan.

PROTECTION AND MANAGEMENT OF OTHER SPECIAL-STATUS SPECIES

Other special-status species known to inhabit Sonoma Coast SP include steelhead and chinook salmon, California freshwater shrimp, tidestroms lupine, and several other special-status plant and wildlife species. Protection of known and yet to be documented populations of special-status species populations at Sonoma Coast SP is addressed in the General Plan. Impacts to special-status species and other sensitive resources resulting from recreational activities is addressed as well. The need for continued enforcement of fish and game protection laws and the education of visitor of special-status species protection and management are identified in the General Plan.

MARINE MAMMALS

The protection of marine mammals is mandated by the Marine Mammal Protection Act. A harbor seal haul-out is present at the mouth of the Russian River and the management and protection of this resource is addressed in the General Plan. The specific need for the enforcement of the existing policy regarding dogs on the beach was identified.

TIDE POOLS

The Stewards of the Coast and Redwoods, a local non-profit operation, support the Department with an interpretive program of tide pool. In addition, school groups from all over Northern California visit the tide pools at Sonoma Coast SP every year. The potential of damage to this fragile resource is an important issue addressed in the General Plan.

HABITAT FRAGMENTATION

Fragmentation of large habitat areas and wildlife migration corridors is detrimental to the long-term health of many fish and wildlife population. The identification and protection of habitat corridors are important issues addressed in the General Plan.

WATERSHED PROTECTION AND RESTORATION

The Willow Creek watershed has experienced degradation in the past, because of land uses such as overgrazing and logging, resulting in excessive erosion and sedimentation. Efforts

are currently underway to plan and implement the restoration of the Willow Creek watershed. The General Plan addresses long-term goals, such as public use and access and the protection and restoration of Willow Creek and its associated resources.

The scoping process also identified the desire for future acquisitions in the Jenner Gulch watershed and the need to counteract sedimentation problem in the Salmon Creek watershed.

ANADROMOUS FISH PASSAGE

The Russian River and Salmon Creek support runs of anadromous fish, such as steelhead trout, coho salmon, and potentially chinook salmon. The Sonoma County Water Agency regularly opens the mouth of the Russian River mechanically to control the risk of flooding in the streamside communities and to promote oxygenation of the stream for anadromous fish. The impact of this activity is unclear and studies conducted to date have been inconclusive.

Fish passage problems have been documented at Willow Creek and may exist at Furlong Gulch. These problems will require coordination with Sonoma County Public Works, Caltrans and other agencies.

SUDDEN OAK DEATH SYNDROME

Sudden oak death syndrome has been confirmed in the campground at Bodega Dunes and is Willow Creek. Oaks and other native species susceptible to this disease form an important component of the natural vegetation of Sonoma Coast SP. Sonoma Coast SP is rich in botanical diversity and contains four different species of oaks (tanoak, coast live oak, chinquapin, and perhaps black oak in the Freezeout area). Management of the disease and the prevention of its spread to other parts of Sonoma Coast SP is an important concern for the ecological health of oak stands at Sonoma Coast SP.

PROTECTION OF ROCKS BELOW PEAKED HILL

The rocks below Peaked Hill (known by local climbers as Sunset Rock or Sunset Boulders) are thought to be a significant paleontological site with prehistoric animal rubbings. It also is an uncontrolled publicly accessible rock-climbing area in Sonoma County and, as such, attracts significant use by climbers, whose use could lead to deterioration of the resource. Evaluation and final determination of significance should be made on the "Rubbing Rock" as a significant paleontological feature. Once this is completed, the Department will determine the appropriate management treatment for protection of this feature. The evaluation of the potential dedication of the site as a Cultural Preserve is included in the General Plan.

2.3.4 CULTURAL RESOURCES

Key Issues:

- ▶ Protection of Duncans Landing

- ▶ Maintenance and Protection of significant historic and potentially significant prehistoric resources
- ▶ Protection of Cultural Landscapes

PROTECTION OF DUNCANS LANDING

Duncans Landing is the site of a 9,000-year-old Miwok rock shelter. The site has been and continues to be subject to trampling, illegal digging, and overuse. In addition, the proposed control of invasive ice plant must be carefully considered in order to avoid impacts to this significant cultural resource. Potential establishment of a Cultural Preserve is addressed in the General Plan.

MAINTENANCE AND PROTECTION OF SIGNIFICANT AND POTENTIALLY SIGNIFICANT HISTORIC AND PREHISTORIC RESOURCES

Other significant resources at Sonoma Coast SP include those discussed above under cultural and historic resources, a once-proposed nuclear reactor site at Campbells Cove (Hole in the Head), and a possible landing site of Sir Francis Drake at Campbell Cove. Furthermore, numerous middens and other prehistoric resources located on the marine terraces at Sonoma Coast SP are threatened by naturally occurring coastal erosion. Adequate protection and interpretation of all of these resources are addressed in the General Plan.

PROTECTION OF CULTURAL LANDSCAPES

A number of significant above ground buildings, structures, and the sites they occupy are important cultural resources in the park because they are largely intact surviving examples of the kind of ranch and farm complexes that were commonly active in the region from the latter 1800s into the 20th century. These resources include Carrington Ranch, Wright's Ranch, Willow Creek Ranch, and a former ranch complex on Penny Island. Natural coastal weathering, deferred maintenance, discontinued use, and drainage erosion processes have caused cumulative wear or damage to some of these cultural resources. Adequate protection and interpretation of these resources and consideration for potential Rural Historic Landscape District designation on the National Register of Historic Places are addressed in the General Plan.

2.3.5 RECREATIONAL OPPORTUNITIES

Key Issues:

- ▶ Camping opportunities
- ▶ Carrying capacity
- ▶ ADA accessibility
- ▶ Environmental living program
- ▶ Other recreational opportunities

CAMPING OPPORTUNITIES

Demand for camping exceeds the current supply of campsites at Sonoma Coast SP. The General Plan considers potential expansions to existing campgrounds, potential additions of new campgrounds, and the potential addition of additional restrooms and showers. Temporary facilities at Wrights Beach may need to be upgraded to permanent status. The need for more trash and recycling containers and the need for an upgrade of the campfire facilities at the Bodega Dunes Campground have also been identified.

CARRYING CAPACITY

Currently, visitors to Sonoma Coast SP have access to areas of cultural, biological and geologic sensitivity, and the overuse and misuse of these areas can adversely affect the resources. An approach for considering carrying capacity is addressed in the General Plan in section 3.3.1.

AMERICANS WITH DISABILITIES ACT ACCESSIBILITY

Limited Americans with Disabilities Act (ADA)-accessible facilities are present at Sonoma Coast SP. The Boardwalk at Bodega Dunes, the Vista Trail, and a section of the Kortum Trail are wheelchair-accessible and several ADA accessible campsites are present at Bodega Dunes Campground. The General Plan addresses the need to provide ADA access to the beach and to address ADA issues at Sonoma Coast SP as a whole.

ENVIRONMENTAL LIVING PROGRAM

The environmental campgrounds at Willow Creek and Pomo Canyon, provide opportunities to establish an environmental living program for students to encourage stewardship of natural and cultural resources. The General Plan provides for the possibility of establishing an environmental living program at Sonoma Coast SP.

OTHER RECREATIONAL OPPORTUNITIES

Other potential recreational opportunities identified during the scoping phase included the designation of quiet areas without motorized equipment, a permit system for fires on the beach for seasonal celebrations, recognition of presences of an historic and active local fishing community, stewardship of trails and programs by user groups, expanded opportunities for hikers, mountain bikers, and equestrians, and provisions for other recreational activities that are compatible with resource management goals.

2.3.6 VISITOR EXPERIENCE, INTERPRETATION, AND EDUCATION

Key Issues:

- ▶ Opportunities for interpretation
- ▶ Concession opportunities
- ▶ Scenic views

OPPORTUNITIES FOR INTERPRETATION

Sonoma Coast SP's current interpretive prospectus was prepared in 1973. The interpretive themes need to be reviewed, revised as appropriate, and incorporated into a comprehensive interpretive plan for Sonoma Coast SP. Some natural and cultural resources worthy of visitor attention and interpretation include: the diversity of outstanding scenic views (geologic formations, plant communities, viewsheds), the dynamic nature of this environment (winds, currents, migrations, uplifting terraces, sea level rise, shifting tectonic plates, etc.), seals and sea lions at the mouth of the Russian River and along the coast, megafaunal rubbing rocks, historic coastal ranches, as well as the human history associated with this region. The General Plan presents potential themes for the interpretation of resources at Sonoma Coast SP.

The need for multilingual signage, "symbolic fencing" to protect resources, and use of education as a law-enforcement tool have been identified as potential improvements to interpretive and educational opportunities at Sonoma Coast SP.

CONCESSION OPPORTUNITIES

Current concessions at Sonoma Coast SP include a mobile food service that operates during the summer months. The Chanslor-Ranch Horseback riding operation, which currently does not have a concession agreement with the Department, is located adjacent to Sonoma Coast SP. The General Plan identifies the need to study potential future concessions at Sonoma Coast SP.

SCENIC VIEWS

The General Plan addresses the effects of proposed developments, both inside and outside Sonoma Coast SP on scenic resources at Sonoma Coast SP, and light pollution of the nighttime sky.

2.3.7 NEW AND PLANNED LAND ACQUISITIONS

Key Issues:

- ▶ Upper Willow Creek watershed
- ▶ Redhill Parcel
- ▶ Carrington Parcel
- ▶ Jenner Gulch
- ▶ Other properties

UPPER WILLOW CREEK WATERSHED

The 3,387-acre upper half of the Willow Creek watershed has been recently added to Sonoma Coast SP. Integration of this property with the Lower Willow Creek portion of Sonoma Coast SP, and potential management and use issues are addressed in the General Plan.

REDHILL PARCEL

The 990-acre Redhill Parcel located immediately south of the lower half of the Willow Creek watershed was recently added to Sonoma Coast SP. Integration of this property into Sonoma Coast SP, and potential management and use issues are addressed in the General Plan.

CARRINGTON PARCEL

In 2003, the 335-acre Carrington Parcel was purchased by the Sonoma County Agricultural Preservation and Open Space District (SCAPOS) for transfer to the State as an addition to Sonoma Coast SP. At the time of preparation of the General Plan, the parcel was proceeding through the transfer process and negotiations regarding a SCAPOS conservation easement on the parcel. When negotiations are completed, the property will be transferred to State Parks and be managed in accordance with the requirements of the conservation easement as well as the General Plan goals and guidelines.

Through a California Coastal Conservancy grant, a partnership comprised of SCAPOS, the non-profit LandPaths, and State Parks have been working cooperatively to provide site clean-up, building security, planning, and public access for the parcel.

Integration of this property into Sonoma Coast SP, and potential management and use issues are addressed in the General Plan. The Sonoma County Landmarks Commission has identified a historic designation for the ranch structures on the site.

OTHER PROPERTIES

Other specific properties have not been identified for acquisition and future addition to Sonoma Coast SP at this time. The Sonoma Land Trust completed a Sonoma County Coastal Parcel Study in 1999 that identifies large landholdings in the vicinity and property owners willing to participate in some form of conservation. Exploring opportunities to incorporate additional parcels is important for meeting the overall park vision for Sonoma Coast SP. In particular, sites for facilities development, such as a permanent visitor center, office and maintenance yard would be desirable. As neighboring properties become available from willing sellers, the opportunity for future additions may arise. The General Plan identifies goals and guidelines addressing the potential future addition of neighboring or other properties and criteria for evaluating other properties for their potential values as biological corridors, public use areas, and/or facility development sites.



