BIG BASIN REDWOODS STATE PARK

Final General Plan and Environmental Impact Report

Approved by the State Park and Recreation Commission

May 2013

Big Basin Redwoods SP
Final General Plan / EIR

This document represents the Final General Plan and Environmental Impact Report approved by the State Park and Recreation Commission on May 17, 2013.

References made to the Findings of Overriding Considerations are added (*in italics)* in the Executive Summary and throughout Chapter 5 in this document. The Department also prepared an Addendum to the Final EIR that introduces a January 2014 Settlement Agreement that stipulates specific actions to be taken by State Parks to further efforts to protect the marbled murrelet. These two documents are located in the Appendices.

Published separately, is the Big Basin Redwoods SP general plan companion document titled "Final EIR Response to Comments," which includes copies of public comment letters, Department responses, and related documents for compliance with CEQA.

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This document is also available as an electronic file at
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Cover Photos:
Old growth redwoods at Big Basin Redwoods SP
1936 photo of the Administration Building
1938 photo of the Big Basin Lodge

BIG BASIN REDWOODS STATE PARK

Final General Plan and Environmental Impact Report

State Clearinghouse #2001112104

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Approved by the State Park and Recreation Commission

May 2013

Resolution 4-2013
Adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Santa Cruz/Scotts Valley, California
May 17, 2013

General Plan and Final Environmental Impact Report for Big Basin Redwoods State Park

WHEREAS, the Director of California State Parks has presented to this Commission for approval the proposed General Plan and Final Environmental Impact Report ("Plan") for Big Basin Redwoods State Park ("Park"); and

WHEREAS, Big Basin Redwoods State Park, established in 1902 through the efforts of the Sempervirens Club, was the first park in today's California State Park System and is historically significant as one of the first public commitments to environmental preservation and outdoor recreation; and

WHEREAS, California State Parks, working together with the Sempervirens Fund, Save the Redwoods League, and other conservation organizations, recognizes the importance of preserving the ancient redwood forests, watersheds, and other significant natural features of the Santa Cruz Mountains, with the goal to make these places of beauty available for the people's enjoyment for future generations; and

WHEREAS, this general plan will guide the development and management of Big Basin Redwoods State Park for public use and resource protection for the next 20 or more years, by establishing goals and guidelines to assist in the daily and long-term management of the Park to ensure that its natural and cultural resources are protected, while providing for a variety of recreation activities and visitor experiences; and

WHEREAS, the Plan is subject to the California Environmental Quality Act (CEQA) and includes the Environmental Impact Report (EIR) as a part of the General Plan, pursuant to Public Resources Code Section 5002.2 and the California Code of Regulations 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 and EIR function as a "tiered EIR" pursuant to Public Resources Code Section 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; and

WHEREAS, the Final EIR (FEIR) calls for the Commission to make a statement of overriding considerations pursuant to the CEQA Guidelines (CCR section 15093) when the agency decides to approve a project that will cause one or more significant environmental effects to reflect the ultimate balancing of competing public objectives (including environmental, legal, technical, social, and economic factors); and

CONTINUED ON PAGE 2

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WHEREAS, the FEIR finds that there is the potential for a significant and unavoidable effect of the approval of the General Plan on the marbled murrelet, a rare and endangered species that nests in old growth redwoods; and

WHEREAS, such findings are attached as an exhibit to this resolution;

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 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

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

RESOLVED: as presented in the attached Overriding Considerations and by substantial evidence in the record, that the benefits of the approval of the General Plan outweigh the potential significant effects on the marbled murrelet contained in the General Plan; and be it

RESOLVED: The location and custodian of the Plan and other materials which constitute the record of proceedings 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

RESOLVED: The California State Park and Recreation Commission hereby approves the Department of Parks and Recreation's General Plan and certifies the Environmental Impact Report prepared for Big Basin Redwoods State Park, dated May 2012; 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 17, 2013 at the Commission's duly-noticed public meeting at Santa Cruz/Scotts Valley, California.

By: *ORIGINAL SIGNED BY* Date: *5-17-13*

Louis Nastro
Assistant to the Commission
For Major General Anthony L. Jackson, USMC (Ret), Director
Secretary to the Commission

Resolution 5-2013
Adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Santa Cruz/Scotts Valley, California
May 17, 2013

Boundary Amendment for West Waddell Creek State Wilderness in Big Basin Redwoods State Park

WHEREAS, the Director of California State Parks has presented to this Commission for approval the proposed boundary amendment for the West Waddell Creek State Wilderness ("Wilderness") in Big Basin Redwoods State Park; and

WHEREAS, the Wilderness is a roadless area of outstanding scenic value that encompasses a significant portion of the Waddell Creek watershed (5,904 acres) and was named and classified by the State Park and Recreation Commission in November 1982 with the provision that the Waddell Canyon Road be excluded from the Wilderness to allow vehicle access for fire protection and public safety purposes; and

WHEREAS, California State Parks evaluated the potential for expanding the wilderness during the general plan process for Big Basin Redwoods State Park and determined that 390 acres of additional lands within the Waddell Creek watershed should be included in the designated state wilderness, a total of 6,294 acres as described in the Wilderness map (Exhibit A attached); and

WHEREAS, the Wilderness designation is consistent with the purpose and vision of the Big Basin Redwoods State Park General Plan, which includes specific goals and guidelines for its management to protect and preserve the primitive visitor experience and natural character of the landscape;

NOW, THEREFORE BE IT RESOLVED: That this Commission has reviewed and considered the resource information and analysis presented by the Department prior to approving the boundary amendment and finds that this action is consistent with the approved Big Basin Redwoods State Park General Plan; and be it

RESOLVED: The location and custodian of the General Plan and other materials which constitute the record of proceedings 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: The California State Park and Recreation Commission hereby approves the Department of Parks and Recreation's boundary amendment for the West Waddell Creek State Wilderness as described in Exhibit A, dated May 2012.

Attest: This Resolution was duly adopted by the California State Park and Recreation Commission on May 17, 2013 at the Commission's duly-noticed public meeting at Santa Cruz/Scotts Valley, California.

By: *ORIGINAL SIGNED BY* Date: *5-17-13*

Louis Nastro
Assistant to the Commission
For Major General Anthony L. Jackson, USMC (Ret), Director
Secretary to the Commission

EXECUTIVE SUMMARY

Chapter Divider Photos:
Post card collection commemorating Big Basin Redwoods SP
1908 post card highlighting park features

EXECUTIVE SUMMARY

PARK DESCRIPTION

Big Basin Redwoods State Park is California's oldest state park, established in 1902 through a land purchase and donation. The park consists of more than 18,000 acres in the Santa Cruz Mountains, located within 60 miles of major metropolitan centers in the San Francisco Bay Area and the Santa Clara Valley. The 3,800 acres that comprised the original California Redwood Park is nominated as a National Historic Landmark property. This area contains the heart of the redwood grove that inspired admirers to form the Sempervirens Club and advocate for the creation of a state park.

Established in 1902, Big Basin Redwoods SP is California's oldest state park.

Elevations within the park range from sea level to over 2,000 feet. Three watersheds (Waddell Creek, East Waddell Creek, and Scott Creek) form the dominant landscape features of the park. Approximately 5,900 acres within the state park is designated a state wilderness, and together with the backcountry (10,540 acres) constitutes 85% of the park, offering quiet solitude among the large evergreen trees and steep canyon slopes.

The Headquarters area, located along Highway 236, has the highest concentration of development and visitor activity in the park, with campgrounds, interpretive facilities, picnic areas, store and gift shop, and trails situated under the towering redwoods. Remnants of the park's early history, including Civilian Conservation Corps (CCC)-era and post-World War II construction, are present in varying degrees of preservation.

At Waddell Beach, the big surf, persistent winds, and ease of access attract surfers, kite surfers, windsurfers, and spectators to this well-known water sport venue. Inland from Highway 1 is the Rancho del Oso (RDO) sub-unit and the 23-acre Theodore J. Hoover Natural Preserve. This area includes remnants of the early Theodore Hoover farm operations, the Nature and History Center, an equestrian camp and trailhead facilities.

In 2011, the Little Basin property (535 acres) was acquired and added to Big Basin Redwoods SP, which includes a developed campground and group recreation facilities.

Purpose For the General Plan

In those early years of the park's history, park plans were made to preserve the ancient redwood forest and provide public access and recreation opportunities. Most of the existing buildings and park facilities were constructed during the first 50 years after the park was established, yet a General Plan was never completed for the park. The need for formal planning was highlighted by recent acquisitions, new potential for regional natural lands and open space connections, a growing demand from the expanding California population for new recreation options and coastal access and the opportunity to coordinate planning with several other state parks in the region. A comprehensive planning effort was initiated to create a long-term and visionary general plan that would be commensurate with the park's significance within the region as well as in the California State Park System.

The park's purpose emphasizes the preservation of the old growth redwood forest, also recognizing outstanding cultural, educational and recreation values.

Regional Planning Context

The Santa Cruz Mountains region includes many recreation and open space providers. In addition to public open space, the region contains small towns, rural housing, small businesses, timber companies, and private recreation developments.

This General Plan was developed by California State Parks as part of a regional planning effort, along with general plans approved for Año Nuevo State Park and Butano State Park. These three parks in proximity to each other share natural, cultural, and visitor demographic characteristics, and face similar issues. Regional characteristics and common issues were researched at the beginning of the planning process and used as a foundation for the resulting park plans. The general plan process also recognized each park's unique assets and needs separately. The plans recognize the close relationship between California state parks and other nearby public and private lands, and emphasize the potential for regional collaboration in resource management, recreational use, education and interpretation, and park management.

Key Issues and Opportunities

The following are the primary planning issues addressed by the General Plan:

- **Vegetation, Wildlife, and Habitat Protection:** Big Basin Redwoods SP contains over 4,400 acres of old growth redwoods, rare plant communities, and numerous animal and plant species having special status or of special concern. Plant and animal

species composition has shifted and populations and habitats in and around the park have declined due to past land use and current human activities. Strategies for ecosystem management and regional collaboration for natural resource management are emphasized in the plan. Additional focus is provided for the special status species found in the park, which include the San Francisco garter snake, coho salmon, steelhead, California red-legged frog, and marbled murrelet. Conservation of the state and federally listed marbled murrelet, a sea-going bird which nests in old growth redwoods and Douglas-fir, is of high importance and nesting habitat of this bird will be protected.

- **Recreation Demand and Visitor Opportunities:** California's rapidly growing population and shifting demographics have created new and increased demands for recreation facilities, amenities, programs, and concession services. The park's unique resources and its location near the high density urban centers around the Santa Cruz Mountains creates a high demand for recreation at the park, particularly during the peak season months of May through October. The park properties in current state ownership offer limited potential for such new development or expansion to meet future recreation demands and visitor needs. However, the addition of Little Basin presents a new opportunity to provide public recreation facilities for groups, families, and for special events outside the old growth forest.

- **Public Access and Circulation:** Outdated infrastructure, older roads and highways, parking inadequacies, limited public transportation, and sensitive resource protection all contribute to the public access and circulation issues within the park. These challenges are most apparent in the historic core area where camping, picnicking, trail use, concession services, and park operations compete for limited parking and roadway space. Much of the existing park infrastructure was developed to accommodate recreation in the earliest acquired areas of the park (i.e. Headquarters area). The plan describes existing and potential access locations and appropriate areas for future facility development, and also encourages development of alternative transportation in and around the park to reduce traffic congestion and air polluting vehicle emissions.

- **Rehabilitation and Preservation of Significant Historic Resources:** Established in 1902 through the efforts of the Sempervirens Club, Big Basin Redwoods SP was the first park in today's California State Park System and is historically significant as one of the first public commitments to environmental preservation and outdoor recreation. The park contains many fine examples of Park Rustic architecture as developed by the National Park Service and constructed by the CCC. There are also important Native American sites within the park. The historic recreation structures and

facilities will benefit from guidelines for management, building preservation, and appropriate adaptive uses. Careful consideration to maintaining appropriate adaptive uses and preserving the historic setting and integrity of individual buildings is essential to the preservation of these valuable resources.

OVERVIEW OF PLANNING CONCEPTS AND PROPOSALS

Natural Resources

The plan emphasizes the preservation of the old growth forest and the park's natural resources, utilizing sustainable management practices to improve the ecology and health of the coastal redwood forests and associated habitat.

To accomplish this goal, the plan calls for relocating or removing some existing recreation facilities (e.g. individual campsite, picnic site, trail, etc.), where necessary, and implement effective management strategies to protect sensitive resources and avoid or reduce adverse impacts.

Footbridge over Waddell Creek

Cultural Resources

Big Basin's heritage, cultural traditions, and significant cultural resources will be preserved and interpreted. The Plan provides important guidance to the treatments and appropriate adaptive uses of historic buildings and protection of archaeological sites and cultural landscape features.

Public Access and Recreation Opportunities

The overall visitor experience will be improved by reducing vehicle traffic and high intensity uses in the historic core area, and increasing access and recreation opportunities at Little Basin, Saddle Mountain, and RDO for family and group recreation and destination for special events.

The wilderness and backcountry will be preserved for its sense of solitude, natural and aesthetic resource values, for its low-impact recreational opportunities and visitor experiences, and improved trail connections for multi-use between destination areas and points of interest within the park.

Interpretation and Education

The interpretive focus will increase the public's awareness of the park's diversity and opportunities and connect visitors with the natural world, cultural history and varied outdoor recreational activities. Efforts will be made to attract and accommodate a more ethnically diverse audience with measures such as offering additional interpretive materials and exhibit translations in languages other than English. In addition, the Park

will promote community outreach to increase attendance, partner with area ethnic organizations on special events or education programs, and publicize park programs via media outlets to reach more under-represented groups.

KEY PLAN PROPOSALS

Wilderness and Backcountry

- Preserve the remote forested mountain character of the state wilderness and backcountry, and protect the integrity and character of the West Waddell Creek watershed through effective management of resources and visitor use.
- Expand the state wilderness to include approximately 390 acres of additional lands north to Gazos Creek Road and west to Whitehouse Canyon Road.
- Establish backcountry trails and trailheads for backpackers, equestrians, and cyclists outside sensitive resource areas and accessible from existing roads and trails.
- Consider offering backcountry tours on fire roads through a concession contract or as a part of the park interpretation and/or accessibility programs.

The Park Rustic style and distinctive features of historic properties will be preserved.

Headquarters Area

- Restrict new facility construction in the old growth redwoods and manage visitor activities to protect significant resources and achieve long-term management objectives.
- Establish the primary visitor contact and campground registration outside the Headquarters area, and relocate some park administrative functions to a new facility at Saddle Mountain.
- Coordinate with DFG and USFWS toward the long-term recovery and survival of the Santa Cruz Mountain's marbled murrelet population.
- Protect sensitive aquatic species, including California red-legged frog and anadromous fish, and take appropriate measures to minimize disturbances in critical habitats during breeding and spawning seasons.
- Rehabilitate the Lodge building, according to the Secretary of Interior Standards, to provide suitable adaptive uses for this historic building.

- Upgrade parking and utilities infrastructure to support continued use of existing facilities in the Sky Meadow area.

- Allow for development of additional staff housing, trailer pads, and amenities outside the designated National Register boundaries of the Lower Sky Meadow residence area to serve future housing needs, while maintaining the historic integrity of this significant 1940s residence area.

Saddle Mountain and Highway 236

- Develop a park welcome center for primary visitor contact, orientation, park information, and campground registration. Develop parking and determine the feasibility of implementing a shuttle system to transport visitors to other areas of the park.

- Preserve and maintain the scenic quality of Highway 236 and establish appropriate "first impression" treatments that are compatible with the character of the park and create an attractive and welcoming park entry experience.

- Preserve the meadow and open space qualities in the planning and design of future park facilities, and establish adequate vegetative screening and buffers between administrative and visitor activity areas, and between park development and adjacent properties.

- Conduct additional natural and cultural resource surveys, as necessary, to determine the presence of significant resources; implement protective measures, and interpret the site's history and important resources through effective interpretation methods and media dissemination.

- Coordinate with Caltrans to manage visitor and non-visitor traffic along Highway 236 through the park, and improve signage at locations on Highway 9 at Waterman Gap and along Highway 236 at China Grade Road to redirect visitors to the south entrance at Saddle Mountain.

- Explore State Scenic Highway and Federal Scenic Byway status for Highway 236 to help provide grant funding for planning, designing, and developing byway-related projects.

- Evaluate the historic Gatehouse for California National Register eligibility. Rehabilitate the historic Gatehouse to serve as an employee residence, park office, or for other appropriate adaptive uses. Consider site improvements to accommodate trailhead parking or a possible shuttle/bus stop.

- Coordinate with Caltrans to develop and/or improve highway turnouts, where appropriate, to accommodate short-term parking, shuttle/bus stops, or temporary vehicle pull-outs.

- Consider acquiring easements or acquisition of additional properties if available from willing sellers, to accommodate facilities development, highway, or trail improvements and/or to ensure long-term compatibility between park-related activities, resource protection, and adjacent land uses.

Rancho del Oso and Waddell Beach

- Coordinate with Caltrans to maintain and expand Waddell Beach parking facilities, as feasible, to support beach activities and ocean view parking.

- Improve highway signage and implement effective measures to slow vehicle traffic and provide early warning to motorists for approaching intersection and pedestrian crossing.

- As part of a fully integrated plan for both sides of the highway, incorporate day use parking (50 -100 spaces), distributed on either side of Highway 1 depending on resource constraints and future roadway alignment, with safe pedestrian access from the inland side of the highway to Waddell Beach.

- Protect special status plant and wildlife habitats, conduct resource surveys and monitor use along roadways and near sensitive habitats, and implement resource management and protective measures to eliminate or mitigate human impacts on significant natural resources.

- Relocate the RDO entrance road gate further inland (+/- 100 ft.) and develop a vehicle turnaround, parking, and park information kiosk for visitors.

- Develop a fully functional ranger station/interpretive facility. This could be an upgrade of an existing facility or a new building. This facility should function as a center for RDO activities and orientation as well as a gateway into the backcountry and the West Waddell Creek State Wilderness.

- Upgrade or reconfigure the horse camp and equestrian staging facilities to improve campsites, trailer parking and vehicle circulation.

- Conduct additional site-specific surveys, as necessary, to identify natural and cultural resource sensitivities and protective measures, and prepare site plan(s) to determine the location, size, and configuration of desired public use and park operations facilities.

- Address public health and safety issues, accessibility requirements, aesthetics, interpretation, and management of visitor capacity.

- Develop a bicycle camp and walk-in campground facilities at a location either adjacent to the horse camp or in an open area along the existing road north of the day use parking lot. Consider alternative forms of camp facilities, such as yurts or tent cabins, with provisions to serve backpackers and touring bicyclists utilizing the California Coastal Trail (CCT) and Highway 1 Pacific Coast Bike Route (PCBR).

- Retain park staff residences for public safety and protection of public property.

- Rehabilitate the Nature and History Center building, parking and support facilities, as necessary, to serve as the primary interpretive center for RDO. Prepare site-specific plans to define day use parking, circulation, picnic areas, accessible restroom facilities, and use of outdoor open space areas for visitor education and interpretive programs.

- Repair and upgrade the current potable water supply and distribution systems to existing and new park buildings and key visitor locations.

- Conduct visitor and potential user surveys to determine future visitor needs and recreation demands for day use and overnight facilities in RDO and coastal areas to the north. Additional campground development (accessible from Highway 1) may be considered in the RDO area, if additional properties suitable for this use became available from willing sellers.

Little Basin

- Upgrade and expand utility systems and infrastructure to support recreational activities, such as camping (including cabins), hiking, biking, horseback riding, fishing, interpretive programs and group activities, including special events. Consider program needs for a possible environmental education center.

- Complete resource inventories and evaluations, and implement resource protection measures where needed. Remove or relocate existing facilities, as necessary, to preserve and protect sensitive and significant natural and cultural resources.

- Upgrade and/or modify existing facilities to satisfy operational needs and to meet ADA accessibility requirements.

- Interpret resource values and site history of Little Basin property.

- Consider a concession-developed and operated overnight lodge with dining facilities and additional cabins.

- Coordinate with Santa Cruz County to identify road improvements and county maintenance that may be necessary to maintain public vehicle access on Little Basin Road from Highway 236 to the Little Basin property.

Staff considers public recreation opportunities at Little Basin

MANAGEMENT PLANS

Major programs and projects implemented during the lifespan of the General Plan will require additional planning. This planning will take the form of management plans or specific project plans. Management plans define the specific objectives, methodologies and/or designs for accomplishing management goals. Occurring on an as-needed basis, they typically focus on specific management topics, goals, or issues. Management plans can apply to all, or part, of a park unit. They usually include program-level decisions that describe how and when management actions are appropriate and necessary and they are often based on funding and staffing capabilities. Some of the goals and guidelines comprising Chapter 4, Park Plan, recommend preparing and updating specific management plans and more detailed site investigations subsequent to the adoption of the General Plan, including the following:

- Roads and Trails Management Plan
- Interpretation Management Plan
- Watershed Management Plans
- Wildfire Management Plan

- Scope of Collections Statement
- Cultural Resource Management Plan

ENVIRONMENTAL ANALYSIS

The environmental analysis and the consideration of alternatives in the General Plan were prepared in conformance with the California Environmental Quality Act (CEQA) requirement to analyze and disclose the potential environmental effects of a proposed action. The environmental analysis is programmatic in scope and serves as a first tier EIR. Tiering is a process where a lead agency prepares a series of environmental documents, progressing from general concerns to more site-specific evaluations with the preparation of each new document. The environmental analysis in this document evaluates broad environmental matters and does not contain project-specific analysis for the facilities that are considered in the General Plan. It is a reference for future environmental documents that will provide more detailed information and analysis for site specific developments and projects.

The General Plan includes guidelines that direct future project-level environmental review of site-specific projects to avoid or minimize potential adverse effects to resources during construction or operation of the facilities and improvements. Specific projects would also undergo subsequent CEQA review as appropriate. Because the General Plan contains goals and guidelines that are designed to avoid or minimize potential adverse environmental effects, no significant program-level impacts were identified. *However, Parks finds that there is a significant, unavoidable impact with respect to the speculative nature of the marbled murrelet research at this time. It is unclear what is causing the decline in numbers, and conversely, it cannot be said with certainty that the activity of Parks visitors in the old-grove redwoods is the reason for the dwindling numbers. This lack of definitive information leads State Parks to make overriding findings for a significant unavoidable impact on the marbled murrelet population.*

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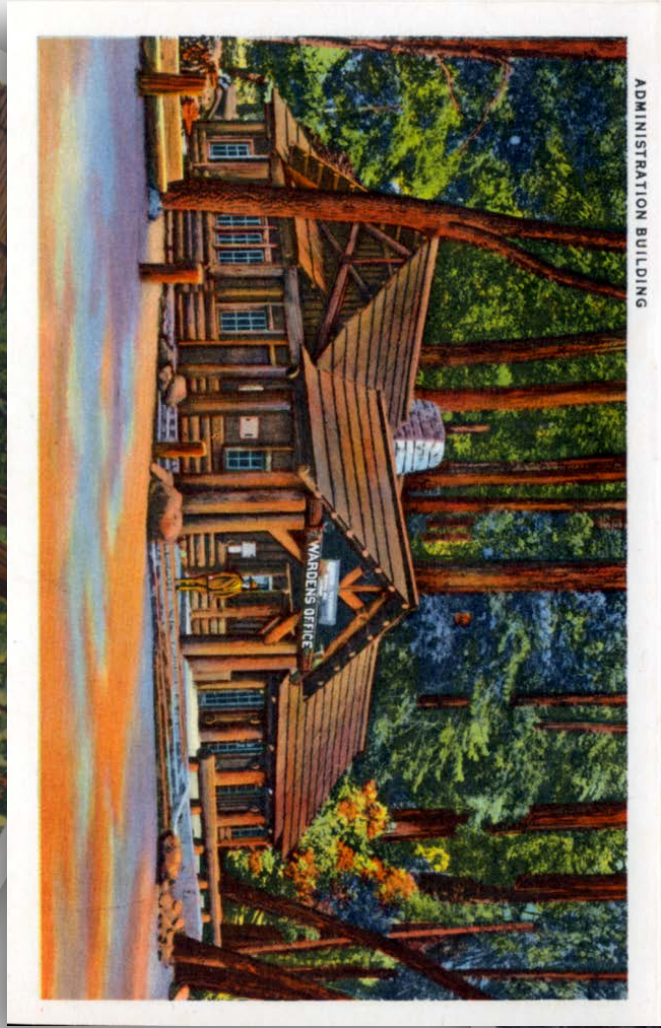
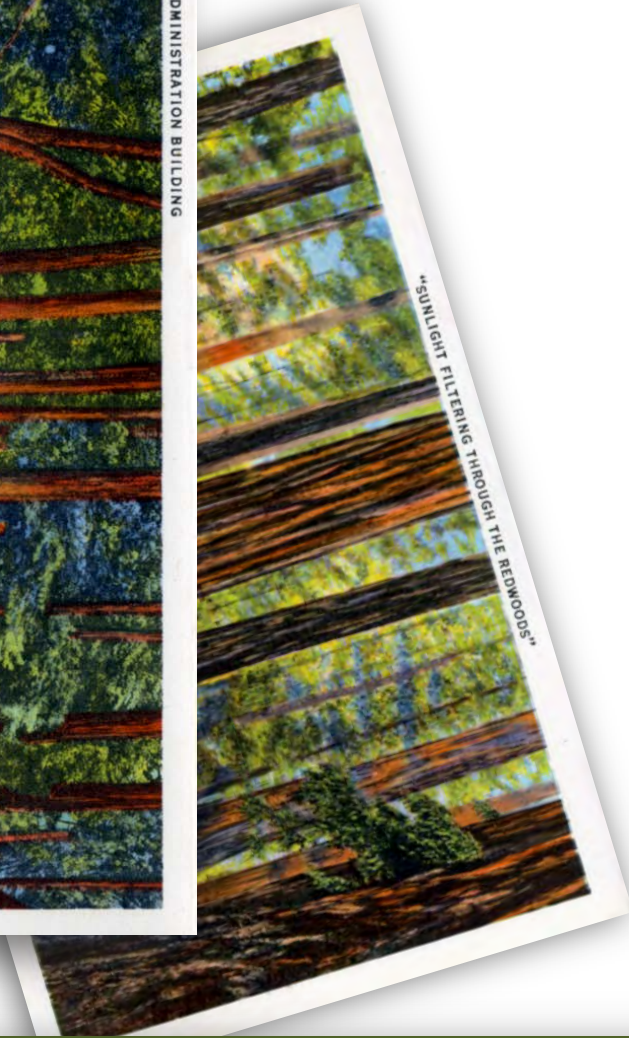
REPORT CONTRIBUTORS (Inside back cover)





1 INTRODUCTION

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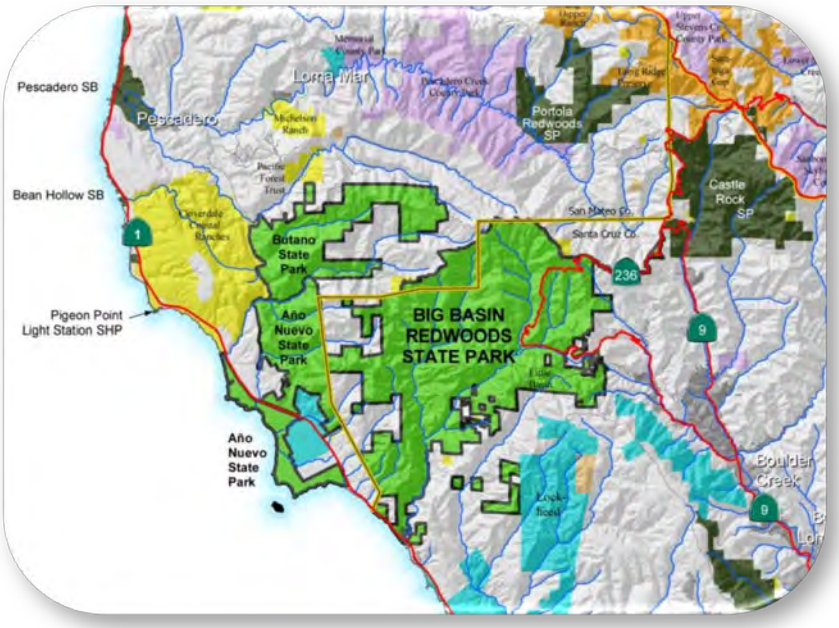
CHAPTER 1: INTRODUCTION

1.1 LOCATION AND REGIONAL CONTEXT

Big Basin Redwoods State Park (SP) lies in the Santa Cruz Mountains of California, 43 miles southeast of San Francisco and 23 miles northwest of the city of Santa Cruz. The park is accessible via Highways 9 and 236, near the small town of Boulder Creek, and from coastal Highway 1 to Waddell Beach and inland at Rancho del Oso (RDO). The park is located within two county jurisdictions: the southern portion of the park is in Santa Cruz County and a small northern portion is in San Mateo County. The Santa Cruz Mountains region includes many recreation and open space providers such as California State Parks, Santa Cruz and San Mateo County Parks, the Midpeninsula Regional Open Space District, Peninsula Open Space Trust, Sempervirens Fund, the California Department of Fish and Game, the Santa Cruz Water Department, and the University of California. In addition to public open space the region contains small towns, rural housing, small businesses, timber companies, and private recreation providers (see Regional Map, **Figure 1**).

The westerly half the park is located within the coastal zone, which falls in the jurisdiction of the County of Santa Cruz and State Coastal Commission for required permits under the approved County of Santa Cruz 1994 General Plan and Local Coastal Plan.



Planning reflects a long-range vision for parks in the Santa Cruz Mountains.

1.2 SITE CHARACTERISTICS

The park consists of more than 18,000 acres and contains two distinct areas, the uplands and coastal areas. The more extensive uplands area is characterized by old growth and previously-logged coast redwood forests together with mixed conifer, oaks, chaparral, rugged terrain, and mountain streams. Many of the ridges are forested with a mixed evergreen landscape, while others contain oak woodlands**,** chaparral, and bare soil. The park's mountain ridges are prominent in the backdrop, with Pine Mountain (2,208 ft.), Buzzards Roost (2,150 ft.), and Chalk Mountain (1,609 ft.), providing spectacular views from their summits and overlooks. Remnants of the park's early history, including Civilian Conservation Corps (CCC)-era and post-World War II construction, are present in the Headquarters area. Also developed in this area are campgrounds, interpretive facilities, picnic areas, store and gift shop, and trails under towering redwoods bustle with visitor activity. The wilderness and backcountry offer quiet solitude in the large evergreen trees and steep canyon slopes. The majority of streams and creeks in these uplands drain into West Waddell Creek, the foremost freshwater resource associated with the park and a major Central California coastal stream supporting a recovering coho salmon and steelhead habitat. West Waddell Creek meanders west, eventually entering the freshwater and brackish marshes of the lowlands where it flows across Waddell Beach to the Pacific Ocean.

The coastal area of the park is characterized by coastal scrub, grasses, marshes, flat terrain, and sandy beaches. Much of the length of coastline in the area is characterized by broad marine terraces, some of which have long been used for agricultural purposes. Remnants of this rich agricultural history are still present, with farm operations continuing just outside park boundaries and historic structures representative of the Theodore Hoover farm operations located and interpreted inside the park. With more than 45 miles of streams, brackish and freshwater marshes, and beaches, few other state parks contain as many distinct and diverse aquatic habitats as Big Basin Redwoods SP. Containing multiple types of threatened and endangered wetland species, the Theodore J. Hoover Natural Preserve is an excellent example of this unique ecological diversity. Waddell Beach represents the largest portion of the park's marine environment, consisting of a gently sloping sandy beach flanked on both sides by steep bluffs with coastal strand vegetation and Monterey pines. Big surf, persistent winds, and ease of access attract surfers, kite surfers, windsurfers and spectators to this popular water sport venue.

View from Chalks Mountain

Berry Creek Falls

Waddell Beach

1.3 PURPOSE ACQUIRED

With its first parcels acquired in 1902, Big Basin Redwoods SP is California's oldest state park. One element of California's natural history represented by the park is the value of preserving and protecting California's natural resources. The acquisition of Big Basin, originally known as California Redwood Park, represents the first successful effort to save coast redwoods from logging.

With pleas from the public beginning as early as 1877 to save the old growth coast redwood forests from logging in the Santa Cruz Mountain areas, the first real effort to purchase land in Big Basin, and preserve it as a state park, was devised by Andrew P. Hill in 1900.

This effort began on May 1, 1900 when a group of people interested in saving the redwoods assembled in the library at Stanford University. This group, led by Hill, decided to visit the areas where outstanding trees existed along Sempervirens Creek. The Sempervirens Club was created as an outcome of this Santa Cruz Mountains trip. The Club became the voice for the preservation of the redwoods and the driving force behind this effort. A bill to create California's first state park, called California Redwood Park, was presented to the state legislature in 1901, and was passed in 1902. The purpose of the park was to bring the public to view and experience the redwoods to ensure their preservation. The first 2,500 acres were purchased for $250,000 with an additional 1,300 acres of private timber land donated by H. L. Middleton and others, comprising a total of 3,800 acres. By 1904, the park was open to the public.

The number of people traveling to the park multiplied with the creation of modern roads and highway links to the area. Within a period of twenty years, the number of visitors and campers expanded from a few hundred a season to many thousands.

In 1927, the California Legislature established the State Park System. Additional parks were established throughout the state, and visitor attendance increased. Acquisition of additional property continued at Big Basin Redwoods SP along with the purchase of other state park lands in the Santa Cruz Mountains region. Acquisitions included additional old growth redwood forest and other important habitats, lands for recreational uses, and ocean frontage.

1.4 SENSE OF PLACE

Each of California's state parks has a unique sense of place. This awareness of the sense of place leads to a sense of belonging and reconnection. State parks offer opportunities to reconnect, enriching people and communities with an enhanced sense of connection to the natural systems that sustain us and to our cultural heritage. Big Basin Redwoods SP represents an important legacy that relates to the preservation of its sense of place, with the first efforts to save old growth coast redwoods inspired by its ancient trees and early establishment as a State Park.

The park preserves an environmentally diverse segment of the California Coastal Landscape Province. Its mountainous watersheds set a dramatic context for the spectacular resources it contains. Differences in terrain and elevation separate the western and eastern parts of the park, but the park remains cohesive through an extensive trail system. In addition to variations in geography, landscape, and facilities, shifting marine and mountain weather conditions often add a particular mystique and dynamic to many park areas.

Visitors to Big Basin Redwoods SP experience distinct settings in various areas, each with its own sense of place.

The **old growth coast redwood groves** on the east side of the park have inspired generations of visitors with wonder and amazement. In the words of John Steinbeck: *"The redwoods, once seen, leave a mark or create a vision that stays with you always.The feeling they produce is not transferable. From them comes silence and awe…they are not like any trees we know, they are ambassadors from another time"* (Steinbeck 1962).

The visitor facilities in the park **Headquarters area** are set in the redwood forest and impart a sense of history through interpretation of the CCC-era and the park's longtime recreational use. Constructed of logs, wood and stone, the historic structures blend effortlessly into the forest environment. Visitors appreciate this unique and rare opportunity to enter the redwood forest and enjoy the historic facilities that would not be possible to build today. During the summer and on spring and fall weekends, this is a very busy and active area of the

park. Day users and campers stop at the Headquarters building to receive park information, enjoy a docent-led walk on the Redwood Trail, or learn about local plants and animals at the Nature Museum. Kids on bikes visit the park store for ice cream or participate in a Junior Ranger program along the creek. In the evening, campers head toward the historic campfire center for programs under the redwoods.

Waddell Beach has salt-laden winds, crashing breakers, and a sandy beach. In summer, the parking lot is often full of beachgoers eager to ride the waves or watch others head to the ocean to surf, board or kite sail.

The **Theodore J. Hoover Natural Preserve** marks a transition zone between land and sea and contains a greater concentration of sensitive plant and animal species than any other place of similar size in California. The preserve can awaken a sense of wonder and the desire to safeguard such a unique environment.

Waddell Valley enchanted former residents and inspires visitors with its wide open spaces bordered by Monterey pines on steep slopes and the red alders and willows lining its lush riparian corridor. Hulda Hoover McLean, whose father purchased extensive property in the Waddell Valley area in the early 1900s, spent many years enjoying the natural wonders of the coast. Her words describe the coastal environment and its spirit of place (McLean 2002):

> *In the Waddell Valley, seasons come gently, merging into each other in small increments.*
>
> ***Spring*** *brings us a mounting chorus of bird songs. They sing… just for the joy of spring…In meadows, fresh green grass pushes through gray litter... Spring wind blows up the valley and whips us as we prepare garden beds for fresh planting…*
>
> ***Summer*** *Flowers are in full bloom and scent the air. Green meadows turn to pale gold…Out at sea, a river of fog clouds the horizon and moves in to cool our nights.*
>
> ***Autumn****. The smell of autumn is shale dust and sagey plants, bay trees and eucalyptus…Poplars turn to gold...*
>
> ***Winter*** *First rain brings up mushrooms…A flooded creek wreaks havoc upstream but brings steelhead and salmon into the creek to spawn… …Rainbows span the valley: they tell us of coming spring.*

The creation of the California State Park system and Big Basin Redwoods SP were inspired by the spirit and beauty of the Santa Cruz Mountains and the coast redwood trees that continue to delight and inspire those who visit them.

1.5 PURPOSE OF THE GENERAL PLAN

The general plan is the primary management document for a park within the California State Park system, establishing its purpose and a management direction for the future. By providing a defined purpose and vision with long-term goals and guidelines, it provides the framework for a unit's resource stewardship, interpretation, visitor use, operation, and development. Subsequently, this established framework helps guide daily decision-making and serves as the basis for developing more detailed management and site-specific project plans.

This document does not attempt to provide a detailed master plan, but rather provides conceptual direction and parameters for future management, development, and appropriate uses. Specific objectives and strategies for implementation of the general plan are intended to be developed in subsequent planning efforts as they are needed, including the preparation of management plans and specific project plans.

This general plan document was prepared by the California State Parks to satisfy the requirements the California Public Resources Code (PRC) Section 5002.2. The PRC specifies that a general plan shall consist of elements that will evaluate and define the proposed management of resources, land uses, facilities, concessions, operation of the unit, and any environmental impacts. The Big Basin Redwoods SP General Plan is submitted to the State Park and Recreation Commission for approval.

Strategies for implementation of the general plan are intended to be developed in subsequent planning efforts as they are needed, including the preparation of management plans and specific project plans.

The California Environmental Quality Act (CEQA) of 1970 establishes a requirement for state agencies to analyze and disclose the potential environmental effects of a proposed action. The environmental impact report (EIR) prepared by state and local governments is usually a freestanding document intended to meet the requirements of CEQA. However, CEQA also encourages options to avoid needless redundancy, such as combining general plans and EIRs (CEQA Guidelines Section 15166) and the use of tiering. Tiering is a process where a lead agency prepares a series of environmental assessments, progressing from general concerns at a programmatic level to more site-specific evaluations, with the preparation of subsequent environmental documents for detailed projects (CEQA Guidelines Section 15152). When the lead agency combines a general plan and an EIR, all CEQA requirements must be covered and documents must identify where the requirements are met.

This general plan serves as a first-tier EIR as defined in Section 15166 of the CEQA guidelines. The analysis of broad environmental matters found within the Environmental Analysis section will be a reference for future environmental documents that will provide more detailed information and analysis for site-specific developments and projects. Please see **Appendix B** for a table indicating the location of required elements of the EIR within this document.

1.6 PLANNING CONTEXT

The following describes the context of general planning in the Department's overall planning structure, a summary description of each general plan chapter, and subsequent planning efforts.

THE PLANNING HIERARCHY

The following planning hierarchy provides direction for the future of Big Basin Redwoods SP:

California State Park's Mission Statement: The Department's *Mission* sets the fundamental parameters within which the California Department of Parks and Recreation acquires, plans, and manages its 279 park units. For all units of the California State Park system:

> The Mission of the California Department of Parks and Recreation 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.

Classification: In addition to the Department's *Mission*, the unit classification recognizes the units' resources significance and establishes the parameters for park management and appropriate development as specified by the California Public Resources Code, Section 5019.50-5019.80**.** Big Basin Redwoods SP is classified as a State Park.

Sub-classification: The Public Resources Code establishes several categories of sub-classifications that may be included within the boundaries of a state park. Big Basin Redwoods SP contains two of these sub-classifications: State Wilderness and Natural Preserve. The West Waddell Creek State Wilderness (Approximately 5,900 acres) consists of a significant portion of the Waddell Creek watershed. The Theodore J. Hoover Natural Preserve (23 acres) is located near the mouth of the Waddell Creek watershed.

Declaration of Purpose: A broad statement of direction that is unique to Big Basin Redwoods SP. The Declaration of Purpose is required by Public Resources Code, Section 5019.50, and is determined by the park's prime resources and recreation opportunities within the larger context of the State Park System.

This general plan process focused on a regional planning effort to address existing issues and recreation trends, and provide ongoing guidance to achieve the long-term vision for state parks located in the central Santa Cruz Mountains.

Regional Planning Strategy: Developed in response to a regional analysis, the general plan process focused on a regional planning effort to address existing issues and recreation trends, and provide ongoing guidance to achieve the long-term vision for state parks located in the central Santa Cruz Mountains.

Regional Vision: A vision statement formulated as part of the regional planning approach to develop the general plans for Big Basin Redwoods SP, Año Nuevo SP, and Butano SP. This vision statement provides philosophical direction and serves as a guiding statement for the desired condition of state parks located in the central Santa Cruz Mountains (see **Chapter 4, Park Plan 4.3**).

Park Vision: The vision statement is a view of the park's desired future conditions and visitor experiences. It expresses a vision of what the park could ultimately be like with implementation of the general plan.

Parkwide Management Goals and Guidelines: Topical guidance whose scope is relevant for the entire park. These goals and guidelines were developed in response to an evaluation of existing conditions and are intended to address existing issues, foreseeable trends/patterns, and provide ongoing guidance for the incremental actions that will be taken over time to realize the long-term vision for the park.

Planning Zones/Areas: Zones or identified park areas that characterize similar types of resource conditions, land uses and activities, which form the basis for planning decisions and guidance for future management actions.

Area-Specific Goals and Guidelines: Management goals and guidelines that clarify the management intent for a specific area.

ORGANIZATION OF THE GENERAL PLAN

The general plan is presented in five chapters that introduce the park and this planning effort, existing land use and resource conditions, planning issues, goals and guidelines, and an assessment of the potential environmental effects of the proposed project. The content of each chapter is summarized below:

Chapter 1: Introduction gives an overview of the park's characteristics, general plan purpose, and planning process.

Chapter 2: Existing Conditions identifies the natural, cultural, recreational, and aesthetic resources of the park, including a discussion of the demographic trends in California that are relevant to the planning process. This information provides a foundation to understand the specific park issues.

Chapter 3: Issues Analysis describes current challenges and major issues facing the park, which helps to define the project scope for planning purposes.

Chapter 4: Park Plan presents a statement of purpose and vision for the park's future. Planning zones and park areas are defined by their geographic location, similar resource characteristics, or associated land use. Parkwide and area-specific goals and guidelines are presented to guide park management and development, and describe the future desired conditions and considerations for subsequent planning and general plan implementation. This section also includes a description of the adaptive management process that will be used to sustain resources and positive visitor experiences at the park. The Park Plan section is considered the preferred alternative, or proposed project.

McCrary Ridge Trail

Chapter 5: Environmental Analysis discloses the potential environmental effects of the proposed project, including any significant and potential significant effects that may result from implementing the general plan. Potential mitigation measures and alternatives to the proposed project are also discussed in this section. This is considered a Programmatic EIR which will inform 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 and CEQA guidelines.

SUBSEQUENT PLANNING

Major programs and projects implemented during the lifespan of the general plan will require additional planning. This planning will take the form of management plans or specific project plans. Management plans define the specific objectives, methodologies, and/or designs for accomplishing management goals. Occurring on an as-needed basis, they typically focus on specific management topics, goals, or issues. Management plans can apply to all, or part, of a park unit. They usually include program level decisions that describe how and when management actions are appropriate and necessary; also, they are often based on funding and staffing capabilities. Typical examples of management plans include resource management plans, operations plans, interpretive plans, concession plans, and facility development plans.

Specific project plans are detailed implementation plans. For example, specific project plans would include design concepts, site plans, and details for rehabilitation and development of public visitor facilities, and parking reconfiguration for the Headquarters area. Future planning efforts may include the preparation of specific resource management plans, Historic Structure Reports, etc. to protect sensitive resources, or the development of site-specific plans for new facilities to determine how they will relate to their surroundings.

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 Programmatic EIR. Securing any permits required for future implementation projects would also be a part of subsequent planning actions. Finally, the General Plan may need to be amended if significant new acquisitions are added to the existing park or if any other circumstances render parts of this General Plan inapplicable.

1.7 THE PLANNING PROCESS

This is the first General Plan prepared for Big Basin Redwoods SP, even though it is the oldest park in the State Park System. A large amount of planning and project work has been accomplished in its long history, and no doubt will continue in the years to come.

A comprehensive planning effort was initiated to ensure that the park has a long-term and visionary General Plan that would be commensurate with Big Basin Redwood SP's significance within the region and the nation as well as in the State Park System. This General Plan was prepared by a multi-disciplinary team who conducted field investigations, research, interviews, public meetings, and surveys to compile a planning information data base, and receive public input. This planning effort examined the areas within park ownership, as well as planning information regarding the surrounding region, and its relationship with nearby state parks and other public lands.

Open House in Felton, February 2010

Public meetings and planning workshops were held in Boulder Creek and Los Gatos in September 2001 to inform the public about the park's resources and to identify various public concerns and issues regarding planning for the park. Another workshop was held in Boulder Creek in August 2003 to consider planning alternatives and opportunities. The planning effort stopped and restarted a few times during the next five years, but regained the Planning Team's full attention in February 2010 with an open house that was held in Los Gatos and in Felton to receive public feedback on the refined planning alternatives being considered. A

public meeting was also held in Felton in March 2011 to present the preferred alternative.

Throughout the planning process, newsletters and the Department's website provided information about the planning process, where to obtain planning and contact information, upcoming public meetings and summaries of public comments, and explained or clarified major issues and planning team proposals.

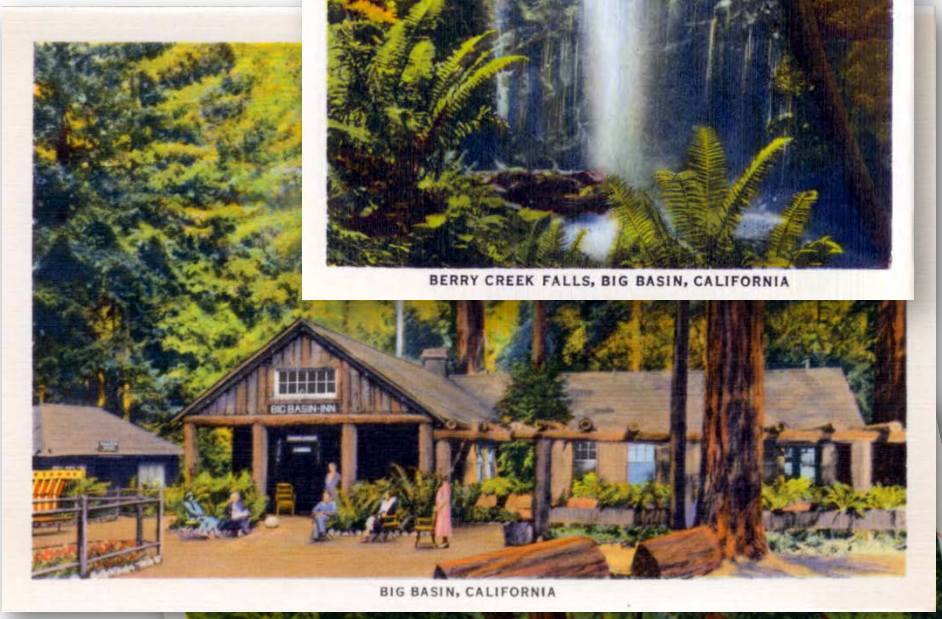
This active participation by the public, organizations, local government, and other agencies in the development of the park's concepts, goals, and proposals influenced the direction and content of the General Plan.

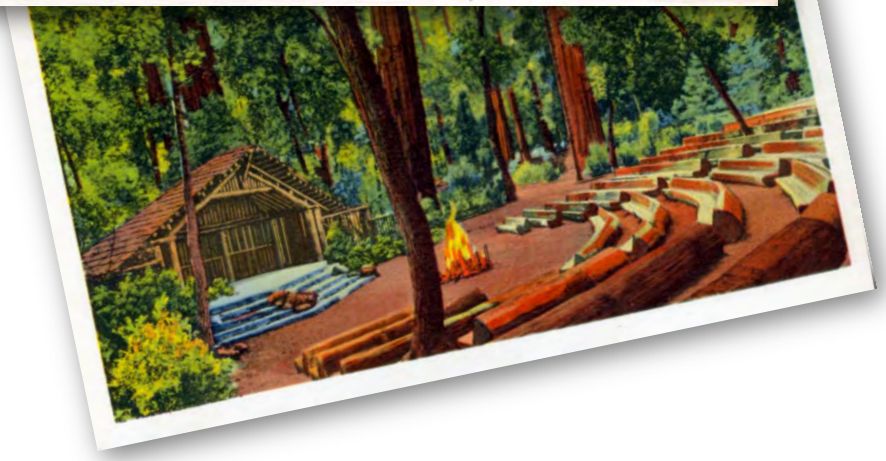
INTERAGENCY AND STAKEHOLDER INVOLVEMENT

Participation by pertinent agencies and organizations was sought throughout the planning process to ensure a broad consideration of concerns and interests as well as compliance or consistency with relevant policies, regulations, and plans. Early consultation with agencies on prominent issues such as sensitive habitats, endangered species, significant cultural resources and recreation needs was conducted to ensure that their input would have timely consideration during the planning process.

In November 2007, the Department contacted the Native American Heritage Commission (NAHC) and a Sacred Lands File search was requested. The Department's cultural staff consulted with tribal members of the Amah-Mutsun Band of Ohlone who represented Native California Indian concerns for protection of the archaeological resources, sensitive project level planning and/or monitoring of future construction activities within archaeologically sensitive areas of the park.

The following are other agencies and organizations contacted during this planning effort: U.S. Fish and Wildlife Service, California Department of Fish and Game, Cal Fire, California Department of Transportation, California Coastal Commission, Sierra Club, California Wilderness Coalition, The Sempervirens Fund, Save the Redwoods League, Peninsula Open Space Trust, Mountain Bikers of Santa Cruz, International Mountain Bicycling Association, Santa Cruz County Horsemen's Association, National Park Service and many others.





2 EXISTING CONDITIONS

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CHAPTER 2:

EXISTING CONDITIONS

2.1 REGIONAL LAND USE

Land use patterns in the Santa Cruz Mountains have not changed significantly in the recent past. The timber industry, parks and open space, and private homes are the major land uses in the area.

Big Basin Redwoods SP either shares borders or is in proximity to Castle Rock, Año Nuevo, Butano, and Portola Redwoods State Parks. Nearby are several other recreational and open space lands such as Pescadero Creek County Park and land owned by private nonprofit organizations such as the Sempervirens Fund and the Peninsula Open Space Trust. Private ownership patterns around the park generally consist of relatively large or very small parcels of land. Lying between the large ownership parcels, consisting of several hundred acres, are subdivided areas with small lots that contain homes and cabins or are undeveloped. Most of the area between the state parks surrounding Big Basin Redwoods SP remains undeveloped. A significant amount of land is owned by timber companies and is in timber production.

Santa Cruz Mountains

2.2 REGIONAL RECREATION FACILITIES

A variety of recreational activities are available within a ten-mile radius of Big Basin Redwoods SP from a diversity of providers, both public and private. See **Appendix C**, *Publicly-Owned Recreational Facilities in the Vicinity of the Park*, for a listing of recreational facilities and activities offered by state and local agencies. Federal, state, and local agency facilities are briefly summarized below.

PUBLIC RECREATION FACILITIES

State Parks

Several state parks are located relatively close to Big Basin Redwoods SP (see **Figure 1**). Butano SP, Portola Redwoods SP and Henry Cowell Redwoods SP are well established and have camping and picnic facilities. These parks all contain redwood forests and complement Big Basin Redwoods SP, helping to fulfill the widespread desire of the public to see, learn about, and appreciate redwood trees close up, as well as providing day use and overnight accommodations.

Año Nuevo SP, located on the coast northwest of Big Basin Redwoods SP, focuses on interpretation of the northern elephant seals that use the park's beaches. The inland portion of Año Nuevo SP, adjacent to the western edge of Big Basin Redwoods SP, is not yet developed for public use. West of Highway 1, Año Nuevo SP is developed with parking, an interpretive center and coastal access trails, with the majority of the coastal dunes protected as a natural preserve. Castle Rock SP, on the ridge above Big Basin Redwoods SP, is largely undeveloped except for primitive backpacking camps, unusual rock formations popular with rock climbers, and trails that are part of a more extensive trail system linking the Santa Clara and San Lorenzo valleys with Castle Rock SP, Big Basin Redwoods SP, and the coast. Trails link Big Basin Redwoods SP with many other parks and preserves in the region.

In the summer of 2006, The Trust for Public Lands (TPL) transferred approximately 400 acres of Coast Dairies property on the coastal side of Highway 1 to California State Parks. Coast Dairies is located between Waddell Beach and Wilder Ranch SP and surrounds the community of Davenport. The Coast Dairies property totals 6,831 acres of northern Santa Cruz County coastal dairy ranch property that consists of agricultural lands, redwood forest, beaches, and other natural and cultural resources. The entire Coast Dairies property was purchased from the Coast Dairies and Land Company by TPL using grants from the State Coastal Conservancy. The remaining inland portion of the property is to be transferred to the U.S. Bureau of Land Management (BLM) and a local nonprofit, Agri-Culture, at an unspecified future date.

In 2005, several local, state and federal agencies partnered with TPL to permanently protect a 154-acre coastal property called Sand Hill Bluff, located between Coast Dairies and Wilder Ranch State Park. California State Parks has acquired 47 acres of the shoreline to provide public access and recreation and to protect coastal and archaeological resources.

County Parks

Santa Cruz, San Mateo, and Santa Clara Counties all have parks near Big Basin Redwoods SP. Santa Cruz County's nearby parks are the smallest and most locally-oriented of the county parks around Big Basin Redwoods SP, mainly emphasizing formal recreational facilities such as playgrounds. The exception is Quail Hollow Ranch, which provides trails and interpretation.

The three San Mateo County parks near Big Basin Redwoods SP, Pescadero Creek Park, Memorial Park, and Sam McDonald Park, offer camping, interpretive, and trail opportunities on a scale similar to some of the nearby state parks.

The three Santa Clara County parks near Big Basin Redwoods SP provide a variety of experiences. Sanborn Skyline Park has camping, hiking and interpretive opportunities similar to those in the San Mateo County parks. Upper Stevens Creek Park offers hiking and biking trails and a wilderness experience. Stevens Creek Park focuses on activities comparable to a more urban day use park including picnicking, trails for hiking, biking, and equestrians, boating, fishing, and archery.

Midpeninsula Regional Open Space District

The Midpeninsula Regional Open Space District (MROSD) was first created in 1972 to preserve open space along the spine of the coastal range running the length of the San Francisco Peninsula and on the boundary separating Santa Cruz and Santa Clara counties (see **Figure 1**).

The MROSD protects viewsheds, provides recreation opportunities in an ecologically-sensitive way, and educates the public about these lands. The MROSD has an active acquisition program in pursuit of these purposes.

The primary facilities in the land that MROSD preserves are trails for hikers, bikers, and equestrians. Some are loops, while some give access to destinations within the preserves. Others are parts of trail networks that connect to other preserves or nearby parks. Generally, trailheads and support facilities are located on land in other ownership. However, some of the preserves provide a variety of public uses **(**see **Appendix C).** Interpretation through self-guided experiences and docent-led tours are also priorities of the MROSD.

The MROSD's Coastside Protection Program provides open space and agricultural preservation and management services on the coast. The MROSD

boundary extends from the southern border of Pacifica to the San Mateo/Santa Cruz County line..

Federal Parks

In December 2011, 3,800 acres of property known as Rancho Corral de Tierra was added to the Golden Gate National Recreation Area in northern San Mateo County, six miles north of Half Moon Bay. This property rises from Highway 1 along the coast to the nearly 2,000-foot peak of Montara Mountain. In the following months, the National Park Service will work with the local communities and public land agencies to develop maps and signage on the existing network of trails, and develop a long-term plan for this new national park site.

This property is the largest concentration of federal open space lands in the region other than in the GGNRA is to the northeast of the park along the southern shores of San Francisco Bay, where there are several National Wildlife Refuges.

Please see **Appendix C** for a list of publicly-owned recreation facilities in the vicinity of Big Basin Redwoods State Park.

PRIVATE RECREATION FACILITIES

The west side of the central Santa Cruz Mountains is primarily a natural setting separated by a prominent ridge from a nearby large metropolitan area. The regional population supports a large number of retreats and conference centers surrounding Big Basin Redwoods SP, mostly in the Boulder Creek-Felton area.

In addition to the camping provided by state and county parks in the area, privately-owned overnight facilities provide additional camping opportunities. The Felton-Boulder Creek area has several campgrounds, two of which serve RVs. The Costanoa resort on Highway 1, just north of Año Nuevo SP, provides a variety of overnight accommodations ranging from a lodge, various types of cabins, individual campsites, and RV spaces. In addition, several motels, lodges, and bed and breakfasts accommodations are near the park.

The park is close to services in nearby communities, including restaurants and stores. Additionally, a variety of recreational amenities and activities are available in the vicinity, including golfing, horseback riding, stock car racing, fishing, vineyards/wine tasting, theaters, art galleries, and museums.

Please see **Appendix D** for a list of privately-owned recreation facilities in the vicinity of Big Basin Redwoods State Park.

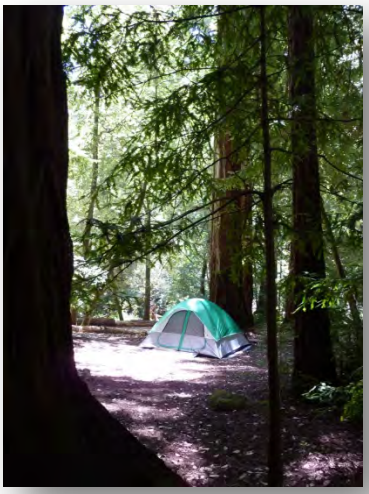
2.3 EXISTING PARK LAND USE AND FACILITIES

PARKWIDE LAND USE

Historic use of the land presently occupied by Big Basin Redwoods SP has included hunting, fishing, shellfish collection, logging, agriculture, lumber milling, and tanning. Today, this state park land is managed for resource preservation, watershed conservation, wildlife sanctuary, recreation and educational activities. The existing land uses in the park blend with the relatively undeveloped nature of the Santa Cruz Mountains and coastal areas between Half Moon Bay and Santa Cruz. Steep and rugged topography and sensitive resources have limited land developed for public use to a small percentage of the park's over 18,000 acres. Distance from transportation routes, rugged topography, and the locations of prime natural and cultural resources have contributed to the current land use patterns established within the park during the past 100 years.

The state park land is managed for resource preservation, watershed conservation, wildlife sanctuary, recreation and educational activities.

The highest levels of public use occur during the park's peak use season, from late spring through October. Many of these activities continue in the park at reduced levels throughout the rest of the year. This allows for seasonal shifts in land uses in specific areas of the park, such as off-season closure of day use areas and campgrounds, or for resource management activities, such as restoration of understory vegetation and prescribed burns.



Campsite in redwood forest

The Headquarters area is located in the eastern portion of the park and is accessed by Highway 236. This area was part of the original 3,800 acre park acquisition and, due to relatively flat terrain, ease of access, and location within old growth redwoods, it contains the majority of recreational facilities in the park. This area has been the focus of the park's recreation since its inception, and remains so. Activities in the Headquarters area include picnicking, camping, hiking, horseback riding, biking, auto touring, study of the park' s natural and cultural resources, staff housing and administrative, interpretive and maintenance facilities.

Rancho del Oso (RDO) is located along the coast in the western portion of the park and is accessed from Highway 1. The proximity of fresh and salt water, gentle slopes, fertile soils, and important natural and cultural resources has shaped existing land use in the area. Waddell Beach on the west side of Highway 1 is the busiest area of RDO, where people gather to take part in activities such as world class kite and wind surfing, swimming, surfing, and sunbathing. In contrast, the Waddell Valley on the east side of the highway offers low-key recreation in quiet, dispersed settings with hiking and horseback riding, biking, picnicking, camping, and interpretation of the natural resources and the history of human occupation of the area.

The vast majority of the park (approximately 11,800 acres) is undeveloped wilderness and backcountry which offers limited access and steep topography, and contains areas of old and second-growth redwood and knobcone pine forests. Fire and maintenance roads, trails, trail camps, bridges, interpretive signage, and overlooks are the only improvements in backcountry locations. Within this area of the park is the West Waddell Creek State Wilderness, a 5,810-acre parcel of land set aside to provide opportunities for solitude and low-impact recreation. The wilderness area is off-limits to mechanized vehicular use and mountain bikes, and does not contain permanent improvements other than semi-improved campgrounds or structures existing at the time of classification. Existing visitor activities within backcountry/wilderness areas include hiking, horseback riding, biking (except in the wilderness), nature study, interpretive programs, primitive camping and orienteering.

PARK ATTENDANCE LEVELS

Average yearly attendance between the years 2000 – 2010 was 814,516 visitors.

The following table demonstrates use levels at the park from 1999-2011 along with a monthly breakdown of fiscal years (FY) 2009-10 and 2010-11. The park received a total of 641,311 visitors during the 2010-2011 FY, with a high of 1,137,024 visitors during the 2000-01 FY. The average yearly attendance during this 10-year period was 814,516 visitors. Day users account for 86% of all visitors, with 14% paid day users and 72% unpaid day users. Monthly attendance figures indicate that the peak use periods are from May through September.

Table 2-1
YEARLY ATTENDANCE
Attendance Levels

Fiscal Year	Paid Day Use	Unpaid Day Use	Overnight Camping	Total Attendance
2010-2011	116,427	428,804	96,080	**641,311**
2009-2010	113,909	428,128	93,785	**635,822**
2008-2009	116,725	555,061	94,109	**765,895**
2007-2008	111,794	667,109	108,764	**887,667**
2006-2007	108,118	433,775	103,468	**645,361**
2005-2006	103,589	348,365	86,706	**538,660**
2004-2005	93,646	513,435	105,485	**712,566**
2003-2004	115,470	652,105	135,770	**903,345**
2002-2003	122,962	591,466	131,378	**845,806**
2001-2002	120,485	843,480	131,419	**1,095,384**
2000-2001	143,145	871,388	122,491	**1,137,024**
1999-2000	120,492	748,361	96,503	**965,356**
Average Attendance	**115,564**	**590,123**	**108,830**	**814,516**

Table 2-1 continued MONTHLY ATTENDANCE Fiscal Years 2009-10 and 2010-11				
Month	**Paid Day Use**	**Unpaid Day Use**	**Overnight Camping**	**Total Attendance**
July 2009	16,764	68,591	19,513	**104,868**
August	11,718	33,661	16,473	**61,852**
September	10,392	45,454	8,489	**64,335**
October	7,920	35,637	6,130	**49,687**
November	6,706	31,208	3,488	**41,402**
December	4,907	26,519	1,091	**32,517**
January 2010	5,250	21,727	929	**27,906**
February	5,438	19,259	1,422	**26,119**
March	8,656	27,110	3,265	**39,031**
April	8,692	32,482	6,556	**47,730**
May	15,038	43,936	10,969	**69,943**
June	12,428	42,544	15,460	**70,432**
July	17,962	60,159	21,319	**99,440**
August	14,731	50,817	18,168	**83,716**
September	10,831	39,871	10,225	**60,927**
October	7,366	32,762	5,287	**45,415**
November	5,907	21,229	2,696	**29,832**
December	4,554	26,542	983	**32,069**
January 2011	5,986	24,063	1,155	**31,204**
February	5,884	21,684	1,462	**29,030**
March	5,432	24,222	1,645	**31,299**
April	12,256	34,382	7,889	**54,527**
May	13,427	44,979	8,743	**67,149**
June	12,091	48,094	16,508	**76,693**
Average Attendance	**9,517**	**45,709**	**9,281**	**64,507**

Source: California Department of Parks and Recreation – October 2011

Average monthly attendance was 64,507 from 2009-2011.

The peak use visitation periods are from May through September.

HEADQUARTERS AREA AND RDO LAND USE AND FACILITIES

Day Use Facilities

Visitors utilizing the day use facilities in the Headquarters area generally visit the Headquarters (Administration) Building first to obtain information and pay user fees. The Headquarters Building was constructed in 1935 by the CCC and is an impressive example of Park Rustic architecture. The building provides visitor services and administration space for park staff. The main hall of the building provides interpretive areas to help park visitors understand the natural and cultural history of the park and to obtain park information. The side rooms provide campsite registration services in addition to staff offices.

The park store is also a historic building located across Highway 236 from the Headquarters Building and provides food and outdoor/camping supplies. The store, gift shop, and tent cabin reservations are currently operated through a concessionaire. A deck and outdoor picnic area are popular with park visitors.

Headquarters Building - Campsite Registration

The Nature Museum is located within the same building as the park store and gift shop. This serves as a natural history museum and contains numerous displays interpreting the natural history of the Big Basin area. In 2011-2012, accessibility improvements were made to the existing buildings and facilities in the Headquarters area.

The primary day use picnic area in Headquarters is located along North Escape Road, just west of Highway 236. A former campground located along Gazos Creek Road intersects North Escape Road from the west and provides additional day use facilities. These historic facilities provide restrooms, picnic tables, parking, modern pedestal grills and historic CCC-era Diablo stoves. Existing picnic areas with tables and grills are spread out along North Escape Road. Day use parking lots are situated near individual and clustered picnic sites to accommodate families and group use. Log barriers define available parking spaces along North Escape Road to minimize resource impacts during busy park visitation periods. The park utilizes a system of gates along North Escape Road to control visitor use. As visitation increases, park staffs open the gates at the north end of the road to increase the area's visitor capacity. The gates remain closed during low visitor use to reduce maintenance and servicing of these areas. The day use facilities located along Gazos Creek Road retain the original historic campsite configuration that include designated parking, a fire ring and a picnic table at each site. A limited number of parking areas are also available for group or oversized vehicle parking, or a few horse trailers. Day use parking, restrooms and picnic locations are accessible from the Headquarters area to the popular trails and park features.

Approximately 380 vehicles can park in the Headquarters Area during the busiest weekends. This assumes that all spaces are full in the Headquarters'

Table 2.2
Existing Parking in Headquarters Area

Location	Description	Number of vehicles (estimated during peak use periods)	Visitor Capacity (assumes an average of 3.6 persons per car)
Headquarters Lot	Main parking lot near store and Nature Museum, redwood loop trail, and campfire center	123	440
Gazos Picnic Area	Parking for developed picnic area at Gazos Creek. Rd. and N. Escape Rd.	50	180
N. Escape Rd.	Parallel parking along N. Escape Rd.	157	565
Outer picnic sites	Misc. day use parking	50	180
	Totals:	**380 vehicles**	**1365 visitors**

Notes: Numbers are estimates only, and vary depending on vehicle size and how visitors park.

lot, Gazos Picnic Area and in other picnic sites, and that vehicles are parked parallel along the North Escape Road (see **Table 2.2**).

Visitor parking is a major operational issue in the park Headquarters Area, due to the limited number of available parking spaces and that Highway 236 bisects this high use area. On busy weekends, visitors will often drive around for a long time to find parking if they wish to visit the museums, Redwood Loop Trail, store and gift shop. The entrance kiosk to the day use area is kept open daily with two staff persons plus a ranger to help direct waiting traffic that backs up on Highway 236. There is only one way in and one way out (by the kiosk) of the day use areas.

Rancho del Oso (RDO)

Rancho del Oso offers a variety of visitor facilities that include a nature and history center, beach day-use facilities, a ranger contact station, the Theodore J. Hoover Natural Preserve, interpretive trails, and backcountry access into the park. RDO contains the 23-acre Theodore J. Hoover Natural Preserve, with wetland habitat and a wide variety of special status plants and animals. The Nature and History Center, operated by park volunteers, offers interpretation of the plant and animal communities associated with the park. The RDO ranger station is open to visitors on weekends and provides park interpretation and information. Located next to the ranger station is a small parking lot that provides overnight parking for the Horse Camp and trail camp users, and provides a trailhead for hikers, bikers and equestrians to access the Skyline-to-the-Sea Trail.

Site amenities at Waddell Beach include parking, restrooms, trash receptacles, recycle containers, bulletin boards and a bus shelter. There is a 150-space gravel surface parking lot that provides a staging area for beach users. The west portion of the parking lot has undergone erosion from storm waves that have decreased the overall size of the parking area. In general, the parking lot fills to capacity on weekends due to favorable wind, surfing and swimming conditions.

Overnight Facilities

Big Basin Redwoods SP has 13 campgrounds, containing a total of 233 campsites, which provide a wide assortment of camping experiences designed for a variety of user groups. Visitors are offered the opportunity to camp under the old growth redwoods, with a large group of friends, near their horses, or within the comfort of a tent cabin. Campground infrastructure varies with each campground and ranges from shower facilities and laundry facilities to pit toilets and no running water. With the exception of campground host sites there are no utility hook-ups in the park. Campsites suited for large RVs are available. The majority of visitors with RVs use small trailers or small self-contained vehicles to negotiate the tight turning radii and small campsites available at the park. Campground facilities are available by reservation only. Although camping is available

throughout the year, some campgrounds are closed when visitor demand is low.

Blooms Creek Campground

Constructed in the1930s by the CCC, Blooms Creek Campground is the oldest existing campground in Big Basin Redwoods SP. This 52-unit campground is located directly off Highway 236 and offers 48 drive-in campsites and four walk-in sites. Set under the old growth redwood forest, the road through Blooms Creek Campground is winding and very narrow in spots making it inaccessible to larger RVs and trucks. Restrooms, showers, trash receptacles, recycle bins, hose bibs, fire rings and picnic tables are provided at the campground. This campground has sparse understory vegetation and volunteer trails with little screening between campsites. Blooms Creek Campground offers four ADA-accessible sites.

Blooms Creek campsite

Sempervirens Campground

Sempervirens Campground is the first campground visible to visitors entering the park on Highway 236 from the south. Constructed in the late 1940s, this 32-unit campground is set within the old growth redwood forest. Tight campsite spacing and avoidance of redwoods has created an attractive and popular campground, but with a very narrow and winding campground road that is difficult for larger RVs and truck-trailer combinations to negotiate. The campground understory is sparsely-vegetated and open between campsites. Restrooms, showers, trash receptacles, recycle bins, hose bibs, fire rings and picnic tables are provided in the campground.

Huckleberry Campground

Huckleberry Campground was constructed in 1968 and is located off Sky Meadow Road. This campground is the largest in Big Basin Redwoods SP and its name reflects the dense huckleberry understory, which distinguishes it from the Blooms Creek and Sempervirens campgrounds. It provides three different types of camping experiences: tent cabins, drive-in sites, and walk-in sites. The tent cabins are operated and maintained by a concessionaire and provide 37 units equipped with two double beds, a table, and a wood burning stove enclosed in a wood framed building capped with a canvas roof. Laundry services are available to tent cabin users. Walk-in camping consists of eight sites located within 20-300 ft. from designated parking spaces. The lack of direct car access, reduced traffic noise and increased site spacing enhances the feeling of seclusion at these campsites. The remaining 26 sites are drive-in sites for both RVs and tent camping. Huckleberry Campground

Tent cabin

was designed to accommodate larger vehicles by providing a wide roadbed and large turning radii. Restrooms, showers, trash receptacles, recycle bins, hose bibs, fire rings and picnic tables are provided in the campground. Huckleberry Campground remains open throughout the year.

Camping at Big Basin

Wastahi Campground

Wastahi Campground is a 26-unit walk-in campground constructed in 1968 and located off Sky Meadow Road. This campground is located on a hillside with individual campsites from 50 to 400 ft. uphill from a central parking area. Restrooms, showers, trash receptacles, recycle bins, hose bibs, fire rings and picnic tables are provided in the campground.

Sky Meadow and Sequoia Group Camps

Group campgrounds offer an opportunity for friends, extended families, schools and organizations to participate in an overnight experience at Big Basin Redwoods SP. Sky Meadow Camp, constructed in 1971, is located off Sky Meadow Road and is comprised of two campsites with a capacity of 40 people per site. Constructed in 1950, Sequoia Camp is located just northwest of park Headquarters and offers two campsites with a 50-person capacity per campsite. Sequoia offers close parking to each campsite while Sky Meadow requires a short walk to one of the two sites. Sequoia Camp is the more popular group camp due to the available parking and proximity to visitor services in the Headquarters area. Camping areas are not delineated at either campground, which provides flexibility for clustering tents or creating separation as desired by the camper. Restroom and shower facilities, trash receptacles, recycle bins, picnic tables, fire rings and grills are

all available at Sequoia Camp. Sky Meadow Camp has trash receptacles, recycle bins, picnic tables, fire rings, grills, and pit toilets.

Campfire Center

Originally constructed in 1911 and reconfigured by the CCC in 1936, the approximately 600-seat campfire center is currently used for campfire and interpretive programs, entertainment events, and group gatherings. The center consists of wooden benches constructed from large redwood logs situated in an amphitheater configuration facing a covered stage and stone fire pit. A restoration effort was recently completed that replaced deteriorated log seating and included upgrades for ADA accessibility. This amphitheater is situated close to the historic lodge building. Although occasionally used for daytime activities, the center is primarily used for nighttime activities and serves those visitors utilizing overnight accommodations.

Campfire Center at Big Basin

Trail Camps

Jay Camp, Lane Camp, Sunset Camp, Twin Redwoods Camp, and Alder Camp are campgrounds located throughout the park designed for use by backpackers and mountain bikers utilizing the Skyline-to-the-Sea Trail and other remote park trails. Jay Camp is the only trail camp located within a developed area of the park and offers backpackers an initial staging area from the Headquarters area. Jay Camp offers eight walk-in campsites accessed from a central parking area and contains restrooms, showers, hose bibs, trash receptacles and recycle bins. All the other trail camps offer from 6-10 campsites and pit toilet restroom facilities. Pets and open fires are not allowed at the trail camps. Road damage along East Waddell Road has prohibited maintenance access and temporarily closed Camp Herbert.

Horse Camp

Horse Camp is located in the RDO area of the park and offers overnight accommodations for equestrian trail users. The camp consists of six sites that may be used individually or for group events. Parking is available in the adjacent trailhead parking lot and ranger station service drive. Recent ADA upgrades of the restrooms and day use parking somewhat restricts movement of horse trailers in and around the parking lot. Horse Camp amenities include picnic tables, fire rings, pedestal grills, hitching post, box stalls, water trough, manure disposal, hose bibs, and a pit toilet. Other ADA accessibility improvements are planned for the horse camp.

Table 2-3 below shows Big Basin Redwoods SP existing campgrounds. Little Basin and Saddle Mountain land use and facilities are described separately on the following pages.

Table 2-3
Existing Campgrounds

Name	Description	User Group	# of Sites	Individual Site Capacity	Overall Capacity
Blooms Creek	Drive-In	Car / RV Campers	48	8	384
Blooms Creek	Walk-In	Car / RV Campers	3	8	24
Huckleberry	Drive-In	Car / RV Campers	27	8	216
Huckleberry	Tent Cabin	Car Campers	37	8	296
Huckleberry	Walk-In	Car Campers	8	8	64
Sempervirens	Drive-In	Car / RV Campers	31	8	248
Wastahi	Walk-In	Car Campers	27	8	216
Sky Meadow	Group	Car Campers	2	40	80
Sequoia	Group	Car Campers	2	50	100
Lane	Trail	Backpacker / Mt. Biker	6	6	36
Jay	Trail	Backpacker / Mt. Biker	8	6	48
Twin Redwoods	Trail	Backpacker / Mt. Biker	6	6	36
Alder	Trail	Backpacker / Mt. Biker	6	6	36
Sunset	Trail	Backpacker / Mt. Biker	10	6	60
Horse Camp	Equestrian	Equestrian	6	6	36
PARK TOTALS			**227 sites**		**1880 people**

Note: There are 12 total campgrounds in Big Basin, including trail camps and the horse camp, not including Little Basin overnight facilities.

SADDLE MOUNTAIN LAND USE AND FACILITIES

Saddle Mountain is a 17.48 acre property located on Highway 236 approximately four miles southeast of the Big Basin Headquarters area. This site includes a former motel and restaurant development initially built in 1949 and later purchased in 1999 by the Sempervirens Fund. The Sempervirens Fund made the property available for use to school districts as an environmental education camp for school children. The property was transferred to State Parks in 2007 which continued the environmental camp as an interim use. The existing camp is currently managed by Exploring New Horizons, a nonprofit organization, under a lease agreement with State Parks. The current lease agreement will expire in 2012. An extension to this lease or a new concessions agreement is anticipated.

The Saddle Mountain property was transferred to State Parks in 2007, which continued the environmental camp as an interim use.