3

Park Plan

3 PARK PLAN



Salmon Creek Ranger Station, Source: EDAW 2003

Following the Department's Mission and other planning mandates, the Park Plan establishes the long-range purpose and vision for the future of Sonoma Coast State Park (Sonoma Coast SP). Specific goals and supporting guidelines further clarify this purpose and vision. These are designed to rectify the issues described in Chapter 4, Environmental Analysis, while providing a solid foundation for continued resource protection, preservation, and restoration, as well as development and interpretation at the Park. The goals and guidelines also serve as design and implementation parameters for required subsequent management and development plans.

While driven by current issues, the General Plan/Environmental Impact Report is somewhat visionary in nature. It is designed as a dynamic document that provides managers with the opportunity to incorporate newly emerging technologies and improved management concepts for resolving current issues, along with the ability to provide adequate direction for resolving issues that may arise in the future.

3.1 PLANNING MANDATES

Management of Sonoma Coast SP is directed by a hierarchy of mandates. The most general mandate is the Department's Mission. Each Unit in the State Park system defines its Purpose and Vision, which must ultimately fulfill the Department's Mission. The General Plan for each Unit further defines the Unit Purpose and Vision by providing Goals and Guidelines by which the management of the Sonoma Coast SP is guided. The Unit Classification is derived from the State Parks Classification system. Goals and guidelines must be consistent with the unit classification. Management plans and development plans "translate" the goals and guidelines into every-day management activities.

3.1.1 CALIFORNIA DEPARTMENT OF PARKS AND RECREATION MISSION

The Department's Mission is to:

Provide for the health, inspiration, and education of the people of California by helping to preserve the State's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high quality outdoor recreation.

3.1.2 UNIT PURPOSE AND VISION

The unit purpose and vision serve as guidelines for the future management of the Sonoma Coast SP. They are related, yet distinct, planning concepts that provide a context and direction for future management and planning efforts for the Sonoma Coast SP. If there is a change in the character of a park unit, such as a significant expansion in size and diversity of park resources, there may be a need for updating a unit's Declaration of Purpose, Vision, and Classification in order to provide more appropriate resource protection, park management, and visitor opportunities. This plan proposes to change the classification to State Park, with the addition of inland watershed properties, and if approved, the following Declaration of Purpose would be revised accordingly. These Declaration of Purpose and Vision concepts are described in more detail below.

DECLARATION OF PURPOSE

The Declaration of Purpose describes the purpose of the Park and is the broadest statement of management goals designed to fulfill its vision. A Declaration of Purpose is required by Public Resource Code (PRC) Section 5002.2(b), "setting forth specific long-range management objectives for the Park consistent with the park's classification..." The Declaration of Purpose for the Sonoma Coast SP is as follows:

The purpose of Sonoma Coast State Park is to make it available to the people, for their inspiration and enjoyment forever, a segment of scenic Northern California Coastline in the vicinity of Bodega Bay, the Russian River, and the Willow Creek watershed by providing a diversity of recreation and education opportunities for the millions of visitors each year while protecting, maintaining, and restoring, in perpetuity, the State Park's abundant and unique natural, cultural, and aesthetic resources.



General Plan Public Meeting at Bodega Marine Library



A group of visitors at Goat Rock Beach



Kortum Trail Signage



Visitor Facility at Shell Beach

Source: EDAW 2003

The functions of the California Department of Parks and Recreation at Sonoma Coast State Park are to prescribe and execute a program that provides facilities and opportunities for optimum enjoyment and protection of the natural, cultural, and aesthetic resources of the unit, in accordance with the declared purpose of the State Park.

PARK VISION

The park vision provides guiding images of what the Sonoma Coast SP may be like following the implementation of the General Plan. The Vision Statement for Sonoma Coast SP is as follows:

Sonoma Coast State Park will be protected and restored as a natural coastal open space of spectacular beauty. The Park will offer visitors access to open expansive views of the ocean, intermittent long sandy beaches below rugged headlands, a craggy coastline with natural arches and secluded coves, rugged sea stacks, lagoons and wetlands, coastal sand dunes, coastal plains, forested and riparian inland watershed areas, the rocky headland of Bodega Head, the mouth of the Russian River, as well as the Willow Creek watershed.

Sonoma Coast State Park will provide a diversity of outstanding recreational and educational opportunities to millions of visitors from throughout California and elsewhere, while preserving, restoring, and maintaining the exceptional value of its outstanding scenic, cultural, biological, and geologic resources. Public access to the coast will be made available to all visitors.

Sonoma Coast State Park will continue to be one of the most visited State Parks units by providing the public opportunities for sightseeing, hiking, biking, horseback riding, beachcombing, fishing, kayaking, boating, whale watching, camping, tidepooling, sunbathing, photographing, and a wide variety of other recreational activities along the scenic Sonoma Coastline, the Russian River, and the Willow Creek watershed. The visitors' appreciation of the ocean, streams, beaches, sand dunes, sea stacks, bluffs, wildlife, hills, grasslands, coastal plains, coastal and inland wetlands, redwood forests, rugged watershed terrain, coastal ridges, and other resources will be facilitated by well designed and maintained trails, day use picnic areas, campgrounds, vista overlooks, and other facilities at Sonoma Coast State Park.

Visitors will be encouraged to discover and enjoy the natural processes, wildlife, and human history of Sonoma Coast State Park through informative interpretive exhibits and educational programs that facilitate meaningful and sustainable interactions between park visitors and resources. Through interpretation, visitors will come away with a greater appreciation for Sonoma Coast State Park.

Sonoma Coast State Park will provide protection and interpretation of its extraordinary prehistoric resources and important historic sites, while acknowledging the established use patterns at the Park. A variety of adaptive management techniques for the purposes of restoring, preserving, and protecting cultural resources will be used to avoid degradation and destruction of cultural resources. The Department will actively pursue further investigations, inventories, and assessments of and research on its cultural resources.

The diverse biological communities at Sonoma Coast State Park will be sustained over the long term through linkages with other protected areas and active natural resource management. The integrity of the natural ecosystems may be protected by the control of exotic species, if necessary, and by habitat restoration where appropriate and feasible. Visitor access to sensitive habitats will be limited, if necessary. Maintenance and enhancement of environmental quality will be recognized as essential to the preservation of biological diversity. Management decisions will be guided by sound scientific knowledge and established best management practices, consistent with natural resource policies of the Department.

Efficient maintenance of Sonoma Coast State Park will be achieved through appropriately sized and equipped facilities at the optimum locations, with emphasis on human and environmental safety, staffing needs, and optimum use of available resources. Sharing of resources with other units in the District as well as with other State and local agencies will be pursued to conserve available resources.

3.1.3 UNIT CLASSIFICATION

This unit is currently classified as a state beach, which is a type of State Recreation Unit pursuant to PRC Section 5019.56. Under this classification state beaches are defined as follows:

5019.56 (c) State beaches consist of areas with frontage on the ocean or bays designed to provide swimming, boating, fishing, and other beach-oriented recreational activities. Coastal areas containing ecological, geological, scenic, or cultural resources of significant value shall be preserved within state wildernesses, state reserves, state parks, or natural or cultural preserves, or, for those areas situated seaward of the mean high tide line, shall be designated state marine reserves, state marine parks, state marine conservation areas, or state marine cultural preservation areas.

RECLASSIFICATION

With the addition of the Upper Willow Creek property in 2005, the Park increased in size to 10,286 acres, far larger than the average 400-acre size of a typical state beach unit. The Willow Creek property also includes portions of the inland watershed with significant natural

resource values and recreation opportunities. With this addition, this unit fits the criteria better for a state park, as established in the PRC 5019.53. Therefore, the Department recommends in this general plan that the classification be changed from State Beach to State Park.

The following is the classification definition for a state park unit (updated in 1994):

5019.53 State parks consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing significant historical, archaeological, ecological, geological, or other similar values. The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most significant examples of ecological regions of California, such as the Sierra Nevada, northeast volcanic, great valley, coastal strip, Klamath-Siskiyou Mountains, southwest mountains and valleys, redwoods, foothills and low coastal mountains, and desert and desert mountains.

Each state park shall be managed as a composite whole in order to restore, protect, and maintain its native environmental complexes to the extent compatible with the primary purpose for which the park was established.

Improvements undertaken within state parks shall be for the purpose of making the areas available for public enjoyment and education in a manner consistent with the preservation of natural, scenic, cultural, and ecological values for present and future generations. Improvements may be undertaken to provide for recreational activities including, but not limited to, camping, picnicking, sightseeing, nature study, hiking, and horseback riding, so long as those improvements involve no major modification of lands, forests, or waters. Improvements that do not directly enhance the public's enjoyment of the natural, scenic, cultural, or ecological values of the resource, which are attractions in themselves, or which are otherwise available to the public within a reasonable distance outside the park, shall not be undertaken within state parks.

State parks may be established in the terrestrial or non-marine aquatic (lake or stream) environments of the state.

JUSTIFICATION

Reclassification to state park is proposed in this plan because the present size of the park and its natural values are characteristics and resource values are more closely associated with other units currently classified as state parks. In Section 5019.53 of the PRC, state parks are described as "relatively spacious areas of outstanding scenic or natural character." Outstanding natural values and variety of ecosystems within Sonoma Coast SP include beaches, coastal prairies, oak woodlands, redwood and fir forests, grasslands, and a rich

and diverse marine environment. The park's rich cultural resources include petroglyphs, archeological sites, historic structure sites, a ranch eligible for listing on the National Register of Historic Places, and a possible landing location for the ship of Sir Francis Drake in 1579. Reclassification of this unit to a state park classification will provide a higher level of management and protection for this diversity of natural and cultural resources. Under the state park classification, traditional recreation use of the unit, including, beachcombing, scuba and skin diving, nature study and camping, hiking, horseback riding, as well as mountain biking are appropriate. The general plan will guide future park management decisions regarding the appropriate recreational uses in specific areas of the park.

3.1.4 SYSTEM-WIDE PARK OPERATIONS RESOURCE POLICIES

DEPARTMENT OPERATIONS MANUAL

The Department's Operations Manual provides the policies and procedures that are pertinent to the operation of the State Park System. It is intended as a working document for Department personnel.

Section 0300, Natural Resources

The Department's Operations Manual Section 0300, Natural Resources, is the basic natural resource policy document for the State Park System. The policies, definitions, processes, and procedures contained in this chapter guide the management of the natural resources under the jurisdiction of the Department of Parks and Recreation, including naturally occurring physical and biological resources and associated intangible values, such as natural sounds and scenic qualities. These policies, definitions, processes, and procedures amplify the legal codes in the PRC, the California Code of Regulations, and the California State Park and Recreation Commission's Statement of Policies and Rules of Order as they pertain to the natural resources of the State Park System.

Section 0400, Cultural Resources

The Department Operations Manual Section 0400, currently under revision, will be the basic cultural resource policy document for the State Park System. Until it is complete, Section 1832 of the Resource Management Directives (1979) and the Cultural Resources Management Handbook (2001) provide the policies, definitions, processes and procedures to guide the management of cultural resources under the jurisdiction of the Department, including prehistoric and historic archaeological sites, historic buildings, features and landscapes, and Native American cultural resources. These policies, definitions, processes and procedures highlight the legal codes in the PRC, the California Code of Regulations, State Historic Building Code, The Secretary of the Interior's Standards, a Memorandum of Understanding between State Parks and the Office of Historic Preservation, Executive Order W-26-92, and the California State Park and Recreation Commission's Statement of Policies and Rules of Order as they pertain to the cultural resources of the State Park System.

3.2 GOALS AND GUIDELINES

This section states management goals and guidelines, which are management approaches for achieving the Declaration of Purpose and Vision Statement described above. Goals and guidelines are defined in the California State Parks Planning Handbook (2002) as follows:

Goal: General, overall, and ultimate purpose, aim or intent toward which management will direct effort. Goals are not necessarily measurable except in terms of the achievement of component objectives which attainment of the goal involves.