This mountainous property contains coast redwood and Douglas-fir forest with an open grassy area along the highway frontage and a large gently sloping grassy meadow and swimming pool development in the central portion of the property. Buildings are located on the highway frontage and around the perimeter of the meadow. Private residential parcels are located adjacent to the property to the west and across Highway 236 and Little Basin Road.

Access to the property is provided by the two-lane Highway 236 on the eastern approach from Boulder Creek to Big Basin Redwoods SP. Entrance into the property is comprised of a wide paved driveway and parking area for the dining hall/kitchen building along the highway frontage portion of the property.

Existing facilities include: a multi-use dining hall/kitchen main building, 12 rustic cabins, swimming pool and two bath houses, large open grassy meadow, campfire center, small amphitheater, community garden, group picnic area, archery range, trails, parking areas, manager's residence, staff residence building, office trailer, maintenance garage, and utilities infrastructure.

Multi-use dining hall at Saddle Mountain

Dining hall/kitchen building: This 2,937-square-foot building was originally constructed in 1949 and used as a restaurant and bar with dance floor. The building is currently used as a dining hall, kitchen, and indoor activities room.

Staff residences: This 3,240-square-foot single story masonry block building was originally constructed in 1949 as an eight-unit motel. Currently, it is used as temporary housing for camp counselors. Each studio-type unit is approximately 384 square feet, with one bedroom, one bathroom, and

small kitchenette. There is vehicle parking for the residents near the front of the building.

Caretaker's residence: This is a 1,577-square-foot two bedroom, one bath, wood-frame dwelling. This building was originally constructed in 1947 with modifications made over the years.

Garage/workshop: Constructed around 1953, this is a 693-square-foot, wood-frame and wood exterior building. It is used by the camp for material and equipment storage and maintenance purposes.

Office Trailer: The office trailer is located between the garage and the boy's cabins along the southern side of the main meadow area. The trailer is used as the office for the administrative functions for the environmental education camp.

Cabins: There are 12 rustic cabins located in two groupings (boys and girls) of six cabins each. The boy's cabins are located along the southeastern perimeter of the meadow and the girl's cabins are located along the southern perimeter of the meadow. Each cabin is a 16' x 16' single wall, wood-frame structure, with a total of 256 square feet of interior space. The cabins have plywood walls and metal roofs.

Campfire Center and Amphitheater: The campfire center is located on a moderately sloped hillside along the southeastern corner of the meadow and is used for group programs and activities. It includes an elevated wood-frame stage area and rustic log bench seating for about 60 people. There is a small stone fire ring in front of the stage area. The amphitheater is situated in a redwood grove at the northwest corner of this property.

Saddle Mountain Campfire Center

Group picnic area: The picnic area is located under a grouping of trees behind the dining/kitchen building and adjacent to the staff residence parking area. There are eight metal picnic tables arranged in a circle.

Pool Area: The in-ground swimming pool is 24' x 65'. It is estimated to be about 40 years old and in relatively good condition. The pool is surrounded by concrete decking and a wooden fence. There is also an outdoor shower in the pool area.

Saddle Mountain buildings, outdoor structures and facilities are not currently ADA compliant.

LITTLE BASIN LAND USE AND FACILITIES

Description and Background

Little Basin is a 535-acre property that was acquired in 2011 as an addition to Big Basin Redwoods SP. Little Basin is comprised of a 40-acre central meadow area, a 150-acre developed campground area with several group-oriented recreation facilities, and 345 acres of scenic woodlands and coast redwoods. Two perennial creeks, Blooms Creek and Scott Creek, traverse the property. Access to the property is via Little Basin Road, a single lane paved road off of Highway 236. A series of roads and pedestrian paths travel throughout the developed camping and recreational area and several hiking trails connect with the trail system in Big Basin (see **Figure 4**).

In 2007, the Peninsula Open Space Trust (POST) and Sempervirens Fund acquired the Little Basin property from the Hewlett-Packard Company (HP). HP founders William Hewlett and David Packard purchased Little Basin in 1963 for the enjoyment of their employees and to accommodate their company's picnics. Over the years, a dedicated crew of volunteers, made up entirely of HP employees, designed and built the Little Basin campground and recreational amenities during weekend work parties. They cleared locations for campsites, built cabins, created playgrounds, and built picnic and barbeque areas. Additionally, they constructed and maintained hiking trails that traverse large areas of the property and provide connections with the adjoining Big Basin Redwoods SP.

Little Basin Administration and Maintenance facilities

Existing Facilities

The Little Basin campground includes 36 tent sites, 14 rustic cabins (several of which are ADA-accessible), and a group camping area that can accommodate 50 campers. Each campsite is equipped with a charcoal-burning BBQ grill, a table with benches, a food locker, and a wood-burning fire pit. Many sites also accommodate trailer parking, although water and electric hookups for trailers are not available. The cabins are single room, wood frame structures. All cabins include two double-bed frames, a single-bed frame, a table, small storage shelf, and electricity. Some cabins can

Little Basin Picnic Area and Amphitheater

accommodate up to eight people. The campground area also includes two bathhouse/shower rooms, water spigots, and restrooms with flush toilets.

Recreational facilities on the property include a tennis court, basketball court, baseball field, children's play structures, and game room. A central recreational/conference hall, bandstand, large outdoor kitchen, and picnic area/amphitheater provide space for large group gatherings. Little Basin Reservoir, created to provide a water source for an earlier cattle ranch operation on the property, was used for catch-and-release bass and bluegill fishing.

Little Basin's existing sewage system (septic tanks) and potable water storage system serviced the campground. Two wells at Little Basin have provided for domestic use, fire, and landscape maintenance and a water treatment plant was located on the property. During drought years, potable water was trucked in to service the campground during peak summer months. In the summer of 2012, a new pipeline was installed from Big Basin to four existing water storage tanks located in the Little Basin campground (two domestic and two for fire protection). With the new waterline to serve Little Basin, trucking water is no longer necessary. Also, the existing water

plant at Little Basin could be removed and the building used for other purposes.

Centrally located on the property is an operations center that includes a two-story 4,100-square-foot residence, office and workshop, and a five-stall maintenance garage. The residence, located above the office, includes a kitchen, living room, three bedrooms, and two bathrooms.

Facilities Management and Operations

In transferring Little Basin to State Parks, POST and Sempervirens set aside funding for a land stewardship fund to ensure that this property is well maintained and cared for into the future. Little Basin's facilities will be managed and operated by the nonprofit group, United Camps, Conferences and Retreats (UCCR), under a concessions agreement scheduled to last through 2017.

Available funding will focus on making improvements to increase the sewage capacity and provide enough water to serve existing campground use without trucking in water.

The concessionaire is responsible to manage all aspects of the maintenance and support required to run Little Basin as a first-class camping and recreational facility, which also includes maintaining the on-site water treatment plant and potable water distribution system, campground and recreation facility reservations, and security. State Parks will provide ranger patrols and law enforcement as needed.

CIRCULATION

Several state highways serve the area around Big Basin Redwoods SP. Some are large and carry heavy traffic, and others are two lane highways providing circulation for residents of the Santa Cruz Mountains and also alternative routes for travelers wishing a more leisurely driving experience.

Highway 236 bisects the park and provides the main access routes to the park headquarters and inland areas off Highway 9. Visitors from the San

Highway 236 through the park

Francisco Bay Area can access the park's inland areas via Highway 9 through the Santa Cruz Mountains to Highway 236 at Waterman Gap, or by crossing the mountains farther south on Highway 17, the main link between Santa Clara County and Santa Cruz. From Santa Cruz, visitors travel north on Highway 9 to Highway 236 at Boulder Creek to the park's southeast entrance. Highway 236 winds through the old growth redwoods, providing close-up views and a distinct sense of arrival from either direction. Visitor contact along Highway 236 is located at the Headquarters facility, approximately five miles from the northern park boundary and 1.5 miles from the park's southern boundary. Traffic on Highway 236 within the core area of the park can become congested on holidays and weekends during the peak season (May-September) because of the large numbers of visitors and limited parking availability.

There is no connecting road through the park for public vehicle access between Highway 1 and Highway 236. Therefore, the Headquarters area and RDO are often viewed by the public as distinctively different parks.

Highway 1 provides public vehicular access to Rancho del Oso (RDO) and Waddell Beach. There is no connecting road through the park for public vehicle access between Highway 1 and Highway 236. Therefore, the Headquarters area and RDO are often viewed by the public as distinctively different parks. The trails system through Big Basin provides the essential linkages for hikers and backpackers from the inland mountains to the coastal region. From Santa Cruz, Highway 1 runs north and south along the coast, with RDO approximately 23 miles to the north of Santa Cruz. Park signs identify the park location, but the closest visitor contact is located approximately 0.3 miles from the entrance gate at the RDO ranger station. According to the California Department of Transportation, over five million people in 2.2 million vehicles per year drive past the Santa Cruz/San Mateo county line on Highway 1, situated between Waddell Beach and Año Nuevo SP.

China Grade Road connects the northern and southern routes of Highway 236 and is an additional access route into the eastern portion of the park. Primarily used by local residents and visitors attending area summer camps, China Grade Road is not considered a major access route for park visitors due to the steep terrain and narrow road conditions. Lodge Road, which connects to the southern route of Highway 236, provides additional access to the eastern portion of the park and is primarily used by park staff to access park residences and maintenance facilities.

Access into the RDO sub-unit is through multiple entry points. Hiking in from the Headquarters area, as well as vehicular travel from roads located on both the north and the south side of Waddell Creek off Highway 1 allow entry into this portion of the park. The paved portion of Waddell Canyon Road, also known as Skyline-to-the-Sea Trail, on the north side of the Waddell Creek only provides visitors vehicle access to the ranger station, horse camp, and parking lot for overnight trail camps. Visitors wishing to continue further in to the park must walk or ride a horse or bicycle on the unpaved road/trail. Park staff use the unpaved portion of Waddell Canyon Road for patrol and maintenance of the trail camps in the backcountry, and for emergency vehicle access. The trail/road is also used by equestrians, hikers, backpackers, and bicyclists for approximately 4.5 miles to a point

where it connects to the Henry Creek Trail. Approximately, one mile of this road from Highway 1 is also used by farm vehicles for access to private agricultural land in the canyon.

Vehicle entry from the south side of the creek is via a right-of-way easement over private property, which provides visitors with vehicle and pedestrian access to the Nature and History Center. This road is also used by park staff to make entry to staff housing and to the maintenance shop. Private land owners in the canyon use this road primarily as an ingress and egress. Staff, visitors, and private landowner's access and circulation is coordinated and maintained to optimize efficiency, security, and emergency access.

The Santa Cruz Metropolitan Transit District (SCMTD) provides seasonal bus service to the Big Basin Headquarters area from the Metro Transit Center in downtown Santa Cruz. There is also year-round bus service from the Metro Transit Center to Waddell Beach. Bicycle transport accommodations are also available on SCMTD buses.

Other methods of accessing the park are by hiking, bicycling, and horseback. Day hikers, overnight backpackers, and equestrians can access the park via the Skyline-to-the-Sea Trail, which extends 26 miles from Saratoga Gap to Waddell Beach and traverses the ridges and valleys of the park. Additional access for hikers and equestrians is available on the Basin Trail easement connecting Portola Redwoods SP and Big Basin Redwoods SP, and the Butano fire road easement, connecting Butano SP and Big Basin Redwoods SP. Hikers can also enter the western portion of the park from Año Nuevo SP by way of the Whitehouse Ridge Trail.

Visitor circulation within the park revolves primarily around the visitor facilities and old growth redwood forest located in the Headquarters area and at the beaches and interpretive facilities found at RDO. Parking is available in the Headquarters area in day use parking lots and along North Escape and Gazos Creek Roads.

Parking at RDO is available for overnight horse camp and trail camp parking at the trailhead / Horse Camp parking lot located near the ranger station. Limited day use parking is also available at the Nature and History Center. From these locations, hikers, bicyclists, and equestrians can access interpretive trails, the backcountry, and wilderness areas. Day use visitors to Waddell Beach use a large parking lot near the beach west of Highway 1 and smaller parking area, east of the highway.

Vehicle parking is available in campgrounds and day use parking lots in the Headquarters area. Campers generally use trails and trail connectors to access activities and facilities located in the Headquarters area. Overnight parking is available in the Headquarters area at Jay Trail Camp for backpackers desiring to hike into the backcountry and wilderness for overnight trips.

The Santa Cruz County Regional Transportation Commission adopted its updated *Regional Transportation Plan* and accompanying Environmental

Impact Report in June 2010. This is a plan for improving the county's transportation system over a 25-year period between 2010 and 2035, which lists future projects such as highway bridge replacements, transit facilities upgrades, and bicycle transportation improvements, including construction of a 14-mile paved multi-use path for bicyclists and pedestrians from Boulder Creek to Santa Cruz.

The following table shows the total available miles of paved and unpaved roads at Big Basin Redwoods SP. Please see **Appendix F** for a complete listing and description of park roads. Also refer to the Land Use and Facilities map (**Figure 3**) for road locations.

Table 2-4
Existing Roads

Road Type	Length
Unpaved Road *Mountain bikes can travel 30 miles of fire roads within the park*	30.3 miles
Paved Road	23.1 miles
TOTAL ROADS	**53.4 miles**

TRAILS

With over 138 total miles of combined trails and fire roads, many developed in the 1930s by the CCC, Big Basin Redwoods SP offers a wide range of trail activities for hikers, bikers and equestrians. Hiking opportunities offer visitors a range of experiences within the park boundaries, from strolling along the 0.6 mile redwood interpretive loop trail located in the heart of the old growth redwoods, to backpacking along 14.4 miles of the Skyline-to-the-Sea Trail. Based on staff observations, the majority of visitors day hiking in the Headquarters area venture no more than 1.0 to 1.5 miles from day use and camping facilities, while only a small percentage hike greater distances to backcountry and beach locations. Bicycles are permitted on paved and unpaved roads. Equestrians are allowed on unpaved roads and designated trails and have access to over 40 miles of park trails. Equestrians may ride from Headquarters to RDO. Day hikers and backpackers can utilize all park trails and roads. Overall, trail conditions within Big Basin Redwoods SP are considered moderate to good.

The following table shows total available trail miles by user group at Big Basin Redwoods SP. Please see **Appendix E** for a complete listing of park trails.

Table 2-5
Trails by User Group

User Group	Length
Hiking Only	64.2 miles
Equestrian and Hiking	20.8 miles
TOTAL TRAILS	**85.0 miles**

ADMINISTRATION AND MAINTENANCE FACILITIES

Administrative office facilities are currently housed in the Headquarters building. Located in the Headquarters area and originally constructed in 1907, the Old Lodge is used occasionally for meetings by park staff, although it does not have operating utilities and is damaged by a fallen tree.

Park maintenance facilities are located on Rodgers Road and consist of a maintenance operations office and multiple storage and workspace buildings. Due to very tight turns along Sky Meadow Road prior to the maintenance facility, a materials storage area has been located just northeast of the Sky Meadow lower residence along Sky Meadow Road. This allows for more convenient access by large trucks and equipment. No administration building or maintenance facilities are located at RDO, except a small ranger office near the horse camp and a maintenance shop located near the Nature and History Center. RDO is more than a 50-minute drive from the park's current maintenance facility on Rodgers Road, which makes it difficult for maintenance staff to effectively service the RDO area.

UTILITIES

Many utilities at Big Basin Redwoods SP were constructed in the 1930-50s and require frequent maintenance.

The wastewater collection system and treatment plant near the Headquarters area is an on-site system originally constructed in 1936 and rehabilitated in 2010. Wastewater is collected, treated, and released into Waddell Creek. The Nature and History Center, and ranger station at RDO use septic systems for wastewater treatment, and the horse camp and campgrounds have pit toilets, which are pumped to remove waste.

Water collection and treatment for the Headquarters area is served by an on-site system. Water is collected at Sempervirens Reservoir, created in

1952 by damming Sempervirens Creek, and piped to a water treatment plant located 1000 feet downstream. The water is then gravity-fed and pumped to water storage tanks where it is distributed to various park facilities. The historic Gatehouse at the park's southern Highway 236 entrance is being used as a lab for the water treatment facility. Currently, there are plans to upgrade this system by replacing water treatment plant facilities, a 100,000-gallon storage tank, and the fire protection system in the Sky Meadow residence area. Since becoming a part of Big Basin Redwoods State Park, the Little Basin area has been incorporated and fully connected to the state park's water system. In 2012, a new pipeline was installed from the Big Basin Gatehouse to four new water storage tanks located in the Little Basin campground (two domestic and two for fire protection).

There are two water systems in the RDO area. At the existing ranger station and equestrian campground area, a well has been reactivated and two 5,000-gallon tanks installed to allow for ionization of the well water before use. On the south side of Waddell Creek, near the Nature and History Center, water is currently supplied by a shallow cistern. State Parks is planning to develop a well in the area to replace the existing system.

Pacific Gas and Electric Company provides electricity to the park through a system of overhead utility lines. Propane tanks provide gas to all facilities requiring heat or heated water. Pacific Bell provides telephone service within the park through overhead lines.

EMPLOYEE HOUSING

The park location and high cost of living in the area necessitates providing park housing opportunities for employees. Employee housing at Big Basin Redwoods SP serves employees working at the park and at other nearby parks located within the Santa Cruz District. Big Basin Redwoods SP offers 19 structures and eight trailer locations available as seasonal and permanent employee residences. The majority of the housing available at the park is located at the lower residence area along Sky Meadow Road (Historic District) and the upper residence area along Lodge Road. These are post WWII single-family units with private bathrooms, shower, and laundry facilities. Cabin units at Jay Camp provide bunkhouse style accommodations for seasonal employees. There is no indoor plumbing within the cabins, and employees utilize the nearby public restroom and shower facilities. Employee residences are also located at RDO, the Headquarters area, and the maintenance area.

CONCESSIONS

The purpose of State Park's concessions program is to seek involvement and assistance from private and public sector entities to provide services that

cannot be adequately performed by State Parks, and that enhance the park experience of visitors. Concession operations are implemented through concession contracts. These contracts grant to a person, corporation, partnership, or association the right to use specified state park lands and/or programs.

Presently, there are two concession contracts at the park. One contract is for operation of the food and gift store in the Headquarters area, and tent cabins, shower, and laundry facilities at Huckleberry Campground. This park concession expires in 2017. The second contract is for the maintenance and operations of Little Basin. This contract was accepted as part of the property transfer in 2011 and also expires in 2017. In addition to these contracts, there is a lease agreement with a nonprofit organization to operate and maintain interim facilities at Saddle Mountain. This lease agreement expired in 2012, and is currently under renegotiations for a short-term lease extension or new concessions agreement.

ACCESSIBILITY OF PARK FACILITIES

The Americans with Disabilities Act (ADA)-compliant facilities within Big Basin Redwoods SP include eight accessible campsites, 12 picnic sites, the 0.6 mile Redwood Trail, various campground restrooms, and the park maintenance office. Several projects that will increase accessibility of the park's facilities are currently underway or scheduled in the next few years. Future construction, trail reroutes, and retrofitting projects of existing facilities will all require compliance with ADA. Additional information on the accessible features of Big Basin Redwoods SP can be found in the June 2000 Santa Cruz District, Mountain Sector, Big Basin Redwoods SP Accessibility Survey and the California State Parks Accessibility website.

The Department is continually improving existing facilities throughout the State Park System to be compliant with the ADA. The Department's ADA improvement program has included several Big Basin Redwoods SP projects scheduled through 2012**.** Those projects include planning and design for new accessible restroom facilities for the Huckleberry Campground and the Sequoia Group Camp. Accessibility modifications are also underway or completed for the Headquarters historic core area buildings, restroom, and campfire center; Blooms Creek Campground restroom; Sempervirens Campground restroom; RDO Nature Center and campground restroom; and the Waddell Beach restroom.

2.4 SIGNIFICANT RESOURCE VALUES

PHYSICAL RESOURCES

The information in this section was compiled from existing documents and field research. For more detailed information on the park's natural and cultural resources, please refer to the park's Resource Inventory, the Reference section of this document, and the Department's unit data files (UDF).

Topography

The park is located in the western, coastal portion of the Santa Cruz Mountains, which is a part of the California Coast Ranges. The Santa Cruz Mountains extend about 74 miles in a northwest to southeast direction from the Golden Gate to the Pajaro River. San Francisco Bay and the Santa Clara Valley form the eastern boundary of the Santa Cruz Mountains, and the Pacific Ocean borders these mountains to the west. The width of the Santa Cruz Mountains ranges from 5.5 miles in the vicinity of Daly City to 29 miles at its maximum. Their western slopes stretch roughly 15 miles from crest to coast in the area of the park and contain elevations ranging from sea level to over 2,000 feet above mean sea level. Loma Prieta, at 3,806 feet, is the highest mountain in the range. Most of the crests are rounded by erosion and have not been affected by glaciation.

View of Big Basin from Chalks Mountain Road

The western margin of the Santa Cruz Mountains between San Francisco and the city of Santa Cruz is characterized by the dramatic coastline formed where the bedrock uplands of the range meet the Pacific Ocean. Landscapes along this portion of coast can be abrupt with steep coastal terrain and rocky shores, or can be more gradual, consisting of flat elevated marine terraces that slope gently downward from mountainous uplands to sandy beaches.

The Waddell, Año Nuevo, and Scott Creek watersheds form the dominant landscape features of Big Basin Redwoods SP. Waddell Creek has two main forks, the East and West Waddell. The West Waddell begins in the northern portion of the park at an elevation of 1,800 feet. Berry and Henry Creeks drain into the West Waddell at the base of Chalk Mountain (1,609 feet), which is immediately to the west. The West Waddell continues south through a narrow valley that drops from 400 to 160 feet before joining East Waddell Creek.

The East Waddell headwaters, including the tributaries Opal Creek and Blooms Creek, originate above the main developed areas of the park at elevations of 1,400 to 1,600 feet. Opal and Blooms Creeks meander through a flat valley that supports some of the park's oldest and largest redwood stands. Both creeks join to form the East Waddell at an elevation of 950 feet. Pine Mountain is a dominant landscape feature in the park, rising to 2,208 feet. The East Waddell continues to flow through a very steep and narrow canyon in its lower reaches.

The East and West Waddell meet and form Waddell Creek about three miles from the ocean. Surrounding ridges rise to 950 feet on either side of the V-shaped valley formed by the creek. Before reaching the ocean, Waddell Creek flows through a brackish marsh that is dissected by tidal channels.

As discussed in the Geology section below, Late Oligocene folding, faulting and orogenic uplift occurred between the Zayante-Vergeles Fault and the San Andreas Fault. The Oligocene folds are expressed in a system of synclines and anticlines in the central and northern Santa Cruz Mountains, including Big Basin. The Ben Lomond Fault has also contributed to development of park landforms, uplifting such peaks as Eagle Rock (2488 feet amsl) and creating intervening basins. Much of the mountainous topography of the park is defined by bedding-plane slopes, where more resistant rock layers form hogbacks (McJunkin 1983).

Climate

The climate of the Santa Cruz Mountains varies over relatively short distances because of diverse topography, although the proximity of the Pacific Ocean moderates some climate extremes. Generally, an increase in elevation and distance from the coast produces a corresponding increase in precipitation and temperature maxima/minima.

The park is at the extreme southern end of the Marine West Coast Climatic Zone and exhibits some characteristics of the Mediterranean Climatic Zone.

Summers are dry and winters are wet, with precipitation beginning in October and continuing through April. Precipitation in the park is quite variable, resulting from orographic effects produced by the Santa Cruz Mountains. The average precipitation in dry years is 30 to 35 inches and in the wettest years exceeds 90 inches, as measured at park Headquarters. Precipitation on the immediate coast, as measured at RDO, is typically a little more than half of this total. Although summer fogs do not produce significant amounts of moisture, they do keep valleys cool and moist, and contribute to moisture conservation in plants by reducing evapotranspiration.

The average precipitation in dry years is 30 to 35 inches and in the wettest years exceeds 90 inches, as measured at park Headquarters.

Precipitation on the immediate coast, as measured at RDO, is typically a little more than half of this total.

Temperatures in the park normally range from 30° to 40° F in the winter to 80° to 90° F in the summer. In the Santa Cruz Mountains area, the overall temperature range is from about 25° to 102° F. The average highs during the warmest months of July through September are 75° to 90° F. Average lows during the winter are in the middle 30s. Temperatures of freezing or lower occur in most years.

During summer and fall, the dominant air movements are associated with differential heating and cooling of the ocean and adjacent land. The onshore wind begins in the morning and blows strongly during the daylight hours as the cooler and denser sea air moves inland to displace the hotter, less dense inland air. At night, greater radiational cooling over land causes the inland air to become cooler and denser than the air over the ocean, resulting in the offshore wind.

In winter, the winds are predominately from a southwesterly direction during storms, but shifts to a northwesterly direction after the passage of a cold front. In the spring, the predominant wind direction is from the northwest.

Potential Effects of Global Climate Change on the Park

Climate change refers to change in the Earth's weather patterns, including the rise in the Earth's temperature due to an increase in heat-trapping or greenhouse gases (GHGs) in the atmosphere. GHGs include carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride among others. Human activities are adding large amounts of GHGs to the atmosphere. Combustion of fossil fuels for heat, electricity, and transportation is the main source of these gases.

Warming of the climate system is now considered to be unequivocal (International Panel of Climate Change 2007) with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase global average temperature between 2 and 6°F over the next 100 years (some projections go as high as 11°F). Rising temperatures could have a variety of impacts,

including increasing emissions of greenhouse gases and criteria pollutants associated with energy generation.

Higher temperatures also contribute to sea level rise by expanding ocean water, melting mountain glaciers and small ice caps, and causing portions of Greenland and the Antarctic ice sheets to melt (U.S. Environmental Protection Agency 2011). According to the December 2009 Staff Report to the California State Lands Commission, sea level is projected to rise 16 inches by 2050, and 55 inches by 2100 (California State Lands Commission 2008). The California Resources Agency states that sea level rise can cause damage to coastal communities and loss of land (see map **figures 24 and 25**).

Regional climate studies indicate that California is likely to see average annual temperatures rise by 3–4° Fahrenheit in the next century, with winters 5–6° F warmer and summers 1–2° F warmer. Winter precipitation will increase, particularly in the mountains, and more will fall as rain than snow. Summer stream flow and soil moisture required for plant growth are likely to decrease. Statewide averages and generalizations cannot tell the whole story, for impacts of climate change are likely to vary greatly from one place to another. Finally, El Niño conditions may occur more frequently in the future, bringing more extreme weather events (Melack, Miller, 1999).

Some potential effects of climate change on Big Basin Redwoods SP may include:

- **Sea level rise:** Based on current climate and greenhouse gas emission projections, it is expected that sea level will rise at a greater rate than it has over the past 100 years. Major consequences of sea level rise include:
    - Increased salt water intrusion into coastal aquifers.
    - More beach areas and coastal wetlands areas will be inundated. Saltwater/freshwater interface and zone of brackish water will migrate inland.
    - Tidal prism will increase - potentially greater coastline scour and removal of sediment. A tidal prism is the change in the volume of water covering an area, such as a wetland, between a low tide and the subsequent high tide.
    - Coastal bluffs will be more exposed to wave energy and increased bluff erosion including scour and undercutting.
- **Habitat loss and shifts:** Some climate change computer models predict decreased rainfall on the California coast, while others predict no change or greater rainfall. If coastal rainfall increases, most of the increase will be lost as runoff, and the dry summer/wet winter current climate pattern will persist. Warmer temperatures in summer will cause increased drying from evaporation. The

Based on current climate and greenhouse gas emission projections, it is expected that sea level will rise at a greater rate than it has over the past 100 years.

Sea level is projected to rise 16 inches by 2050, and 55 inches by 2100.

combination of warmer temperatures and drier summer conditions may eliminate some plant communities and animal habitat, greatly fragment other habitat, and cause some habitats to shift. El Niño warming may encourage toxic algal blooms in bays and estuaries and depress ocean productivity offshore. The moisture-dependent wetland, riparian, and redwood forest plant communities could be especially affected at Big Basin Redwoods SP. Gains or losses in wetland areas will depend on the ability of a wetland to migrate inland, the ability of a wetland to migrate to higher elevation inland areas with greater trappings of sediment; and overall change in tidal range. Since the park is in the southern end of the coast redwood's range, these trees are especially vulnerable to the effects of warming.

- **Fire danger:** As the climate warms and possibly dries, wildfires may become more frequent in some areas of California. The San Mateo and Santa Cruz coastal areas may see a small increase in fires. Both knobcone pine forest and chaparral plant communities located on the higher park ridges are very prone to fire. The plant species in these communities are adapted to fire and typically regenerate, but increased fires could cause wildlife losses, threaten public safety and structures, and contribute to poor air quality in the region.

- **Severe storms and flooding:** Climate change may alter the frequency and intensity of winter storms, resulting in flooding and mudslides that could damage park infrastructure and access roads. Indirectly, this could affect visitor use, particularly in inland areas of the park during the winter season. On shore, heavier and/or more frequent El Niño rains could increase the frequency of the rodent population booms that precede hanta virus outbreaks.

- **Fishery habitat change:** Over the next century, spawning streams may warm above temperatures suitable for cold water fish, such as salmon and steelhead. Reduced summer stream flow due to evaporation will also cause a loss of fish habitat.

- **Possible visitor use increase and changes in recreation use patterns and access:** California's central coast parks have historically been used in the summer by many Central Valley residents escaping the heat. As the Central Valley summer temperatures climb even higher, the number of visitors from these hotter areas could also climb. Potential changes in recreation use patterns and access resulting from a rise in sea level elevation may involve loss of existing sandy beach areas and safe coastal access locations. Depending on the magnitude of sea level rise, Waddell Beach and areas east of Highway 1 in RDO may become smaller in size.

Air Quality

The California Air Resources Board (CARB) regulates emission sources and oversees the activities of the local Air Pollution Control Districts and Air Quality Management Districts. CARB regulates local air quality by establishing state ambient air quality standards and vehicle emission standards. The Monterey Bay Unified Air Pollution Control District (MBUAPCD) is the local agency that regulates air quality in the North Central Coast Air Basin (NCCAB).

Existing Air Quality

The main factors that determine air quality are the types of pollutants, locations of pollutant sources (such as urban or industrial areas) and the influence of topographic and climatic/meteorological conditions. Wind direction, wind speed, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

The majority of Big Basin Redwoods SP is located within the northernmost portion of the NCCAB which includes Santa Cruz, San Benito and Monterey counties. A small portion of the park that is located in San Mateo County is included in the southern portion of the San Francisco Bay Area Air Basin (SFBAAB). The main emission sources in the NCCAB are the Moss Landing Power Plant, agricultural activities, and vehicle emissions from Highway 101 traffic. Though separated by the Coast Range (Santa Cruz Mountains) to the south, wind can move air pollution from the SFBAAB to the NCCAB. The NCCAB is a non-attainment area for ozone and PM10. This applies to California air quality standards only. The area actually attains the National Ambient Air Quality Standards for ozone, PM10 and PM2.5. The NCCAB also meets the California standard for PM2.5. The nearest air monitoring site was approximately 11 miles south of the park in Davenport, but is no longer in operation. However, recent monitoring data from Davenport is useful for describing conditions in the project area. Two air quality components of concern are ozone and particulate matter.

Ozone: Ozone is the chief component of urban smog. Ozone is a secondary air pollutant that is produced in the atmosphere when hydrocarbons and nitrous oxide (NOx) precursors react in the presence of sunlight. Motor vehicle emissions are generally the primary source of ozone precursors. Low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for ozone formation; therefore, summer is generally the peak ozone season. Wind then disperses the ozone, creating a regional problem. The North Central Coast Air Basin (NCCAB) has violated the state ozone air quality standard in recent years, but overall ozone concentrations are decreasing.

Particulate Matter (PM): PM_{10} consists of a mixture of particles and droplets 10 microns or less in diameter ("coarse" particles) that

have varied chemical composition. PM contains a subgroup of smaller particles ("fine" particles) less than 2.5 microns designated as $PM_{2.5}$.

Sources of ambient PM include: combustion sources such as trucks and passenger vehicles, off-road equipment, industrial processes, residential wood burning, and forest/agricultural burning; fugitive dust from paved and unpaved roads, construction, mining, and agricultural activities; and ammonia sources such as livestock operations, fertilizer application, and motor vehicles. In general, combustion processes emit and form fine particles (PM2.5), whereas particles from dust sources tend to fall into the coarse (PM10) range. The Davenport station often recorded the highest PM10 readings in the entire NCCAB and also had the greatest number of exceedances of the State PM10 standard. These exceedances were often due large in part to naturally occurring sea salt, which fortunately has no known health effects. A similar environment likely exists in the Rancho del Oso and Waddell Beach Specific Areas.

Most of the state, including the NCCAB, is designated as non-attainment for PM_{10} standards. Due to the variety of sources and the size and chemical composition of the particles, the PM_{10} problem can vary widely from one area to another. Also, PM_{10} emissions vary with the seasons: wildfires, agricultural practices, and dust storms are potential spring and summer season sources, while wood burning is a common fall and winter season source. Dry weather and windy conditions cause higher coarse PM emissions, resulting in elevated PM_{10} concentrations. **Table 2-6** summarizes the air quality in the North Central Coast Air Basin from 1990 through 2010.

Table 2-6 Air Pollution Summary North Central Coast Air Basin						
Pollutant	**Standard[b]**	**1990**	**1995**	**2000**	**2005**	**2010**
Ozone						
Highest 1-hr. average, ppm[c]	0.09	**0.120**	**0.138**	**0.098**	**0.107**	0.087
Number of state standard 1-hr. exceedances[d]		11	8	3	2	0
Basin max. nat'l 8-hr. average concentration, ppm[c]	0.075	**0.095**	**0.102**	**0.084**	**0.085**	**0.078**
Basin nat'l 8-hr. exceedances[d]		15	16	9	2	2
Particulate Matter $PM_{2.5}$						
National 24-hr., µg/m^3 $PM_{2.5}$[c]	35	ND[e]	ND	26.4	21.7	32.8
National 24-hr. $PM_{2.5}$ exceedances[d]		ND	ND	0	0	0
Particulate Matter PM_{10}						
Highest 24-hr. average, µg/m^3 PM_{10}[c]	50	**56**	**152**	**77**	**69**	**54**
Number of state standard 24-hr. exceedances PM_{10}[d]		6	71	24	12	12

Key to Table 2-6:

a. Data from the California Air Resources Board, Trend Summary Database.
b. State or national standard. Exceedances are shown in bold type.
c. ppm – parts per million; µg/m3 – micrograms per cubic meter
d. Number of days in a given year that violations of the applicable standard were measured.
e. ND – No Data

Geology

Big Basin Redwoods SP is within the boundaries of the Coast Ranges Geomorphic Province. This province extends along the California coast from the Oregon border south to the Santa Ynez Mountains of Santa Barbara County. It trends in a north-northwesterly direction roughly parallel to the Sierra Nevada Mountains, and is bounded on the west by the Pacific Ocean and on the east by the Great Valley (aka Central Valley).

The information summarized in the following section is from the Geologic Resource Inventory report (McJunkin 1983) prepared for State Parks by the California Division of Mines and Geology, now the California Geological Survey.

Geologic History and Lithology

Big Basin Redwoods SP is located on the Salinian Block, bounded by the San Gregorio Fault to the west, and the San Andreas Fault to the east. The Zayante Fault cuts through the east-central portion of the park (see Regional Fault Map (**Figure 6**). The oldest rocks in the Big Basin Redwoods SP area are Cretaceous age (136-66 million years) quartz diorite, which underlies part of the Pine Mountain area. The Salinian Block granitic rocks were eroded to a relatively flat surface at the end of the Cretaceous, and inundated by the sea in the middle Paleocene (60 million years). Marine sedimentary rocks consisting of sandstone, siltstone, and shale were deposited on the eroded granitic rocks over a period of approximately 30 million years, during periods of sea level rise and fall. Northward movement along strike-slip faults (San Andreas system) has brought these rocks northward. During the Late Oligocene to Miocene (approximately five to 28 million years), the area was subjected to uplift, folding, and erosion. The region then subsided and another sea level rise occurred. During this time (Neogene), the Santa Margarita Sandstone was deposited. At the end of the Miocene, sedimentary conditions changed and the silica-rich, organic Santa Cruz Mudstone was deposited. This rock type is found today in the western and southern portions of Big Basin Redwoods SP. It is the characteristic formation exposed along ridge tops such as Chalk Mountain. The Pliocene (2-5 million years) Purisima Formation was then deposited over the Santa Cruz Mudstone.

Silica-rich, organic Santa Cruz Mudstone is the rock type found in the western and southern portions of Big Basin Redwoods SP.

It is the characteristic formation exposed along ridge tops such as Chalk Mountain.

The Chalks

Geomorphic development of the present Big Basin landscape occurred in the late Pliocene to early Pleistocene (1-6 million years). Streams had already established their drainage patterns. At least four periods of glaciation occurred during the Pleistocene epoch (1.6 million to 10,000 years), with cooler, wetter climates, and fluctuations in sea level. Sea

level was lowered as much as 350 feet below its present elevation during periods of active glaciation. In the Big Basin area, lowering of sea level caused extensive erosive down-cutting by streams. This rapid erosion undercut the mountain slopes and caused many landslides to develop, some of them more than one square mile in area. The ancient Middle Ridge landslide covers more than three square miles in the northern portion of Big Basin Redwoods SP.

The post-glacial sea level rise caused alluvial backfilling in the local creek estuaries. This alluvium helped to buttress the toes of some larger landslides along lower Waddell Creek. The drier climate also helped reduce the potential for major landslides. The many landslides within the park, some still active, are the legacy of this time period.

Soils

Big Basin Redwoods SP is located in Soil Region I, Northwestern Coast Ranges. Soil Region I encompasses steep mountain ranges and small valleys of the Coast Ranges from the Santa Cruz Mountains north to the Oregon border. Soils in Region I are primarily derived from sedimentary rocks, alluvium, and granitic rocks.

Twenty soil mapping units representing nine soil series have been identified within the park. These soils are derived from sedimentary, metasedimentary, and granitic rocks. Most soils are moderately deep to very deep. Drainage is quite variable, ranging from somewhat poorly drained to somewhat excessively drained.

The U.S. Department of Agriculture Natural Resources Conservation Service has determined the limitation or suitability of soils that occur in Santa Cruz County. Potential land uses that have applicability for parks are picnic areas, paths and trails, and camp areas. Soil limitation ratings are slight to moderate on all Soquel soils for these uses. For all other park soils, there are moderate to severe constraints for development of camp and picnic areas. Constraints for paths and trails range from slight to severe. The most common limiting factor for development is steepness of slope.

Geologic Hazards

The following are several potential geologic hazards that must be considered when planning new buildings, campsites, roads, or trails within Big Basin Redwoods SP.

Landslide Hazards: Landslides are common in the park, most having formed during the Pleistocene, as discussed above. Several large

landslides occur on the northwest side of Pine Mountain and the north and west sides of Mount McAbee. Middle Ridge Landslide, which covers over three square miles, has smaller landslides, both active and inactive, superimposed on it.