➤ **Guidelines:** General set of parameters that provide directions towards accomplishing goals.

This plan is divided into two sets of goals and guidelines. The first set consists of park-wide management goals and guidelines, which are applicable to the entire Sonoma Coast SP. The second set consists of additional goals and guidelines applicable to each of the two management zones. The management zones are shown in Exhibit 3-1. They are described in Section 3.4 below. Potential Development Areas, within which new facility sites may be selected, are shown in Exhibit 3-1. The Potential Development Areas are approximate and provide guidance regarding potentially suitable sites. As more information is gathered about site specific conditions, the suitability of specific development sites will be refined and may include property either inside or outside the Potential Development Areas.

It should be noted that management goals and guidelines would be implemented in conjunction with all laws, regulations, and plans that are applicable to Sonoma Coast SP. For example, management actions within Sonoma Coast SP must comply with this General Plan and with the Sonoma County Local Coastal Plan. As laws, regulations, and plans are revised and updated, unforeseen planning or regulatory conflicts may arise. In this case, management actions should adhere to the most specific and/or most stringent laws, regulations, or plans.

Management Plans and Development Plans are developed following the adoption of the General Plan/ Environmental Impact Report to provide more detail and specific objectives for various park-wide management issues (e.g., vegetation, facilities development, roads, and trails). Guidelines in the General Plan/Environmental Impact Report may call for the development of Management Plans to further define specific areas of management, and Development Plans to implement specific projects in the Sonoma Coast SP.

3.2.1 PARK-WIDE GOALS AND GUIDELINES

Park-wide management goals and guidelines are organized into three main categories: (1) resource management; (2) visitor use and opportunities; and (3) administration and operations. Each category is further divided into subcategories.

RESOURCE MANAGEMENT

Sonoma Coast SP contains an abundance and diversity in resources, and wise stewardship of these resources is crucial in retaining and sustaining its biological, historic, aesthetic, educational, and recreational values. In balancing the needs of nature with those of visitors and staff, a wide range of resources and natural processes should be considered in future management decisions. For purposes of this General Plan, resource management at Sonoma Coast SP is organized into the two main themes of natural resources management and cultural resources management.

Natural Resources Management

The Department's fundamental principals for natural resource management are based on direction providing by the PRC. In summary, those principals are:

- ▶ Preservation, support, or re-establishment of physical, chemical, biological, and evolutionary processes are fundamental goals.
- ▶ Emphasize natural native resource communities.
- ▶ All native species have equal value.

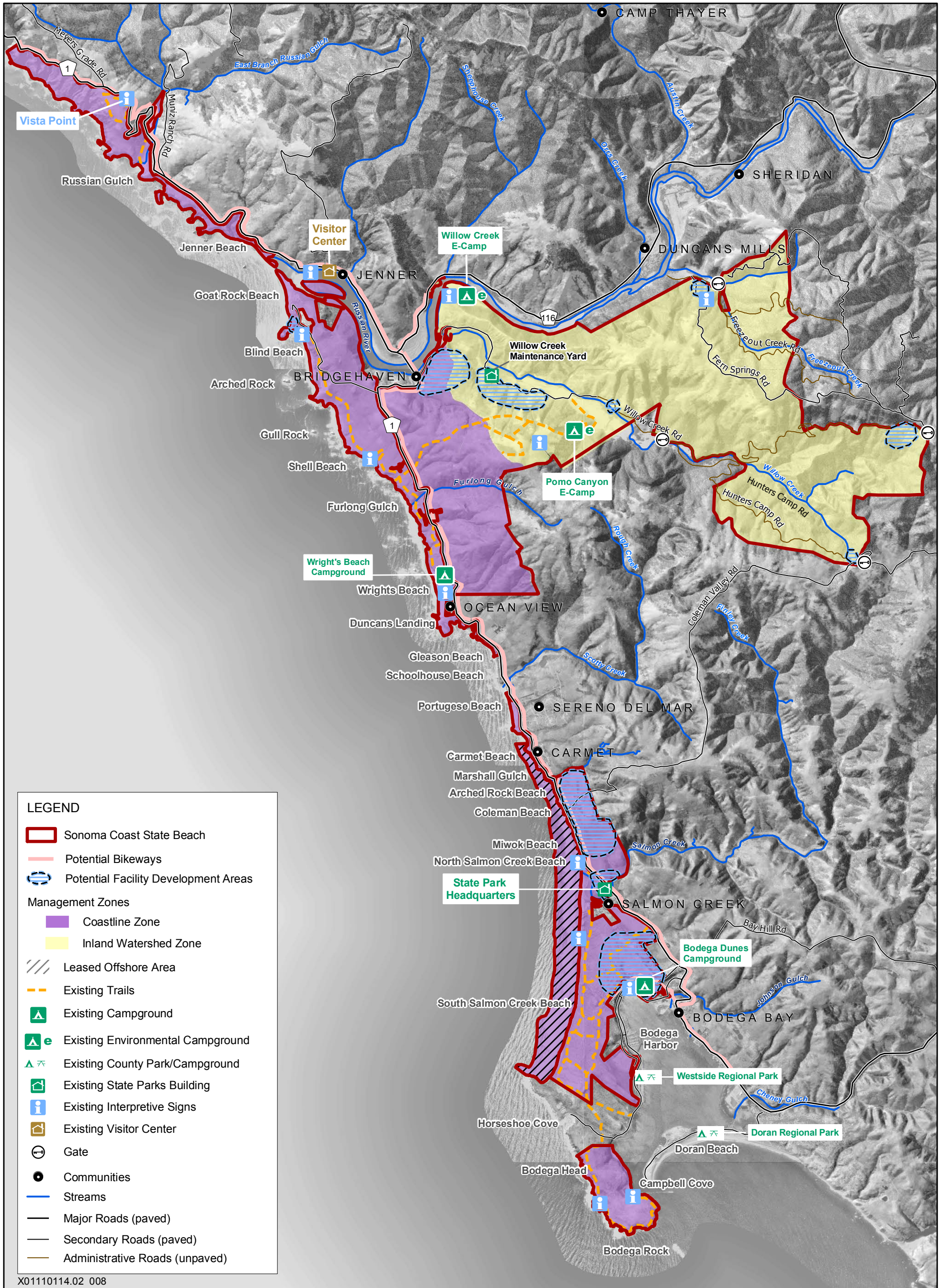
The natural resources present at Sonoma Coast SP are strongly influenced by the physical and hydrological processes of the California Coast Range, the Pacific Ocean, the San Andreas Fault, and the Russian River, Salmon Creek, and other creeks and springs (i.e., wildland fire, flooding, drought, coastal erosion, earthquake). The resulting mosaic of natural communities provides important habitat for many plants, fish and wildlife species and invertebrate species. Allowing natural processes to occur uninterrupted is crucial for the perpetuation of healthy ecosystems at Sonoma Coast SP. Where natural processes have been substantially altered or interrupted by human influences, attempts should be made to restore processes to a natural condition.

The goals and guidelines presented below are broken into separate sections for plant life, fauna, and paleontological resources, but the integration of all guidelines for the management of ecosystems and the application of adaptive management strategies are important for maintaining the ecological integrity of the natural areas and their inhabitants at Sonoma Coast SP.

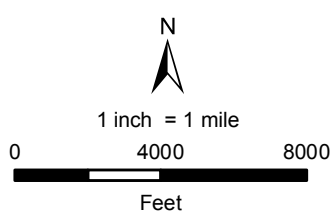
VEGETATION

Common and Sensitive Natural Communities

Common natural communities are those plant communities that are locally and regionally widespread and that are not of critical concern to management and regulatory agencies. Examples of common natural communities at Sonoma Coast SP include annual grassland and coastal scrub. Sensitive natural communities are plant communities that are of special



Source: EDAW 2003



May 30, 2007
EDAW

Sonoma Coast State Park

Exhibit 3-1 Potential Development Areas

concern to resource agencies, government agencies, or conservation organizations. Sensitive natural communities are considered important because they provide habitat for numerous wildlife and plant species, including special-status species. Sensitive communities also include those considered rare or uncommon locally, regionally, or statewide, and those protected by State and federal laws and regulations. Sensitive natural communities at Sonoma Coast SP include coastal dunes, coastal terrace prairie, riparian forest and scrub, redwood forest, coastal brackish marsh, coastal freshwater marsh and open water habitat associated with the streams and lagoons present throughout Sonoma Coast SP.

Special-status Plants

Special-status plant species are those listed by the California Department of Fish and Game, the U.S. Fish and Wildlife Service and the California Native Plant Society. Locally endemic or uncommon species may also be considered special-status plants by resource management agencies. Special-status plant populations are typically dependent on the protection and perpetuation of their habitat.

Invasive Weeds

The presence of invasive weeds disrupts natural processes and vegetative conditions, including sensitive riparian and wildlife habitat that are critical to the dynamic ecosystem within Sonoma Coast SP. Proactive control of invasive weeds at Sonoma Coast SP, therefore, is an important component to natural resource management.

Vegetation Management

The following goal applies to vegetation management at Sonoma Coast SP:

Goal NAT-1: Protect, maintain, and, where appropriate, restore the diversity of natural areas within Sonoma Coast SP. Protect special-status plants within Sonoma Coast SP and manage resources for their perpetuation and enhancement in accordance with State and federal law.

- **Guideline NAT-1A:** Inventory and monitor Sonoma Coast SP's natural resources including natural communities and special-status plants to document their distribution and abundance.
- **Guideline NAT-1B:** Protect and restore natural areas in those areas where they will not recover in a reasonable timeframe if left untreated. This may be accomplished through maintenance or re-establishment of natural processes such as fire, flooding, and succession.
- **Guideline NAT-1C:** Control and/or eradicate non-native invasive species to prevent their establishment and spread. Priority for control efforts should be directed toward species that are most invasive, ecologically detrimental, and/or conspicuous within areas that contain intact native plant communities. Maintain database on distribution and abundance of target populations.

- **Guideline NAT-1D:** When implementing habitat restoration projects and landscaping around facilities, use native species that are appropriate to the site and that are obtained from native plant species within Sonoma Coast SP boundaries or from within 5 miles of Sonoma Coast SP. This includes transplanted cuttings and rootstocks or seedlings and saplings grown from collected seed that are genetically compatible. Ensure that all mulches are free of foreign seed.
- **Guideline NAT-1E:** Avoid fragmentation of intact habitat areas when constructing new facilities and siting trails.
- **Guideline NAT-1F:** Acquire land or conservation easements from willing sources that would act as a protective buffer for critical resources or that are essential for the completion of goals in resource management programs.
- **Guideline NAT-1G:** Cooperate with existing regional conservation plans and policies, and participate in the development of regional conservation plans when such programs are consistent with Sonoma Coast SP natural resources goals.
- **Guideline NAT-1H:** Develop interpretive programs and facilities that inform visitors about the importance of protecting the diversity of native plant life at Sonoma Coast SP.

Fish and Wildlife Species

Sonoma Coast SP supports a diversity of native fish and wildlife species. Some species are dependent on the inland forests and wetland while others depend on the coastal prairie and coastal dunes. The Russian River, several streams, and the nearshore waters of the Pacific Ocean within Sonoma Coast SP provide important habitat for anadromous and resident fish species, while the beaches and offshore rocks provide essential habitat for marine mammals and shorebirds. Protection of suitable habitats is essential to the perpetuation of the species within Sonoma Coast SP.

Special-status Fish and Wildlife Species

Special-status fish and wildlife species are those classified as Species of Special Concern, or listed as threatened or endangered by the State and/or federal governments. These sensitive species often play an essential role in the functioning of ecosystems and are dependent on the protection and perpetuation of their habitat.