Creekside erosion along the Skyline to the Sea Trail

Many smaller landslides occur on the canyon slopes of Waddell Creek and its tributaries. Many of the local landslides are small features that involve localized slope failure. Landslides along Union Creek below Sky Meadow have caused problems with trails and sewer lines. The Eastern Road Landslide is a reactivation of a portion of an older landslide, caused by road placement that has cut into dipping rock units. Gazos Creek Road crosses an unnamed active landslide that has destroyed many large redwood trees. The road requires continued maintenance during wet weather to keep it open. The road is most likely contributing to the slope failure.

The locations of the active and inactive landslides have been mapped and are discussed in detail in the Geologic Resource Inventory (McJunkin 1983). Any new development within Big Basin Redwoods SP should be located outside of any known active or probable landslides. Any slope area should be considered potentially active for engineering purposes until a geotechnical evaluation is conducted. Some roads within the park are probably contributing to landslide movement and the continued use of those roads should be evaluated.

Seismic Hazards: The Big Basin area is located within an active seismic zone, between the San Gregorio and San Andreas Fault systems. The Zayante Fault cuts through the east central portion of Big Basin Redwoods SP. After the 1989 Loma Prieta earthquake, whose epicenter was approximately 25 miles to the east-southeast of Big Basin Redwoods SP, some aftershocks were recorded on the Zayante Fault, indicating conjugate faulting. Strong seismic shaking can be expected to occur in some areas of Big Basin Redwoods SP. Therefore, the possibility of ground rupture within Big Basin Redwoods SP should be considered when planning future development.

Secondary seismic hazards, such as liquefaction and landsliding, may occur during an earthquake. Loose, granular materials (alluvium) below the water table, such as along stream channels and in unconsolidated, disturbed materials, may be subject to liquefaction. The County of Santa Cruz Emergency Management Plan (2002) Liquefaction Hazard Map shows a zone of high potential for liquefaction within the Waddell Creek drainage. The zone includes the lower reach of Waddell Creek, from the ocean to the intersection of the east and west branches of Waddell Creek. Strong seismic shaking may also trigger movement on any of the many landslides within Big Basin Redwoods SP.

Flood Hazards: Localized flooding is possible along the lower reach of Waddell Creek, extending about 1.5 miles inland from the ocean.

Flooding may also result from the blockage of a stream channel by a landslide and then subsequent failure of the landslide dam.

Another potential source of flooding could be from the failure of Sempervirens Dam, an earth-fill structure built in 1951. This flooding would extend downstream from the dam along Sempervirens Creek, reaching the Headquarters area within approximately 15 minutes. The inundation area is a narrow zone along Sempervirens Creek and would not affect the Headquarters' buildings. Once they join with Waddell Creek, the floodwaters would take approximately 40 minutes to reach the Last Chance Creek area and about an hour to finally reach the ocean. The inundation zone is narrow and would only affect people or property adjacent to the active river channel. The elevation affected will depend upon the existing level of water in Sempervirens Creek and Waddell Creek.

Tsunami inundation is possible along the Waddell Beach area and some distance upstream in the Waddell Creek drainage (see **figure 23**). The actual run-up distance and elevation is dependent upon the size and location of the earthquake; the tsunami travel path, the coastal configuration, and the offshore topography; therefore, a set distance or elevation of run-up cannot be provided. The tsunami inundation map from the Santa Cruz County Emergency Management Plan (2002) indicates possible inundation for a 6.8+ earthquake on the offshore San Gregorio Fault Zone. The wave would arrive just minutes after the earthquake, and an inundation zone could extend approximately one mile inland in the Waddell Creek drainage, with wave heights up to 50 feet.

Historically, the 1964 magnitude 8.4 Alaska Earthquake generated a Pacific-wide tsunami that reached heights of 11 feet in the Santa Cruz Harbor (NOAA 2005). On March 11, 2011, a magnitude 8.9 earthquake in Japan caused powerful surges that destroyed boat docks in Santa Cruz harbor and triggered evacuations for beaches and low-lying coastal areas west of Highway 1 in response to the tsunami. Water levels rose slightly, with surges of water as high as two or three feet.

Highway 1 bluff erosion at Waddell Beach

Coastal Erosion: In the Santa Cruz region, the rate of coastal bluff retreat has been measured at approximately one foot per year or less. Much of the erosion occurs during major storm events, such as El Niño storms. Highway 1 traverses the bottom of a cliff just north of Waddell Creek. This area requires ongoing maintenance by Caltrans due to bluff instability, especially during extended periods of wet weather.

Hydrology and Water Resources

Almost all of Big Basin Redwoods SP is located within the Central Coast Hydrologic Basin, as identified by the Department of Water Resources. A small portion of Big Basin Redwoods SP (northern ridgetop areas that drain to Pescadero and Butano creeks) is located in the San Francisco Hydrologic Unit. The Central Coast Regional Water Quality Control Board (RWQCB) designates the area as the Big Basin Hydrologic Unit.

In general, the watersheds within the Santa Cruz Mountains are recovering from historic impacts due to the logging and agricultural practices of the mid-20th century. Clearcutting and road building associated with extensive logging released large amounts of sediments to the creeks and rivers. The Santa Cruz Mountains watersheds historically had excellent coho salmon and steelhead habitat, which is slowly recovering due to improved land management practices. The Butano Creek and Gazos Creek watersheds are designated as priority watersheds for restoration of steelhead and coho habitat.

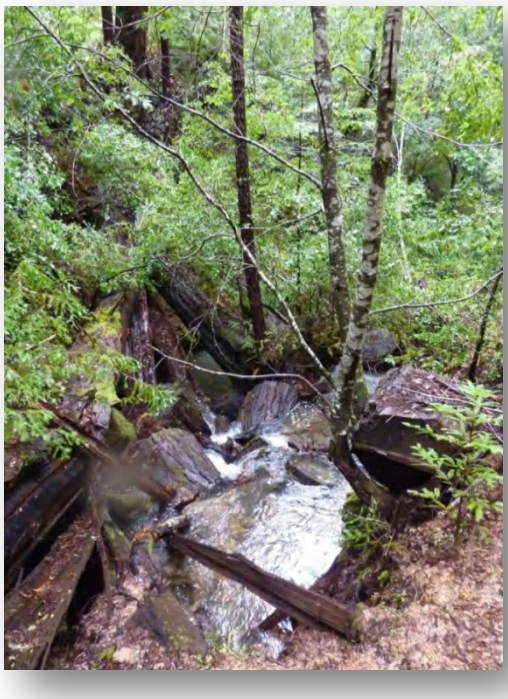
Watersheds

A watershed is typically defined as: *all lands enclosed by a continuous hydrologic drainage divide and lying upslope from a specified point on a*

stream. Big Basin Redwoods SP encompasses most of the 26 square mile (16,700 acres) watershed of Waddell Creek, along with portions of other watersheds including significant Waddell Creek tributaries. The features and resources of the Waddell Creek watershed influence the hydrologic and related resources of Big Basin Redwoods SP. The Waddell Creek tributaries include: Sempervirens Creek and its tributaries Union and Blooms Creeks; Opal Creek and its tributaries Rogers, Maddocks, Redwood, and Huckleberry Creeks; and Timms, Kelly, and Last Chance Creeks (see **Figure 7**, Watersheds and Streams).

Waddell Creek: The headwaters originate in the relatively steep northern and northeastern margins of Big Basin Redwoods SP, near the 2,200 foot elevation, forming East Waddell and West Waddell Creeks. These creeks join below the Headquarters area and flow to the Pacific Ocean; the total distance from headwaters to ocean is approximately 12 miles. Much of the Waddell Creek watershed is classified as a youthful stream; the principal activity is active downcutting that forms a V-shaped valley with steep inner gorges and waterfalls (Berry Creek, Golden, Upper, and Sempervirens Falls). Landslides are numerous within the inner gorge area. As Waddell Creek reaches its lower floodplain, the gradient and stream energy decreases, the sediment load is deposited and the stream meanders across its floodplain. A seasonal lagoon commonly forms behind a sandbar during summer and fall.

Sempervirens Creek: This perennial tributary to Waddell Creek has a watershed of 1,465 acres and is the water supply source for the largest developed areas of Big Basin Redwoods SP. The upper watershed is steep and predominately redwood forest with a thick humus layer; there are no roads and only one steep, wooded trail. At an elevation of approximately 1,225 feet, water is stored in a 4-acre reservoir behind Sempervirens Dam, an earthen dam with a storage capacity of 78 acre-feet. Water is piped to a nearby treatment plant and then distributed throughout the Big Basin Redwoods SP. Flows into Sempervirens Reservoir also appear to be supplemented by subsurface inflows from spring sources originating in the underlying Santa Margarita Sandstone aquifer. Siltation has reduced the depth of the reservoir from 40 to 33 feet at its deepest point.



Opal Creek

Opal Creek: Opal Creek is a 4.5 mile long perennial tributary to Waddell Creek with a watershed of 2,300 acres. The upper watershed is steep and predominately redwood forest. In its lower reaches, the gradient is

low and the water often appears stagnant during summer and fall. This watershed is of special significance because of its location in the area of Big Basin Redwoods SP with the most intense public use. Opal Creek and its tributaries were once part of the Big Basin Redwoods SP water supply system before the development of Sempervirens Reservoir.

Other Watersheds: There are several creeks within Big Basin Redwoods SP that drain directly to the Pacific Ocean and are not tributaries to Waddell Creek. These include Finney Creek with a 225-acre watershed of steep topography with predominately pine forest, some redwood and brush. The middle and lower reaches have perennial flow. Elliot Creek, adjacent to and south of Finney Creek, has a 640-acre watershed similar to Finney Creek, and exhibits perennial flow through the Big Basin Redwoods SP area. Other significant creeks and rivers with portions of their headwaters within the boundaries of Big Basin Redwoods SP are Scott Creek, Boulder Creek (a tributary of the San Lorenzo River), and Año Nuevo Creek.

Groundwater Resources

In general, the sedimentary rock units within Big Basin Redwoods SP are a poor source of groundwater. Groundwater drains quickly and freely through the fractures, and therefore, the surface detention capacity is low. It is estimated that in the adjacent Scott Creek watershed, forty percent of the precipitation leaves the system as surface runoff. The Department of Water Resources (DWR) Bulletin 118 (DWR 2003) does not include this area in its list of groundwater basins, apparently due to insufficient groundwater resources. There are no developed wells in use within the Big Basin Redwoods SP, other than a shallow well that provides water to the RDO Nature and History Center. One well near RDO was abandoned due to high concentrations of hydrogen sulfide.

However, there are three developed spring sources within Big Basin Redwoods SP. A spring near RDO provides relatively high quality water for this subunit. Brown House Spring, upstream and across Waddell Creek from the RDO spring, provides water to several residences. Pine Mountain Spring, higher in the Waddell Creek watershed, provided potable water to the Big Basin wastewater treatment plant before the development of Sempervirens Reservoir. There are also suspected springs beneath the Sempervirens Reservoir that provide a significant amount of water to the reservoir. These spring sources indicate that some of the sandstone rock formations within the park provide adequate high-quality groundwater.

Water Quality

Surface water quality varies among different sources in Big Basin Redwoods SP but is generally good. During periods of high flow, turbidity increases but has no significant impact. Big Basin Redwoods SP staffs perform routine water quality tests in conjunction with water supply and wastewater treatment facilities. The treated drinking water from the Sempervirens

Reservoir supply is periodically tested for chlorine, bacteria, minerals and other chemical characteristics. Some secondary (aesthetic) maximum contaminant levels (MCLs) have been exceeded for dissolved iron, turbidity and color.

To protect the public from exposure during water contact activities, the Santa Cruz County Health Department has set maximum safe limits for coliform in surface water. Relatively high counts of fecal coliform and streptococci have been detected in the upper tributaries of Blooms Creek outside of park boundaries. The levels decrease in the lower portion of the creek, then rise again as the creek passes through the Blooms Creek campground. In the upper reaches of Opal Creek, coliform levels are very low, but increase near the campgrounds.

The Big Basin Redwoods SP Wastewater Treatment Plant discharges treated effluent into East Waddell Creek just below the confluence of Blooms and Opal Creeks. Water testing is done above and below the outfall. In some cases, the coliform count decreases below the outfall due to the effect of chlorine from the treatment plant. The park has been cited in the past by the RWQCB for sewage effluent discharges. East Waddell Creek is also listed on the RWQCB's 303(d) list as an impaired water body for nutrients (such as nitrogen and phosphorous) from sewage effluent. The Central Coast RWQCB (Environmental Protection Agency 1994a) Basin Plan states that "*The Department of Parks and Recreation must correct deficiencies in order to protect public health and the beneficial uses of Waddell Creek and its tributaries.*" A project to upgrade the WWTP began in 2006 and is still in progress.

Groundwater quality in the vicinity of Big Basin Redwoods SP is dependent upon the composition of the water-bearing materials (aquifer). Due to variability in the underlying geology, wells located in close proximity can produce water that varies greatly in mineral content and potability. A well drilled at RDO had to be abandoned due to excessive hydrogen sulfide levels. High-quality water can be found in a nearby well on private property. Water yield and water quality can also change quickly and dramatically after an earthquake, as occurred following the 1989 Loma Prieta earthquake. Brown House Spring, discussed above, first increased in flow rate and then went dry for almost two years. Other springs and groundwater wells in the area experienced similar disruptions. Water quality of the RDO spring is generally good, with only iron, manganese, turbidity, and color levels greater that the secondary MCLs. The shallow well that supplies the Nature and History Center has only exceeded the secondary MCLs for color and turbidity.

Water Supply

Three sources of water have been developed and are currently used within the park. Water from Sempervirens Reservoir, which holds approximately 78 acre-feet, serves the Headquarters area including employee residences and campgrounds. The yearly withdrawal is approximately 34 acre-feet. RDO

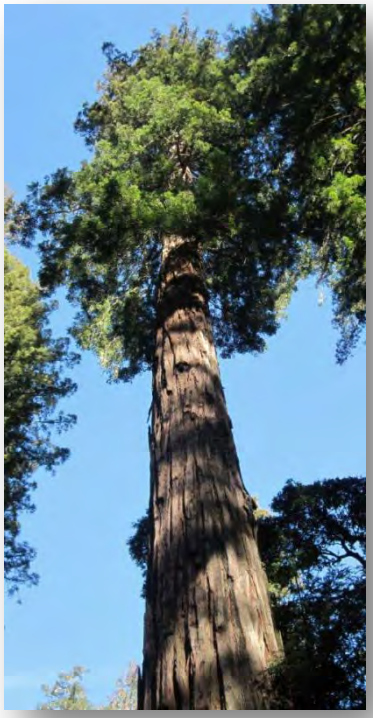
obtains water from a spring to supply park facilities and the ranger residence. The Nature and History Center uses water from an 11 foot-deep shallow well. All three sources have historically been adequate to meet typical demand, even during drought conditions, although the Nature and History Center well requires some water conservation measures during summer.

NATURAL RESOURCES

Plant Life

Vegetation Types

Vegetation types in California are formally recognized and classified in the California Natural Diversity Database (CNDDB) (California Department of Fish and Game 2010). Standards for classifying vegetation are based on *A Manual of California Vegetation* (Sawyer et al. 2009) and the National Vegetation Classification Standard (NVCS) adopted by the federal government (USGS 2010). CNDDB vegetation lists incorporate many elements of the earlier CNDDB vegetation classification system described in Holland (1986).



Sequoia sempervirens

Big Basin Redwoods SP exhibits a significant diversity of vegetation types, consisting of at least 15 types; 12 of these are alliances (equivalent to series/plant community) and two are classified as stands (equivalent to alliance). One other vegetation type is not documented as a current CNDDB types. This is the Sand Verbena-Sea Rocket-Cord Grass Association (the most specific level of classification in the NVCS).

The 15 vegetation types found in the park are:

- *Salix lasiolepis* Shrubland Alliance (Arroyo willow thickets)
- ***Schoenoplectus americanus* Herbaceous Alliance (American bulrush marsh)**
- *Phalaris aquatic* Semi-Natural Herbaceous Stands (Harding grass swards)
- *Quercus chrysolepis* Forest Alliance (Canyon live oak forest)
- *Quercus wislizenii* Woodland Alliance (Interior live oak woodland)
- *Adenostema fasciculatum* Shrubland Allliance (Chamise chaparral)
- *Quercus agrifolia* Woodland Alliance (Coast live oak woodland)
- *Baccharis pilularis* Shrubland Alliance (Coyote brush scrub)
- *Pseudotsuga menziesii* Forest Alliance (Douglas-fir forest)
- *Pinus attenuata* Forest Alliance (Knobcone pine forest)
- ***Pinus radiata* Forest Alliance (Monterey *pine forest)***
- *Alnus rubra Forest Alliance (Red alder forest)*
- ***Sequoia sempervirens* Forest Alliance (Redwood forest)**
- ***Callitropsis abramsiana* Woodland Special Stands (Santa Cruz cypress grove)**
- Sand Verbena-Sea Rocket-Cord Grass Association

The four vegetation types **identified above in bold type** are considered by the CNDDB to be of high inventory priority (formerly referred to as "rare natural communities") because of their rarity and imperilment. In addition, the Redwood Forest type is of special significance because it provides habitat for listed wildlife species and because protection of remnant old growth redwood stands was the primary impetus for park establishment. These four imperiled vegetation types are described below.

Schoenoplectus americanus **Herbaceous Bulrush Alliance**

Two marsh complexes occur at the mouth of Waddell Creek. The larger of the two marshes is located along Waddell Creek from the Highway 1 bridge upstream for a distance of about 700 to 800 feet. The other marsh, known as the "Turtle Pond," is about two acres in size and is located about 200 feet south of the mouth of Waddell Creek and east of Highway 1. Both of these marsh complexes can be categorized as Bulrush Alliance, although they differ somewhat in species composition and salinity.

Coastal marsh at the mouth of Waddell Creek

The larger marsh has elements of both Coastal Brackish Marsh and Coastal and Valley Freshwater Marsh as described by Holland (1986), with brackish to saline conditions present in a portion of the marsh. Common species include three square (*Schoenoplectus americanus*), Pacific Coast bulrush (*Schoenoplectus robustus*), slough sedge (*Carex obnupta*), broad-leaved cattail (*Typha latifolia*), tall cyperus (*Cyperus eragrostis*), arroyo willow, toad rush (*Juncus bufonius*), Mexican rush (*Juncus mexicanus*), and common rush (*Juncus patens*). The small marsh is a freshwater system that is equivalent to Holland's Coastal and Valley Freshwater Marsh. The dominant species are common tule (*Schoenoplectus acutus* var. *occidentalis*), California bulrush (*Schoenoplectus californicus*), and arroyo willow. Both marshes provide valuable wildlife habitat, especially for fish, amphibians, and birds.

Pinus radiata **Forest Alliance**

Pinus radiata Forest Alliance is a unique vegetation type that is limited to three natural mainland populations, all in California. Approximately 116 acres of the northernmost population (Año Nuevo population) of Monterey pine is within the boundaries of Big Basin Redwoods SP. Here it occupies the ridges flanking both sides of the mouth of Waddell Creek, extending to the

north on to private property. The canopy is dominated by Monterey pine (*Pinus radiata*), with scattered coast live oak (*Quercus agrifolia*), Douglas-fir, and knobcone pine. Fog and fire play important roles in the health and maintenance of this community. The former probably has a primary role in limiting the distribution of Monterey pine to within five miles of the immediate coast. Although not absolutely vital for reproduction like other closed cone pines, fire does provide optimum conditions for reproduction and enhances the vigor and growth of Monterey pines. An often fatal disease, pine pitch canker has infected the Año Nuevo population, posing a serious threat to the continued existence of native stands of Monterey pine in the Santa Cruz Mountains. There is no effective management strategy to control this disease in a wildland situation, hence State Parks has had no option other than to let the disease run its course while removing dead or dying trees that pose a threat to visitors or facilities.

Sequoia sempervirens Forest Alliance

The *Sequoia sempervirens* Forest Alliance vegetation covers more than 50% of the park. It is dominated by redwood (*Sequoia sempervirens*), with Douglas-fir (*Pseudotsuga menziesii*) and tanoak (*Lithocarpus densiflora*) as co-dominants in the canopy, especially in drier locations. Redwood is the dominant tree in more moist situations along streams. Redwood forests occupy much of the low to middle elevations of the park where sufficiently moist conditions exist, especially in drainages with a permanent water source. About 4,400 acres of old growth redwood forest occur in the park, providing habitat for the marbled murrelet, a federally listed threatened, and state listed endangered, bird species.

Once widespread in the northern hemisphere during the age of the dinosaurs, native coast redwood forests are now limited to a narrow coastal belt from central California to extreme southwestern Oregon. Currently, approximately 4% of the old growth redwood forest present when Euro-Americans arrived in the redwood region has not been logged. The largest old growth redwood acreage in the Santa Cruz Mountains is protected in Big Basin Redwoods SP. The total biomass of an average old growth redwood forest stand is greater than any other vegetation type on earth. In addition, redwoods are the world's tallest measured trees and have a girth exceeded by only a few species.

***Callitropsis abramsiana* Woodland Special Stands**

The state and federally listed endangered Santa Cruz cypress (C*allitropsis abramsiana*, now *Hesperocyparis a*.) dominates the canopy of this vegetation type. Knobcone pine and interior live oak (*Quercus wislizenii*) are minor components of the canopy. The shrub understory is typically well developed, commonly including species such as chamise (*Adenostoma fasciculatum*) and brittle-leaved manzanita (*Arctostaphylos tomentosa*). There are only five known populations of Santa Cruz cypress, all occurring in the Santa Cruz Mountains. Three stands of Santa Cruz cypress, constituting a single population, occur in the Eagle Peak portion of the park. Visitor use in

this area is extremely low, but there is a developed trail that extends from Little Basin Road to the summit of Eagle Peak that provides limited access to two of the cypress stands.

Special Plants

Special plants are those listed on the California Department of Fish and Game Natural Diversity Database Special Vascular Plants, Bryophytes, and Lichens List (CDFG 2011). Species officially listed or candidates for listing by the U.S. Fish and Wildlife Service and the California Department of Fish and Game, and all taxa listed in the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2011) are included on this list. Species that are proposed for listing by the federal government and state candidates for listing are legally protected as if they were listed, and species listed by CNPS on their California Rare Plant Ranks 1A and 1B meet the criteria for listing and are protected as such. Other species locally sensitive and important to the management of parks are also considered special by State Parks.

The California Native Plant Society (CNPS) has developed five California Rare Plant Rank categories to categorize the state's rare, threatened, and endangered vascular plants. Rank 1A is composed of plant species presumed to be extinct in California because they have not been seen or collected in the wild for many years. Plant species ranked as 1B are considered as rare, threatened, or endangered throughout their range, and with few exceptions are endemic to California. Species appearing on Rank 2 are considered rare, threatened, or endangered in California, but are more common elsewhere. Rank 3 is composed of plant taxa that lack the necessary information to assign them to other lists or to reject them. Plants on Rank 4 comprise a watch list of plant taxa that are of limited distribution in California.

The CNPS Threat Rank is an extension added onto the California Rare Plant Rank and designates the level of endangerment by ranking from 1 to 3, with 1 being the most endangered and 3 being the least endangered. A Threat Rank is present for all California Rare Plant Rank 1B, 2, 4, and the majority of California Rare Plant Rank 3.

There are fourteen special plant species reported to occur within the boundaries of Big Basin Redwoods SP. Several other species are known to occur on lands adjacent to or near the park and suitable habitat for some of these species can be found in the park (see **Appendix I**). Biological information for all of these species is available in the CNPS Inventory of Rare and Endangered Vascular Plants of California (2011).

Twelve of the fourteen special plant species reported to occur within the park are California Rare Plant Rank 1B plants and two are California Rare Plant Rank 2 species. The Rank 1B species are arcuate bush mallow (*Malacothamnus arcuatus*), Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*), Kellman's bristle moss (*Orthotrichum kellmanii*), Kings Mountain manzanita (*Arctostaphylos regismontana*), Monterey pine, pine rose (*Rosa pinetorum*), San Francisco campion (*Silene verecunda* ssp.

v*erecunda*), San Francisco collinsia (*Collinsia multicolor*), Santa Cruz cypress (*Hesperocyparis abramsiana* ssp. *abramsiana*), Santa Cruz manzanita (*Arctostaphylos andersonii*), Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleei*), and white-**flowered rein orchid (*Piperia candida*). The Rank 2 species are slender** sliver moss (*Anomobryum julaceum*) and Norris' beard moss (*Didymodon norisii*).

Arcuate bush mallow

Arcuate bush mallow is an evergreen shrub that is associated with chaparral habitat. It has been reported from the China Grade area north of Big Basin Headquarters.

Ben Lomond spineflower is a small annual herb of open lower montane coniferous forest habitat that is listed as federally endangered. It is from the Slippery Rock area near Sempervirens Falls.

Kellman's bristle moss is found in chaparral and cismontane woodland habitats. It has been reported from the Basin Trail near the China Grade area of the park.

Kings Mountain manzanita is an evergreen shrub of broadleaved upland forest, chaparral, and coniferous forest habitats. Although it has been reported from the vicinity of the Big Basin Headquarters, the taxonomic identification of this occurrence is questionable.

Ben Lomond spineflower
© 2009 Neal Kramer

Monterey pine is a conifer of a closed cone coniferous forest type that is endemic to California. There are only three native mainland populations of Monterey pine, although it has been widely planted in other parts of the world. A small portion of the northernmost population falls within the boundaries of the park at the mouth of Waddell Creek. All populations of Monterey pine in the state are threatened with a potentially lethal pine pitch canker disease that has infected some trees in this population.

Norris' beard moss occurs in the Eagle Rock area of the park.

Pine rose is associated with closed cone coniferous forest habitat. It was collected in 1932 in pine woods at the mouth of Waddell Creek, but surveys conducted in the late 1990s failed to relocate this historic occurrence.

Kings Mountain manzanita

San Francisco campion is a perennial herb known from fewer than 20 occurrences ranging from San Francisco to northern Santa Cruz County. It occurs in many different habitats, including sand hills and dunes, coastal prairie, valley-foothill grassland, coastal scrub, coastal strand, and chaparral. It is known from a single occurrence on steep eroding slopes alongside the trail between Rancho del Oso and the Alder Trail Camp. However, park biologists have been unable to relocate the noted population and think it is likely extirpated.

San Francisco collinsia is an annual herb of moist, shady locations in coastal scrub and closed cone coniferous forest ranging from San Francisco to the Monterey Peninsula. A small population occurs alongside the trail between

Rancho del Oso and the Alder Trail Camp in the general vicinity of the San Francisco campion occurrence.

Santa Cruz cypress is a federally and state listed as endangered conifer species endemic to the Santa Cruz Mountains. It occurs in chaparral and a type of closed cone coniferous forest. In the park it is restricted to three small groves in the Eagle Rock area.

Santa Cruz manzanita is an evergreen shrub that is endemic to the Santa Cruz Mountains. Several occurrences have been located in the park, including an area between open chaparral and redwood/mixed evergreen forest at the junction of Highway 236 and China Grade Road. Another occurrence is located adjacent to the lower end of the dirt access road leading to Eagle Rock. Santa Cruz manzanita is a relatively common component of all chaparral communities in the park.

The Santa Cruz Mountains beardtongue is a perennial herb of coniferous forest and chaparral habitats that is endemic to the Santa Cruz Mountains. A non-specific location has been reported in the Eagle Rock area.

Slender silver moss has been collected from the China Grade area of the park.

White-flowered rein orchid is a perennial herb of coniferous forest and broadleaved upland forest habitats. This species has been reported from the Pine Mountain area of the park.

Please see **Appendix I** for additional information on the special plant species at Big Basin Redwoods SP.

Exotic Plant Species

Past activities such as logging, mining, agricultural production, and road development have resulted in the introduction of invasive exotic plants into the park. Ongoing efforts to control the most damaging exotic plants have been undertaken. Two species of continuing concern are Cape ivy (*Senecio mikanoides*) and periwinkle (*Vinca major*), both of which occur in the lower reaches of the Waddell Creek drainage.

Animal Life

In the Santa Cruz Mountains past and ongoing land use practices, especially logging, have created a mosaic of pristine native habitats, habitats in various stages of succession and other lands that provide little or no wildlife habitat value, such as areas converted for agriculture, road development, and home sites/businesses. The once pristine and fairly extensive redwood forest habitat has undergone the most change from pre-Euroamerican conditions. The varied habitats represented in Big Basin Redwoods SP, combined with the strategic connection at locations along its boundary to Butano SP and Año Nuevo SP, make this park very important for wildlife. The park provides important habitat for several unique wildlife species, and is of great importance to regional wildlife populations. It contains valuable old growth and older second growth redwood habitat. The park lies within the Santa Cruz Mountains, a bioregion recognized as one of the top ten hotspots of biodiversity nationwide. Healthy populations of a large number of native wildlife species exist within the park. Its connectivity to other State Parks, including the extensive system of regional and county parks, provides important movement corridors for wildlife between native habitat areas within the Santa Cruz Mountains bioregion.

California red-legged frog

Wildlife habitats in Big Basin Redwoods SP are very diverse. Aquatic habitats within the park include marine, estuarine, fresh emergent marsh, lacustrine, and riverine. Tree-dominated habitats include montane riparian, coastal oak woodland, montane hardwood, montane hardwood-conifer, closed-cone pine-cypress, and redwood. The montane riparian habitat in Big Basin Redwoods SP includes willow-dominated forest and alder-dominated forest, both providing important cover and foraging habitat, as well as movement corridors for wildlife along streams. The shrub-dominated habitats found are coastal scrub, chamise-redshank, and mixed chaparral. There are also small areas of annual/perennial grassland in the park. This wide range of habitats supports a mixed assemblage of native wildlife.

California Coast Range newt

Amphibians

Aquatic habitats within Big Basin Redwoods SP support several amphibian species. Sempervirens Reservoir is home to the threatened California red-legged frog (*Rana aurora draytonii*) and the bullfrog (*Rana catesbeiana*), an introduced species that competes with red-legged frogs for habitat and resources. California newts (*Taricha torosa*) and rough-skinned newts (*Taricha granulosa*) live in Waddell Creek and its tributaries, and can often be found along trails during wet times of the year. A variety of salamander species live in Big Basin Redwoods SP, including the Pacific giant salamander (*Dicamptodon ensatus*), and black salamander (*Aneides flavipunctatus*). The aquatic habitats of the park also support western toads (*Bufo boreas*), and Pacific tree frogs (*Pseudacris regilla*).

Reptiles

Reptiles can be found in every habitat in Big Basin Redwoods SP. Some of the species present include the western rattlesnake (*Crotalus viridis*), gopher snake (*Pituophis melanoleucus*), kingsnake (*Lampropeltis getula*), garter snake (*Thamnophis couchii*), and ringneck snake (*Diadophis punctatus*). It is common to see lizards like the western fence lizard (*Sceloporus occidentalis*), and both northern and southern alligator lizards (*Elgaria* sp.) basking in the sun in rocky areas, and western skinks (*Eumeces skiltonianus*) can sometimes be found under logs and rocks. Reptiles in Big Basin Redwoods SP can be found throughout the park, near creeks and wetlands, as well as on exposed ridges in drier habitats like chaparral.

Garter snake

Birds

Big Basin Redwoods SP supports a tremendous diversity of avian life, and several rare and specialized species. The old growth redwood forests provide habitat for a variety of bird species, some of which are yearlong residents and some of which are seasonal visitors. Residents of the redwood forest include the golden-crowned kinglet (Regulus satrapa), Pacific wren (formerly winter wren) (*Troglodytes pacificus*), dark-eyed junco (*Junco hyemalis*), purple finch (*Carpodacus purpureus*), Steller's jay (*Cyanocitta stelleri*), and hairy woodpecker (*Picoides villosus*). Summer visitors include hermit warbler (*Setophaga occidentalis*) and Pacific-slope flycatcher (*Empidonax difficilis*), whereas winter visitors include the varied thrush (*Ixoreus naevius*) and Townsend's warbler (*Setophaga townsendi*).

Golden-crowned kinglet

The willow and alder riparian forests along Waddell Creek provide very rich bird habitat, with excellent cover and foraging opportunities for several species, including California quail (*Callipepla californica*), great horned owl (*Bubo virginianus*), Anna's hummingbird (*Calypte anna*), northern flicker (*Colaptes auratus*), chestnut-backed chickadee (*Parus rufescens*), orange-crowned warbler (*Oreothlypis celata*), spotted towhee (*Pipilo maculatus*), and song sparrow (*Melospiza melodia*). Raptors hunt and nest along Waddell Creek and throughout the park, including the red-tailed hawk (*Buteo jamaicensis*), sharp-shinned hawk (*Accipiter striatus*) and Cooper's hawk (*Accipiter cooperii*). Insectivorous birds such as the black phoebe (*Sayornis nigricans*), barn swallow (*Hirundo rustica*) and violet-green swallow (*Tachycineta thalassina*) forage over the waters of creeks and wetlands, as well. At the outlet of Waddell Creek, Waddell Beach attracts shorebirds such as the sanderling (Calidris alba), willet (*Catoptrophorus semipalmatus*), and black oystercatcher (*Haematopus bachmani*), and provides a good viewing area for seabirds.

Sanderling

Mammals

Mammals are abundant in Big Basin Redwoods SP. Many park visitors see the mule deer (*Odocoileus hemionus*) and raccoons (*Procyon lotor*) that are thriving in the Headquarters and campground areas. Less obvious, are the

numerous species of bats living throughout the park. Large redwood and Douglas-fir trees provide habitat for bats that roost under loose bark, in crevices, and hollowed out trunks. Fourteen species of bats could be present within Big Basin Redwoods SP. Desert cottontails (*Sylvilagus audubonii)* and brush rabbits (*Sylvilagus bachmani*) can be found in the sage scrub and chaparral habitats of the park, and several species of mice live in the park, including California pocket mouse (*Chaetodipus californicus*) and deer mouse (*Peromyscus maniculatus*). Coyotes (*Canis latrans*) and gray fox (*Urocyon cinereoargenteus*) can both be found in Big Basin Redwoods SP, and are important predators in the ecosystem.

Invertebrates

Big Basin Redwoods SP is home to many species of invertebrates. Ranging from dragonflies and spiders, down to the microbes in the soil, invertebrates are the most abundant and diverse taxonomic group in the park. A complete inventory of invertebrate species within the park has not been completed.

Special Animals

Santa Cruz County has an unusually high number of threatened and endangered species within each major taxonomic group. Due to the diversity of habitats at Big Basin Redwoods SP and the rareness of the park's prime resource, the old growth redwood forest, several rare and special status wildlife species live in the park and surrounding lands. Special status wildlife species are those listed as state or federally endangered or threatened, California Species of Special Concern, or of local concern, because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

Special Amphibians

The threatened California red-legged frog can be found in several locations in the park, including the wetland and riparian habitats of Rancho del Oso and Waddell Creek, and the lacustrine habitat at Sempervirens Reservoir. During certain times of the year, red-legged frogs can be found in upland habitats as well, when individuals are dispersing to and from their aquatic habitat.

Special Reptiles

The endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) is present in the Rancho del Oso area, where it is established in the wetland areas around the mouth of Waddell Creek. The Coast horned lizard (*Phrynosoma coronatum*), a California Species of Special Concern, may be present in the coastal scrub and mixed chaparral habitats within the park. The southwestern pond turtle (*Clemmys marmorata pallida*), another California Species of Special Concern, lives in Turtle Pond and the wetlands in the Rancho del Oso area.

Special Birds

The marbled murrelet (*Brachyramphus marmoratus*), a federally threatened seabird, was an ornithological mystery until a nest for the species was first discovered in the Headquarters area of Big Basin Redwoods SP over two decades ago. This fascinating bird nests almost exclusively on the large-diameter upper branches of old growth redwood and Douglas-fir trees even though it spends the rest of its life in coastal ocean waters. This federally threatened seabird requires old growth trees with complex canopy structures and suitable nesting platforms (large diameter horizontal branches in upper canopy of trees, with sufficient canopy cover to help conceal the nest from predators). A dwindling population of breeding marbled murrelets can be found in the old growth redwood forest in the Headquarters and surrounding areas of the park.

Marbled murrelet

The federally threatened and state endangered marbled murrelet has been listed because of population declines throughout its range in California, Oregon, and Washington primarily due to habitat loss (USFWS 1997, Pacific Seabird Group 2003). Current major threats include logging or modification of habitat, oil spills and predation of eggs by Steller's jays and common ravens. Egg predation is particularly evident in the Santa Cruz Mountains population. Marbled murrelet surveys in four parks in the Santa Cruz Mountains have shown a drastic reduction in detections of murrelets in the past 10 years. The average numbers of occupied site behavior detections at Big Basin Redwoods SP has declined from 55 in 1995 to less than five in 2005 for the annual survey period. The numbers from the other parks also show a similar decline (Suddjian 2005).

The state endangered American peregrine falcon (*Falco peregrinus*) can be found in areas of Big Basin Redwoods SP where there are suitable cliffs and rock outcroppings, which this species requires for nesting. The federally threatened Western snowy plover (*Charadrius alexandrines nivosus*) nests in small numbers on Waddell Beach. Threatened brown pelicans (*Pelecanus occidentalis*) and many other marine birds can be found on the beach at times, as well. Several other sensitive bird species are found in the park, including Vaux's swift (*Chaetura vauxi*), black swift (*Cypseloides niger*), and yellow warbler (*Setophaga petechia*). Black swifts nest under some of the waterfalls present in the park.

Special Mammals

Mountain lions (*Felis concolor*) are known to occur in the Santa Cruz mountains region, and Big Basin Redwoods SP is a critical piece of the

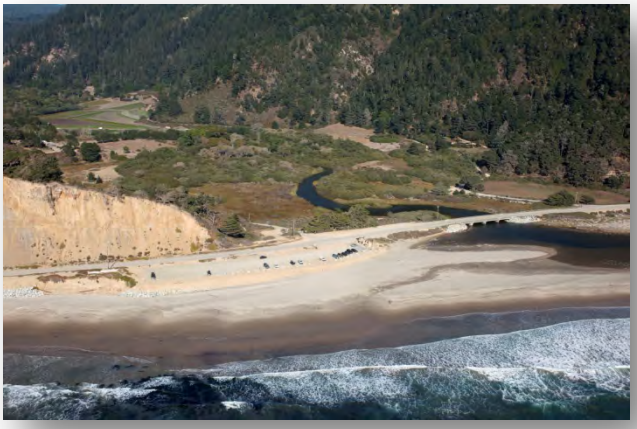
regional habitat for species like this that are wide-ranging and require large territories. Several bat species present in the park are Species of Special Concern, including the Townsend's western big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis*).

Please see **Appendix J** for the complete list of sensitive wildlife species that occur, or for which potential habitat exists within Big Basin Redwoods SP.