Wildlife Management

The following goal applies to fauna management at Sonoma Coast SP:

Goal NAT-2: Restore, maintain, protect, and ensure the perpetuation of native fauna at Sonoma Coast SP. Protect special-status fauna within Sonoma Coast SP and manage resources for their perpetuation and enhancement in accordance with State and federal law.

- **Guideline NAT-2A:** Protect common and sensitive fauna and their habitats for the purpose of establishing and maintaining self-sustaining populations in a natural ecological setting. Avoid human-induced disturbance and degradation of natural areas. Protect special habitat elements such as snags and monarch roost trees.
- **Guideline NAT-2B:** Develop specific programs to protect and rehabilitate sensitive animal populations and their habitats using sound ecological principles and professionally accepted methods. Include species that are locally important.
- **Guideline NAT-2C:** Inventory and monitor selected common and special-status fauna to identify population trends. Protect all special status fauna occurring within Sonoma Coast SP. Monitor and develop baseline data for future management, assess the health of the populations, and take corrective actions if necessary.
- **Guideline NAT-2D:** Identify, maintain, and protect wildlife movement corridors within Sonoma Coast SP.
- **Guideline NAT-2E:** Maintain working relationships with other land owners and stakeholders in the vicinity of Sonoma Coast SP, to coordinate efforts to identify and preserve habitat linkages.
- **Guideline NAT-2F:** Establish cooperative agreements, conservation easements, or purchasing land from willing owners to provide buffers and habitat linkages to existing resources within Sonoma Coast SP.
- **Guideline NAT-2G:** Avoid adverse impacts to sensitive aquatic species in the timing and implementation of any work that would result in streambed alteration, instream work, or disturbance of riparian areas.
- **Guideline NAT-2H:** Remove barriers to fish passage where feasible to provide habitat linkages to existing resources within Sonoma Coast SP.
- **Guideline NAT-2I:** Control the establishment and spread of invasive animal species that are detrimental to the integrity of ecological processes or special-status fish, wildlife, or plant species and their habitat.
- **Guideline NAT-2J:** Develop interpretive programs and facilities that inform visitors about the importance of protecting the diversity of native fauna at Sonoma Coast SP.
- **Guideline NAT-2K:** Reduce and, where possible, eliminate wildlife access to human food and garbage by using wildlife-proof trash containers where appropriate in Sonoma Coast SP, including administration and residence areas.

Paleontological Resources

Paleontological resources are remnants of life from past geological periods (e.g., fossil remains). These resources constitute a fragile and nonrenewable scientific record of the history of life on earth and represent an important and critical component of the natural heritage. The geologic formations in Sonoma Coast SP contain various types of fossils, most of which are common fossils dating to when the land within Sonoma Coast SP was submerged. Portions of Sonoma Coast SP contain carbonized tree remains, bones, and trace fossils dating to the late Pleistocene Epoch. Furthermore, unique rock slicks on the sides of coastal outcrops that may have been caused by Pleistocene megafauna (mammoths or bison) rubbing against the rocks (Parkman 2002) are an unusual feature in the park. Natural artifacts, such as the possible Pleistocene animal rubs may represent a unique resource that may have both natural and cultural resource value as well as potential as an interpretation topic. Erosion and excavation, associated with site improvement and construction activities, may expose fossils and other paleontological resources. Other human activities may result in damage or destruction of these resources. Protection and preservation of paleontological resources of cultural importance are addressed by the following goal and guidelines.

Goal NAT-3: Protect and preserve significant paleontological resources within Sonoma Coast SP.

- **Guideline NAT-3A:** Inventory, map, and monitor paleontological resources at Sonoma Coast SP for their protection, preservation, and interpretation.
- **Guideline NAT-3B:** Consult and coordinate with the Department's natural resource specialists if unusual or major paleontological resources are discovered (i.e., exposed by excavation), to determine significance and implement appropriate remediation.
- **Guideline NAT-3C:** Coordinate with cultural resource specialists on protection and preservation of paleontological resources such as the possible Pleistocene animal rubs that may have both natural and cultural resource value.
- **Guideline NAT-3D:** Develop interpretive programs and facilities that inform visitors about the importance of protecting paleontological resources at Sonoma Coast SP.

Cultural Resources Management

Tangible cultural resources include historic districts, structures, landscapes, objects, and archeological and ethnographic resources and sites. Sonoma Coast SP includes important cultural resources, including numerous Native American sites, petroglyphs, historic roads and trails, historic farms, ranches, and other structures. Natural artifacts, such as the possible Pleistocene animal rubs may represent a unique resource that is both a natural resource and cultural resource management concern. Some of these resources are cultural landscapes, which are defined, in part, as landscapes that evolved through use by people whose activities or occupancy shaped them such as the rock shelter at Duncan's Landing and cultural sites and locations such as the Carrington Ranch and Willow Creek Ranch. Rural Historic

Landscape Districts and Cultural Preserves may also be appropriate designations to ensure a higher level of management attention and protection. The following goal is aimed at protecting significant cultural resources in Sonoma Coast SP:

Goal CUL-1: Protect, maintain, and preserve significant prehistoric and historic resources within Sonoma Coast SP.

- **Guideline CUL-1A:** Develop an inventory, mapping system, and database for those significant cultural resources within Sonoma Coast SP that may be eligible for inclusion in the National Register of Historic Places and/or the California Register of Historic Resources. Consider designations or classifications such as Rural Historic Landscape District or Cultural Preserve where appropriate. All treatment plans are to comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties, to include a determination of significance or determination of eligibility for cultural resources.
- **Guideline CUL-1B:** Consult with local Native American people and groups who have traditional ties to resources within Sonoma Coast SP to ensure productive, collaborative working relationships during the planning and implementation of specific development projects, and especially when considering management practices, such as the Department' gathering policy, and interpretation involving Sonoma Coast SP's natural and cultural resources of interest and concern to them.
- **Guideline CUL-1C:** Prepare and conduct surveys and inventories of cultural resources in areas subject to development. This should include surveys of historical structures, inventories and condition assessments of artifacts, or assessments and research on cultural landscapes (gardens, dams, roads, and ranches) and completions of the PRC 5024 project evaluations. Comply with Department policies and procedures prior to removing any man-made feature that has potential to be a significant resource.
- **Guideline CUL-1D:** Identify and evaluate for significance potential cultural landscapes within Sonoma Coast SP.
- **Guideline CUL-1E:** Coordinate with natural resource specialists on protection, preservation and management of paleontological resources such as the possible Pleistocene animal rubs which have both natural and cultural resource value.
- **Guideline CUL-1F:** Acquire additional land or conservation easements from willing sources to provide a buffer for the protection of especially significant historic, prehistoric, and archaeological sites or properties that are threatened or are of concern to Native Americans.
- **Guidelines CUL-1G:** Develop interpretive programs and facilities that inform visitors about the importance of protecting cultural resources at Sonoma Coast SP.

VISITOR USE AND OPPORTUNITIES

Sonoma Coast SP is one of the most heavily visited park units in the State Park System and provides many opportunities for quality outdoor recreational experiences. As California's population continues to increase and diversify, the demand for coastal and inland recreational opportunities at Sonoma Coast SP is likely to increase, both in the number of visitors and in the types of recreational activities and facilities future visitors might seek. For example, overnight group facilities may be developed to provide for a variety of education or recreation opportunities. Visitor safety has always been an important concern at Sonoma Coast SP, as the rip-tides and undercurrents characteristic of California's north coast present dangers to unsuspecting swimmers and surfers. For purposes of this General Plan, visitor use and opportunities at Sonoma Coast SP are organized into the two major themes of recreation and interpretation and education.

Recreation

Sonoma Coast SP provides opportunities for a wide variety of recreational activities, including camping, hiking, mountain biking, horseback riding, picnicking, beachcombing, wildlife viewing, and many other activities associated with the beach, riparian and upland habitats. The following goal aims to provide a variety of quality recreation activities.

Goal REC-1: Provide a variety of day-use and overnight recreational opportunities at Sonoma Coast SP to meet the existing and evolving needs of park visitors.

- **Guideline REC-1A:** Plan for recreational opportunities within a regional context and in coordination with other plans, (e.g., the Sonoma County Outdoor Recreation Plan, the Californian Coastal Trail), as required or as determined appropriate by the Department.
- **Guideline REC-1B:** Provide for a variety of day-use activities at Sonoma Coast SP that take advantage of its size, varied terrain, and coastal and inland habitats.
- **Guideline REC-1C:** Provide a variety of overnight camping facilities and alternative overnight accommodations that are convenient for visitors of varying abilities and for individuals and groups seeking diverse recreational and educational experiences.
- **Guideline REC-1D:** Continue to maintain and enhance safe access to the beaches and other areas within Sonoma Coast SP through appropriate studies and evaluations (as an example see Willow Creek Site Access Evaluation in Appendix G).
- **Guideline REC-1E:** Evaluate the current capacities and diversity of day-use, camping and interpretive facilities in providing for quality visitor experiences, and determine management plans for each area or type of facility based on the scenic character of Sonoma Coast SP.
- **Guideline REC-1F:** Evaluate the potential need for new public facilities, such as trails and camping areas, with their potential negative impacts to plant and wildlife species and

cultural resources. In particular, avoid adverse impacts to critical resources areas and follow all applicable protocols.

- **Guideline REC-1G:** If recreation trends and visitor desires indicate interest in kinds of facilities that would be new to Sonoma Coast SP, such as a new and larger Visitor Center, conduct appropriate studies as a part of the site specific planning and facility development.
- **Guideline REC-1H:** Acquire additional properties from willing sellers to provide appropriate sites for future recreational facilities, including trail connections, if suitable locations are not available within Sonoma Coast SP.

Interpretation and Education

Interpretation of Sonoma Coast SP's resources enhances the visitor experience and promotes public support for the preservation, protection, and restoration of sensitive resources. Education provided to park visitors and the local community can foster wise stewardship of the resources within Sonoma Coast SP while helping visitors avoid actions that degrade resources. Interpretation and education also play an important role in informing visitors of the appropriate recreational activities and potential hazards that should be avoided. The participation of volunteers and community groups in providing education and interpretation at Sonoma Coast SP is an important component of community involvement and enhances visitor education and the overall visitor experience. The provision of a variety of interpretive and education programs (e.g., environmental living, guided walks, interpretive panels) would enhance access to interpretation and education for all visitors.

Goal EDU-1: Provide access to educational and interpretive opportunities associated with the unique natural, cultural, and scenic resources of Sonoma Coast SP.

- **Guideline EDU-1A:** Provide interpretive and educational opportunities for all visitors desiring information about Sonoma Coast SP through a variety of interpretive and educational programs on topics such as sensitive ecosystems, species natural history, historic resources, and Native American use of the resources.
- **Guideline EDU-1B:** Develop interpretive opportunities and visitor information at strategically located sites that are compatible with the sensitive biological, cultural, water quality, and scenic resources of Sonoma Coast SP.
- **Guideline EDU-1C:** Explore the feasibility of developing a new visitor center for Sonoma Coast SP at a location that best serves interpretive functions and visitor access and that serves as a gateway to other state park units in the region, as well as to other public lands.
- **Guideline EDU-1D:** Develop a comprehensive interpretive prospectus that addresses themes representative of Sonoma Coast SP, including those regarding natural, cultural and recreation resources. The interpretive prospectus should be based on current

research and park philosophy, and it should also be consistent with the spirit of the place, the vision for Sonoma Coast SP, and all General Plan policies, particularly those related to resource protection. The interpretive prospectus should consider the diverse needs of existing and future visitors, based on demographic trends and community needs. The comprehensive interpretive prospectus shall include or update the following interpretive themes:

- ▶ **Unifying Theme:** Sonoma Coast SP's natural, cultural, aesthetic, and recreational resources constitute a priceless legacy, one which deserves to be protected, maintained, studied, appreciated, and enjoyed.
- ▶ **Primary Theme #1:** Sonoma Coast SP encompasses a wealth of resources, many of which are unique and outstanding in their ecological, scientific, aesthetic, and recreational values.