Aquatic Life

The aquatic resources of Big Basin Redwoods SP are primarily associated with Waddell Creek and its tributaries. The park also includes portions of several other major coastal streams such as Año Nuevo, Boulder, and Elliot creeks. Over 45 miles of streams are contained within the park. There are also lacustrine, palustrine, and estuarine aquatic resources, including Sempervirens Reservoir, and the marsh at the T.J. Hoover Natural Preserve and seasonal Waddell Lagoon complex.

The aquatic resources of the park are rich and moderately diverse. Eleven species of fish, at least four species of amphibians, three species of reptiles dependent on aquatic habitats, and well over 100 taxa of aquatic insects and other aquatic invertebrates have been recorded in the park. Waddell Creek and the Lagoon provide habitat for several listed or sensitive aquatic animal species discussed above, as well as coho salmon (*Oncorhyncus kisutch*), steelhead (*Oncorhyncus mykiss*), and tidewater goby (*Eucyclogobius newberryi*).



Mouth of Waddell Creek

Marine Life

Big Basin Redwoods SP provides habitat for several marine species at the mouth of Waddell Creek, where the park meets the Pacific Ocean in a gently sloping sandy beach. This coastal strand habitat includes the littoral zone, an area subject to wave and tidal action. Many species of shorebirds forage in this tidally active area. Kelp wrack and other detritus washed up on the beach attract kelp flies (*Coelopa vanduzeei*, *Fucellia costalis*), which provide a rich and abundant food source for insectivorous vertebrates, such as sanderlings and threatened snowy plovers.

Waddell Beach also provides habitat for the occasional visiting marine mammal, such as the northern fur seal (*Callorhinus ursinus*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), harbor seal (*Phoca vitulina*), and northern elephant seal (*Mirounga angustirostris*), which breeds at nearby Point Año Nuevo. Several marine bird species can be found foraging and resting on Waddell Beach, including several species of gulls. Western gulls (*Larus occidentalis*) are present year-round and Heermann's

gulls (*Larus heermanni*) and ring-billed gulls (*Larus delawarensis*) are often seen during winter.

Rocky intertidal habitat occurs off of Waddell Beach near the park's northern boundary, and is home to a diverse assemblage of intertidal invertebrates. Just beyond, the inshore zone provides important habitat for several marine species. The inshore waters are important foraging areas for seabirds such as the marbled murrelet, brown pelican, various gulls, and three species of cormorants (*Phalacrocorax* sp.). During winter, rafts of seabirds congregate just beyond the surf zone, including such species as western grebes (*Aechmophorus occidentalis*), Pacific loons (*Gavia pacifica*), and surf scoters (*Melanitta perspicillata*).

Exotic Animals

Several species of exotic animals have been introduced into Santa Cruz County, frequently with deleterious effects. Of particular concern to biologists are the spread of the bullfrog, wild pig (*Sus scrofa*), red fox (*Vulpes fulva*), eastern gray squirrel (*Sciurus carolinensis*), European starling (*Sturnus vulgaris*), and brown-headed cowbird (*Molothrus ater*), which is a native bird whose range has expanded due to human activity. These species are extremely prolific and impact natural ecosystems and native species where they occur.

Feral Pigs: *Feral pigs were introduced throughout California by the Spanish missionaries in the 1700s (Barrett and Pine 1980). The earliest reported date of feral pig presence in Santa Cruz County was 1944 (Hoehne n.d.), observed in the eastern portions of The Forest of the Nisene Marks SP. Feral pigs damage native vegetation by their rooting activities. They can eliminate populations of rare plants, cause erosion problems, and stimulate exotic plant proliferation. They compete with native animal species for acorns and feed on herptofauna, bird eggs, and nestlings. They also may harbor diseases, which pose a health threat to other mammals in their range, including humans.*

Preferred feral pig habitat includes coast live oak woodlands and riparian areas. However, they will also forage in redwood forests. During the dry season, they are usually found in damp creek bottoms, while in spring and winter they move along ridge tops, rooting in oak woodlands.

Areas of the park that have shown evidence of feral pig activity include the park Headquarters area, Waddell drainage, and the Theodore Hoover Natural Preserve. Feral pigs have become established in the Natural Preserve as recently as 1995.

Bullfrog: Bullfrogs are present in Sempervirens Reservoir where they predate upon and compete with threatened California red-legged frogs. They also interfere with red-legged frog reproduction.

Red fox: Red foxes were first discovered in Big Basin Redwoods SP in 1995 (Burkett, personal communication). They predate on ground nesting birds, causing significant damage to prey populations. Red foxes pose a potentially serious threat to the threatened Western snowy plover, which ground nests in the Rancho del Oso area.

Eastern gray squirrel: The eastern gray squirrel is a native of the eastern half of the United States. It was introduced to San Francisco and other west coast cities in 1925. It competes with native wildlife for mast and other forage resources.

European starling: The European starling was introduced from Europe to New York in 1890. Rapidly spreading west, the species was first noted in California in 1952, reaching Santa Cruz County soon thereafter. Behaviorally aggressive, the starling frequently out-competes native bird species for nesting cavities, effectively decreasing native bird populations.

CULTURAL RESOURCES

Big Basin Redwoods SP's over 18,000 acres are host to a variety of cultural resources. These archaeological and historical resources are a testament to the stream of human involvement in this redwood park for millennia. Sites relating to early California Indians, Spanish explorers, logging, conservation, and park development are dispersed throughout the groves, beaches, and meadows of the park and the recently acquired Little Basin property. Cultural resource surveys, NHL and National Register nominations, and artifacts from these locations have allowed researchers and park managers to identify sensitive areas for protection and preservation.

Archaeology

Prehistoric cultures have occupied the local coastal environments for at least the last 7000 years and probably as early as 10,000 years before the

The California Indians of the San Francisco and Monterey Bay areas are today collectively known as the Ohlone.

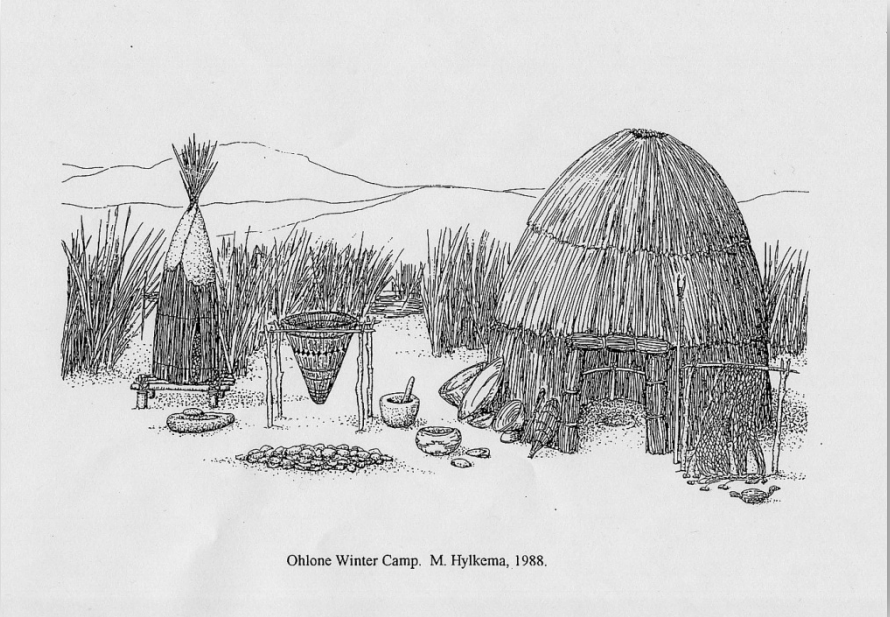
present. Clues to the prehistory of the Central Coast and Santa Cruz Mountains exist within Big Basin Redwoods SP. Evidence of prehistoric inhabitants has been documented in several places throughout the park. Sites containing bedrock mortars and stone tools have been discovered at the interface of evergreen forests and oak woodland meadows that occur sporadically throughout the Santa Cruz Mountains and in Big Basin Redwoods SP (Dallas 1983; Green 2008). Archaeologists have theorized about the development of prehistoric societies along the Central Coast, with most researchers concurring with an early foraging model that gradually emerges into a collector model. Early foraging societies sustained a general economic focus on resource procurement with frequent residential changes according to the seasons. Populations moved from food source to food source as necessary, thus food storage was not a component of their strategy. Comparatively, the later collector societies replaced the foraging societies around 2000 years ago and focused on a narrower economy, relying on food storage in a centralized village setting for most of the year. Hylkema (1991) provides the best archaeological overview of Santa Cruz and San Mateo counties.

Archaeological collections associated with temporary special-use site types include shell, bone, and burned rock artifacts and display low tool diversity. Multi-use sites have longer occupation periods, have similar resources, a greater diversity of tool types, occasional human remains, and include well-defined activity features. Prehistoric settlement patterns were evaluated by examining sites within various ecological zones and their associated artifact assemblages and features. Excavations at an archaeological site situated along the northern boundary of the park provided evidence of a substantial residential settlement. Artifacts recovered from this site included diagnostic obsidian projectile points, shell bead ornaments, abalone (*Haliotis*) pendants, and stone beads suggesting a Late Period occupation (1200-1769 AD). The shell beads and obsidian projectile points, some sourced to Napa Valley, indicated a robust trade network between the coast and the interior valley as well as long distance procurement or trade/exchange with the Napa region.

Ethnography

The California Indians of the San Francisco and Monterey Bay areas are today collectively known as the Ohlone. The Spanish coined the name Costanoan for the indigenous people they encountered in the region. Prehistorically, they were comprised of approximately 50 autonomous groups often called tribelets. These tribelets were related by language, though mutually unintelligible. The eight language branches Mutsun, Rumsen, Awaswas, and Ramaytush, Karkin, Chochenyo, Tamyen and Chalon all belong to the family of the Penutian language speakers. Together, with the neighboring Miwok tribes, they form the Utian branch of the larger Penutian stock (Levy 1978). Records indicate that several tribes of Ohlone speakers - Quiroste, Achistaca, Cotoni and Sayante - lived in and around the area today known as Big Basin Redwoods SP.

Ohlone Indian populations in this region at the time of European contact were organized into extended families, or clans that formed villages. Within the villages, clan members ascribed to different clubs or societies. Membership usually involved initiation where novices learned the customs



Ohlone Winter Camp. M. Hylkema, 1988.

of the organization, and used shell beads to pay dues. Abalone shell pendants were frequently used as badges of membership and rank.

Together, the various social organizations formed the fabric of society and directed the storage and redistribution of surplus food resources, construction of village buildings, planned hunting strategies and followed the seasonal cycles of nature that would determine where and when they should relocate. Both men and women could be members of various societies, and among larger communities, an elite group of women directed the construction of large circular dance houses that were excavated several feet below the surrounding ground level.

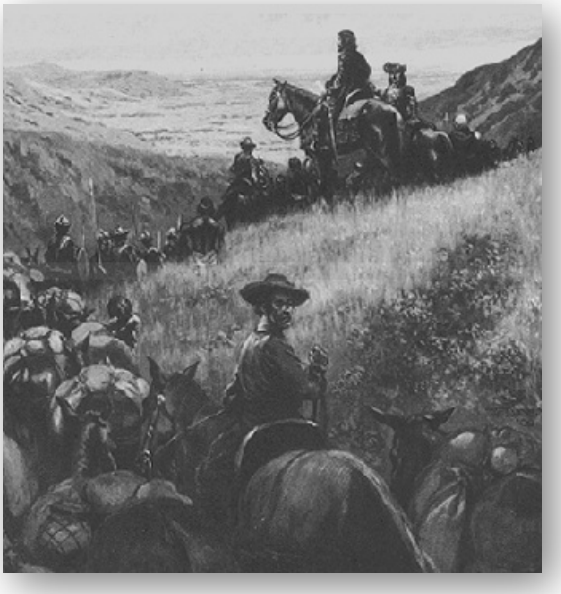
Houses called *ruk* and/or *tac* were constructed of tule reeds that were tightly thatched and woven over a framework of willow poles. Every house had an indoor and outdoor hearth and underground oven. Many fist-sized river cobbles were used to distribute heat in the ovens where plant bulbs, shellfish and animal meats could be roasted. Each village also had a semi-subterranean, roofed sweathouse where interior fires steamed the occupants like a sauna.

Ohlone economy reflected a mixture of hunting and gathering. Along the coast, they hunted small animals, such as rabbits, as well as marine mammals, such as sea lions and whales, when they occasionally washed ashore. The Ohlone communally hunted elk, deer, and, at times, bears, and they were also avid fishermen, catching salmon and trout from streams, as

well as surf fish from the ocean. Mussels and other shellfish were also a major source of food. Acorns, where available, were gathered, leached, and made into meal and gruel. On the coast, small seeds, including clarkia and tarweed, were substituted for acorns as a food source. The Ohlone would burn the land in order to manage and clear the underbrush and promote the growth of seed-bearing plants.

European Contact to Present

The first known visit of Europeans to Big Basin Redwoods SP came on October 20, 1769, when the Portolá Expedition stopped at the mouth of a creek on the Pacific Ocean now called Waddell Creek. The Spaniards named it *La Salud,* Spanish for *"good health",* since several members of the expedition who were sick with scurvy began to recover after camping near the creek. This was probably because they were able to gather madrone berries. The ascorbic acid these berries provided gave them back their good health or "*La Salud*" (Brown 2001). The explorers spent more time recovering at a large Ohlone Indian village of the Quiroste on nearby Whitehouse Creek. Days later, the Expedition made the great discovery of the San Francisco Bay.



Portola sights the Bay, by W. Francis, 1909

The Spanish eventually settled the entire bay areas of Monterey and San Francisco. They implemented the traditional colonizing system of pueblo, presidio, and mission. These efforts were led by both Franciscan friars and military officers. The system relied solely on the work of the local Indians. The local Indians made the adobe, built Mission walls, painted the interior of the churches, and grew the food for the newly arrived Spanish and themselves, since the traditional diet was slowly abandoned for the new.

The redwood forests in Big Basin Redwoods SP served as a refuge for Ohlone Indians during the Spanish occupation of the area. The first active resistance to Spanish power in the Bay Area was led by Charquin, a leader of the Quiroste in the area of Point Año Nuevo, down the coast from San Francisco. Charquin and his followers retreated into the rugged country behind Point Año Nuevo in late 1791, lands that were equidistant from the missions San Francisco, Santa Clara, and Santa Cruz. During the eighteen years that the Spanish military had been present among tribes of the Bay Area, its leaders had tried to avoid direct confrontation that might result in losses and a resultant weakening of its authority. But the success of Charquin goaded the soldiers into action in May of 1793. On December 14, 1793, Quirostes took part in a direct attack on Mission Santa Cruz, the only attack on a Mission north of Monterey ever reported during the entire Spanish era. The attack on Mission Santa Cruz was a continuation of the ongoing history of the Charquin resistance.

The Spanish Mission system was the ultimate cause of demise of the intricate traditional culture of Ohlone people that existed prior to the Missions. Conditions worsened for Ohlone during the Mexican Period (1821-1846). Mission lands were secularized, with no lands being received by the Indians. After statehood, the 1849 Constitution of California deprived all Native Americans of citizenship. It was not until 1924 that the U.S. Congress extended citizenship to all Native Americans. Today, the descendants of the Costanoan Indian mission people use the designation of *Ohlone* to encompass the families from as far south as Soledad and Monterey, northward to Livermore and San Francisco. Some of the Ohlone have further subdivided into discrete family tribal groups such as the Carmel Band of Rumsen, the Pajaro Valley Indian Association of Watsonville, the Mutsun of San Juan Bautista, the Amah Band of Gilroy, and the Muwekma Tribe of Santa Clara Valley. Descendants of Ohlone still thrive today in and around the San Francisco and Monterey Bay areas and maintain their rich culture and lifeways.

In a poem written in 1991 by an Ohlone woman named Linda Yamane, she is asked:

Indian faces by Louis Choris

"What does it mean to be Ohlone?
If someone should ask me that question again
I wonder where I would begin?
I guess I'd say it's knowing who I've come from-
imme amah-anumk selesium
from the people-the ancient ones.
And knowing exactly where I belong-
tsiaiaruka uti ruk
the country around here was their home
tsiaiaruka ka ruk
this is my home.
This is where I belong.
Haxe lattui-
I know that-
And that's why I can never leave."

(Yamane 1991, from Bean 1994)

History

The Portola Expedition was the first to see and document the magnificent redwoods of the Santa Cruz Mountains. The coast redwood, a species previously unknown to science, was described by Father Juan Crespi, the diarist of the expedition:

> *"There begins here a large mountain range covered with a tree very like the pine in its leaf, save that this is not over two fingers long; the heartwood is red, very handsome wood, handsomer than cedar. No-one knew what kind of wood it might be; it may be spruce, we cannot tell; many said savin, and savin 'twas called, though I have*

> *never seen them red. There are great numbers of this tree here, of all sizes of thickness, most of them exceedingly high and straight like so many candles: what a pleasure it is to see this blessing of timber."* (Brown and Stanger 1969)

Scientific identification of the redwood tree came soon afterwards. Archibald Menzies, a Scottish naturalist and surgeon with the Vancouver Expedition took samples of coast redwoods in an area now within Big Basin Redwood SP. He sent the samples to England in late 1794. A.B. Lambert concluded that coast redwood belonged to the *Taxodium* genus and gave it the botanical classification of *Taxodium sempervirens* (ever living) in 1824. However in 1847, Austrian botanist Stephen Endlicher established that coast redwood was not related to *Taxodium* (Bald Cypress) but a new genus. Endlicher, an accomplished linguist as well as botanist, chose the name *Sequoia sempervirens* to honor Sequoyah, a Cherokee Indian who created a Native American alphabet (Kennedy 2008).

The harvesting of lumber resources in the Santa Cruz Mountains began in earnest in 1833 when Joseph Majors, a newly naturalized Mexican citizen, secured land grants for Rancho Zayante and Rancho St. Augustine in the areas around Felton and Scott's Valley. Majors held them in title for Isaac Graham and his partner Henry Neale, who were not Mexican citizens, and therefore could not legally own land. Graham built a saw mill, as well as a distillery in Zayante, along the San Lorenzo River. Other notable pioneers, Paul Sweet, Peter Lassen and Captain Elisha Stevens also were early timber men in the Santa Cruz Mountains (McCarthy 1994).

Oxen team transporting logs in the Santa Cruz Mountains

Those early logging operations were small compared to what was to come. The timber resources remained relatively untouched until the Gold Rush began in 1849. The following building boom that accompanied the Gold Rush created huge demands for lumber. Wood was needed for construction, timber for the mines, railroad ties and fuel. There were 28 saw mills in operation in Big Basin and the San Lorenzo Valley by 1864 (Verardo 1975). William Waddell began logging the area near the creek that now bears his name in the mid-1860s. The Waddell Creek watershed encompasses East and West forks as well as the creeks Opal, Bloom, Sempervirens, Berry and Henry, almost all within Big Basin Redwoods State Park. The Waddell Creek watershed was an early target for nineteenth-century timber harvesting. Called Big Gulch at the time, Waddell began to log the watershed. He constructed a five-mile tramway with more than ten bridges all the way to the coast. Waddell had a run-in with a large grizzly bear during a hunting

excursion in what is now Big Basin Redwoods State Park in the fall of 1875. William Waddell died five days later from his injuries.

The tan bark industry was also prosperous in the Big Basin area with evidence of early mill sites still present in the park. The tannin extracted from the tan oak bark was essential for the leather industry. An ambitious bark stripper could take out as much as 2,000 cords a year out of Big Basin. One such man was Tom Maddock who moved his family onto a homestead in Big Basin in late 1870s. In 1883, Tom and his eleven-year-old son, John, built a cabin out of a single redwood tree they felled by ax. Tom Maddock moved out of Big Basin in 1889, but his wife and son remained until the State bought the land in 1902 (Verardo 1975). The Maddock Cabin site is located north of the Headquarters area near the confluence of Maddock and Opal Creeks.

The arrival of the railroad to Boulder Creek, in 1885, made timber harvesting even more possible and profitable. The railroad also brought people to the area that normally could not access it to view and marvel at the remaining stands of old growth redwoods.

Protecting the Redwoods

The first plea on record to save the giant redwood trees was in 1877 when Ralph Sydney Smith, editor for the *Redwood City Times and Gazette*, wrote an article after the disturbing experience of seeing a giant redwood felled. It was Smith who coined the term "Save the Redwoods," the rallying cry for the conservation of the big trees.

He sought to protect all the old stands of redwoods in his home county of San Mateo and in neighboring Santa Cruz County. He wrote in an open letter to his paper:

> *"…ours is indeed a privileged country: a land of fertile plains, picturesque valleys and green robed hills, a land of magnificent prospects in two senses, physical and economic. The earth holds few fairer landscapes than that which unveils itself from a thousand points along the 'ridge', the back bone of our peninsula county."* (Wing 1940)

It was Smith that had the concept of a redwood park. He pushed for the purchase of land by a public entity so that redwood trees would be protected for future generations. About the Big Basin locale in Santa Cruz County, he wrote:

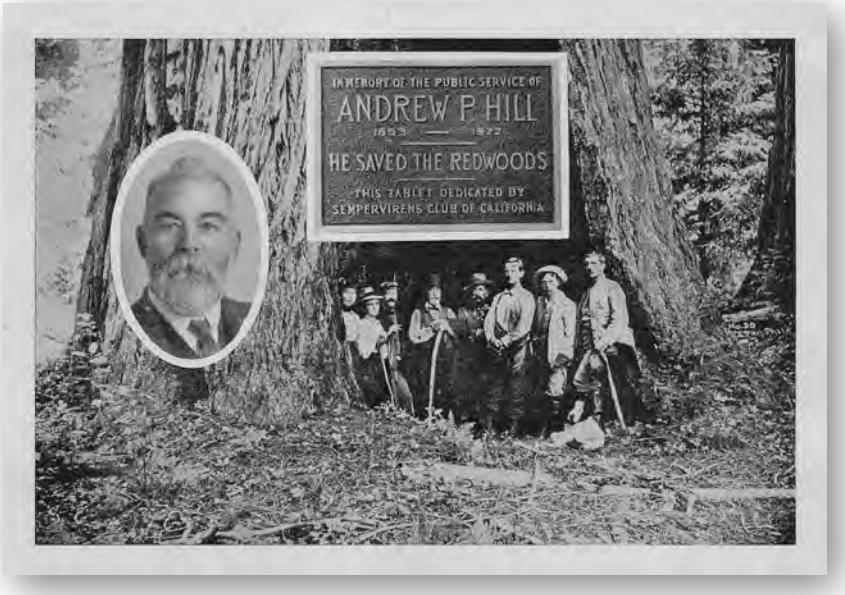
> *"Big Basin of the three pronged Waddell Creek, in the northern part of Santa Cruz County, is fully equal of the location proposed by us. The rugged grandeur of its hills, the dense growth and size of its forests, equal anything in these States. San Mateo will not complain if Big Basin is selected for the site."*

The San Francisco Chronicle continued carrying Smith's torch for a park in a somewhat prophetic article on a *"Redwood Park."*

> *"It is believed that if the State of California would appropriate a portion of the purchase money, the rest could be raised by subscription from public spirited men who know and appreciate the value of such a preserve for the State. Its proximity to this city makes it more available and desirable for the purposes of a great forest park than any other body of redwood in the state."* (Wing 1940)

Smith penned and circulated informational pamphlets pushing his plea for a park. *"The Redwood Reserve Plan,"* as it was titled, helped acquaint people with the majesty of the coast redwood trees and the need to conserve them. East coast periodicals such as *The Atlantic Monthly, Scribner's, Harper's Weekly* and the *New York Tribune* all commended the plan. Many were in support of it, but not all. Ralph Sydney Smith was shot in the back and killed in his hometown of Redwood City on November 29, 1887. But the call to *"Save the Redwoods"* would not die with him.

The Sierra Club was formed in 1892, in response to concerns regarding the present and future of Yosemite. In 1896, the club's president, John Muir, began advocating for preservation of redwoods in the Santa Cruz Mountains area (de Vries 1997). In 1899, now spurred by profitable orders from the Southern Pacific Railroad for railroad ties, lumber activities increased, assisted by the coming of electricity to the area. In this year, Andrew Putnam Hill, a painter and photographer based in San Jose, was contacted by a British publication, *Wide World Magazine*, to provide some photographs of redwood forest in California. Hill traveled to Felton Grove (then privately owned, now Henry Cowell Redwoods State Park), near Santa Cruz. Hill paid the entrance fee and took his photographs of the trees. When the owner discovered this, he strongly objected to the photographs, demanding that Hill relinquish his photographic plates. He also told Hill that he was planning to harvest his redwood grove. Hill refused to give up the plates and left the Felton Grove. Hill soon came to the conclusion that *"these trees, because of the size and antiquity, were among the natural wonders of the world, and should be saved for posterity,"* and he determined to start a campaign to make the grove a public park (de Vries 1997).



Andrew Hill was an idealist with extraordinary energy and determination, and a broad circle of friends. Many were popular writers of the day whom he persuaded to write articles for local newspapers on saving the redwoods. Hill threw himself into a multitude of activities, meetings, and lectures before groups such as chambers of commerce, the Native Sons and Daughters of the Golden West, academic groups, local women's organizations, and many others. Many of these groups forwarded resolutions for Congress to create a Santa Cruz Mountains National redwood park. Hill also utilized his skills as a photographer to carry his message across the country. His photographs of the redwoods appeared in many venues, including the Pan American Exposition in New York (de Vries 1997).

Hill was asked in April of 1900 to call a meeting of potential park supporters. He chose to enhance the prestige of the issue by involving the notable educational institutions of the times. He recruited the president of Stanford University, David Starr Jordan, to host the meeting. At the May 1st meeting, the group changed their parkland focus from the Felton Grove to Big Basin. Dr. C.L. Anderson had convinced the group that the Big Basin contained larger trees, and would be cheaper to obtain than the redwood groves near Felton. Hill's group of park supporters decided to make a field trip to visit the property. On May 15, the group was joined at Boulder Creek by Charles Wesley Reed, member of the San Francisco Board of Supervisors and Henry L. Middleton, agent for the lumber company that held options on most of the basin. Notably, Middleton (or the lumber company which he represented) was inclined towards selling the property to the state. He provided the party with a guide as well as a cook. The party followed the ridge between Sempervirens Creek and the East Waddell, though there was no road or trail. They headed for Barlow's Camp, in an area which would later become known as Governor's Camp and today known as the Headquarters area.

On May 18, 1900, Hill's group named the new organization the Sempervirens Club. Their objectives were threefold: preserving the redwoods, saving the fauna and flora for scientific study, and creating a park for all people.

The group explored the area for the next three days, camping formally at the base of Slippery Rock, a sandstone outcrop on Sempervirens Creek. On the evening of May 18, the group decided to form a permanent organization with the purpose of preserving the natural environment of the basin as a public park. They named the new organization the Sempervirens Club. Their objectives were threefold: preserving the redwoods, saving the fauna and flora for scientific study, and creating a park for all people. One of the significant aspects of the trip was that the extent of the redwoods in the region was fully realized, together with the value of the watercourses which included Waddell, Gazos, Pescadero, and Butano creeks (Yaryan 2002).

Sempervirens Club members were skillful in their promotion of the cause, recruiting many from prestigious educational institutions, widespread community groups, chambers of commerce, women's clubs, the Sierra Club, and other citizen organizations, and seeking the guidance of knowledgeable legislators. Fund-raising and meeting activities grew during the summer and fall of 1900. Support for the cause was provided by Native Sons and Daughters, regional chapters of Game and Fish Protective Association, San Jose Cross-Country Club, California Pioneers of Santa Clara County, the

American Association for the Advancement of Science, American Forestry Association, and the Society for the Promotion of Agriculture, to name a few. Local newspapers, particularly in San Jose and Santa Cruz, took up the cry of "Save the Redwoods," publishing frequent articles and editorials on the subject. These greatly assisted in awakening the call for preserving the land among the local citizens.

A concern that the redwoods were disappearing at an alarming rate added to the strength of the movement. William Dudley of Stanford University conducted one of the first surveys of the Big Basin area. He reported two million acres of redwoods in the area had disappeared between 1895 and 1898. Joined by Charles Wing, also of Stanford, in his critical concern, Dudley determined by 1900 that there was no good timber left in public hands, only that which was privately owned. He concluded that any efforts to create a redwood park would involve its purchase from the private sector. Another concern arising from the disappearance of the redwood forests was that of climate change. Many believed that rainfall had lessened in the area as a result of the removal of the forests. Farmers in the fruitful Santa Clara Valley feared that the cutting of more redwoods would lead to desertification in surrounding regions (Yaryan 2002).

The vision of the Sempervirens Club was aptly summed up by Carrie Stevens Walter in a 1900 article in the *San Francisco Chronicle*:

> *"Imagine a time in the not very remote future when the whole peninsula from San Francisco to San Jose shall become one great city; then picture, at its very doorway, this magnificent domain of redwood forest and running streams, the breathing place of millions of cramped and crowded denizens of the city. [This park] is a heritage of which we have no right to deprive future generations*" (Yaryan 2002).

This was echoed in an article in the *San Jose Mercury* on January 5, 1901:

> *"...There is sweeping all over the United States a wave of the same spirit that actuates the members of the Sempervirens Club in their effort to save the trees of Big Basin. Everywhere, thoughtful men and women are beginning to realize the terrible consequences that would surely follow upon the heels of the destruction of our magnificent forests."*

The Sempervirens Club had provided one of the first focused public actions in the emerging Conservation Movement.

The club made the decision to convince the California State Legislature, instead of the US Congress, to acquire the land. There were several reasons for this approach: Club members did not want to jeopardize a state bill already pending to purchase Calaveras Big Trees. There was opposition among many politicians in eastern states for the creation of more parks in the West. There was resistance among some Californians for increased federal control of state lands and Congress was largely unwilling to purchase

private land for forest protection while a great deal of federal land remained (Yaryan 2002).

California Assemblyman George Fisk introduced a bill in January 1901, drafted by Charles Reed, President of the Sempervirens Club, calling for the creation of a California Redwood Park Commission comprised of the governor and four of his appointees, and calling for the funds to purchase the proposed parkland. The bill's stated goal was to:

> *"preserve a body of these trees from destruction and maintain them for the honor of California and the benefit of succeeding generations."*

The bill also called for $500,000 in order to purchase 5,000 acres at $100 per acre, the price offered by Middleton and his lumber company. When the bill ran into trouble, only Hill refused to give up, conferring with popular Assemblyman Alden Anderson and modifying the bill's appropriation to $250,000, with the expenditure spread out at $50,000 per year for five years. Anderson also advised Hill to seek support from Sacramento legislator Grove Johnson, leader of the Southern Pacific Railroad Company's political activities in the state. The railroad was supportive, anticipating increased tourism to the state as a result of the establishment of the park, and quietly directed its own immensely influential political pressures toward the adoption of the bill.

Hill and the Sempervirens Club actively campaigned for the next two months, with newspaper and magazine stories, leaflets, interviews with key people, field trips to Big Basin, and garnering the considerable support of women's groups throughout the state. Fr. Robert Kenna S.J, club member and President of Santa Clara University, lobbied Catholic Church members in an unusual involvement of the church in conservation activities. Kenna, along with many other prominent members of the clergy, appealed on the basis of spirituality and morality:

> *"Man's work, if destroyed, man may again replace. God's work, God alone can re-create. Accede, then, to the prayers of the people. Save this forest. Save it now."* (Yaryan 2002)

In early March 1901, when the bill came to a vote, it was almost unanimously approved by both houses of the California legislature.

However, there was one last hurdle. Governor Gage had to sign the bill, and he was confronted with the redwood park option, as well as a bill calling for the creation of a statewide forest and water conservation commission. After important conferences with David Starr Jordan, President of Stanford University, and an additional outpouring of public support for the park throughout the state, Gage signed the Redwood Park bill. The passage of the bill only set plans in motion. Land now had to be actually purchased. A four-man Redwood Park Commission was appointed by Governor Gage to acquire the land. Implementation of the new park legislation was difficult, and ultimately required the assistance of the Sempervirens Club and others.

One of the commissioners Gage appointed had been a supporter of the forest and water conservation commission bill, and out of anger at its loss, blocked the acquisition of the Big Basin lands. Meanwhile, preparations to begin logging operations were underway. An owner of 320 acres in the proposed park, I.T. Bloom grew tired of waiting for the state to purchase the land, and began cutting timber. Middleton, supporter of the park and still in the lumber business, worked with the Sempervirens Club to negotiate one option after another on the land to stall the logging while the state was making a decision. Hill convinced Middleton to invite Governor Gage and the members of the Redwood Park Commission to the park site. Several small cabins and a cook house were built in the heart of the property at what would soon become known as Governor's Camp. The party camped in the redwoods for ten days in August 1901. Many in the party went home to publicize the property in newspaper and magazine articles (de Vries 1997).

In September 1902, the Commission finally agreed to acquire 2,500 acres in Big Basin at $100 an acre. An additional 1,300 acres of brush and cut-over land was donated by Middleton and others. This became known as California Redwood Park. Sometime thereafter, a five-room cottage was built in the Governor's Camp area for use by Governor Gage. Later, it would also be used by subsequent visiting governors. After the purchase of the land by the state, the Sempervirens Club reorganized, and under the leadership of Laura White engaged many fellow clubwomen to further the conservation cause. Carrie Stevens Walter and Louise Jones were two other key women in the early conservation movement that were introduced to the movement through Big Basin park efforts (Yaryan, Verardo and Verardo 2000).

Early meeting of the Sempervirens Club

The Sempervirens Club continued to monitor the activities of different managers of Big Basin after the State's purchase, and alerted public attention when needed to eliminate destructive or damaging practices by park management. The Sempervirens Club continually arranged for additional sales and grants to expand the park, occasionally enlisting the assistance of the later-formed Save the Redwoods League. The protection of natural watershed lands in addition to already designated parklands, in order to control activities that could damage the forest from outside its boundaries, became a priority for acquisition. Acquisitions were also made to construct adequate roads to the park from populous and accessible regions south of the San Francisco Bay Area (Fox 1981).

Several notable writers of the late nineteenth and early twentieth century whose works were often located in natural settings made special visits to the park during the early years after its 1902 establishment, including Bret Harte, Robert Louis Stevenson, Rudyard Kipling, John Masefield, Josephine Clifford McCrackin and John Muir. These writers, and others like them, appreciated the beauty of Big Basin and were eloquent in interpreting it to the public. The fame and widespread readership of these authors, greatly contributed to the evolution of the American Conservation Movement.

The tide of public sentiment toward the designation and state ownership of the park did not subside with the signing of the legislation. Public support of long-term protection of the park land continued and interjected itself throughout the first twenty-five years of its establishment, in an ongoing effort to ensure that the park would indeed be preserved for future generations. This sentiment was a part of conservation movement philosophy and policy of the times.

Management of the new park was given to J.H.B. Pilkington, Santa Cruz County horticultural commissioner, by the Redwood Park Commission. Designated as "Warden," it was his responsibility to protect the park resources and spend the $10,000 allotted by the legislature for development of the area. In July 1903, Governor Pardee (Gage's successor) visited the new acquisition with the commission members, staying there for several weeks. His party stayed at one of several campsites in the area. While there, Governor Heber Wells of Utah visited Pardee at the old Barlow Camp, and the site thereafter was referred to as Governor's Camp. The park was finally opened to campers in June 1904. A large gathering of state officials and businessmen was held in the park that summer, encouraging further appropriations and acquisitions to expand the park land. Park commissioner H.L. Middleton deeded nine acres of his own land for the location of a warden's residence (later called the Warden's Lodge), near the park entrance (on what is now Lodge Road). The current Lodge was finally built several years later (1911). In September 1904, a fire broke out and burned many acres of the park, though the Governor's Camp area was spared by the diligent work of Pilkington and his crew.

Governor Pardee and the state legislature disbanded the Redwood Park Commission in 1905 on the grounds of mismanagement, and established a new commission in which the state forester served as park manager. The park was placed under the authority of the State Board of Forestry. Pardee was an admirer of Gifford Pinchot, believing that forest *"conservation"* with controlled economic exploitation was preferable to less intrusive park-style preservation, which he considered a *"waste"* of natural resources. The change in management of the park and subsequent activities reflected this philosophy.

Governor Gillett's 1906 election resulted in Pilkington's replacement by Samuel Rambo, soon after which it became rumored that illegal logging operations were underway in the park. Rambo and state forester G.B. Lull maintained that only dead or burned timber was being removed. In 1908,

Andrew Hill and others made their own first-hand investigation. They found many downed green trees, wood cut up everywhere, and long piles of trees on the ground visible through a thinned forest. Backed with Hill's photographs, the group's report generated a grand jury investigation and the end of logging in the park. The Sempervirens Club "watchdog" activities demonstrated their continuing conservation concerns. Again, the group utilized its connections with various local newspapers to publicize the dangers to the general public. As a result, the legislature restored the Redwood Park Commission, removing the park from the control of the state forester.

The Commission, headed by Charles Wing, appointed William “Billy” Dool as warden of the park, a job which included serving as manager, law officer, postmaster, and campfire program director, among other tasks. He eventually had a small group of assistants, mostly young men, to help in these varied tasks. In 1908, the Sempervirens Club and the park commission obtained more federal lands in the Big Basin area, adding another 3,980 acres to the park. This addition included about half of the Waddell Creek watershed.

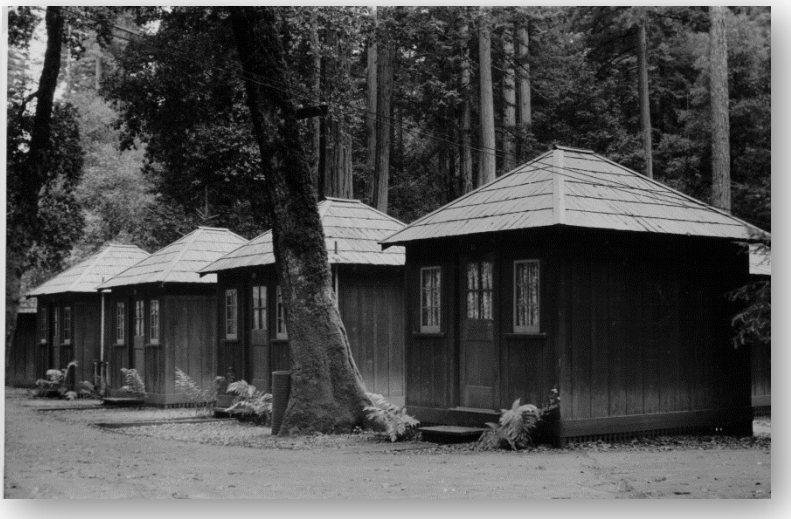
Hill's next campaign, with the support of the Sempervirens Club and park enthusiasts, was for legislative support to construct a good access road to the park. This new campaign garnered almost as much support as that which designated the park, with the additional impetus of completion in time for the 1915 Panama-Pacific International Exposition in San Francisco. With the establishment of good access to the park, the club and park supporters anticipated visitors from San Francisco and around the world. Hill's remarks on the occasion of the legislature's vote of $70,000 to construct the road stated that the club had secured a total of $327,602 for the road along with other park improvements. The road, known as the Saratoga-Big Basin Road, was completed in May 1915, in time for the Exposition.