Supporting Themes:

- A. **The natural ecosystems along the Sonoma Coast consist of an interwoven web of intricate relationships.** Educate the visiting public on the intricate relationships between the terrestrial and marine ecosystems along the Sonoma Coast. Describe specific examples, such as interrelations between anadromous fish species, the mouth of the Russian River, and water quality in Willow Creek.
 - B. **Sonoma Coast SP presents an unrivaled array of outstanding scenic views.** Name and describe the origins and function of each of the geologic formations, plant communities, and other unique features in the viewsheds. Acquaint visitors with the different viewpoints available throughout Sonoma Coast SP and the variation that may be observed at different times of the day and year.
 - C. **Visitors come to Sonoma Coast SP all year round seeking a variety of recreational opportunities.** Describe environmental factors (e.g., mild climate, vegetation that stays green all year) that contribute to the popularity of the Sonoma Coast SP during each of the four seasons.
- ▶ **Primary Theme #2:** Sonoma Coast SP is an outstanding example of the complex relationship between human beings and the natural environment along California's northern coastline.

Supporting Themes:

- A. Native American cultures have flourished along the Sonoma Coast for thousands of years. Depict how some of the earliest human beings in North America might have lived along the Sonoma Coast. Describe the cultures and lifestyles, via artifacts and art work, of the Kashaya Pomo and Coast Miwok.

- B. The historic heritage of Sonoma Coast includes famous explorers and settlers from several nations. Describe evidences of English, Spanish, and Russian exploration in the vicinity. Narrate the activities of (e.g., commercial logging, ranching, farming) and interactions between Russian, Mexican, and American settlers and the Native American groups. Also describe any influences these activities and interactions may have had on the natural or cultural landscape.
 - C. Nineteenth and early twentieth century farms, ranches, dairies, logging, fishing, etc. as well as railroad and early circulation routes. Describe how these activities were linked and how they relate to the Natural and Cultural history of Sonoma Coast.
 - D. Tourism, as well as logging, ranching, and fishing, constitute the most important economic activities today. Describe the historic prominence of fishing, grazing, and logging activities. Portray the growing importance of tourism in the region and the role of Sonoma Coast SP.
- ▶ **Primary Theme #3:** Protection of the resources in Sonoma Coast SP requires collaborative efforts of the Department, other agencies, public-interest organizations, and, most of all, the visiting public.

Supporting Themes:

- A. **Collaborative efforts are required to preserve open space and to establish open space corridors.** Discuss past efforts of the Department, Sonoma County, public-interest organizations, and active citizens to preserve open space in the region. Provide a map of public open spaces in the region. Describe the benefits of a regional network of open space.
 - B. **Visitors can help preserve resources in Sonoma Coast SP by following simple rules.** Describe what and why certain activities should be limited to avoid adverse effects on resources in Sonoma Coast SP (i.e., not too many people tidepooling at same time, do not disturb sea mammals, do not remove plants, do not litter, avoid straying from trails).
 - C. **Each person can do their part every day to keep the environment healthy.** Illustrate activities each person can do to keep the environment healthy (e.g., reduce, reuse & recycle, keeping wastes from storm drains, conserve water, avoid transporting exotic species). Explain how these efforts help to preserve the resources in Sonoma Coast SP.
- ▶ **Guideline EDU-1E:** Seek input from the community, non-profit organizations, local school districts, and other interested stakeholders during the development of Sonoma Coast SP's interpretive programs.

- **Guideline EDU-1F:** Provide appropriate access for educational programs to sensitive resources of Sonoma Coast SP, for the State’s diverse population, including people with disabilities.
- **Guideline EDU-1G:** Manage the number of groups using Sonoma Coast SP for education and interpretation per year to protect the ecological integrity of sensitive resources such as tide pools, wetlands, and coastal dunes.
- **Guideline EDU-1H:** Prepare a Scope of Collections Statement consistent with the Department’s “Guidelines for Writing a Scope of Collections Statement (DPR 2000) for Sonoma Coast SP and maintain an interpretive collection that is consistent with the interpretive themes and the comprehensive interpretive prospectus.

ADMINISTRATION AND OPERATIONS

The administration and operation of Sonoma Coast SP includes visitor services, public safety, facility maintenance, resource management, and community interaction as performed by the Department’s maintenance staff, rangers, resource specialists, interpreters, and other administrative personnel. Volunteers and participating community groups may also play an important role in the operation by providing services such as monitoring and interpretation of important resources. A well-operated park unit provides for visitor safety and enjoyment, protects resource values, optimizes the utilization of the park unit’s funding and material resources, and increases the effectiveness of the staff’s efforts. While this section proposes broad guidance on the administration and operation of Sonoma Coast SP, it is not intended to constitute a formal Operations Plan for Sonoma Coast SP. For the purposes of this plan, administration and operation of Sonoma Coast SP is organized into five components: (1) roadway access and safety; (2) trails; (3) public safety; (4) operational and recreational facilities; and (5) community involvement and agency cooperation.

Roadway Access and Safety

Sonoma Coast SP is primarily accessed from two highways: SR 1 and SR 116. Both of these highways are heavily used by visitors to the region, and experience heavy traffic congestion during peak visitation periods. In addition to traffic congestion, several other factors add to the risk of traffic-related injury and damage. While the roadway conditions on portions of these highways are not conducive to safe bicycle travel (i.e., narrow shoulders, no separated bike lanes), these highways are popular with bicyclists. Also, these Highways have several intersections with local roadways and driveways, and scenic pullouts that are not controlled by signals or stop signs. Lastly, many pedestrians walk along and across the highways, increasing traffic delays and the potential for collision and injuries.

Because access to Sonoma Coast SP is primarily through these two highways, it is imperative that travel conditions (e.g., the alignment, physical condition, and traffic conditions) are conducive to visitor activities and safety. There is no single entrance point to Sonoma Coast SP and entrance signs are available at only two of the four major entrances to Sonoma Coast SP, resulting in low recognition of State Park facilities. Because most visitors arrive at Sonoma

Coast SP by private motorized vehicles, there is the need to provide sufficient parking space at each major point of interest. The importance of these two highways is further accentuated by the Upper Willow Creek addition which expands the Inland Management Zone to include most of the Willow Creek watershed. Initial investigations conducted in the Willow Creek Access Site Evaluation identify potential access points that can be reached from the two highways. The Access Site Evaluation is included with Plan as Appendix G. Further studies are needed to evaluate the safety, adequacy, and appropriateness of the road connections to possible access points before establishing future Willow Creek access. Please refer to the Inland Management Zone, Access and Recreation Opportunities section for further discussion of Willow Creek access.

Inland park access also potentially includes access from Willow Creek Road and Coleman Valley Road to the Willow Creek watershed area. Although these are local roads that have primarily served local communities and residents, Coleman Valley Road has also served as a destination scenic road for non-local visitors, bicyclists, and motorcyclists. It is important to evaluate the safety, adequacy, and appropriateness of these roads for providing park access for the Willow Creek area. Evaluations should be part of an overall strategy for providing safe and appropriate public access to the Willow Creek area.

Public transportation, including buses, could provide access to Sonoma Coast SP for people who choose to visit Sonoma Coast SP by public transportation. Currently, Mendocino Transit Authority provides limited bus service with stops near Sonoma Coast SP. Feasibility of increasing bus service would depend on the expected level of existing and future use. The goals below addresses vehicular circulation to and within Sonoma Coast SP:

Goal ROAD-1: Provide for a system of roadways, parking areas, and road signage that is safe and convenient for different modes of transportation, provides orientation and direction to visitors, and is consistent with the protection of resources.

- **Guideline ROAD-1A:** Develop a comprehensive roadway management plan, in coordination with Caltrans and Sonoma County, where appropriate. Coordinate the roadway management plan with the parkwide trails management plan where appropriate.
- **Guideline ROAD-1B:** Evaluate road signage throughout Sonoma Coast SP to determine whether it is adequate to orient and direct visitors arriving at Sonoma Coast SP. Install signage to bring visitors' attention to the primary destinations and attractions, to distinguish between designated parking areas and scenic pull-outs, and to provide appropriate warnings of potential hazards. Investigate signage possibilities for increasing stronger identity or recognition of Sonoma Coast SP areas and facilities as a part of a distinctive state park.
- **Guideline ROAD-1C:** Coordinate and advocate with Caltrans and Sonoma County to assure that improvement and maintenance of roadways in and around Sonoma Coast SP will result in easy and enjoyable driving experience for motorists, consistent with resource

management goals and guidelines. Improvements may include the following that are identified by Caltrans:

- ▶ Road widening where feasible;
 - ▶ Realignment to correct poor site distance and horizontal curvature;
 - ▶ Turning lanes at new or existing roads that intersect SR 1, especially if current or future turning movements are heavy enough to reduce the level of service at the intersections;
 - ▶ Turning lanes to major parking facilities;
 - ▶ Turning restrictions where appropriate;
 - ▶ Increased parking management, development, and enforcement programs;
 - ▶ Other traffic engineering applications to maintain traffic flow and enhance safety; and
 - ▶ Roadside maintenance is conducted in a manner consistent with natural resource and cultural management goals, particularly roadside ditch cleaning, stream crossing maintenance and road side vegetation management.
- **Guideline ROAD-1D:** Explore the possibility of adding a bike lane or bike path along SR 1, consistent with resource management goals and guidelines.
- **Guideline ROAD-1E:** Coordinate with Mendocino Transit Authority, Sonoma County Transit, and local organizations to maintain existing public bus services and advocate for providing additional public transportation to the primary attractions of Sonoma Coast SP with the intent of enhancing public transportation and reducing greenhouse gas emissions.
- **Guideline ROAD-1F:** Remove parking areas where hazards cannot be avoided, adding off-highway parking areas where on-highway parking conditions are hazardous, and require sufficient parking capacity, serving various vehicle types, into facility development plans.
- **Guideline ROAD-1G:** Coordinate and advocate with Caltrans and Sonoma County to provide sufficient emergency vehicle access on the roadways in and around Sonoma Coast SP.
- **Guideline ROAD-1H:** Conduct road and traffic studies for proposed access points for the Willow Creek watershed as recommended by the Willow Creek Access Site Evaluation (Appendix G) to evaluate safe access to any proposed access sites for the inland Willow Creek watershed.

Trails

Trails within Sonoma Coast SP serve non-motorized activities, such as horseback riding, mountain biking, and hiking. Aside from providing access to the coast, a regional network of trails can provide visitors the option of traveling to and within Sonoma Coast SP without the use of private motorized vehicles. As trail development in the region progresses (i.e., California Coastal Trail) and as populations grow, it is anticipated that Sonoma Coast SP will experience an increased demand for multi-use trail systems. Issues that must be considered in the development of a multi-use trail system include the types of uses allowed on each of the segments, effects on vegetation and wildlife, and the need for directional signage and maps. Determination of appropriate non-motorized activities on trails shall be part of a unit-wide trails management plan.

Goal TRAIL-1: Enhance visitor access to, and visitor experiences with, resources in and around Sonoma Coast SP by providing an interconnecting trail network within Sonoma Coast SP for various transportation modes where appropriate and linkages to regional trail systems.

- **Guideline TRAIL-1A:** Prepare a trails management plan to evaluate the entire trail system within Sonoma Coast SP as well as potential inland trail opportunities and provide management recommendations for existing trails and the placement and use of any future trails. Emphasis should be placed on creating the appropriate type and amount of opportunities for visitors to enjoy the diverse topography, biotic communities, and scenic views at Sonoma Coast SP, as well as possible regional connections. To be consistent with the Department’s goal of increasing access to walking and hiking trails for people with disabilities, the trail management plan shall be consistent with the accessible trail program formulated through the Department’s Transition and Trail Plans for Accessibility in State Parks” and with other applicable ADA compliance guidelines. The trail management plan shall consider forming an interconnecting network of trails throughout Sonoma Coast SP. Multiple uses on trails (e.g., walking/hiking, biking, and horseback riding) shall be allowed where appropriate and compatible. The actual location, distance, and use of future trails should be guided by the trail management plan.
- **Guideline TRAIL-1B:** Provide amenities, such as interpretive and educational resources panels, along trails.
- **Guideline TRAIL-1C:** Coordinate with State and local agencies and community organizations to incorporate connections to the regional bicycle trail system.
- **Guideline TRAIL-1D:** Coordinate with State and local agencies to incorporate State Park trails into the California Coastal Trail planning process.
- **Guideline TRAIL-1E:** Explore strategies to provide access to campsites, alternative overnight accommodations, trails, vistas, overlooks, and historical resources in balance with the scenic character of Sonoma Coast SP.

- **Guideline TRAIL-1F:** Coordinate the trails management plan with the road management plan where appropriate.

Public Safety

Public safety is an important concern at Sonoma Coast SP, as the coastline experiences riptides and strong offshore currents at high frequencies. In addition, high level of erosion caused by seasonal waves, stormwater runoff, and visitor use cause some trails to become unsafe for visitors at times and may require temporary closure to the public. The Department's objective to providing a safe visitor experience for all park users is reflected in the goal below:

Goal SAFE-1: Provide facilities and services that contribute to the safety and convenience of visitors.

- **Guideline SAFE-1A:** Work with local communities, local districts and agencies, and State agencies to provide a unified delivery of services in response to structural and public safety emergencies, training and utilizing the expertise of all personnel.
- **Guideline SAFE-1B:** Evaluate signage informing visitor of riptides, undercurrent hazards, and other known hazards and install or improve signage where appropriate and necessary.
- **Guideline SAFE-1C:** Continue to provide lifeguard services as feasible.
- **Guideline SAFE-1D:** Maintain trails in safe conditions where feasible and monitor for hazards. Close trails with unsafe conditions until improvements are completed.
- **Guideline SAFE-1E:** Coordinate with appropriate fire suppression agencies, such as the California Department of Forestry and Fire Protection (CDF), local fire departments, and volunteer fire organizations, to update the park's Wildfire Management Plan for the Park to include the Willow Creek area.

Operational and Recreational Facilities

Adequate facilities, including vehicle service yards, ranger and lifeguard offices, maintenance yard and operations offices, and visitor center, are critical for the administration and operations of Sonoma Coast SP and the District. Where existing facilities are inadequate or are located in environmentally incompatible areas, facility relocations and/or a more appropriate use of the site should be considered once a new, more compatible location is identified and Department resources are available.

Planning for the development of new facilities within Sonoma Coast SP involves consideration of a number of physical factors (e.g., flooding, scenic quality, availability of water, compatibility of wastewater systems with site soils, sensitivity of nearby natural and cultural resources) and logistic factors (e.g., response time, nearness to park entrances, accessibility

from highways, and proximity to other park units within the District). For example, new facilities and improvements should not be located adjacent to sensitive resources unless the particular locations are vital to the purpose of the facility (i.e., interpretive panels of the sensitive resources, environmental campground in primitive setting). The facility types considered for locations adjacent to sensitive uses should have minimal building footprint or otherwise result in minimal adverse impacts (i.e., new administrative buildings or a new visitor center, which experience heavy use, should not be located adjacent to sensitive resources). The following goal addresses both existing facilities and the planning and development process for new facilities.

Goal FAC-1: Develop and maintain environmentally compatible and logistically convenient facilities in order to meet visitor, staff, and park management needs and to support efficient operations.

- **Guideline FAC-1A:** Initiate site specific area plans and studies to determine size and locations for parking and staging areas, ranger station, visitor center, maintenance yard, other interpretive facilities, camping facilities, and other recreational facilities.
- **Guideline FAC-1B:** Major facilities should be located in the Potential Development Areas identified in Exhibit 3-1 or on new properties acquired for the purpose of facility development. New development of facilities shall consider the site selection criteria in Table 3-1 in Section 3.2.2 to determine site suitability. Potential environmental effects shall be mitigated to the extent feasible.
- **Guideline FAC-1C:** Integrate the park’s positive aesthetic features into the design of new park facilities and in appropriate renovation and maintenance programs. Integrate built facilities into the park’s natural setting through the use of appropriate siting techniques and building form, scale, materials, and colors. Preserve and showcase scenic views, use native (or replicated) building materials, use muted colors that reflect the natural surroundings, and take advantage of (or screen) ephemeral conditions (weather, wind, sunlight, etc.), as appropriate.

Table 3-1 Site Selection Criteria	
Facility or Improvement	Siting Criteria
Visitor Center	<ul style="list-style-type: none"> ▶ Easy and safe access to major highway ▶ Availability of utilities (e.g., water, sewer or septic, electricity) ▶ Large enough area to accommodate parking lot and buildings ▶ Avoid adverse impacts to natural and cultural resources. Minimize or mitigate impacts where alternatives are not feasible. ▶ Outside 100-year floodplain ▶ Without significant effect on scenic resources and coastal views, as seen from roadways, trails, and scenic viewpoints ▶ Outside areas demonstrated to be prone to landsliding and falling rocks

Table 3-1 Site Selection Criteria	
Facility or Improvement	Siting Criteria
Trails and Coastal Access	<ul style="list-style-type: none"> ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ Connection to roadway and parking areas ▶ ADA accessible ▶ Connection to regional trail network ▶ Outside areas demonstrated to be prone to landsliding and falling rocks
Bike Ways	<ul style="list-style-type: none"> ▶ Sufficient roadway shoulder width, if on roadway ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ Connection to regional network ▶ Outside areas demonstrated to be prone to landsliding and falling rocks
Boat Launch	<ul style="list-style-type: none"> ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ ADA accessible
Scenic Viewpoints	<ul style="list-style-type: none"> ▶ View of prominent, notable, or characteristic park feature ▶ Opportunity for park interpretation ▶ Outside areas demonstrated to be prone to landsliding and falling rocks ▶ ADA accessible ▶ Easy and safe access to major highway
Parking Area	<ul style="list-style-type: none"> ▶ Sufficient roadway shoulder width, if on roadway ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ Outside areas demonstrated to be prone to landsliding and falling rocks ▶ ADA accessible ▶ Close to recreational resources or trails ▶ Easy and safe access to major highway

- **Guideline FAC-1D:** Maintain and upgrade existing facilities as needed.
- **Guideline FAC-1E:** Reduce and, where possible, eliminate wildlife access to human food and garbage by using wildlife-proof trash containers where appropriate in Sonoma Coast SP, including administration and residence areas.
- **Guideline FAC-1F:** Design culverts placed beneath roads and trails to accommodate 100-year storm and fish passage.
- **Guideline FAC-1G:** Inspect buildings for sensitive species, including bat populations, and establish mitigation measures for any species identified prior to major maintenance, construction, or structure demolition.

**Table 3-1
Site Selection Criteria**

Facility or Improvement	Siting Criteria
Environmental Campgrounds	<ul style="list-style-type: none"> ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ Connection to trails ▶ Outside areas demonstrated to be prone to landsliding and falling rocks ▶ Close proximity to recreational resources
Campgrounds	<ul style="list-style-type: none"> ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ Outside 100-year floodplain ▶ Large enough area to accommodate parking lot and buildings ▶ Availability of utilities (e.g., water, sewer, electricity) ▶ Connection to roadway ▶ Outside areas demonstrated to be prone to landsliding and falling rocks ▶ Close to recreational resources.
Alternative Overnight Facilities	<ul style="list-style-type: none"> ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ Outside 100-year floodplain ▶ Large enough area to accommodate parking area and buildings ▶ Availability of utilities (e.g., water, sewer, electricity) ▶ Connection to roadway ▶ Outside areas demonstrated to be prone to landsliding and falling rocks ▶ Close to recreational resources
Day-use Areas	<ul style="list-style-type: none"> ▶ Large enough area to accommodate parking lot and buildings ▶ Availability of utilities (e.g., water, sewer, electricity) ▶ Connection to roadway ▶ Outside areas demonstrated to be prone to landsliding and falling rocks
Administrative and Operational Center (Maintenance Facility, Ranger Station, Employee Housing, Lifeguard Station)	<ul style="list-style-type: none"> ▶ Large enough area to accommodate parking lot and buildings ▶ Availability of utilities (e.g., water, sewer, electricity) ▶ Connection to roadway ▶ Central/convenient location within Unit and District ▶ Site without sensitive and special status natural resources and sensitive cultural resources or where effects can be minimized and mitigated ▶ Average slope of less than 10% ▶ Outside 100-year floodplain ▶ Without visual obstruction of scenic resources as viewed from roadways, trails, and scenic viewpoints ▶ Outside areas demonstrated to be prone to landsliding and falling rocks

- **Guideline FAC-1H:** Avoid development of facilities in areas known to support special-status fauna and their habitat to the greatest extent feasible.
- **Guideline FAC-1I:** Acquire additional lands from willing sellers when available and suitable to support the management goals.
- **Guideline FAC-1J:** When planning new facility development or property acquisitions, consider the needs for public safety personnel, equipment, and communication systems.
- **Guideline FAC-1K:** When reviewing potential new facility development or property acquisitions, assess the ability to provide for adequate public safety as part of the environmental review.
- **Guideline FAC-1L:** Consult with other state agencies, such as the Northern Sonoma County Air Pollution Control District and the North Coast Regional Water Quality Control Board, prior to initiating construction activities.
- **Guideline FAC-1M:** Conduct project-specific geotechnical evaluations prior to preparation of final plans for development on sites that would subject property or persons to significant risks from geologic hazards. Site mitigation, if necessary, shall conform to the recommendations in the geotechnical evaluations.
- **Guideline FAC-1N:** Conduct noise studies, for development or improvements that may cause State noise standard exceedances at nearby sensitive use sites. Implement recommendations from the noise studies to reduce generated sounds to within acceptable noise levels.

ACCESSIBILITY

Currently there are campgrounds, picnic facilities, a visitor center, and a boardwalk that are universally-accessible. Future projects will retrofit facilities to ADA standards and provide additional universally-accessible facilities and recreation opportunities in the park as identified in the Department's Accessibility Transition Plan.

Goal ACC-1: Sonoma Coast SP's recreation facilities shall become universally-accessible, and provide high-quality recreational opportunities for all visitors.

Accessibility Guidelines:

- **Guideline ACC-1A:** Provide universal access to the park's recreation facilities and resources where feasible, including buildings and their contents, historic structures and landscapes, roads, walkways and trails, and the park's important natural and cultural resources, in accordance with the *Americans with Disabilities Act (1990)* and California State Park's *Accessibility Guidelines*. Provide universal accessibility for employees in work areas and in park residences as they are developed or renovated.

- **Guideline ACC-1B:** Use the *California Historic Building Code* as a guideline for providing appropriate accessibility in historic structures. The code provides alternative regulations to facilitate access and use by persons with disabilities to and throughout buildings, structures, and sites designated as qualified historic buildings or properties. Reasonably equivalent access alternatives are evaluated as part of this process.