The park received unprecedented attention and publicity as a result of the Exposition, particularly as a result of Hill’s photographs and lectures. Better access encouraged greater use. Camping was free, wood was free, the park had a post office, daily newspapers and telephone, and the hotel was a reasonable $14 a week. Mrs. Phoebe Apperson Hearst, a longtime supporter of the park, contributed $1,250 to remove poison oak from the Governor's Camp area, all measurably improving the camping experience.

In May of 1917, Hill alerted club members to the planned construction of a saw mill adjacent to the park, increasing the danger of fire within the park boundaries. Hill and the Club sought support for the passage of a bill providing $150,000 to purchase the proposed mill site and prevent its construction. The bill passed, and the property was purchased, tripling the original size of the park to more than 9,300 acres.

Hill continued as an effective promoter and salesman for the redwoods, making countless lectures on their virtues. Hill was elected president of the Sempervirens Club in 1918. That same year, a studio for his work was

completed in the park, allowing him a place to sell his paintings and photographs, as well as a darkroom for developing film. The new road increased the accessibility of the park and on July 4, 1919, every camping spot was occupied, and 1,000 automobiles were counted. The increasing availability of automobiles resulted in further park visitation, despite difficult road conditions. In response, Warden Dool constructed 100 more camping sites, with brick stoves, tables and seats. Three thousand autos squeezed into the park that year for the September 6th presentation of the forest play created by club members and supporters, "Soul of the Sequoia." Over 6,000 people attended the performance the following year.



Big Basin cabins, circa 1920s

By 1922, fifty-three rental cabins/cottages had been constructed. These were located east of the Lodge between the Lodge and Opal Creek. Some of the cabins were singles while others were duplexes. A resemblance of a park *"village"* was created which contained laundry and storage sheds, dormitories for the hotel and kitchen staff, arbors/pergola's, walkways and benches, a post office, clubhouse, wash house, barbershop, boat landing, park store/lunch counter, filling station, and campfire circle. The Lodge is the only remaining structure from this era (Kennedy 2009).

During the 1920s, camps for groups such as the Campfire Girls, Boy Scouts, Girl Scouts, and the YWCA were established in the park. More camping areas were designated and picnic tables and stoves were added to enhance the visitor's stay. Other facilities, such as the Lodge, and the campfire area, begun earlier, were expanded and enhanced. According to Don Waters, the grandson of Warden Billy Dool, the principal activities enjoyed in the 1920s were "hiking, picnicking, meandering among the huge trees, picking huckleberries, and watching Fred Canham call the deer to dinner in the early evening…"(*Santa Cruz Weekly* 1980)

Andrew Hill passed away in 1922, having been declared by many the father of the park and savior of the redwoods. The *San Jose Mercury* had published some 400 articles about Big Basin written by Hill during the 22 years that he was involved in its preservation. The Sempervirens Club, however, continued its work. Because of the negative experiences during the early management of the park by state foresters, the club played an active role in the creation of the State Park System. Part of the role of this new organization would be to acquire land desirable for state parks.

Newton B. Drury, secretary of the Save the Redwoods League, helped establish a state park Commission, a state park survey, and authorization of

a State Parks bond issue. All three were successful, with the $6 million bond issue passing in 1928. With the creation of the State Park Commission, the Sempervirens Club lobbied for the purchase of additional lands in order to complete the acquisition of all of the Big Basin watersheds. By 1928, the park's name was changed from California Redwood Park to Big Basin Redwoods State Park.

The original goals of the Sempervirens Club members were to preserve a "greater" park of 60,000 acres that would include the forests of Butano and Pescadero. Although they succeeded in acquiring the core area of Big Basin, the goal of acquiring the expanded acreage was more difficult to achieve. The Club continued to lobby for the acquisition of the entire watershed. Eventually, separate parks would be established in the other forests, connected to Big Basin by trails. Following World War I, the club's activities declined as many of the founders had died or moved onto other ventures. By the late 1920s, conservation interests had shifted to saving the redwoods in California's north coast. Club members continued to seek funds to acquire adjacent land, build new facilities, and construct better roads; however, the most significant work of the Sempervirens Club had been accomplished.

The Three C's and Depression Era Construction in the Park

The arrival of the Great Depression had a dramatic effect upon parks nationwide, and Big Basin was no exception. Despite the economic downturn of the 1930s, a great deal of development work was completed in the park throughout the decade. Two major programs affected the development of parks in the United States: federal projects funded by emergency appropriations and administered through the Public Works Administration (PWA); and Emergency Conservation Work (ECW) carried out by the Civilian Conservation Corps (CCC). The work was to be carried out according to National Park Service (NPS) standards and designs with skilled labor by private contractors. The extent, scope, coordination, and quality of facilities constructed in state and national parks during the 1930s and 1940s would not have been possible without the existence of the CCC. Though created for other purposes, the CCC was a perfect implementation tool for newly established public parks throughout the country. The development by the NPS of a standard design aesthetic in both state and national parks created a unifying natural and appropriately rustic design treatment that was well-suited to the character of both wilderness and parklands. The use of local materials such as the redwood used in construction and regional rock for the stone work and masonry enhanced the rustic look and feel. It also created a symbiosis between the natural and built environments. The CCC provided the means needed to implement the designs, and constructed many parks and monuments throughout the country that broadly influenced and shaped the public concept of parks.

Workers for the CCC were primarily young men in their late teens and early twenties, generally unskilled and unemployed. With professional oversight and training, the crews became skilled in many activities including landscape naturalization, trail construction, park improvements, roadside planting, and

the construction of complex park structures. Professionals, scientists and educators unemployed by the Depression were hired as supervisors and foremen, and landscape architects, in particular, were sought to provide professional expertise. Oversight inspection included a network of regional professionals that reviewed *work and enforced uniform high standards for park design and* construction.

CCC men constructing a road

In 1934, Daniel Hull, formerly the Chief Engineer of the NPS landscape division, took over the management of the ECW program for California, serving as both the State Park Landscape Engineer and California Procurement Officer for the federal ECW. He organized a central design office to manage all of the CCC efforts within the state. Within the ECW program, Hull directed the design and construction of hundreds of park facilities throughout the state, including long-range development plans that still shape functional and recreational aspects of the parks (McClelland 1993).

The first CCC camp was established in Big Basin in June 1933, followed by two more by 1935. The principal buildings remaining in the Governor's Camp/Headquarters area today were constructed by the crews of the CCC from drawings signed by Daniel Hull. It was during this era that the park gained its Headquarters Administration building (1935), the Outdoor Theater with a stage, campfire circle, and cut log benches (1935), the Nature Museum and Store (1938), and an expanded Lodge (1939). Other structures were also built to support the park's increasing demands, such as ranger residences, garages and work sheds. The Headquarters area complex is considered a major example of Daniel Hull's work and is among the best representatives of NPS design and CCC achievements of the era.

The attack on Pearl Harbor in 1941 ushered in a new era, not only for the United States, but for the entire world as well. With the nation involved in its second world war, the effects were felt all over the country. The park was no exception. Gas and food rationing, as well as blackouts, and an entire generation of men and women involved in the war effort created a hiatus with development in the park. The CCCs were disbanded and many Park employees joined the Armed Services. Development increased in the Park after the war, but never as was seen during the 1930s. In the 1940s, a new policy of decentralization was taken and other locations in the park were sought for new development. The area known as Lower Sky Meadow was selected as a site for construction of new employee residences, which were completed by 1949.

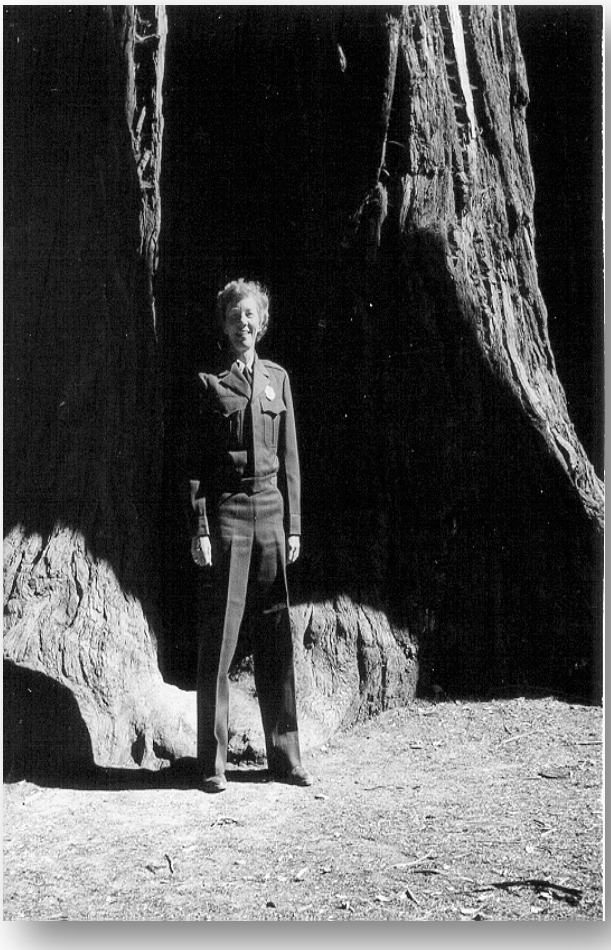
The face of new construction in the park during the 1950s began to change, becoming less rustic and more utilitarian. This change reflected the need for modernizing the park infrastructure. Materials other than natural ones that could be found in the park were used in bathhouses and restroom facilities. Steel sheds for maintenance work and storage were also installed, and several individual cabins were removed. The dance floor that had hosted many summertime evening musical events was last used in 1951. The pool that was constructed in 1939 in the meadow near the Redwood Loop Trail was closed and filled in due to polio concerns. In 1953, the meadow was restored. New water systems were constructed, a sewage plant was built, and the post office was closed. In 1961, the last of the cabins were removed from the Headquarters area and the Lodge was closed, but the park continued to grow. That same year, the State purchased an additional 488 acres from Big Creek Timber Company. The new acquisition included Golden, Silver and Lower Berry Creek falls. In 1967, the Huckleberry and Wastahi campgrounds were built. Over the ensuing decades, new facilities and visitor services were completed at the park, while efforts have been made to retain many of the historic buildings and features.

One of the last ornithological mysteries was solved in the early 1970s in the park. The marbled murrelet was known to science as a sea bird, but no nests had ever been identified. In 1974, a forester trimming limbs in the Blooms Creek campground area, noticed a small nest with a web-footed bird in it. *"Here discovered in Big Basin was the last North American breeding bird whose nest had not been discovered,"* reported Denzil Verardo, a ranger at the park (Verardo 1975). The significant discovery in the old growth forest led to the bird being listed as a federally threatened and state endangered species in 1990. The nest and the tree limb it was found on are now in the California Academy of Sciences in San Francisco.

In 1983, a severe wind storm knocked down the Warden Tree in the park Headquarters area. The tree sent several other redwoods crashing down. A portion of the Lodge was destroyed as was a smaller residence.

Over 100 Years of Big Basin Redwoods State Park

In 2002, Big Basin Redwood SP celebrated its 100 year anniversary. It is the oldest state park in the California State Park System. Many events and ceremonies occurred during the centennial year. One project to commemorate the centennial was an oral history project conducted by State Park Ranger Kim Baker. She and a team interviewed dozens of people who were associated with the park and its history. *The Oral History Project "Visionaries, Visitors and Valued Workers*" offers many insights to several eras of the Park's history. Baker wrote in her introduction that "these stories provide some historic facts. More importantly they demonstrate the experiences and emotions, memories and unique insights that are not provided by other forms of documentation." (Baker 2002) It is a chronological journey through park history as told by campers, concessionaires, employees and conservationists. An individual whose life and career was fundamental to the history of Big Basin Redwoods SP was



Harriett "Petey" Weaver was the first woman ranger in the State Park System.

Harriett "Petey" Weaver. She was the first woman ranger in the Division of Parks, which later became California State Parks. "Petey" Weaver was one of the most people-oriented and best-liked rangers at the park. Every summer she organized activities for campers and visitors, ranging from nature walks, "coffee hikes," to campfire songs and skits. Writing about her experiences she reflected on a time when campfire programs were the highlights of the camper's experience in Big Basin:

"For thousands upon thousands of people of that time in our century, before television and jet planes and travel trailers and motor homes, turned thought and mobility into a national restlessness, such outings and activities highlighted the family year. Amassing far flung lands had not yet become a status thing. Campers liked to go to a favorite spot and stay. Between vacations they kept in touch with one another and arranged to be in the park the same weeks or months. Those who chose to help at campfires checked the strings of their guitars and banjos, wrote more skits, assembled more funny stories and stirring adventures and experiences to tell; learned more readings and tap steps, bought more sheet music, and offered new songs for the community singing. Happily they reminisced about summers past, their vacation neighbors, both human and wild. No mountaintop lodge or rocky point aerie beside the sea could ever have been more cherished than their campsite among the giant redwoods" (Weaver 1994).

Historic Headquarters Area

The built environment at the park Headquarters area nestled among the redwoods groves along Opal Creek is what many people associate with Big Basin Redwoods SP. It is the historic core area of the original 3,800 acres deeded to the State that became the first California State Park in 1902. Within this area are over 400 recorded sites, buildings and features that reflect the historic activity of the early park years. It is an example of early park development that became the model for later park development throughout the state. A majority of the buildings and structures were built by the CCC from 1933 until 1941. The architecture is defined by the classic Park Rustic style that has come to identify park infrastructure in the Western United States. This style is synonymous with the National Park Service and popular examples are Yosemite's Ahwahnee Hotel, the Grand Canyon's El Tovar Hotel and the Rim Village at Crater Lake National Park. Daniel Hull, Chief Engineer of the NPS landscape division designed many of the buildings that exist at the Headquarters area. The cut granite stone and log and

rough-hewn wood frames of the buildings, as well as their carefully selected locations, blend harmoniously with the natural redwood forest background. The historic Park Rustic buildings at Big Basin Redwoods SP are perhaps the best examples of this style of architecture and design within the California State Parks System and more specifically the Santa Cruz Mountains. Many of the historic resources located here retain the original historic fabric. Several of the historic structures are eligible to the National Register of Historic Places as well as the California Register.

Big Basin Inn, circa 1936

Several maps are included at the end of this document for reference to the locations of historic buildings, sites and features described below. **Figures 11**, **12** and **13** identify the park's historic landmark contributing sites and features, and **figures 14**, **15**, **16** and **17** depict the major buildings, structures, and objects that existed in the Big Basin Headquarter's Area (Governor's Camp) in the years between 1924 and 2011.

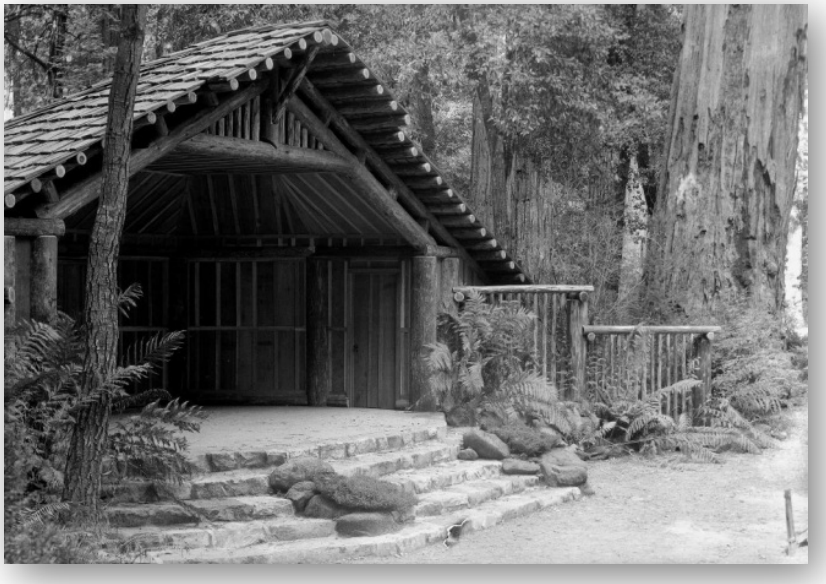
Headquarters Administration Building

This building was constructed in 1935 by the CCC. It is of classic Park Rustic style and currently serves as the Administration building for the park. It is a single-story wood frame building with a gable roof and wood shingles. A massive internal stone masonry chimney and fireplace is located within the structure. Stone steps and a raised masonry porch define the main entrance. The campground registration and information window is located under a gable roof on the north end of the west side.

Headquarters Administration building

Nature Lodge (museum) and Store

This building was constructed in 1938 by the CCC. It currently serves as a park store, gift shop, natural history museum, and storage. In 1941, it served as a studio, lunch room and store. Later modifications were made to several of the original windows, and a wood deck was added on the west and south sides of the building. In 1918, a U.S. Post Office was housed in a smaller building on this site.



Campfire Center

Outdoor Theater/Campfire Center

This historic structure was constructed in 1935 by the CCC. It replaced an existing stage and campfire circle in the same vicinity. It consists of a wood frame stage, complete with dressing rooms, fire ring, and log benches located in a small amphitheater configuration that provide seating for approximately 600 people. Stone masonry steps wrap around the front of the stage. Many of the old log benches were restored or replaced in 2010 - 11 (crafted in the same style as the original log benches) as part of a rehabilitation project, and to meet ADA accessibility requirements. The Outdoor Theater/Campfire center hosts regular campfire programs and performances during the high visitation periods. Historically, it was extremely popular during the summer months, attracting campers and non-camping locals.

Three Car Garage

This building located northeast of the Headquarters Administration building was constructed by the CCC in 1937. It is a single-story wood frame structure with rough cut stone facing on a concrete foundation, with a small addition on the east side. It has been altered by filling in one garage bay,

replacement windows and roof, with a chimney and a small shed addition. While these alternations have had an impact on the building's historic integrity, it still remains a fine example of Park Rustic architecture with exceptional detail.

Residence #3

This building was constructed by the CCC in 1939 and is still used as ranger housing. It replaced a 1922 custodian cottage built by park staff at the same location. The structure faces west along North Escape Road, just north of the Nature Museum. It has a rectangular foundation and rests on a pier foundation. The board-and-batten sheathed walls are topped with a cross-gable roof clad with wood-shake shingles. A raised covered porch provides access to the house on the west side. This house has served as a residence to many park rangers including Harriet "Petey" Weaver, the first female California State Park Ranger.

Lodge

This building was constructed in 1911 and expanded several times thereafter. Originally known as the Redwood Inn, it became the Big Basin Inn in the 1920s, then the Big Basin Lodge Office. In 1918, a new store was built at the Inn, followed by an outdoor dining veranda covered by a log pergola. The Inn filled the role of a hotel lobby for the park's guest cabins, but did not have its own overnight accommodations. Kitchen and dining facilities were expanded in 1932, and a dining wing was added during the 1950s. In 1983, a large redwood tree fell on the dining wing, destroying it and the 1911 front entry. The entry had faced the Campfire Center, and its loss changed the orientation of the building so that the original side entrance of the building is now considered the front entrance. The eastern elevation is the oldest part of the building with remains of the original lobby and a large intact stone fireplace. Interior log and lumber trusses support the gabled roofs. The outdoor dining veranda and pergola has been removed.

The Lodge at Big Basin

Lower Sky Meadow Residence Area

The post war period saw fewer buildings and structures built than in the 1930s, but some new facilities were added. Campgrounds and comfort stations were the most common new facilities. Park administrators also emphasized new staff housing for development. Construction began at Lower Sky Meadow for staff residences in 1941. The Sky Meadow area was considered the only sunny location in the park, and it also represented a safer location for housing than at the park Headquarters area. Staff had

rarely been able to live in the park in the winter months, since existing housing in the densely forested Headquarters area was in danger of falling trees during winter storms. Four residences were completed in the summer of 1942 at Lower Sky Meadow.

Lower Sky Meadow Residence Area

The houses were constructed in the Minimal Traditional architectural style. Minimal Traditional style was a common design style found in domestic architecture in the United States from about 1930 to 1950. Houses constructed in this simple style were less expensive versions of the period revival architectural styles of the 1910s and 1920s, with lower pitched roofs and without period detailing. The style remained popular after WW II, since resources were still limited and inexpensive construction methods and materials remained popular. These single-story homes were usually small cottages known for being durable and functional.

Three Minimal Traditional residences and two detached garages were added to the residential area in 1947. One additional home, identical to these three single family homes, was built in the maintenance yard. In 1953-54, two additional homes and two duplexes were constructed in the same architectural style at the upper residence area. Four of the Lower Sky Meadow homes were raised and placed on new foundations in 1949.

The staff residences and contributing elements (i.e. homes, garages, walkways and road) at Sky Meadow are eligible at the local and state levels as a Historic District, and have been nominated to the National Register of Historic Places (see **Figure 13**). This represents the first time in the California State Park System that a complex of employee residences was developed for park staff. The new residences provided staff with modern housing comparable to homes in an American suburb. The residences maintain many of the aspects that define integrity for historic resources: original location, design, setting, materials and workmanship. The residential area remains the largest and most intact housing development built between 1941 and 1955 in a California State Park. (Avery 2011)

Slippery Rock (State Historic Landmark #827)

Aside from the redwood trees themselves, Slippery Rock is perhaps the most conspicuous and significant landscape feature in the park. Slippery Rock is an exposed slab of Miocene sandstone, approximately 200 yards long and 100 yards wide. The rock formation is named for the underwater springs that seep through the ground and flow down the rock's smooth surface. As early as the mid-1870s, tanbark was hauled down Slippery Rock and out Old Lodge Road to tanneries in Santa Cruz.

In May of 1900, a group of conservationists, led by Andrew P. Hill, camped at the base of Slippery Rock and organized the Sempervirens Club, with the goal of saving the magnificent redwood trees. It was here that the plan to establish Big Basin as a state park was galvanized. A State Historic Landmark plaque marks the location of the Sempervirens Club campsite, dedicated in 1968.

Sempervirens Falls

Sempervirens Falls is immediately adjacent to the site of the original Sempervirens Club campsite. The creek and falls were named in commemoration of the event. The falls themselves have changed little from their appearance in early historic photographs, and remain a popular spot for park visitors.

Wastahi Campground (1923)

Established by the San Jose Campfire Girls, this camp contained buildings and a swimming pool constructed in the 1920s. Little remains from this early period, although a paved area may represent an outdoor dance floor used by the campers. Today, Wastahi campground is a 26-unit walk-in campground that was constructed in 1968.

Blooms Creek Campground (c. 1920s)

Camping has been an important land-use activity along Blooms Creek between its junctions with Sempervirens and Opal Creeks. Two YWCA camps were established near the present-day Blooms Creek Campground during the 1920s. Although neither of these camps remains in place, campgrounds have continued in the general area.

Jay Camp (c. 1906, with subsequent alterations)

This area was originally used for stables that were in place by 1906. A stage line was operated out of this stable, with service to Boulder Creek. A barn and several other structures were added by 1924. The area was used for shops and storage buildings during the 1930s. It is currently operated as a

trail camp, which includes mobile home trailers for seasonal housing and sheds converted to cabins.

Big Basin Lodge cabin sites

Numerous resort cabins were constructed behind the Big Basin Lodge, first built in 1912. Eventually, a total of 52 cabins were in place. By the 1960s, they were deteriorated and obsolete, and gradually demolished by State Parks.

Lodge Road (c. 1875-1878) (Old Lodge Road, Park Road, Bloom Mill Road, Upper *Boulder Creek Road)*

This road was originally built as a logging road in 1875-1878, but was eventually extended to serve as the primary park entrance. It was the only road into Big Basin prior to the construction of Highway 236. In 1903, the road was extended from Slippery Rock to Governor's Camp (Headquarters area). Today, the two-mile route through the park is still used by park employees and local traffic.

Sequoia (Trail Beautiful) Trail (c. 1875)

The Sequoia Trail is one of the oldest trails in the park, and may have been in use as early as 1875. A portion of this trail was formerly known as the Trail Beautiful. This section was built in 1895 from Opal Creek to Slippery Rock and down to the only road (Lodge Road) out of the basin. A part of the Trail Beautiful was originally known as Rodgers Trail, which extended from Governor's Camp to China Grade.

Redwood Trail

The current alignment of the Redwood Trail is much shorter than previous trails that extended through this area. From virtually the inception of the park, visitors were guided through this area to see the most dramatic of the old growth redwood trees. Today, this half-mile loop trail circles some of the largest redwoods in the park. Having originated as a 1.5-mile loop, this trail crossed Opal Creek four times and passed by many of the named trees in the area. In the late 1930s, the area had been heavily impacted by visitor use, and plans were made to have only one trail access this area. By 1940, the route was shortened to a loop from park Headquarters southward along the current alignment.

Highway 236 (1914-1915) (Lower Boulder Creek Road, Redwood Park-Saratoga Summit State Highway, State Highway 9A*).*

Route 236 was built between 1914 and 1915, with approximately five miles through the original park boundaries. Part of the southern portion of the road utilized the route of the Sempervirens Trail. Portions of the Old Barlow Road were also used in the routing of the new highway.

Gazos Creek Road (c. 1924)

Gazos Creek Road appears on the 1924 *Trail Map of the California Redwood Park and Vicinity.* The road was improved in 1927, to provide a western outlet for the park to the coast.

Hihn-Hammond Road (1915-1917)

The Hihn-Hammond Road was originally constructed between 1915 and 1917 as a shingle mill and logging road. The section of the road within the original park boundary runs from Highway 236 to the intersection with the Last Chance Road.

North Escape Road (1938)

The North Escape Road was built by the CCC in 1938 in response to fire safety concerns. A portion of the road utilized the pre-existing China Grade Trail as well as the Maddock Cabin Trail. It also follows the route of the original Opal Creek Trail for 1.5 miles.

Skyline to the Sea Trail (c. 1914)

Much of the Skyline-to-the-Sea Trail west of Opal Creek appears to have been part of a trail in place as early as 1914. The present-day trail follows a portion of a 1905 trail that extended from China Grade to Maddock Creek. The section of the trail, following the West Fork of Waddell Creek to Berry Falls, was known as the Berry Falls Trail in 1912. In more recent years, the trail has been extended several times and now connects Big Basin with Castle Rock State Park.

Numerous lumber mills, camps, and cabins (prior to establishment of the park)

There were numerous lumber mills and camps in what is now the state park. They include Union Creek Mill, Blooms Mill, Waters Tie Camp site, Porter Brothers Tanbark Camp, Old Bark Campsite, Beatle Mill, and Rodgers Sawmill. None of these camps remain, although these sites are likely to contain archaeological evidence of early lumber mill activities. Similarly, there were several cabins in place prior to the establishment of the park, including Maddock's Cabin (1883–1938), Barlow Cabin (removed 1907), Pratt Cabin, Rodgers Cabin, Timms Cabin (pre-1883), and the Barr Cabin (pre-1876). None of these cabins remain today.

Rancho del Oso

Rancho del Oso and the lower Waddell Creek drainage has a rich history. Remnants of that history still exist at RDO. These include features, sites and structures that relate to prehistoric California Indians, Spanish explorers, pioneering loggers, dairy ranchers and a prominent American family, the Hoovers.

Significant evidence of prehistoric inhabitants has been found at RDO. This area was located between the territories of the Quiroste and Cotoni Ohlone tribes**.**

The lower Waddell Creek was where the Gaspar de Portola expedition found sustaining and healing wild fruit that cured many members of the exploring party who were suffering from scurvy.

William Waddell established the first organized lumber operation in Big Basin. Originally from Kentucky, Waddell came to the area as an experienced woodsman in 1850. Waddell began logging near "William's Landing," located at the mouth of San Vincent Creek, near modern Davenport. After relocating to Waddell's Canyon, also known as Big Gulch, he built the largest lumber mill in the county at the fork of Waddell Creek in 1862.

Rancho del Oso aerial 1927

He constructed a five-mile long tramway from the mill on Waddell Creek to the beach. Oxen, and later horses, were used to pull the carts of lumber along the tramway. Waddell also constructed a wharf at Waddell Creek, which was damaged by a storm soon after its construction. The mill burned down in a fire in 1864 and was relocated to Seaside, along Scott Creek. Rather than repairing the wharf, Waddell constructed a new 700-foot wharf at Año Nuevo Bay in 1866, and by 1868, he constructed a railroad tramway to the new wharf. Waddell continued to log in the Big Basin region until his death in 1875. Some trails or logging roads remain from the Waddell's logging activities; although the buildings and structures are no longer present (Kennedy 2009).

Theodore Hoover, older brother of President Herbert Hoover, visited the Waddell Valley as a Stanford University student on a surveying expedition in 1898. Hoover wrote about the experience in his journal, *"Someday I'm going to own a field, a hill and a piece of the stream"* (Stanford Magazine Jan/Feb 1997). Hoover was able to accomplish his dream in 1912 when he purchased the majority of the Waddell Valley from over a dozen small landowners. He named his holdings Rancho del Oso or Ranch of the Bear. It became the weekend retreat for the Hoover family. In 1925, Theodore Hoover became the Dean of the Engineering Department at Stanford University. The same year he had a four-story, thirty-room Spanish style residence built at RDO. It was called the "Casa." Theodore and his wife, Mildred, moved into the Casa full time after his retirement from Stanford University in 1936. Hulda Hoover McLean, the couple's second daughter, moved into the Casa in 1943 with her family to take care of the Ranch and her father after her mother died.

Hulda and her husband, Chuck McLean, raised three boys at RDO. They became active community members in Santa Cruz County. Hulda became the first woman on the County Board of Supervisors. Theodore Hoover died at RDO in 1955. The Casa burned down in 1959. The McLeans continued to live at RDO until it was sold to the State in 1979. It was Theodore Hoover's vision to preserve the natural beauty of the lower Waddell Creek watershed.

The McLean family maintained that vision during the years that they lived at RDO. The house that they built in 1971, the "Casita," has become the Nature and History Center and the lower reaches of Waddell Creek are now included in the Theodore J. Hoover Natural Preserve.

Saddle Mountain

A review of historical aerial photographs of the property, beginning from 1948 through 2005, revealed a history of changes at Saddle Mountain. In 1948, the property appeared to be undeveloped with no visible on-site structures; however, the northeastern portion of the site was rough graded in preparation for construction. The northern and central portions of the property were sparsely populated with trees and the southern portion was densely forested. By 1956, a motel facility had been constructed in the northeastern portion of the property, as well as several smaller structures and a swimming pool. By 1963, two unpaved roads had been developed on the property. There has been little development since the 1950s. The property has served as a family resort/motel and a saloon and lodge. Currently, an environmental outdoor school is leasing the property from State Parks since 2007 when it was acquired from Sempervirens Fund. The outdoor school facilities include several cabins, a garden, trails, a small outdoor campfire center, a small amphitheater, staff housing, a dining facility and kitchen.

Little Basin

Prehistoric evidence of human habitation has been identified in two archaeological sites that are indicative of more permanent settlement by California Indians at Little Basin. A large bedrock milling feature is located on the margins of a meadow. The association of creeks, meadows, and wetlands, rich in ecological diversity, played integral roles in the lifeways of prehistoric peoples of the region.

The first historic recorded activities in the Little Basin area were two logging operations. The first took place from 1885 to 1895 and the second from 1908 to 1910. The stumps of the large trees that once stood on the basin floor can be seen around the camping area and on the trails.

The Little Basin property was used as a cattle ranch from 1935 to 1940. Thin topsoil prevented range-quality grass from growing, and the ranch was subsequently abandoned. During this time, the Little Basin Reservoir Dam was built to provide a year-round source of water for the cattle and grass.

The property was sold to Mr. Rohn in 1940. Rohn used the property as a military surplus depot, refurbishing World War II equipment. To provide space to store the equipment, Rohn cut trees and leveled terraces in the area which is now used for overflow parking. Rohn also built the Coffer Spring Dam in the west hill above the basin floor to help provide a continuous supply of potable water to Little Basin. Coffer Spring Dam, although no longer used for potable water, is still a working dam.

On February 13, 1963, Hewlett Packard (HP) founders Bill Hewlett and David Packard purchased the Little Basin property from Hazel Rohn for a place to accommodate large company picnics. The campsite area was developed from 1963 to 1973 by HP employee volunteers who needed a place to set up their tents during weekend work parties or during company picnics. The picnic area was also developed by HP employee volunteers. The picnic tables currently in the picnic area were designed by Bill Hewlett. The lumber was cut to length in HP's carpentry shop in Palo Alto, trucked to Little Basin and assembled. Volunteers also made use of the natural resources that Little Basin offered. The current cook shack structure and the bandstand were constructed from one fallen redwood tree milled on-site.

In 1991, HP created a ten-year master plan to develop and improve the site. This plan included a new operations center, water treatment facility, restroom remodeling, maintenance center, tent cabins, sports court and field, children's play area and road paving. All projects were complete by 2001 (information from www.LittleBasin.org).

In 2007, HP transferred ownership of Little Basin to the Peninsula Open Space Trust (POST) and Sempervirens Fund for permanent resource protection and public recreation. The two organizations partnered to maintain the land until it was acquired by State Parks in 2011.

Museum Collections

The museum collections consist of a variety of objects related to the park's cultural and natural history. A significant portion of the collection is archival documents, such as historic photographs and postcards of the park. These objects document the early years at Big Basin Redwoods SP and show buildings, activities, people, and the natural resources of the park. A.P. Hill and F.R. Fulmer produced many of the postcards and photographs in the first thirty years of the park's existence. The park was fortunate to receive glass plate negatives made by A.P. Hill that were later donated by John Fulmer. There are also many photographs and postcards of the park from unknown sources. Park staff and volunteers have collected park brochures, memorabilia, and programs. Much of the photographic and art collections related to Big Basin Redwoods SP are currently stored at California State Parks Photographic Archives and the State Museum Resource Center in West Sacramento. Mounted natural history specimens make up another large portion of the museum collection.

A Scope of Collections Statement was completed for the park in March 2006. The Scope of Collections Statement discusses historical periods from circa 2,900 B.P. to the present day, proposes significant topics to be interpreted, discusses the content, history, and uses of the park collections, and presents collections development and management goals.

The collections development goals focus collections acquisition on the following Big Basin subject areas: the acquisition and development of Big Basin Redwoods SP; historic recreational activities; park personalities; oral histories; archival materials and park memorabilia; natural history; and Native American presence in the region.

AESTHETIC RESOURCES

Scenic Resources

Scenery can be defined as the general appearance of a place and the features of its views or landscapes. It consists of both biophysical elements (landforms, water, and vegetation) and cultural, or manmade, elements. Scenic quality is an important and valuable resource, especially on public lands. Many people value the quality of the scenery and have high expectations of scenic quality, especially when visiting state parks. Scenic resources often provide a unique sense of place to an individual park, as well as to specific areas within a park unit. Big Basin Redwoods SP has been recognized for its unique scenic qualities and natural beauty.

Majestic old growth redwoods

The visual resources of Big Basin Redwoods SP are associated with views inside the park, especially of the majestic old growth redwood trees, as well as views from the roads looking toward the park landscape. These are the views and special scenic resources that provided the motivation to preserve this inspiring and unique landscape.

The visual quality of this area is very important not only for visitors to the park, but also on a local, regional and State level, as indicated in local and regional land use plans (such as the Santa Cruz County General Plan and Local Coastal Program). Views from the highway and park roads are where many people experience this landscape. Consequently, the preservation and protection of scenic quality is an important public issue in this region.

Overview of Scenic Character

There are a wide variety of scenic resources to experience in the park. The majority of the landscape is characterized by many ridges running generally

southwest from the summit toward the ocean. A variety of vegetation communities occupy these ridges – mixed evergreen forests, oak woodlands, chaparral, and grasslands.

The landscape character in the park is extremely variable. Visitors can experience the shady and cool old growth redwood forests of massive, towering trees, mixed evergreen forests with a variety of forms and textures, and meandering creeks containing lush riparian corridors and waterfalls are surrounded by delicate fern covered rock faces. Canyons of coastal scrub present seasonal wildflowers and the scent of sagebrush, as well as the freshwater and brackish marshes that harbor abundant wildlife habitat within sedges, cattails, and bulrushes. Visitors can also find drier sites with an open canopy of knobcone pine forest intergrading with dense stands of mixed chaparral, and sandy beaches with panoramic views of the Pacific Ocean.

View of the basin from Buzzard's Roost

This diversity of landscape character and vegetation is complemented by the CCC-era log and stone structures and associated park facilities designed to harmonize with the natural landscape. These Park Rustic structures help to define the special scenic qualities in the park Headquarters area.

Situated beside the Pacific Ocean, the western side of the Santa Cruz Mountains is heavily influenced by marine weather patterns. Summer fog is frequent, producing a cool, misty, and quiet quality to the coastal areas, blanketing the coastal bluffs, and often reaching deep into the canyons and the redwood forest. Along with a variety of weather conditions (such as fog, wind, and rain), the changing seasons contribute to a transformation of vegetation in form, texture, and color. The most noticeable are the seasonal displays of wildflowers throughout the park and the changing colors of deciduous vegetation and grasses which are especially pronounced in the autumn and spring.

Highway 236 is the gateway into the main entrance and core area of Big Basin Redwoods SP. Near the park entrance, it is a narrow curving road dominated by a closed canopy of redwoods.

Highway 1 offers extensive panoramic views of the surrounding landscape, and serves as the gateway to the Waddell Beach and RDO sections of the park. The scenic resources along Highway 1 in this vicinity are considered to be top quality. There is a variety of terrain, land uses, and vegetation as well

as a rich contrast between wide marine terraces and high ridges, the ocean on one side, and dry chaparral areas near lush forests.

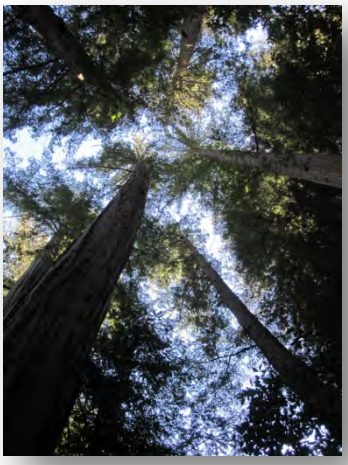
Vista points and panoramic views are primarily found along areas of higher elevation and open vegetation along the roads and trails in and surrounding the park. Panoramas of the park and surrounding landscape can also be found on Highways 9, 35, 236 and China Grade Road.

Distinct areas of the park with panoramic views are Waddell Beach, RDO, and The Chalks. In Waddell Beach and RDO, there are extensive views of the Pacific Ocean toward the west, and to the east, views of the interior of the park property as the landform gains elevation and the vegetation changes from coastal scrub to forest. The Chalks, a high ridge on the western side of the park, offers one of the best vantage points and panoramic views across the park.