Sustainability

Sustainability is one of many important elements in the design, development, and operation of park facilities. A widely used definition of sustainable development is a “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainability is integrated as a basic tenet of this General Plan, as illustrated in the management guidelines and recommendations for facility locations based on a natural and cultural resource-based opportunity and constraints analysis. Sustainability, combined with site development criteria, park facility guidelines, planning zone aesthetic guidelines, as well as the aesthetics of park design heritage, provides a comprehensive approach to park development. This General Plan also encourages adaptive management techniques to monitor and adjust approaches to resource and visitor management with long-term benefits for each. Sustainable design practices can also be incorporated into future area-specific projects during the planning and design phases. The benefits of sustainable design concepts and practices include:

- ▶ Increasing environmental benefits (conservation of natural resources and reduced waste)
- ▶ Reducing operating costs through less energy consumption
- ▶ Promoting better health for park visitors (for example, through use of fewer toxic and low-emitting materials and interior climate control)
- ▶ Increasing operations and maintenance efficiency (more durable products, less maintenance of toxic substances, lower maintenance costs from resource and energy conservation)
- ▶ Using adaptive management techniques to monitor and adjust approaches to resource and visitor management for long-term benefits to each

Goal SUST-1: Incorporate principles and practices of sustainability into the park’s design, improvements, and maintenance and operations, and utilize adaptive management principles.

- **Guideline SUST-1:** Use sustainable practices in site design, construction, maintenance, and operations. Sustainable principles used in design and management emphasize environmental sensitivity in construction, the use of non-toxic materials and renewable resources, resource conservation, recycling, and energy efficiency.

- **Guideline SUST-2:** Programs such as LEEDs (Leadership in Energy and Environmental Design) shall be consulted for development of facilities and site-related construction.
- **Guideline SUST-3:** Support public and alternative modes of transportation for visitors to Sonoma Coast SP to help reduce greenhouse gas emissions, both locally and within the region.

Community Involvement and Agency Cooperation

The local communities of Jenner, Bodega Bay, and others are an important resource in planning and program implementation. Fostering the relationship between Sonoma Coast SP and the local communities promotes public support and involvement in the protection of unique natural, cultural, and scenic resources. Community groups and individuals can also assist staff in day-to-day operations, as well as providing information to staff (i.e., alerting rangers to unusual occurrences). Private companies can also provide concessionary services that facilitate desired and appropriate recreational activities within Sonoma Coast SP. Developing and maintaining positive working relationships with Sonoma County, the California Coastal Commission and other government agencies, particularly during the Local Coastal Plan update process, would minimize planning and regulatory conflicts and increase mutual cooperation in achieving the mission of each agency. The following goal aims to promote community involvement and agency cooperation.

Goal COMM-1: Maintain open communication and cooperation with local communities, local Native American tribes, organizations, businesses, and other stakeholders in the planning and management of Sonoma Coast SP. Encourage use of volunteers for providing visitor services, interpretation, resource protection, and restoration where appropriate.

- **Guideline COMM-1A:** Conduct surveys to determine additional services that would be supported by park visitors. Based on survey analysis and trend identification, encourage appropriate concessions and work with nearby communities and other stakeholders to provide visitor services.
- **Guideline COMM-1B:** Provide opportunities for continued public input and review during the planning phases of major facility development projects.
- **Guideline COMM-1C:** Involve community groups in the protection, interpretation, and restoration of natural and cultural resources within Sonoma Coast SP.
- **Guideline COMM-1D:** Participate in the Local Coastal Plan update process. Coordinate with Sonoma County to ensure the Local Coastal Plan and the General Plan are mutually compatible.

3.2.2 SITE SELECTION CRITERIA

Recreational and administrative facilities may be developed within Sonoma Coast SP in the future in order to meet visitor and operational needs. Development sites would be required

to be evaluated for their appropriateness for development according to site-selection criteria (Table 3-1). Evaluation would take place prior to the Department's approval for use of any particular site for any development or improvement projects. The site selection criteria vary based on the type of facility or improvement. Criteria have been established for the following facility types: campgrounds, alternative overnight facilities, day-use areas, visitor center, administrative center, trails, bikeways, boat launches, scenic viewpoints, and parking areas.

3.3 MANAGEMENT OF VISITOR USE IMPACTS—CARRYING CAPACITY

PRC §§5001.96 and 5019.5 require that the land carrying capacity be determined before any park development plan is adopted, and that attendance at State Park System units be held within the limits established by this capacity. A definition of carrying capacity by the code, however, is not provided.

3.3.1 CHARACTERIZATION OF CARRYING CAPACITY

The carrying capacity of land is developed by evaluating the interaction between land uses and natural systems and determining how these interactions will affect, over time, the land's integrity, and sustainability. Maximum capacity is the point at which land regeneration is just exceeded by demands made on natural systems and at which degradation or destruction of the systems occurs. Carrying capacity not only relates to the area's environmental resources but also the quality of the visitor experience.

In terms of park and recreation planning, carrying capacity may be extended in meaning to suggest that no cumulative net losses will be permitted to occur in any of the unit's resource values (natural, cultural, aesthetic, or recreational) because of human use (activities or facility development). However, seemingly insignificant effects can have a permanent impact on resource values. Therefore, the intent of the PRC is to avoid degradation of resource-based park systems. The large variety of factors involved in damage to natural resources and the complexity of the interactions among the factors makes establishing a carrying capacity number difficult. Visitation, individual or group usage, time, and types and patterns of recreational use all contribute to the impact on resource systems. To aid in impact minimization, management can regulate capacity limits and land use, enact mitigation measures, educate and interpret for the public, and ensure proper design. Determination of resource location and significance allows management to create future guidelines for public use of a park and access to it.

3.3.2 ADAPTIVE MANAGEMENT

Adaptive management is a tool to address carrying capacity (or allowable use intensity) issues and is included in the guidelines within this General Plan. Adaptive management is an ongoing, iterative process of determining desired conditions, selecting and monitoring qualitative indicators and quantitative standards that are reflective of these desired conditions, and then taking additional management actions if adequate progress toward the desired conditions is not being made.

- ▶ The desired conditions for Sonoma Coast SP are reflected in the management goals above in Section 3.2, particularly those pertaining to visitor experience and resource protection. If the Department determines that the entire State Park or a specific area of Sonoma Coast SP is not meeting the goals and that desired conditions would not have been realized, then management action would be initiated. Management action could determine that the violation was caused by natural variation (e.g., seismic activity) or by human-induced variables (e.g., trampling associated with increasing hiking activities). Actions to manage or limit visitor use would be implemented when the desired condition was not met because of impacts associated with visitor use. Management actions could include, but are not limited to, the following:
 - ▶ Site management: Implement measures affecting facility design, barriers, surface treatments, area or facility closure, change in access locations, or redirection of visitors to other areas.
 - ▶ Regulations: Limit number of people, location or time of use, permitted activities, and allowable equipment (i.e., seasonal restrictions on use, such as trail or area closures during wet or extreme conditions).
 - ▶ Enforcement of regulations: Institute or increase patrols, notifications of infractions, and citations for violations.
 - ▶ Education: Provide informative signs and exhibits, interpretive programs or activities, brochures and fliers to be handed out at park entrance, meetings with user groups.
 - ▶ Following the implementation of the management action, monitoring should be conducted to determine if the desired outcome is being achieved. This would include annual updates of the Natural Resources Baseline Condition Assessment. When the desired outcomes are achieved, then Sonoma Coast SP is being operated within its carrying capacity. If the desired outcomes are not being achieved, then alternative management actions would be carried out until the desired outcome is achieved.

3.3.3 ENVIRONMENTAL QUALITY INDICATORS

Desired conditions, which are reflected in the management goals in this General Plan, and their associated risk of non-attainment, include the following:

- ▶ Maintenance of sustainable populations of special-status plant, fish and wildlife species;
- ▶ Retention of the integrity and value of cultural resources;
- ▶ Maintenance of a quality visitor experience;
- ▶ Preservation of the water quality within Sonoma Coast SP; and
- ▶ Protection of the scenic resources within the viewsheds.

Desired conditions may be measured by assessing whether environmental quality indicators have been achieved. Potential mechanisms for monitoring these environmental indicators may include, but are not limited to the following:

- ▶ Long-term monitoring of special-status species populations;
- ▶ Ongoing inventories of biological resources in Sonoma Coast SP;
- ▶ Monitoring of invasive species populations;
- ▶ Conducting visitor surveys regarding satisfaction and overall experience;
- ▶ Monitoring water quality at selected sites; and
- ▶ Develop screening criteria for future development aimed at protection scenic resources.

Successful results would be attained if the monitoring process is feasible to accomplish as a part of regular operations. For example, if the environmental quality indicators are physical conditions that are observable during the day-to-day operational activities, then the monitoring process would occur continuously with minimum additional effort. Qualitative measurements are preferred, if detailed quantitative monitoring and analyses render the monitoring process infeasible. In all cases, however, the environmental quality indicators should be good predictors of the desired outcome. Thus, for some desired outcomes (e.g., sustainable populations of special-status species), the indicator monitoring processes may require field surveys undertaken by staff with special qualifications. Table 3-2 contains a sampling of environmental quality indicators that are developed based on some of the management goals in this General Plan and their associated desired outcomes. It should be noted that environmental quality indicators may be modified on a regular basis, based on site-specific knowledge, recent observations in the field, and updates in scientific understandings.

**Table 3-2
Sample of Desired Outcomes and Environmental Quality Indicators**

Goal	Desired Outcome	Environmental Quality Indicators ¹	Potential Monitoring Activities
Goal NAT-2: Protect special-status plants within Sonoma Coast SP to manage for their perpetuation and enhancement in accordance with State and federal law. Goal NAT-4: Protect special-status fish and wildlife species within Sonoma Coast SP to manage for their perpetuation and enhancement in accordance with State and federal law.	Sustainable populations of special-status plant and wildlife species.	<ul style="list-style-type: none"> ▶ Increased occurrence of special-status plants species. ▶ Active nest sites. ▶ Presence of suitable habitat. ▶ Abundance of prey species. 	<ul style="list-style-type: none"> ▶ Periodic field surveys. ▶ Checks for active nest sites prior to construction activities.
Goal CUL-1: Protect and preserve significant prehistoric and historic resources within Sonoma Coast SP.	Retention of the integrity and value of cultural resources.	<ul style="list-style-type: none"> ▶ Lack of disturbance to known archaeological sites. ▶ Retention of historical integrity and character defining features. 	<ul style="list-style-type: none"> ▶ Staff observations during day-to-day operations.

¹ Environmental Quality Indicators may be updated by park staff based on field observations, new scientific knowledge, etc.

3.4 MANAGEMENT ZONES

Management zones were developed to address the distinct natural, aesthetic, and recreational values found in Sonoma Coast SP. Each of the management zones encompass parts of Sonoma Coast SP that have similar characteristics and would be managed similarly. For the purpose of this General Plan, Sonoma Coast SP was divided into two management zones, as illustrated in Exhibit 3-1. The primary distinction between these two management zones is their relationship to the watershed.

3.4.1 MANAGEMENT ZONE GOALS AND GUIDELINES

In addition to the park-wide goals and guidelines that are applicable to the entire State Park, specific goals and guidelines were developed for each management zone, as described below.

COASTLINE MANAGEMENT ZONE

Statement of Management Intent

The 4,597-acre Coastline zone includes areas of Sonoma Coast SP that are along the coastline and on the west side of the Coast Range crest. Watersheds within this zone drain directly into the Pacific Ocean. This zone is also adjacent to the California Coastal National Monument that consists of offshore islands, rock outcroppings, and reefs. The primary purpose of this zone is to protect coastal resources and to support recreation associated with the coast.

Coastal Access

Coastal access is a primary concern within this management zone because it is key to many of the recreational activities enjoyed by visitors. For instance, the beaches are a main attraction of Sonoma Coast SP. Some of the beaches are located adjacent to parking areas and therefore easy to access. The rugged nature of the coastline at other beach locations, however, makes beach access extremely difficult for people with limited mobility. Maintaining coastal access and providing visitors of varying abilities with the opportunity to enjoy the coast is a goal of Sonoma Coast SP.

Goal COAST-1: Provide and maintain coastal access for visitors of varying abilities.

- **Guideline COAST-1A:** Comply with requirements established by the California Coastal Act, the Americans with Disabilities Act, and other applicable laws and regulations to the extent feasible and required.
- **Guideline COAST-1B:** Maintain existing facilities at Sonoma Coast SP, including fully accessible trails, such as the Vista Trail and the boardwalk at Bodega Dunes.
- **Guideline COAST-1C:** When planning new coastal access points, accommodate visitors of all abilities.

Water Quality

Land uses in this management zone and the surrounding areas results in runoff that may contain pollutants and sediments that could degrade water quality of the streams and their estuaries, as well as Bodega Bay. Because visitors enter the water in these areas, poor water quality poses public health risks. Sound planning decisions and best management practices can help improve water quality, which is crucial in sustaining healthy aquatic habitats, maintaining safe conditions for visitors, and providing water supplies to the local community.

Goal COAST-2: Provide for water quality within the springs, streams, estuaries, and coastal waters at Sonoma Coast SP that is safe for visitors and keeps water bodies inhabitable for wildlife and plant species.

- **Guideline COAST-2A:** Coordinate with Sonoma County Division of Environmental Health, the State Water Resources Control Board, and North Coast Regional Water Quality Control Board to identify any potential sources (including non-point) and management strategies for the control of pollutants in any water bodies that originate from Sonoma Coast SP. Water quality objectives are in the North Coast Basin Plan.
- **Guideline COAST-2B:** Restore native vegetation bordering the streams and springs to filter sediments and other pollutants from runoff that enter these water bodies.
- **Guideline COAST-2C:** Prepare and implement erosion control plans or stormwater pollution prevention plans for development involving excavation or other ground surface disturbances that have the potential for increasing the generation of sediment-carrying runoff.

Aesthetics

The scenic quality of Sonoma Coast SP is primarily based on Sonoma Coast SP's location along the coastline and the presence of its myriad hydrological, geological, and biological resources. Because many of these scenic features are visible from SR 1, Sonoma Coast SP presents a coastal landscape that can be appreciated by both park visitors and casual "passers-by." In managing for the aesthetic quality of Sonoma Coast SP, three key elements must be considered: the scenic resource within the viewshed, public viewpoints that provide access to these views, and management proposals that would introduce new facilities in the existing landscape.

Public viewpoints are locations that allow unobstructed views of unique scenic features or perspectives of scenic resources, such as Arched Rocks, Goat Rock, and the mouth of the Russian River. Public access to these view points, through trails or roadways, enhances the visitor's appreciation of Sonoma Coast SP and the coastal environment.

Goal COAST-3: Preserve the natural beauty of the coastal viewshed in and around Sonoma Coast SP for the enjoyment of visitors.

- **Guideline COAST-3A:** Designate public viewpoints along trails and roadways where views of the coastline, the Coast Range, or other visual resources are not obstructed by existing vegetation or other natural and man-made features.
- **Guideline COAST-3B:** Consult with Caltrans and designate pull-outs or other parking areas for designated viewpoints along SR 1.
- **Guideline COAST-3C:** Provide signage at designated viewpoints to facilitate public viewing and interpretation of resources.
- **Guideline COAST-3D:** Establish appropriate visual screening of existing and new facility developments that are visible from the State routes or the designated scenic viewpoints.
- **Guideline COAST-3E:** Avoid new development that would decrease the scenic quality of resources within or near Sonoma Coast SP.
- **Guideline COAST-3F:** Provide input to Sonoma County and California Coastal Commission regarding visual impacts of private development within the coastal viewshed that are visible from points within Sonoma Coast SP, particularly if the private development would be visible from designated viewpoints.
- **Guideline COAST-3G:** Shield light sources to eliminate or minimize light pollution that can degrade night-time views of the coast and the sky.

INLAND WATERSHED MANAGEMENT ZONE

Statement of Management Intent

This 5,014-acre management zone encompasses those areas of Sonoma Coast SP that are located east of the crest of the Coast Range watersheds of the Russian River and of its tributaries, Willow Creek and Freezeout Creek. The Willow Creek and Freezeout Creek watersheds are located to the east of the crest line of the hills. Natural resources present within the inland watershed management zone differ from those present within the coastal portion of Sonoma Coast SP and include stands of coast redwood Douglas Fir and Bay Laurel, riparian forests and scrub, and coastal wetlands. Portions of this zone contain formerly logged lands in need of restoration or rehabilitation.

The inland watershed management zone is an important part of the larger Russian River coastal watershed. The watershed's rich diversity of natural, cultural, and scenic resources significantly contribute to Sonoma County's regional natural open space resources. The addition of the Willow Creek watershed also significantly expands the landscape character and recreational opportunities at Sonoma Coast SP and provides excellent opportunities for habitat restoration and enhancement.

The inland watershed management zone will be managed to preserve and enhance the watershed as a natural open space while providing opportunities for appropriate and diverse

recreational activities. Appropriate public access will be provided. Connectivity with surrounding regional open space, natural communities and habitats, as well as recreation networks will be encouraged. Natural resource programs, watershed rehabilitation programs, and on-going inventory programs will be continued. Cultural resource inventories and evaluations will be conducted for those areas intended for development or rehabilitation. Significant resources will be identified, protected, and incorporated into park interpretive programs as appropriate. Management or programs in this zone may involve partnerships with conservancies, open space organizations, interpretive associations, or other agencies. The Sonoma County Agricultural Preservation and Open Space District (SCAPOSOD) holds conservation easements on inland portions of the park including the Willow Creek, Redhill, and potentially Carrington areas. The Department fully intends to comply with any easements or encumbrances on State Park properties. This includes permitted and prohibited uses and activities.

Access and Recreation Opportunities

The addition of the Upper Willow Creek acquisition in 2005 places most of the Willow Creek watershed in park ownership and provides possibilities for expanding inland park access and recreation experiences. Site specific studies in conjunction with other watershed planning considerations such as natural resource restoration programs, cultural resource evaluations, a parkwide Trails Plan, traffic studies, compatibility with adjacent land uses, as well as park operations and security considerations are needed before development of access sites and facilities occur. Visitor access to the inland watershed management zone was a key planning issue addressed during the development of this General Plan. An initial investigation of potential visitor access locations for the Willow Creek watershed conducted during the planning process is included as Appendix G.

Inland visitor access is a primary concern within this management zone as it is a key factor to providing recreation opportunities and management of the Willow Creek watershed. Permanent inland access sites and facilities have yet to be determined. The steep, rugged nature of the majority of this area makes access planning problematic. Maintaining access to the Inland Management Zone, while providing park visitors with the opportunities to enjoy this property is a primary management goal at Sonoma Coast SP.

GOAL INLAND-1: Provide for diverse and appropriate access provisions to accommodate recreational opportunities and visitor enjoyment of the distinctive resources of the inland watershed area.

- **Guideline INLAND-1A:** Establish appropriate access points that best satisfies the site selection criteria for development, trail connectivity, visitor safety, and consistency with resource management objectives.
- **Guideline INLAND-1B:** Establish a primary visitor access point within the Inland Management Zone. This location should be able to accommodate a wide range of visitor

use and operational facilities that are appropriate to the watershed area, with opportunities for a variety of appropriate recreational activities.

- **Guideline INLAND-1C:** Establish secondary visitor access points within the Inland Management Zone that provide alternative locations for appropriate park facilities and visitor activities, and could help reduce traffic or potential visitor conflicts that might occur at other access points.
- **Guideline INLAND-1D:** Limited, controlled, or authorized park access locations may be designated for specific areas within the Inland Management Zone. These access locations are intended to provide limited access and use opportunities in specific areas within the Inland Management Zone with specific site or management constraints.
- **Guideline INLAND-1E:** Identify and establish administrative connectivity within the Inland Management Zone. Consolidate park operations facilities, if feasible, outside of sensitive resource areas.
- **Guideline INLAND-1F:** Maintain existing facilities at Sonoma Coast SP, such as the Pomo and Willow Creek Environmental Campgrounds, including fully accessible trails, where possible.
- **Guideline INLAND-1G:** Develop a parkwide Trails Plan to provide for an appropriate variety of recreation experiences that includes, but is not limited to, trail opportunities for hiking, horseback riding, mountain biking, multi-use trails, interpretive trails, as well as accessible trails for disabled visitors.
- **Guideline INLAND-1H:** Conduct site-specific resource investigations and development-related studies, and identify feasible opportunities for appropriate day use and overnight visitor facilities. Consider various possibilities such as trailside camps, equestrian camps, bicycle camps, conventional drive-in campgrounds, and alternative accommodations such as yurts.
- **Guideline INLAND-1I:** Consider providing staff housing near access locations for improved park surveillance and security purposes.

Water Quality

The water quality of the Russian River portion near this management zone exceeds the water quality standards for temperature and sedimentation/siltation, as defined by the Regional Water Quality Control Board (RWQCB) on its Clean Water Act Section 303(d) List (RWQCB 2003). The North Coast Regional Water Quality Board is charged with developing action plans, called Total Maximum Daily Loads (TMDL), to improve water quality (SWRCB 2003).

The Willow Creek watershed has historically been used for agricultural and logging activities that have contributed to the sedimentation of Willow Creek. Management of the natural

resources within this watershed (i.e., restoration of the native habitat) was one of the main reasons for the acquisition of the Willow Creek property. Effective measures are needed to protect and improve water quality from further development and use in this management zone and from the surrounding areas that may contribute runoff with sediments affecting water quality.

Goal INLAND-2: Improve the water quality in Russian River, Willow Creek, and in other inland waterways.

- **Guideline INLAND-2A:** Treat sediment-carrying runoff from County roadways.
- **Guideline INLAND-2B:** Support and implement the Willow Creek Watershed Management Plan in a manner that is consistent with this General Plan. Watershed restoration treatments in Willow Creek may apply to stream, watershed, and logging roads for the purposes of maintaining and improving water quality. Watershed restoration may include erosion control plans, in accordance with water quality requirements, for development involving excavation or other ground surface disturbances that would increase the potential for generating sediment-carrying runoff. Watershed restoration may also include conversion or improvement of logging roads, with consideration of their potential historic significance. Storm-proofing of roads and establishment of vegetative buffers shall also be included to minimize stormwater runoff that can degrade water quality. Restoration plans would also address plans for management of grasslands and forests, and exotic species.

Aesthetics

The primary visual characteristics in the Willow Creek watershed are the Coast Range and a meadow within a forested valley with little visible development. The portion of the Russian River watershed near Sonoma Coast SP exhibit more development but retains much of the forest and riparian scenery that has resulted in the designation of SR 116 as a State Scenic Highway. Preservation of the natural scenery would be crucial in maintaining the visual and recreational value within this management zone. Cultural landscapes and historical resources also contribute to the aesthetics of the park. Cultural landscapes may be the site of an important event or reflect patterns of land use, settlement, or cultural traditions.

Goal INLAND-3: Preserve the natural beauty of the inland watershed in and around Sonoma Coast SP for the enjoyment of visitors.

- **Guideline INLAND-3A:** Establish appropriate visual screening of existing and new facility developments that are visible from the roadways and trails.
- **Guideline INLAND-3B:** Maintain native vegetation within the Willow Creek watershed in order to present primitive scenery of the valley.
- **Guideline INLAND-3C:** Provide input to Sonoma County regarding visual impacts of developments that are visible from points within the Sonoma Coast SP watershed.

- **Guideline INLAND-3D:** Shield light sources to eliminate or minimize light pollution that can degrade night-time views of the dark sky.