There are a variety of unique and valuable scenic areas throughout the park, including Waddell Beach, the RDO/Theodore J. Hoover Natural Preserve/Nature and History Center area, the old growth redwood forest, The Chalks, and the numerous waterfalls encountered along the trails.

There are three areas of the park that have unique scenic characteristics: the Park Headquarters, RDO, and Waddell Beach.

Waddell Beach



Old growth redwoods

Park store

Kite surfing at Waddell Beach

Park Headquarters

The Headquarters, or core area of the park, is characterized by majestic old growth coast redwood trees, some towering above 300 feet. The entire area is dominated by the redwood forest, with massive red-brown striated trunks leading the visitor's eye upward toward glimpses of the sky through a canopy of green. The area is predominantly shady, receiving filtered sun through the tree canopy. The understory vegetation in this old growth forest provides a variety of textures, forms, and color to the landscape. Sempervirens Falls is located in this area and is a unique feature and extremely scenic resource. Several other waterfalls are located adjacent to trails throughout the park.

Most of the facilities and structures in this area complement the scenic quality by harmonizing with the natural environment primarily through the use of natural/native building materials (primarily stone and wood), siting structures and other facilities unobtrusively within the trees, and the use of dark brown colors to blend effortlessly with the existing landscape.

Many of the structures and facilities in the core area of the park are historic structures built by the CCC in the 1930s. These structures illustrate the Park Rustic style of architecture and site planning as they blend with the natural landscape. The Headquarters building and Campfire Center are two of the best examples of the Park Rustic style and use of native materials.

Rancho del Oso

This area of the park is located on the coast adjacent to Highway 1 and extends east of the highway into Waddell Valley. The valley can be characterized as a canyon originally shaped by the meandering of Waddell Creek, and gradually widening at the mouth of the creek as it enters the Pacific Ocean. Steep-sided bluffs of native Monterey pine form the north and south boundaries of this area. Elevation increases from west to east and there are also a variety of vegetation communities represented, from fresh and brackish marshes, grassy meadows, to northern coastal scrub, agricultural fields, and finally, redwood forest. The mix of vegetation adds an ever-changing variety of color, form, and texture throughout the seasons. Expansive views of the ocean predominate at the western boundary of this area.

Waddell Beach

Waddell Beach is a sandy pocket beach at the mouth of Waddell Creek. The beach is enclosed on the north and south by bluffs that extend down to the ocean's edge. The dominant visual feature is the expansive view of the Pacific Ocean toward the west. To the east is a limited viewshed looking into Waddell Valley.

AUDITORY RESOURCES

The dominant sounds at Big Basin Redwoods SP are natural ones, of wind in the trees, bird calls, and moving water. The roadways in and out of the park (Highway 236 and Highway 1) contribute vehicle noise in adjacent areas, such as in the Headquarters area, especially during the busy summer season.

INTERPRETATION RESOURCES

This section presents an overview of the Interpretation resources at the park. More detailed information on interpretation resources and media used in the park can be found in the Interpretation Resources Inventory prepared for this planning effort.

Park Interpretive Conditions

Section Overview

The primary interpretive facilities and programs are located in the park Headquarters and the Rancho del Oso areas. These two interpretive programs are currently managed separately. A third area, the Saddle Mountain area, is currently leased to a nonprofit environmental education provider. Little Basin, a recently acquired recreation area, also provides programs and resource information to visitors through a separate concessions operating agreement.

The Rancho del Oso, Headquarters, and Saddle Mountain areas will be addressed separately in this section, since their programs are currently unrelated.

As the oldest state park in the system, Big Basin Redwoods SP has a long history of interpretive programs and exhibits. This section will not cover the park's interpretation history, except as it pertains to current conditions, but it is a topic worthy of further study and documentation.

Past Interpretation Planning

Described below, are three State Parks-produced interpretive planning documents for the current park interpretation:

1. ***Big Basin Redwoods State Park Interpretive Prospectus,* April 1975**. The park cultural and natural history information in this brief document emphasizes the Waddell Creek watershed. Its themes are:

Primary Themes:

- The total environment and ecology of the watershed
- The watershed concept and its relationship to the human environment
- Various plant communities of the park
- Animal life of the park and its association with various plant communities
- The origin of the redwood conservation movement and the beginnings of the State Park System.

Secondary Theme:

- Pioneer life and associated early logging activities.

2. ***Big Basin Nature Lodge: Big Basin Redwoods State Park Interpretive Plan*, January 1989**. This is the exhibit plan for the current Nature Lodge exhibits. The author of this plan extended it with suggested topics and media for other park interpretation sites and programs, including RDO. The topics and themes are consistent with the topics presented in the interpretive prospectus, but are more detailed.

3. ***Interpretive Plan for the Visitor Center at Big Basin Redwoods State Park*, October, 1994.** This is the plan for the current Sempervirens Room exhibits. It is based in part on the Nature Lodge interpretive plan recommendations for the Sempervirens Room, and the cultural history display planning that was not implemented at the Nature Lodge.

Current Interpretation Topics

Headquarters Area

Redwood forest ecology, park plants and animals (especially the coast redwood and marbled murrelet), wayfinding and visitor orientation, microclimate influences on plant communities, park watersheds, and area history—homesteading, timber harvesting, redwood conservation movement, the CCC, and the early park days.

Rancho del Oso

Dune, pond, and wetlands ecology; area history (with emphasis on William Waddell and the Hoover family), park animals (particularly newts and the extinct California grizzlies), wildflowers, wayfinding, and visitor orientation.

Interpretive Facilities

Headquarters Area

Sempervirens Room: This room in the Headquarters Administration building serves as a park orientation and information center, and a meeting room for off-season interpretive programs. The Mountain Parks Foundation operates a sales counter, selling books and other materials related to the park's resources. A popular interactive computer kiosk provides general information about the park and detailed information on several trails.

The Sempervirens Room also contains exhibits on the park's history, installed c. 1996. They cover the loggers, homesteaders, park recreation in the early 20th century, the movement to save the redwoods, and the expansion of the park to include the entire Waddell Creek watershed. A large diorama, possibly built by the CCC or the WPA, depicts the Headquarters area in the 1930s. The room is furnished based on an interior photograph of the Big Basin Lodge lobby in the early 20th century *(Note: New exhibits were installed in 2013 to replace the outdated interpretive information and displays).*

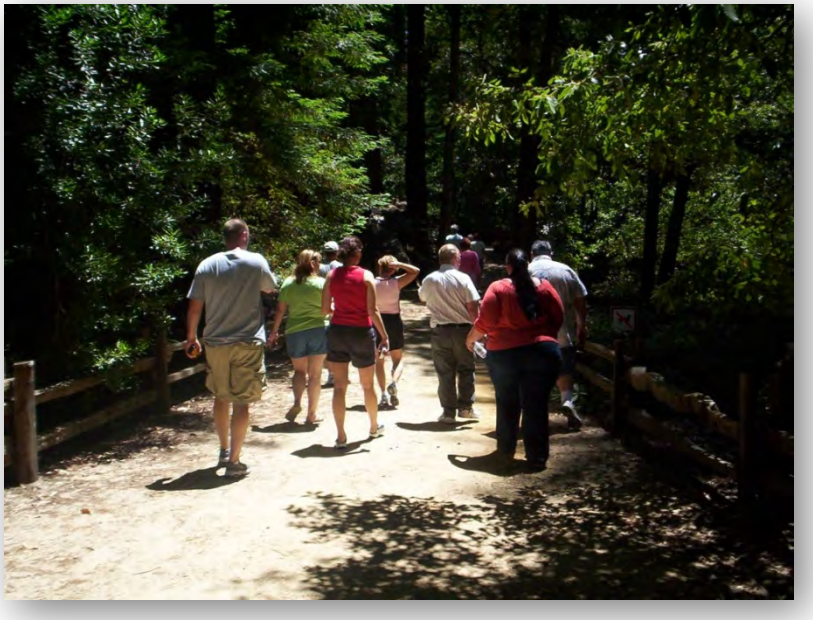
Nature Lodge: This building was a lunchroom in the 1940s and has been adapted for interpretive displays about the park's natural resources. The primary exhibits focus the three most prevalent plant and animal communities of the park—upland/chaparral, mixed evergreen forest, and redwood forest. Taxidermal animals are used in each display. Other exhibit sections provide information on the park's geology, meteorology, and watersheds; effects of fire on redwoods, and the different species of sequoias world-wide. Several enlarged postcard images from earlier park days are displayed on the walls.

Sempervirens Room exhibit

Three interactive displays provide a dynamic dimension. “Build an Animal” interprets the adaptations of several park animals in a mix-and-match activity. Visitors can peer through tubes at the watershed model to see major features mentioned in the display text. The third interactive display is a panel with push buttons that display the features of the different species of redwoods. Visitors can also watch a film about marbled murrelets. The *Audio-visual and Other Electronic Media* section provides more details on the film.

The back room of the Nature Lodge is devoted to the Naturalist’s Lab exhibit. This display recreates how the room appeared circa 1948 when it was part of the Central Nature Workshop used by Leonard Penhale, the first official State Park Naturalist, to prepare mounted specimens and artwork for exhibits throughout the State Park System. The Naturalist’s Lab exhibit includes many of the mounted natural history specimens from the original 1940s Nature Lodge exhibits.

Redwood Trail: The Redwood Trail is an interpretive loop trail that winds through old growth redwood groves and is within easy walking distance from the Headquarters building. The trail guide brochure is sold at the bookstore, park Headquarters, and at the beginning of the trail. The trail is accessible for people with mobility disabilities.



Redwood Trail Visitors

Campfire Center: A Campfire Center was built in the Headquarters area during the early years of the park. The CCC completely reconfigured and rebuilt it as an amphitheater with stage in the 1930s. The campfire center/amphitheater is still in use, and serves as a venue for traditional campfire programs and special events. Audio-visual equipment has been

upgraded several times through the years, and is regularly used for campfire programs and special presentations.

Big Basin Lodge: The Lodge is occasionally used for interpretive activities, especially for special events such as Founders' Day. It is also used for docent training sessions. Historic photos of the park are displayed on the interior walls. It is not accessible for people with mobility disabilities.

Wayside Interpretation: Seven outdoor panels and several historic markers or plaques are located in the Headquarters area. The panel topics are:

- Don't feed the wildlife
- Marbled murrelet natural history and conservation
- Habitats and trails of Big Basin
- The Maddock homestead and tanbark harvesting
- "Relics of the Past" - redwoods
- Redwood life span and size (by redwood round).

A time capsule marker from the 1978 State Park's 50th anniversary, a plaque on a historic water fountain dedicated to Andrew P. Hill in 1924, a plaque with information on the CCC's park development, and a state historic site marker noting the 1902 founding of the park could also be considered interpretive features of the park. There is also a state historic landmark plaque at Slippery Rock commemorating the founding of the Sempervirens Club.

The Redwood Round display is the most prominent outdoor interpretation in the Headquarters area. It is a cut section/slice of a large redwood trunk. It was originally installed by the CCC in the 1930s. The original round was in deteriorating condition by the 1990s. The district replaced it with a contemporaneous round that had been displayed inside at the Los Angeles Museum of Science and Industry. The enclosure is still the Big Basin original. The round is marked with dates in human history and is located adjacent to the Headquarters Administration building.

Rancho del Oso

Nature and History Center: The Nature and History Center is the main interpretive facility in the coastal section of the park. It is currently open on weekends. The center includes interpretive exhibits, a small interpretive sales counter, a meeting space, a reference library for docents and staff, and a small office for the seasonal park interpretive specialist.

The current interpretive exhibit topics are native flora and fauna, and RDO history. A taxidermied grizzly bear is the highlight. The Nature and History Center has also hosted nature-oriented art exhibits. The inner

courtyard plantings include area natives, which are identified with plant labels.

Park staff and volunteers have developed plans for new interpretive exhibits in the Nature and History Center. Topics include:

- Natural community diversity
- Stewardship and habitat preservation, endangered and extinct species
- The Hoover family history at RDO, and their nature study
- A comparison of logging past and present
- Marsh life exploration, from microscopic to macroscopic

Plans also include new exhibits on birding and ducks, to be located outside of the Nature and History Center *(Note: New exhibits were installed in 2013 to replace the outdated interpretive information and displays).*

Ranger Office/Visitor Center: There are a few exhibits in this building, on area wildlife, park recreation, and wayfinding (including a three-dimensional area map). New exhibits are also planned for this building, to include an introduction to the park flora and fauna, as well as wayfinding and recreation opportunities.

Nature Trail: The RDO Nature Trail is within easy walking distance (approximately 200 feet) of the Nature and History Center. The nature trail guide booklet is keyed to numbered posts along the trail. Topics include plant communities, individual plant species, local animals, Native California Indians, and local history.

Wayside Exhibits: A deck with three interpretive panels along the roadway is located adjacent to the Theodore J. Hoover Natural Preserve. Topics are park natural and cultural history (including the Hoovers), and the preserve's marsh habitat.

Four interpretive panels are located along the western section of the Skyline-to-the-Sea Trail. Topics include newts, native wildlife, salmon and steelhead, and wayfinding.

Panels by the Waddell Beach parking lot were replaced as part of an ADA compliance project in this area.

Saddle Mountain

The 17-acre Saddle Mountain area was acquired by California State Parks in December 2007. It is currently operated under a lease agreement to the nonprofit "Exploring New Horizons" for interim use as an outdoor education school, summer camp, family programs, and weekend group programs at the site. Exploring New Horizons uses three facilities on the property for interpretation and education similar to typical state park programs: a building that formerly housed a restaurant, and two campfire center/ amphitheaters.

The former restaurant is used as an indoor activity area, as well as a dining hall and office and storage space. It has a large combination dining room/dance floor. The larger campfire center/amphitheater seats approximately 60 people, and the smaller campfire center/amphitheater has seating for approximately 40 people.

Exploring New Horizons also developed an organic garden, pens for farm animals, and a small trail system on the south side of the property; these are all used in the environmental education program.

Interpretive Programs

Headquarters Area

Campfire Programs: Campfire programs are presented in the historic CCC-built campfire center. Programs are popular with visitors and cover a wide range of cultural and natural history topics.

Campfire center

Walks and Hikes: Docents or staff members lead Redwood Loop walks on the Redwood Trail. The walks focus on park history and redwood forest ecology. Staff members and docents lead many other interpretive walks and more strenuous hikes throughout the year. Most are given during the busy camping months. Schedules, topics and routes vary based on the walk or hike leader, usually a volunteer docent. Other walks/hikes include history walks to the Maddock cabin site or Slippery Rock, dog-friendly walks on the North Escape Road, and longer hikes on the Shadowbrook Trail or to the 1,685-foot Ocean View Summit. A variety of additional walks and hikes are offered intermittently.

School programs: Seasonal staff and volunteers conduct "Old Growth Redwood Walks" for K-12th grade school groups, covering cultural and natural history. More than 400 children per year have attended these programs. Ranger and interpretive staff have previously conducted offsite school programs.

Other Presented Programs: Seasonal park interpreters present Junior Ranger programs and Big Basin Nature Club programs for children during the summer camping season. They are designed for 7 to 12 year-old children as a part of the California State Parks statewide Junior Ranger program.

Big Basin Nature Club programs, for 3 to 6-year olds accompanied by a parent, are also offered during the summer camping season. The programs were developed in response to demand for activities for children too young for Junior Rangers, and feature age-appropriate hands-on nature activities.

During the summer 2008 season, interpretive staff experimented with craft activities at the campgrounds. These were offered every Monday, and were fairly successful.

Special Events: Founders' Day commemorates the 1902 park founding. Every September, up to 30 docents present a melodrama along the Redwood Trail, using music and theater to tell the story of the founding of the park. Staff and docents also offer other history-themed activities for adults and children.

An evening interpretive event in the Halloween season, The Missing Arm of William Waddell, combines history (William Waddell's death by grizzly bear attack) and imagination on a forest night-time walk.

Other annual events are the Tales of the Basin storytelling weekend in July, Wings over the Basin weekend of bird activities and scholarship in May, and a Mother's Day history program called The Women of Big Basin.

Informal Interpretation: Roving Interpretation provides an important service to visitors. Interpretive staff and docents visit campgrounds and day use areas, answer questions, share hand-held interpretive artifacts, and encourage compliance with park rules. These contacts provide many people who might not otherwise attend an interpretive program with an interpretive experience and a positive interaction with park staff.

Continuing a long tradition at the park, interpreters and docents give informal Coffee Talk programs in the Sempervirens Room on some weekend mornings during the peak season. Along with hot beverages, interpreters share park information with visitors and respond to questions. Various interpretive exhibits are discussed during the Coffee Talk.

Rancho del Oso

School Programs: Rancho del Oso school programs focus on nature discovery, with some cultural history included. Approximately 100 children per school year have attended the programs the last three years.

Public Programs: In the past, the staff interpreter and docents have presented guided nature walks on Saturdays, often with special themes. These programs normally meet at the Nature and History Center and explore a nearby natural area. Occasionally, outside experts have also guided weekend walks. Due to the current low staffing levels, regular weekend walks are not being offered.

The Nature and History Center is the hub of RDO interpretation activities. Outside speakers have given afternoon or evening presentations in the Center on diverse cultural and natural history topics such as organic farming, snowy plover conservation, grizzly bears, whales, and the “Big Slide” located north of the park along Highway 1.

Nature and History Center exhibits

Staff interpreters have also organized nature-themed art and craft classes at the Center, and receptions for the openings of new interpretive art displays.

"Newt Night" and “Grizzly Bear Festival” have been popular annual special events, and a “Wildflower Weekend” was added to the special event line-up several years ago.

Audio-visual and Other Electronic Media

A *DVD of a short film on marbled murrelets* is available for viewing in the Nature Lodge. Viewers can choose English or Spanish captioning.

Campfire programs, special events, and talks often include presentations developed on computers (using PowerPoint and other software) and shown via an LCD projector.

The California State Parks Foundation has produced a podcast on Big Basin State Park, which is available on their website. A link to the podcast also appears on the official State Park's Big Basin Redwoods page, as well as a link to download a PDF of the broadcast transcript. The podcast includes information on the park's founding, natural resources, recreation opportunities, and the story of the discovery of the marbled murrelet nest that solved the marbled murrelet mystery. It does not mention the Rancho del Oso area.

Park Websites: The Park's official website for Big Basin Redwoods SP is www.parks.ca.gov/BigBasinGP. The cooperating associations Mountain Parks Foundation and Friends of Santa Cruz State Parks also have some information on their websites. There is little interpretive content on these sites.

Interpretive Collections

The park archives and museum collections are very large. State Park's collections catalogue database contains records for more than 1,000 Big Basin Redwoods SP items. They include Native California Indian artifacts, timber harvesting tools, historic photographs, books and postcards, documents related to the park's founding and early operation, objects used in the park's early days, WPA art from an early interpretive display, taxidermal animals (some also with a historic connection to early park displays), artwork by Hulda Hoover McLean, and much more. The vast majority of the objects are not suitable for hands-on use, but they are valuable for research. Some of these items are on display in the park. The park acquired a few of Harriet "Petey" Weaver's personal items relating to Big Basin for eventual development of an exhibit about her.

The current collection includes some objects obtained for hands-on use in interpretive programs. The bulk of the collections, including most of the WPA art collection, are located at the State Museum Resource Center in Sacramento.

Docent Programs

The Headquarters and Rancho del Oso areas have active docent programs. Volunteers make it possible for a variety of interpretive activities to be offered in both areas of the park. They also keep the Nature and History Center open on weekends at Rancho del Oso, and work in the Nature Lodge and Sempervirens Room at Headquarters.

Support Facilities

Interpreters' office and storage space is currently limited in the Headquarters area.

The docent den located in the Krevis Cabin provides a space for preparing for presentations, resting between programs, and conducting research. Another collection of reference books is kept here, plus some print images, resource files and costumes.

The Rancho del Oso Nature and History Center contains a reference library for docents and staff in that section of the park.

Cooperating Associations

The *Mountain Parks Foundation* raises funds for park interpretation in the Headquarters area, and the *Waddell Creek Association* funds interpretation at RDO. Several active members of the Waddell Creek Association are also docents at RDO.

Regional Interpretation

The regional interpretation study area is a section of the Santa Cruz Mountains and the adjacent coastal area chosen to reflect common park visitor access routes along Highways 1, 9, 17, 35, 84, and 236. It is approximately 20 miles wide and 40 miles long, extending from San Gregorio in the northwest to Aptos in the southeast, and from the ocean in the southwest to the edge of the Santa Cruz Mountains in the northeast. .

Major interpretation topics in this study area include redwood, coastal, marine, and grassland ecology; wetlands, timber harvesting, natural resource preservation, recreation past and present, local agriculture, maritime exploration and commerce, the Ohlone, European exploration and settlement, special status plants and animals, and geology.

Area Interpretation Providers

This area is rich in interpretation providers. The following list has been limited to the providers with the strongest physical or thematic connections. All are either within ten driving miles of Big Basin Redwoods SP Headquarters or the RDO entrance, connected by publicly accessible fire roads or trails to the park, or with strong interpretation topic overlap. A list of primary interpretation topics is given for each of these providers.

- **Año Nuevo State Park:** elephant seals and other marine mammals, plant communities, rocky shore and sand dune ecology, the Quiroste, Spanish exploration and mission outpost, dairy ranching, coastal agriculture, lighthouse and shipwreck history.
- **Butano State Park:** plant communities, nocturnal animals, amphibians, Native California Indians, logging, homesteading.
- **Castle Rock State Park:** timber harvest history and impacts, second-growth forest succession.

- **Cloverdale Coastal Ranches, Peninsula Open Space Trust:** coastal grassland ecology, habitat restoration, red-legged frogs, San Francisco garter snakes.
- **Henry Cowell Redwoods State Park:** redwood ecology, logging, preservation, plant communities, Ohlone.
- **Memorial Park, San Mateo County:** redwood ecology, land use history.
- **Natural Bridges State Beach:** coast ecology and geology, monarch butterflies.
- **New Brighton State Beach:** animal migration (including monarch butterfly, sooty shearwater), human migration (including Ohlone, Spanish, Portuguese, Chinese), the CCC, park area recreation history.
- **Pescadero State Beach (marsh preserve)**: coastal wetland ecology.
- **Pigeon Point Lighthouse State Historic Park:** lighthouse, shipwrecks, whales and whaling, Monterey Bay National Marine Sanctuary, California Coastal Trail.
- Pigeon Point is also one of the gateways for the offshore **California Coastal National Monument (CCNM).** The Bureau of Land Management (BLM) is the primary agency in charge of the CCNM; California State Parks is a partner.
- **Portola Redwoods State Park:** redwood ecology, timber harvesting
- **Quail Hollow Ranch County Park, Santa Cruz County:** area cultural and natural history, including sandhill plant and animal special status species.
- **San José History Park, City of San José:** This facility is outside the study area, but is located only 22 miles from Big Basin Headquarters. It is worth noting because it contains the relocated and restored **Andrew P. Hill home**. Interpretation of the home includes the story of Hill's role in founding Big Basin Redwoods SP.
- **San Lorenzo Valley Museum, Boulder Creek Historical Society:** logging and other forest product harvesting, life in the San Lorenzo Valley c. 1900.
- **Sanborn County Park, Santa Clara County (interpretation/education run by Youth Science Institute):** nature-based science study.
- **Skyline Ridge/Russian Ridge Preserves, Midpeninsula Regional Open Space District:** natural communities, pond ecology, recreation opportunities and orientation. These adjoining open space preserves share a visitor center and interpretive program.
- **The Forest of Nisene Marks State Park:** redwood forest ecology, logging and other land use history.

2.5 PARK SUPPORT

There are many volunteer groups, nonprofit organizations, advocacy groups and cooperative associations that assist with acquisition, operations, maintenance and interpretation at the park. Typical park support activities include trail patrols and maintenance, special events, interpretive programs, facility maintenance, habitat restoration and land acquisition.

Friends of Santa Cruz State Parks is dedicated to the long-term preservation of local state park resources to ensure that their history, traditions and natural beauty may be enjoyed by all. As a nonprofit organization, Friends work in a creative partnership with California State Parks to fund and support interpretive activities and recreation by promoting public education, awareness and participation.

The **Mountain Parks Foundation** has been funding educational and interpretive activities in the Santa Cruz Mountains State Parks since 1973. In cooperation with California State Parks, the Foundation supports educational activities for more than 1.5 million visitors each year. It publishes and distributes park literature, sells books, maps and park brochures, purchases equipment and supplies for educational programs, sponsors seminars, children's day camps, and special events for park visitors.

The **Santa Cruz Mountains Bioregional Council** is a nonprofit public benefit corporation whose purpose is to conserve native plant and animal biodiversity in the Santa Cruz Mountains Bioregion. The Bioregional Council works to preserve and restore native biological diversity and processes through information sharing, coordinating activities, fostering of biological research, initiating land conservation and habitat enhancement projects, and supporting public education. Council members include individuals from state and federal resource management agencies, local governments, land trusts, open space districts, educational institutions, conservation groups, and private properties.

The **Santa Cruz Mountains Trails Association** builds and maintains trails in the Santa Cruz Mountains. The group has been active at Big Basin Redwoods SP rehabilitating park trails, including the Skyline-to-the-Sea Trail.

The **Save-the-Redwoods League** contributes to the permanent protection of redwood forest, funds environmental restoration, supports research to expand knowledge about the redwood forest, and educates the public about the redwoods and the redwood forest ecosystem.

The **Sempervirens Fund** works closely with California State Parks to preserve and protect the natural character of California's Santa Cruz Mountains and encourages appropriate public enjoyment of this environment. The Fund purchases threatened redwood forest lands in the Santa Cruz Mountains

region and fosters public participation in activities such as reforestation and trail projects.

The **Waddell Creek Association**, in cooperation with California State Parks, operates the Rancho del Oso Nature and History Center. The association helps to interpret and preserve the resources of the Waddell Valley section of Big Basin Redwoods SP.

The **Wildlands Restoration Team** is a volunteer based organization dedicated to preserving the rich biodiversity of the Santa Cruz Mountains. The group has been active at the park restoring plant communities and wildlife habitats.

2.6 PLANNING INFLUENCES

Planning for State Parks is extensive, and must consider issues that cross statewide, regional, and local boundaries. Federal, state, county, and community agencies are responsible for providing oversight and review of various planning-related policies and laws. Additionally, local planning information is essential in assisting State Parks with relevant information regarding natural, cultural, recreational, and aesthetic resources, existing land uses, and education and interpretation programs pertinent to the park.

The following systemwide, regional, and regulatory planning influences were considered in developing the General Plan goals and guidelines.

SYSTEMWIDE PLANNING

Systemwide planning improves the ability of State Parks to fulfill its mission by establishing policies, methods and guidelines for managing state-owned park land. This enables State Parks to apply a more consistent approach and implementation to the various aspects of park planning, preservation, development and operation throughout the park system. It is the intent of this General Plan to be consistent and current with systemwide planning and policies. Elements of systemwide planning policies, procedures and guidelines include the following: A description of each of these is found in **Appendix G**.

- Public Resources Code
- California Environmental Quality Act
- California Department of Parks and Recreation Administrative Manual (DAM)
- California Department of Parks and Recreation Operations Manual (DOM)
- *Department Operations Manual (DOM) Chapter 0300, Natural Resources*
- *DOM Section 0400, Cultural Resources (Current DOM Chapter 1600 will be updated as DOM 0400 when completed).*
- *California State Park System Plan*
- State Parks Accessibility Guidelines
- California Recreational Trails Plan
- California State Park Systemwide Concessions Policies

REGIONAL PLANNING

Consideration of regional planning influences is important for any park planning effort because it enables planners to anticipate and coordinate with regional planning efforts and issues that affect the park. For this general plan, planning influences focus on the region around Big Basin Redwoods SP, Butano SP, Año Nuevo SP, Portola Redwoods SP, and Castle Rock SP, as well as the northern boundary of Henry Cowell Redwoods SP. Big Basin Redwoods SP is integrated within a regional landscape of open space recreation areas, habitat preservation areas, and recreational trail networks. Planning consideration is also given to major access routes from areas providing significant visitation to the park as well as connections to other regional recreation destinations.

Big Basin Redwoods SP is integrated within a regional landscape of open space recreation areas, habitat preservation areas, and recreational trail networks.

Although Big Basin Redwoods SP is the largest single park in the region, several other state and county parks, the nearby recreation areas of the Midpeninsula Regional Open Space District, and many other public and private open space ownerships also preserve natural and cultural resources and provide recreational opportunities and facilities. Open space networks and recreational corridors link the park with other nearby parks and preserves, as well as provide connections to major trails serving the San Francisco Bay Area.

Several agencies have regulatory or management authority within this region. Big Basin Redwoods SP falls under two county jurisdictions, with its southern portion in Santa Cruz County and the northern in San Mateo County. The park draws a significant amount of its visitation from nearby Santa Clara County. The park is within the Coastal Zone and under the jurisdiction of the Santa Cruz County Local Coastal Program and the San Mateo County Local Coastal Program. The park also spans areas regulated by various air and water quality boards and regional planning agencies. Several major state and county roads provide access.

Many of the non-governmental organizations, such as the Sempervirens Fund, The Trust for Public Land, and the Peninsula Open Space Trust, are acquiring property in the area around Big Basin Redwoods SP with the intent of preserving it in perpetuity as open space. Due to the influx of suburban development in the Half Moon Bay area, San Mateo County is also increasing its efforts to maintain its coastal lands in open space.

Regional Plans

Policies of existing regional planning documents that are most pertinent to planning for Big Basin Redwoods SP are summarized below:

Santa Cruz County General Plan and Local Coastal Program

The 1994 Santa Cruz County General Plan and Local Coastal Program present a “set of policies and programs to guide future growth and development in a manner consistent with the goals and quality of life desired by Santa Cruz

County citizens." The Santa Cruz County General Plan and Local Coastal Program integrate all policies and programs in one document.

The following are summaries of the policies that most relate to this planning process:

- Agriculture and coastal-dependent industry are the first priority for the Coastal Zone. The second priority is recreation, including public parks, visitor-serving commercial uses, and coastal recreation facilities. The third priority is given to private residential, general industrial and general commercial uses.
- The Waddell Creek Watershed, including Bloom's Creek and Año Nuevo Creek are designated as *Least Disturbed Watersheds* which recognizes and supports their value as relatively natural watersheds with clear running streams.
- State Highways 1, 9, and 236 are identified as county Scenic Roads which affords them the highest level of scenic protection.
- Expansion of established preserves, parks or open space areas and connections between existing preserved lands are supported.
- State Parks is encouraged to use open space and easements rather than acquisition for trail expansion. Highest priority is given to developing trails in the State Park System Trails Plan. The County encourages coordination with State Parks in developing links between County and State trail systems.
- Development of vista points, providing a continuous coastal bicycle route, linking existing trail systems, and establishing equestrian trails are supported.
- Waddell Bluffs and Waddell Creek Beach are designated as primary public access areas which should have adequate visitor services.
- State Parks is encouraged to retain and expand picnic facilities, camping sites, RV facilities, trails and shoreline access and to develop overnight uses at new parks and increase capacity of existing facilities.

San Mateo County General Plan and Local Coastal Program

The 1986 San Mateo County General Plan calls for preservation of agricultural lands for agricultural use, protection of native habitats, animals and plants, and protection and enhancement of the natural visual quality of county lands. It proposes the continued provision of recreational lands for the "physical, mental, and spiritual quality of life of San Mateo County residents." It also defines what the County would like State Parks' role to be:

- "…to give priority to developing existing facilities."
- "…to provide park and recreation facilities of statewide significance."
- "…to be "the principal agency to acquire, develop and maintain coastal beaches."

The San Mateo County General Plan lists land use objectives for rural areas as: a) preserve natural resources; b) provide for the managed productive use and monitoring of resources; c) provide outdoor recreation; and d) protect public health and safety.

The 1998 San Mateo County Local Coastal Program (LCP) offers specific policies in support of the general policies of the 1986 San Mateo County General Plan. The LCP is also focused on the Coastal Zone within the county. The LCP describes the Local Coastal Program as "…a comprehensive set of land use policies for the Coastal Zone in order to meet the requirements of the California Coastal Act of 1976. These policies encourage the development of recreation-oriented, visitor-serving facilities and the concentration of new development within rural service centers, while providing the maximum protection of access to beaches, the preservation of scenic values, and the protection of agricultural lands." All development in the Coastal Zone requires either a Coastal Development Permit or an exemption from coastal permit requirements.

The following are summaries of the 1998 San Mateo County LCP policies that most relate to State Parks' planning process:

- Highway 1, south of Half Moon Bay, is designated as a county Scenic Road which affords it high levels of scenic protection.
- Support a trails program that connects recreation facilities along the coast and which connects coastal and inland recreation facilities.
- State Parks is encouraged to specify an alignment for the Pacific Ocean Corridor Trail.
- State Parks is designated as the primary agency for the acquisition, development and maintenance of public recreation and visitor-serving facilities (including the Pacific Ocean Corridor Trail) in the Coastal Zone.
- Developments must comply with sensitive habitat policies while not substantially altering the natural environment or interrupting views.
- As feasible, State Parks is encouraged to remove pampas grass and invasive brooms from its lands.

Midpeninsula Regional Open Space District Master Plan and Regional Open Space Study

The Midpeninsula Regional Open Space District's (MROSD) Master Plan and Regional Open Space Study guide their open space preservation efforts. The Master Plan sets forth guidelines for MROSD acquisitions and shows the relative desirability of potential open space land acquisitions for the purpose of "preserving a regional greenbelt along the crest of the hills along the San Francisco Peninsula." The Regional Open Space Study shows the general extent of lands and public access improvements (both existing and under consideration) to complete the MROSD's Greenbelt Mission. Both documents are submitted to the counties, cities, and other conservation-oriented local, state, and federal agencies and organizations for review and

comment in order to encourage coordination with their planning and policies.

The MROSD can provide locally based, long-term stewardship of some lands and offer easement opportunities to willing sellers for agricultural lands. Over the next 15 years, the MROSD anticipates it could purchase or manage approximately 11,800 acres of land within the entire Coastside Protection area.

The MROSD promotes watershed protection and is involved in regional recreation planning efforts such as the Skyline-to-the-Sea Trail that runs through Big Basin Redwoods SP, the Bay Trail, a planned recreational corridor that, when complete, will encircle San Francisco and San Pablo Bays with a continuous 400-mile network of bicycling and hiking trails along their shores, of which 240 miles have been completed, and the Bay Area Ridge Trail, which will ultimately be a 500-mile trail encircling San Francisco Bay along the ridge tops, open to hikers, equestrians, mountain bicyclists. Almost 300 miles of this trail has been completed and dedicated for use.

Coast Dairies Long-Term Resource Protection and Access Plan (February 2004)

In the summer of 2006 the Coast Dairies property, made up of 6,831 acres of northern Santa Cruz County coastal dairy ranch land, was transferred to California State Parks by The Trust for Public Land (TPL). Coast Dairies is the centerpiece of a regional network of conservation open space, providing opportunities for regional trail development and other recreational linkages, such as beach access.

A collaborative effort by State Parks, BLM, TPL, and the Santa Cruz community, the Coast Dairies Plan is a broad planning document and management plan. All transferred property will be managed in accordance with the Coast Dairies Plan. The plan's vision is to preserve the distinctive character and resources of the area which is marked by the interface of the natural rugged coastline, sandy "pocket" beaches, coastal marine terraces, pastoral grasslands, densely forested upland and riparian corridors, and the developed uses of coastal agriculture, mining, Highway 1, and the town of Davenport. The Coast Dairies Plan provides broad direction and guidance on managing and protecting natural and physical resources, visitor use, and development on the property.

The plan will be implemented in three phases: 1) an Immediate Access Stage, an Interim Access Stage (0-5 years after conveyance), and a Long-term Access Stage (5-10 years after conveyance).

Santa Cruz County North Coast Beaches Master Plan

The North Coast Beaches Master Plan (1991) provides policies and recommendations for land use and facilities for nine north Santa Cruz County beaches from Laguna Creek Beach (north of Wilder Ranch SP) to Greyhound Beach (south of RDO). The plan's purpose is to guide the

county's efforts in providing and balancing public beach access developments with resource protection.

A range of visitor services are recommended, including parking improvements, bus stops, educational and regulatory signage, telephones, restrooms, recycle containers, bike racks, trails, bridges, and stairs. Restoration of dune areas, protection of wetlands and sensitive species, and plantings of native species along damaged or closed trails are recommended. Plan policies support preservation of rural views, natural and cultural resources, and sensitive species and habitats. They also promote exotic plant removal and native plantings. The plan supports interpretation, encourages alternative modes of transportation, limits the levels of recreational use and opportunities to existing levels and opportunities, and establishes the County as the lead agency for managing these nine beaches.

California Coastal National Monument, Resource Management Plan

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 designation as a National Monument mandates the protection of historic and scientific objects, particularly wildlife species which normally inhabit the monument area.

The Bureau of Land Management (BLM) was originally charged with managing the monument. In June 2000, BLM signed a Memorandum of Understanding with the Department of Fish and Game (DFG) and California State Parks to collaborate in the management of the Monument. Approximately 25% of California's coastline is under State Parks management.

The BLM (with DFG and State Parks 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. 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 visitor gateways (Año Nuevo SP and Big Basin Redwoods SP have not been identified as potential gateway locations); seabird conservation; and CCNM connections with tide pools and the intertidal zone.

REGULATORY INFLUENCES

There are several agencies involved in regulatory authority for the region that includes Big Basin Redwoods SP.

- California Coastal Commission, Central Coast District
- State Water Resources Control Board
- Bay Area Air Quality Management District
- Monterey Bay Unified Air Pollution Control District
- California Department of Fish and Game
- United States Fish and Wildlife Service
- National Marine Fisheries Service
- National Oceanic and Atmospheric Administration, Monterey Bay Marine National Sanctuary
- United States Army Corps of Engineers
- Regional Agencies and Non-Governmental Organizations
- Central Coast Regional Water Quality Control Board

REGIONAL AGENCIES AND NON-GOVERNMENTAL ORGANIZATIONS

The following are several regional agencies and non-governmental organizations that are actively involved in planning and acquiring natural open space lands in this region. See **Appendix H** for summary of each.

- Association of Bay Area Governments
- Association of Monterey Bay Area Governments
- Midpeninsula Regional Open Space District
- Peninsula Open Space Trust
- Save-the-Redwoods League
- Sempervirens Fund
- The Trust for Public Land

DEMOGRAPHICS, TRENDS, AND PROJECTIONS

In the last 50 years, the importance of outdoor recreation to Californians has steadily grown. During the last several decades, changing demographics and user interests and demands require recreation planners to be responsive to several factors that will affect the future use and development of California's state parks. The following are several key factors which will affect future use patterns, management decisions, facilities, and programs at state parks located in and around the Santa Cruz Mountains.

Selected County Populations
(April 1, 2010 Census)

The majority of visitors to the Santa Cruz Mountains' state parks live in Bay Area communities in San Mateo, Alameda, Santa Clara, San Francisco, and Contra Costa counties.

Central Valley
6.5 million

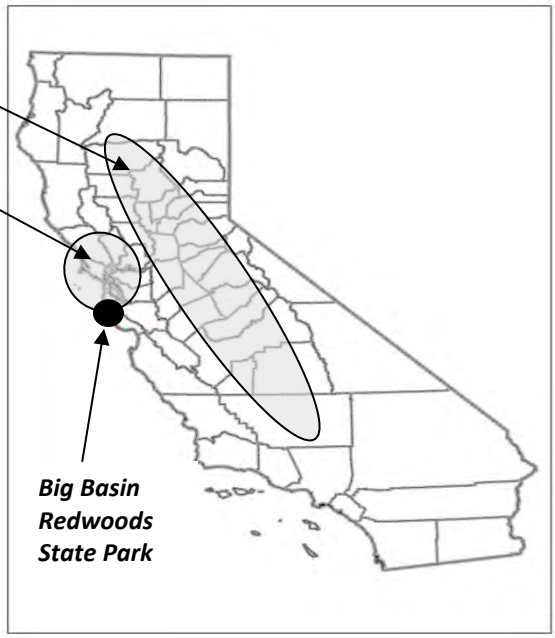
SF Bay Area
7.15 million

San Mateo Co.
718,451

Santa Clara Co.
1,718,642

Alameda Co.
1,510,271

Contra Costa Co.
1,049,025



Population Increase and Park Visitation

California's population approached 37.3 million persons in the Census year 2010, according the California Department of Finance. California, the nation's most populous state, represents 12.1% – one out of every eight persons – of the United States population. The state has increased by nearly 3.4 million persons – 9.1% – since the last census on April 1, 2000.

Even though the current population growth figures have slowed in comparison to earlier projections, perhaps in response to a slower national economy, population growth in California continues to remain strong. Between 1987 and 2002, the state's population grew by 25% and according to the Association of Bay Area Governments, the population of the San Francisco Bay Area is projected to increase 20% by the year 2025. This equates to an additional 1.4 million residents living in and around the San Francisco Bay.

Ninety-seven percent of this population participates in some form of outdoor recreation activity at least a few times a year, with almost half

participating twice a week or more (Bay Area Open Space Council 2004). Due to these factors, along with California's explosive population increase, it's projected that demand for recreational opportunities in these coastal state parks will certainly increase. With the projected population growth rates in the Bay Area and California, even activities with static or declining rates of participation will grow in absolute numbers because there will simply be more people to participate.

Living costs and home prices remain high in the San Francisco Bay Area, prompting home buyers to move to less expensive areas where commutes are much longer such as the burgeoning Central Valley where home prices and quality of life issues are important. Yet these former residents occasionally return to the Bay Area for recreation pursuits and it is expected that the Santa Cruz Mountains will continue to be popular with Central Valley residents seeking to escape the heat of the valley during the hot summer months.

Transplanted Bay Area residents form relationships in their new communities and share their positive experiences at this park and parks nearby, such as Castle Rock and Butano State Parks, increasing visitation to all Santa Cruz Mountains parks by people who do not live in the immediate area. The Central Valley's population is projected to sharply rise in the next three to four decades, increasing anticipated visitation to Bay Area and Santa Cruz parks from valley communities such as Stockton, Sacramento, Modesto, Merced, and Fresno.

Table 2-7 below reflects selected Bay Area and Central Valley county population changes between 2000 and 2010, where much of the Santa Cruz Mountains recreation visitation originates.

Table 2-7
Selected County Populations

County	Total Population		Increase, 2000-2010	
	April 1, 2000	April 1, 2010	Number	Percent
Alameda	1,443,741	1,510,271	66,530	4.6%
Contra Costa	948,816	1,049,025	100,209	10.6%
Merced	210,554	255,793	45,239	21.5%
Sacramento	1,223,499	1,418,788	195,289	16.0%
San Francisco	776,733	805,235	28,502	3.7%
San Joaquin	563,598	685,306	121,708	21.6%
San Mateo	707,161	718,451	11,290	1.6%
Santa Clara	1,682,585	1,781,642	99,057	5.9%
Santa Cruz	255,602	262,382	6,780	2.7%
Solano	394,542	413,344	18,802	4.8%
Stanislaus	446,997	514,453	67,456	15.1%
Yolo	168,660	200,849	32,189	19.1%

Source: California Dept. of Finance

Age and Technology Factors

By 2010, 16.3% of the California population was older than 60, and by 2020, the senior population will double due to the aging of the baby boomers. It is predicted that the boomers will have expectations of recreation providers and active recreational abilities that their parents didn't have due to improvements in overall fitness and advances in medical technology. In addition, baby boomers are typically better educated and more knowledgeable about legislative advocacy, so the expectation is that they will ask for services more readily than previous generations. Raised in relative prosperity, they will anticipate more amenity-rich and meaningful recreational experiences and programs, including park facilities and infrastructure such as RV campgrounds, alternative overnight accommodations and facilities where they can use their high-tech equipment such as GPS units, bikes, kayaks, backpacking equipment, and fishing gear. In addition, baby boomers will have mobility enhancement issues, and are anticipated to be interested in conservation and heritage programs as well as volunteer activities where they can contribute their knowledge and time. They will have an appetite for adventure and high quality programs and an aversion to slowing down as they age (California State Parks 2007).

Recreation equipment is being custom designed by measuring the user's body mass index using graphite and titanium alloy materials. Although expensive to do so now, as technological advances continue, it is expected that this 'customization' will decrease in cost and become more available to a larger consumer group. There is also a perception that custom-tailored equipment will shorten the learning curve for the skill needed for the recreation activity. And, as technological advances continue, new forms of recreational pursuits appear. These activities, such as geocaching, will continue in popularity as will Wi-Fi (high-speed wireless Internet access).

Implications to population changes mean that park service providers will need to expand lands, programs, services, and facilities to accommodate the future influx of anticipated user groups. Lands not acquired now may be unavailable or too costly in the future and programs and opportunities will need to be constantly evaluated and updated to reflect the interest and demands of a rapidly changing California population.

Thirty-seven percent of California's foreign-born arrived since 1990. With such a diverse group of users, greater emphasis will need to be placed on recreation programs that attract a variety of people. For example, many immigrants to the Bay Area are unfamiliar with the types of facilities and services provided at Big Basin Redwoods SP. Ways to educate and encourage these diverse groups and newcomers to become users of and advocates for parks and recreation should be developed.

In 1960, the baby boom was the largest group in the total population of the state; in 2000, boomers were still a major group but were surpassed in numbers by the 5-9 year- old age group. The most populous age groups of California's youngest citizens are on average two full years younger than the

U.S. average, due to recent immigration. By 2020, it is projected that California's young adult group (ages 18–40) will still be the most populous in the state (California Dept. of Finance 2007), and will be more mobile, dependent on technology, and more comfortable with change and cultural diversity than their predecessors. This age group is fueled primarily by recent immigration with families including young children. Studies have shown that these young (and new) Californians are not necessarily connected to outdoor recreation activities and programs of the kind California State Parks typically provides. For recreation, they will most often prefer to travel, participate in extreme (at risk) sports, attend movies, and go on day trips, often combining multiple activities and experiences (California State Parks 2005).

The Bay Area's population age demographics show a typical baby boom aging pattern. However, the proportion of younger age groups in the total Bay Area population is larger than the baby boom generation's was statewide, and it is larger than the younger age groups in the statewide population. This indicates an even higher potential recreation demand by this young Bay Area age group for nearby relevant recreational facilities and experiences.

Please see **Appendix K** for chart information on US population distribution by age, 2008 and 2030.

Latent Demand for Outdoor Recreation

A series of surveys of 2,512 representative adults throughout California showed that the trend for all segments of the population during the 1990s was to engage in some form of outdoor recreation. Camping grew in popularity as the decade drew to a close, but more recent surveys showed the participation rate started to decline in the late 1990s and continues to decline slightly. California State Parks' *2007 Public Opinions and Attitudes on Outdoor Recreation in California* shows that outdoor recreation areas and facilities are still very important to the quality of life for most Californians and that there is a strong public belief that the protection of the natural environment is an important aspect of outdoor recreation (California State Parks 2007).

Based on unmet demand and public support, Californians believe the following outdoor recreation activities, in the following order, should have top priority for expenditure of public recreation funds (*Public Opinions and Attitudes on Outdoor Recreation in California*, 2007):

- Walking for fitness and pleasure
- Camping in developed sites
- Bicycling on paved surfaces
- Day hiking on trails
- Picnicking in developed sites
- Beach activities
- Visiting outdoor nature museums, zoos, gardens or arboretums

- Visiting historic or cultural sites
- Attending outdoor cultural events
- Off-highway vehicle use

The U.S. Forest Service's *National Survey on Recreation and the Environment (2000–2003)* shows the current top recreation pursuits in the Santa Cruz Mountains area are:

- Walking and hiking
- Family gatherings
- Viewing/photographing natural scenery
- Visiting outdoor nature centers
- Picnicking in developed sites

Big Basin campsite

Campground demand will continue to grow throughout California, particularly for RV and alternative campground facilities. This is for the most part true for aging baby boomers who seek convenience and relaxation and who are still inclined to enjoy camping, may have limited mobility, but have grown weary of the preparatory steps such as setting up tents. Families and single parents with young children who seek quality time with their family and less work, such as single mothers who are concerned about safety and security, are pleased with tent cabins and yurts. During the peak season and holiday weekends, many state park campgrounds are full and campers are turned away. California State Parks has been able to add very few campsites during the last ten years, and no coastal campsites. Population growth and demand is so high that if California State Parks were to add 325 campsites a year, it would not keep up with demand (California State Park System Plan 2002). The situation for day use picnic sites is similar.

The *National Survey on Recreation and the Environment (2000-2003)* indicates that camping in developed sites was an activity that approximately

37% of the residents of the Bay Area participated. With the dramatic projected increases in statewide and regional populations, especially of younger, active people interested in family and group recreational experiences, camping will continue to be an important and well-used type of recreation facility in this park in the future.

Changing Ethnic Patterns

The relatively large Latino-Hispanic and Asian populations located in the San Francisco Bay Area and Central Valley counties, combined with changing ethnicity patterns in California, will directly affect visitor demographics at Big Basin Redwoods SP. A language other than English is spoken in approximately 40% of California households and, approximately 25% of K-12 students are learning English as their primary language. California ethnic facts are impressive – over one-third of Asian Americans live in California and nearly one-third of Hispanic Americans call California home.

The relatively large Latino-Hispanic and Asian populations located in the San Francisco Bay Area and Central Valley counties, combined with changing ethnicity patterns in California, will directly affect visitor demographics at Big Basin Redwoods SP.

The Latino-Hispanic population in 2010 was 28.7% of California's total population, which is a 20.8% increase since 2000, according to the 2010 U.S. Census. The total Asian population was 4.3% of California's total population, a 22.6% increase since 2000. Population projections for Santa Clara, Santa Cruz and San Mateo counties show a 15.7% increase in the Latino-Hispanic population and a 9.4% increase in Asian populations by 2020, compared with only moderate increases or slight reductions for other ethnic groups. This increase suggests that the mix of user groups and the corresponding facility needs at parks may be changing. For example, there is a correlation between Latinos recreating in large, often family-based groups and a high demand for developed recreation sites, particularly sites with picnic tables, barbeque grills, and parking lots. Group picnics also tend to be longer in duration than for other ethnic groups, as many food items are prepared on site (California State Park System Plan 2007). Asian Americans also spend time outdoors with family and friends and like to be near natural areas to view and photograph wildlife and hike and bicycle on park trails (Bay Area Open Space Council 2004).

It is clear that the San Francisco Bay Area population is changing. This is also true for the Central Valley, another potential visitor base for the park. Population projections for Sacramento, San Joaquin, Yolo, and Solano counties suggest that from 2000 to 2020 there will be a 256% increase in the Latino population, which will then comprise 33% of the population in these four counties. In the same four Central Valley counties, the Asian American population is expected to double in the same time frame to comprise just over 15% of the population. African Americans and other ethnic groups will also increase as a percentage of the population, while in certain Valley counties, the percentage of Caucasians will decrease. The implications of these demographic changes for recreation demand will compel future planners to provide recreation facilities and public participation opportunities that will satisfy these emerging user groups.

Visitor Demographics

Formal studies have not been done for visitor demographics at the park. The following demographic information is based on park staff observations, anecdotal evidence, and available data from other sources.

The interpretation staff members at the Headquarters area have provided the following estimates of audience demographics, based on their experience. All figures are approximate.

- Most visitors are in family groups.
- The majority (c. 60%) of families come from the Bay Area (Santa Clara, San Mateo, San Francisco, Alameda counties).
- Most visitors are Caucasian, 20-30% are Asian, 5-10% are Latino, 2% are African American, 2% are South Asian Indian, and 2% other.
- Few people of color participate in the park interpretive programs.
- 5 -10% are foreign visitors. The most common countries of origin appear to be Germany and Japan, in that order.
- 5% are Seniors
- 10% Single adults
- Many families attend campfire programs (60-70% of audience)
- Approximately 3-5% of interpretation audience is Spanish speaking
- 1-5% speak Hindi or Urdu
- 5% speak another foreign language

According to a study prepared for the Santa Cruz County Convention and Visitors Council, most visitors to the county come from the San Francisco Bay Area and the Central Valley, and the average travel group consists of 3.3 people.

PUBLIC INPUT

California State Parks uses a variety of methods to solicit public input during the preparation of general plans. Methods for the Big Basin Redwoods SP General Plan included holding public meetings and workshops, posting planning information on the State Park's web site for public comment, and the use of visitor surveys. Identifying issues that the General Plan should address were also obtained during the California Environmental Quality Act (CEQA) Notice of Preparation public comment period.

Public Meetings and Workshops

The Planning Team held a series of public meetings to solicit input for the preparation of the General Plan. The majority of attendees at these meetings were adjacent residents or members of local communities.

The purpose of the first series of meetings was to identify issues and concerns and to gather input on desired recreational activities in the Santa

Cruz Mountains and along the Central California Coast. These meetings were used as scoping meetings following CEQA recommendations. Approximately 60 people attended a meeting held September 26, 2001 at Boulder Creek Elementary School. Approximately 30 people attended a second scoping meeting on September 27, 2001 at Fisher Middle School in Los Gatos. A planning workshop was also held in Boulder Creek in August 2003 to consider plan alternatives. This type of public meeting was also held during the concurrent planning processes for Butano SP and Año Nuevo SR and SP.

The initial Notice of Preparation (NOP) for this General Plan was prepared and filed by the Department on November 30, 2001. Following project delays, a subsequent NOP was filed and circulated to the appropriate federal, state, and local planning agencies on January 28, 2010. Many issues identified and discussed at the two public scoping meetings were included in the NOP. The purpose of the NOP is to gain input from other agencies, organizations and individuals identifying additional issues that should be addressed in the General Plan/EIR. The Department received input from several agencies and individuals during the NOP comment periods, including concerns about the protection of endangered plant and animal species, such as the marbled murrelet and old growth redwood habitat in the park; the potential for additional designation of wilderness lands within the park; and a desire for a region-wide analysis of recreation and resource programs and opportunities.

Three public workshops were held during the early planning stages. Participants learned about the planning process, reviewed the resource data, and provided input on issues, concerns, and recommendations for the park's future. Using this input, the planning team developed alternative concepts and preliminary plan guidelines for public review.

Public meeting to present plan alternatives

Two public meetings were held in February 2010 in an open house format to present plan alternatives. The two public meetings were well attended and the feedback that we received provided mixed reviews. Public comments expressed continued interests for park access and trails to support equestrians, bicyclists, hikers. Concerns by individuals, neighbors and representatives from various organizations focused on the protection of redwood forests, wilderness areas, historic buildings, and long-term management and stewardship of park resources. A summary of public comments was made available for review on State Parks' website.

Input from these meetings and further environmental analysis was used to develop a Preferred Alternative that was presented in March 2011 for public

review. This Preliminary General Plan and Draft EIR was completed and made available for public review in the spring of 2012. Public comments on the EIR are an important part of the CEQA public review process. The California State Park and Recreation Commission is expected to hold a public meeting in 2012 to take action towards approval of the Big Basin Redwoods SP General Plan. Through public meetings, agency and stakeholder briefings, surveys, and posting of planning information on the project website, the planning process has encouraged public participation.

Visitor Surveys

Written visitor surveys were conducted in 1999, 2000, and 2001 at Big Basin Redwoods SP. The approximately 300 responses were examined to help identify potential issues during the planning process. Most comments related to visitor experience and park facilities, such as the availability of showers in the campgrounds and containers for recycling, excess vehicles and noise in the campgrounds, and a desire for more varied interpretive programs in the park.

A survey was taken shortly before the February 2010 public meetings from a select audience who had camped at Big Basin Redwoods SP in 2009. Campers were primarily from outside the region. This information helped the Planning Team understand what activities campers like to do or expect to do at Big Basin. Of the 6,578 people who received the survey by e-mail, 1,831 responded (almost 28 percent - a high return). Since this survey was sent to campers, as expected, the activity that most respondents wanted to do was "camping" (96 percent), followed by "hiking" (83 percent), "relaxing in the outdoors" (75 percent), and "walking for pleasure" (62 percent).

Native California Indian Consultation

California State Parks recognizes its special responsibility as the steward of many sites of cultural and spiritual significance to living Native peoples of California. Therefore, it is the policy of California State Parks to engage in open, respectful, ongoing consultation with appropriate Native California Indian tribes or groups in the proper management of areas, places, objects or burials associated with their heritage, sacred sites and traditional cultural properties or cultural traditions in the State Park System.

The Native American Heritage Commission (NAHC) was contacted on November 29, 2007 and a Sacred Lands File search was requested. Native American contact lists for San Mateo and Santa Cruz counties were also requested. No Sacred Lands were identified by the NAHC.

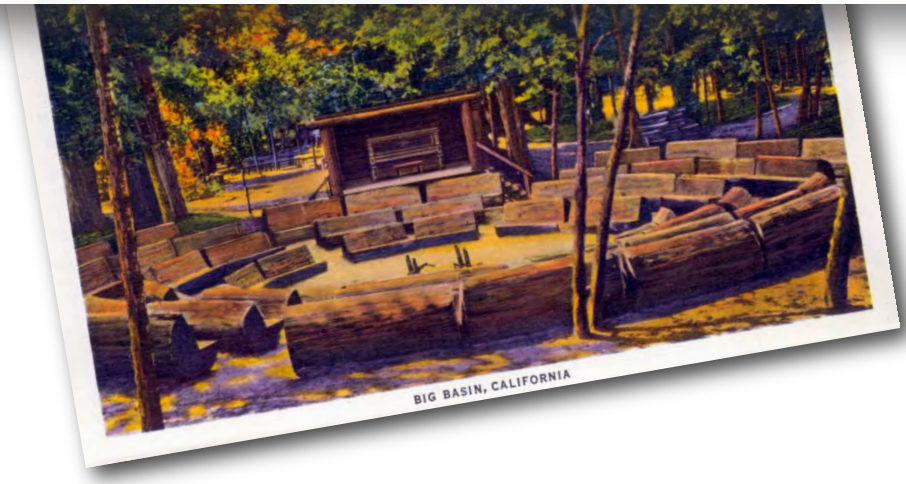
Individuals on the NAHC contact list were contacted by mail and telephone on several occasions. The area of Big Basin Redwoods SP is traditionally in an area recognized as under the oversight of the Amah-Mutsun Band of Ohlone for consultation on development matters. The Amah-Mutsun have previously represented Native California Indian concerns with the Santa Cruz

District and maintain a consulting relationship with the cultural resource staff at the district.

A tribal member representing the Chairman of the Amah-Mutsun Band of Ohlone attended the Los Gatos public meeting. After tribal review of the "plan alternatives", the Amah-Mutsun indicated they were generally supportive of State Parks plans for protection and interpretation of the park and its cultural resources. Their main concerns or requests were for protection of the archaeological resources and sensitive project level planning and/or monitoring of future construction activities within archaeologically sensitive areas. The Amah-Mutsun also requested "exclusivity" in regards to the Native California Indian dealings with the park and the entire Santa Cruz District.

Continued Public Involvement

Subsequent to the completion and approval of the General Plan, there will be public input opportunities on future management plans and project efforts that implement the recommendations of the General Plan. This includes California Environmental Quality Act public review of proposed projects.



ISSUES ANALYSIS

3

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CHAPTER 3:
ISSUES ANALYSIS

The Issues Analysis section identifies planning assumptions, key parkwide issues, and specific area issues that were identified during the planning process. These issues were identified during the statewide and regional analysis for natural, cultural, and recreational resources, public workshops, and stakeholder meetings.

The following are the primary planning issues the general plan will address, either through overall parkwide management guidelines or through management guidelines for specific park areas.

3.1 PLANNING ASSUMPTIONS

The following assumptions are based on current state and federal laws, regulations, and State Parks policy, which form the basis for planning and set the parameters for addressing general planning issues for Big Basin Redwoods SP.

California State Parks will:

- Continue to manage Big Basin Redwoods SP, as required by Public Resources Code Sec. 5019.53, which is classified as a state park to preserve outstanding natural, scenic, and cultural values, and manage its use compatible with the primary purpose for which the park was established. Management will also follow the requirements for Natural Preserve and State Wilderness sub-classifications that are also contained within the state park boundaries, as defined in the Public Resources Code Sec. 5019.68 and 5019.71.

- Manage and protect rare, threatened, and endangered species and sensitive wildlife habitats, including the old growth redwood and estuarine habitats, as required by federal and state laws.

- Preserve the park's cultural resources, including historic structures and landscapes, following The Secretary of the Interior's Standards for the Treatment of Historic Properties.

- Maintain and increase, where appropriate, the overall level of recreational opportunities for state parks located in the Santa Cruz Mountains region.

- Consider the issues and concerns of adjacent land owners and residents during the planning and implementation process; seek input from local, regional, and statewide interests.

- Coordinate with planning efforts in adjacent state parks and with other open space providers and agencies, to evaluate potential connectivity and compatibility of state park recreational opportunities and resource management programs with surrounding land uses, and

- Maintain public and private vehicle access on Highway 236 and Highway 1, as important linkages with nearby communities, including Boulder Creek, Los Gatos, Felton, Santa Cruz, and San Mateo.

Old growth redwood at Big Basin

3.2 PARKWIDE ISSUES

VEGETATION, WILDLIFE, AND HABITAT PROTECTION

Big Basin Redwoods SP contains over 4,400 acres of old growth redwoods, rare plant communities, and numerous animal and plant species having special status or of special concern. Past and present human influences, including logging, agricultural production, fire suppression, wildlife feeding, introduction of non-native plants and animals, intensive visitor activities and facility development have changed the conditions under which natural ecosystems have developed. Over time, these changes have created shifts in species composition and changes in the structure and pattern of plant communities and species populations. As a result, sensitive habitats such as old growth redwoods and riparian and estuarine areas have been impacted and native plant and wildlife values have declined in some locations. This decline has affected species such as the tidewater goby, coho salmon, snowy plover, and marbled murrelet.

Climate change predictions range from a decreased rainfall on the California coast, to no change, or greater rainfall. The combination of warmer temperatures and drier summer conditions could eliminate some plant communities and animal habitat, greatly fragment other habitat, and cause some habitats to shift. The moisture-dependent wetland, riparian, and redwood forest plant communities could be especially affected at Big Basin Redwoods SP.

The park is an important part of a regional mosaic of preserved lands in the Santa Cruz Mountains that provide valuable native habitats for wildlife. Protecting habitats within the park as well as between the park and other surrounding public open space lands is essential for maintaining healthy ecosystems. Allowing public access and interpreting the importance of the area's natural history is also an important planning consideration.

RECREATION DEMAND AND VISITOR OPPORTUNITIES

The park's unique resources and its location near the high density urban centers around the Santa Cruz Mountains creates a high demand for recreation at the park, particularly during the peak season months of May through October. Currently recreation demand is exceeding the supply of recreation facilities and opportunities in the park during the peak season,

with camping, picnicking and trail use being the most popular activities at the park. As the population continues to increase and diversify in the Santa Clara Valley, Central Valley and the Bay Area, the demand for outdoor recreation is also certain to grow, both in the numbers of people desiring outdoor experiences and in the types of recreational activities they seek in the Santa Cruz Mountains.

California's demographic changes are also creating a larger demand for recreation opportunities that vary from traditional park facilities and programs. More group day use facilities, overnight accommodations, such as cabins, yurts, and lodges, and opportunities for multi-use trails and more accessible trails for all visitors to the park's points of interest are desired. Big Basin Redwoods SP, along with other regional open space and park lands, will be challenged to provide additional recreation facilities and more diversified recreational activities to satisfy future recreation demand.

The general planning process included evaluating sites having development potential to accommodate new or expanded developments and appropriate activities. With the diversity and significant of natural and cultural resources, the plan recognizes that the park properties in current state ownership have limited potential for such new development or expansion to meet the recreation demand in the Santa Cruz Mountains. Coordination and collaborative planning between agencies and land managers will continue to focus on future recreation demands and visitor needs, guided by the general plan vision and plan guidelines for future management actions.

Understanding the sensitivity of the meadow and its past use

PUBLIC ACCESS AND CIRCULATION

Outdated infrastructure, older roads and highways, parking inadequacies, limited public transportation, and sensitive resource constraints all contribute to the public access and circulation difficulties within the park. These challenges are most apparent in the historic core area where camping, picnicking, trail use, concession services, and park operations compete for limited parking and roadway space. Much of the existing park infrastructure was developed to accommodate recreation in the original park acquisition (i.e. historic core area) and there are fewer developed recreational access points and opportunities in other acquired properties. The general plan process evaluates existing and potential access locations and appropriate areas for future facility development. The newly acquired Little Basin property is one example of park property that has development potential outside the old growth forest.

The park's large size and central location within the Santa Cruz Mountains offers good potential as a primary destination area and trailhead for regional trail connections. Trail opportunities within the park and those connecting regional open space and parklands are in high demand by multiple user groups. Improving access to and within the park and enhancing regional connections is a significant aspect of this planning effort.

PRESERVATION OF CULTURAL SITES AND FEATURES

Established in 1902 through the efforts of the Sempervirens Club, Big Basin Redwoods SP was the first park in today's California State Park System and is historically significant as one of the first public commitments to environmental preservation and outdoor recreation. The park contains many fine examples of Park Rustic architecture as developed by the National Park Service and constructed by the CCC. There are also important Native American sites within the park. The historic recreation structures and facilities will benefit from guidelines for management, building preservation, and appropriate adaptive uses.

Cultural sites are clues to an area's prehistory and history. They are viewed as important resources that are protected by a variety of state and federal laws and regulations as well as California State Parks' directives and policies. Cultural resources are irreplaceable and once lost are non-renewable. The protection and preservation of these resources is a primary mission for California State Parks.

Archaeological sites have been documented throughout Big Basin Redwoods SP. All of these sites possess potential data that may give greater insight into the cultural habits and lifeways of prehistoric Native California Indians in the Santa Cruz Mountains. The entire park has not

been systematically surveyed for cultural resources; however initial site investigations were done in areas proposed for future facilities development. The potential exists for other previously unknown sites to occur through out the park in those un-surveyed areas. The knowledge that can be gleaned from the documentation and subsequent investigation of archaeological sites is valuable during future project implementation to identify alternatives and required mitigation measures, and in the interpretation and education of the park's past.

The entire original 3,800 acres of Big Basin has been nominated as a National Historic Landmark (NHL). A National Register Historic District has been nominated for the Lower Sky Meadow Residential Area and the historically significant employee housing complex located there. The significant buildings, structures and the sites that they occupy are important cultural resources because they are examples of previous development that occurred at the Park. A National Register of Historic Places Multi-Property Documentation form prepared by California State Parks and the National Park Service in 2010 identified three associated historic contexts for the historic period of the park: Early Development at Big Basin Redwoods State Park, 1902-1933; The Civilian Conservation Corps in Big Basin Redwoods State Park, 1933-1941; and the Post World War II Development at Big Basin Redwoods State Park, 1941-1955.

Nature lodge /Park store is one of several historic buildings in the park Headquarters area.

Careful consideration to maintaining appropriate adaptive uses and preserving the historic setting and integrity of individual buildings is essential to the preservation of these valuable resources.

INTERPRETIVE PLANNING

Opportunities exist to increase the effectiveness, accessibility, and efficiency of park interpretive programs, activities, and facilities. Chapter 2 (Existing Conditions) describes the interpretive planning documents, programs and facilities that currently exist for the park, indicating the main interpretation topics and focus of current exhibits. Most of the interpretive panels and displays on the redwood forest ecology and the history of Big Basin Redwoods SP are concentrated in the Headquarters area. The Nature and History Center at RDO also provides exhibits on wildlife and the Hoover family history at RDO.

Interpretive planning has helped establish a vision for the park and will guide future planning decisions for the visitor's appreciation, understanding, and enjoyment of park's natural, cultural, and recreational resources. Beyond the general plan, the long-range approach to interpretive planning is to complete the more detailed interpretive plans (Interpretation Master Plan, Action Plan, and Individual Project or Program Plans). Chapter 4 (Park Plan) includes interpretation goals and guidelines pertaining to the park, and identifies the primary periods and themes related to the park's cultural and natural history and significant resource values.

REGIONAL PARK PLANNING

Big Basin Redwoods SP shares borders with Año Nuevo SP and Castle Rock SP and is in proximity to Butano SP and Portola Redwoods SP, as well as with several other recreational and open space lands such as Pescadero Creek County Park, and Sempervirens Fund and Peninsula Open Space Trust properties. The proximity of these properties and the similarity of natural, cultural, and recreational resources provide opportunities to manage these lands in a coordinated and integrated way. Coordinated management and integral planning can better identify visitor needs and desires and improve the effectiveness of maintenance, administrative, and visitor services. Coordination among the region's open space and park land agencies along with adjacent private property owners strengthens natural and cultural resource protection, enhances park operations, improves recreational and educational opportunities, and can protect private property interests. The planning and management of Big Basin Redwoods SP has considered interagency and regional coordination as key elements during the preparation of this general plan.

CLIMATE CHANGE

Climate change may have an effect on the long-term need, appropriateness, feasibility, public safety, and operational practicality of public access and facilities in coastline areas that may be affected by sea level changes. It can also affect the migration of plant and animals in the park. On-going research and management strategies are being developed and coordinated with other agencies and institutions to guide long-range planning in response to future climate changes. This general plan considered potential changes in environmental conditions, habitat location shifts, migrations of plants and animals, changes in public access and recreation opportunities, new emerging interpretive opportunities, and response to changing park operation challenges.

3.3 SPECIFIC AREA ISSUES

PARK HEADQUARTERS AREA

The majority of visitor facilities, including day use picnic areas and campgrounds, are located in the Headquarters area. This area is also considered the historic core that contains the oldest redwoods and numerous historic structures initially built to provide visitor services to experience and enjoy the redwood environment. Evaluating how visitor services, recreation, redwood habitat protection, and historic building preservation can coexist and provide healthy natural habitats, educational opportunities, cultural resource stewardship, and recreational enjoyment is a key planning consideration.

Over several decades, random parking, volunteer trails, and overuse in some areas has resulted in the loss of understory vegetation and soil compaction, especially in the park's campgrounds and in the vicinity of the picnic facilities located along North Escape Road. Soil compaction is detrimental to the redwood's shallow root systems, which can adversely affect the long-term health of the redwood forest.

Multiple time periods of facility construction for recreational use, visitor services, and park operations are represented in the historic core area. The remaining historically significant buildings contribute to the park's cultural history and require decisions for preservation, interpretation, and appropriate adaptive uses. There is a need to preserve and protect the outstanding examples of Park Rustic architecture constructed by the CCC. Concentrated visitor use in some of the campgrounds and picnic areas is having an impact on the natural and cultural resources in this area.

The old growth redwood habitat located in the historic core area is recognized as designated critical habitat for the state and federally-listed marbled murrelet. A factor in the decline in marbled murrelet detections and nesting success within the park's historic core area is related to the nest/nestling predation by various corvid species (e.g. Steller's jay, common raven) and other predators. Planning considerations have addressed the conservation of the marbled murrelet and other sensitive species, and the effects of existing and proposed development and use in the old growth redwood habitat.

The Headquarters area provides the majority of visitor services in the park. Visitors can park, check in, pay fees, receive information, purchase camping supplies, visit the snack bar, camp, picnic, access trailheads and attend campfire programs in this location. During the park's peak visitor use season (May-October) congestion occurs in the historic core area as

Entrance Traffic at Big Basin

campers, picnickers, and trail users compete for limited parking and facilities. Vehicular and pedestrian congestion can impact the surrounding natural environment and have a negative effect on visitor experience. Planning considerations included an evaluation of controlled vehicle access through the park, the location, and amount of visitor parking, day use and overnight facilities, and the location and requirements for visitor services as well as park administrative and maintenance functions.

Sky Meadow

The Sky Meadow area includes a group camp and employee residence area. The park maintenance and storage facilities and a few additional employee residences are also located further up the road. These areas were part of the original park acquisition and later developed for park operations and recreation activities outside the old growth forest. Remaining buildings and structures continue to serve this use, some dating back to the 1940s. Significant natural and cultural resources also exist within these areas.

Over the years, the Sempervirens Fund and Save the Redwoods League have established memorial groves and dedicated trees on park property acquired through these nonprofit organizations. Several of these memorial groves and trees are located along Sky Meadow Road.

Planning issues include the proper treatment and protection of historic buildings, particularly the Lower Sky Meadow Residence area recently nominated as a Historic District to the National Register of Historic Places,

protection of the sensitive plant and wildlife habitats (including Sky Meadow), and the recognition of memorial groves and dedicated trees through proper signing and access to these areas. These resource issues are also important considerations in planning for public access and recreational uses.

BACKCOUNTRY AND WILDERNESS

Streambank erosion has closed off vehicular access to the upper reaches of West Waddell Creek Road and is jeopardizing trail access through this area. Key planning issues include visitor safety, the need for emergency access, bicycle access and impacts on wilderness values, and the long term sustainability of trail access in the backcountry.

The upper portion of the West Waddell Creek State Wilderness ends at the original park acquisition boundary. Additional properties within the West Waddell Creek Watershed have been acquired since the State Wilderness classification in 1982. During the general plan process the Wilderness boundaries were evaluated to reflect parkwide goals, appropriate land uses, and desired visitor experiences.

Limited opportunities exist to provide additional trailheads and provisions for access into the backcountry and connections to regional open space and adjacent public lands. The general plan addresses the potential for improved access into the backcountry areas.

WADDELL BEACH AND RANCHO DEL OSO

Waddell Beach offers world-class, ocean-oriented recreational opportunities. The T.J. Hoover Natural Preserve and Waddell Creek, with its associated riparian vegetation and wetlands, provides habitat and protection of several rare and endangered plants and animals. RDO offers equestrian camping, trail camps and trailhead parking for backpackers, and interpretation of the resources and early history of this area. Planning considerations and guidelines address the related issues, concerns and goals for improved access facilities for continued public use, adequate protection of cultural resources, and enhancement of the creek and lagoon habitats.

Vehicular access to this area is challenged by a lack of entrance identity and directional signs. With two entrance roads and beach parking, many visitors have difficulty identifying this area as being part of Big Basin Redwoods SP. Currently, there is a lack of immediate visitor contact, orientation and park information available to park visitors adjacent to Highway 1. Parking is inadequate for both beach and inland day use

during the peak visitor use season and during special events at Waddell Beach. Pedestrian pathways and bicycle lanes are limited or non-existent along Highway 1 and across the bridge at Waddell Creek. The General Plan provides guidance for future considerations by State Parks and Caltrans for bridge work, parking, bicycle lanes, and pedestrian beach access along Highway 1 at Waddell Creek and Waddell Beach.

The Nature and History Center lacks adequate facilities to serve the visitors, including restrooms, parking and outdoor meeting facilities, for educational and other programs. There is also a lack of day use picnic facilities in the RDO area.

The developed facilities at RDO, including the existing equestrian campground, are located in a culturally sensitive area and are adjacent to sensitive plant and wildlife habitat. The ranger office and interpretive displays need upgrading to serve the visitors. The equestrian campground lacks adequate vehicular/trailer parking and turn-around areas. Planning goals and guidelines are developed for RDO, Waddell Beach, and the Nature and History Center to guide long-term visitor use and protection and interpretation of the areas' significant natural and cultural resources.

SADDLE MOUNTAIN

In 2007, State Parks acquired this property, which is often referred to as Saddle Mountain. This land acquisition came with an existing lease to a nonprofit organization and included several buildings and structures that remain from a former motel and restaurant development. Over time, these facilities were adapted for its current interim use by the nonprofit as an outdoor environmental education center. A new lease agreement may extend this current use. Aging buildings and infrastructure require ongoing maintenance and repairs; also new building construction or replacement would be required for long-term uses.

The General Plan process considered the potential for long term public use of this property, and also looked at the site potential for development of new park facilities to provide additional visitor services or satisfy park administrative needs. Important considerations include its location and access from Highway 236, resource constraints and sensitivities, and its development potential and compatibility with adjacent land uses. The potential parking and vehicle circulation generated by any new development is an issue to be addressed at this program level General Plan/EIR, and also during subsequent environmental impact assessments when a specific project proposal is made. During the general planning workshops and public meetings, one of the issues and expressed public concerns was the impact that new development and changing uses would have on the continuation of the environmental education program on this site.

LITTLE BASIN

During the course of planning for this general plan, State Parks acquired the Little Basin property. This acquisition process included an assessment of existing facilities, resource conditions, access from existing roads and trails and determining how the Little Basin property and developed facilities would be managed and operated as part of Big Basin Redwoods State Park.

Replacing aging infrastructure and providing adequate water storage and supply was identified as one of the primary issues to be addressed in the planning for future recreation development and public use at Little Basin. The potential for development of additional recreation facilities was also considered during the general planning process, in response to the growing demand for recreation and to support visitor facilities and interests outside the old growth forest. Facility upgrades would also include ADA accessibility requirements.

Public input was obtained on the acquisition and future use of the Little Basin property. Public support was received for adding this property to the state park, with the focus on providing public access for group recreation activities outside the old growth forest. Public interests and concerns were also expressed for potential impacts from increased public traffic along Little Basin Road and noise from special events.

Group Picnic Area at Little Basin

BIG BASIN
REDWOOD
STATE PARK
CALIFORNIA
POSTAGE
1½¢
WITHOUT
MESSAGE

"AUTO TREE"
335 FEET HIGH, BIG BASIN, CALIFORNIA

"FATH

PARK PLAN

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CHAPTER 4: PARK PLAN

The Park Plan establishes the long-range vision and purpose for Big Basin Redwoods SP. Specific goals and supporting guidelines further clarify the purpose and vision. These are written to address current issues while providing a foundation for continued planning, resource protection and preservation, as well as future development and interpretation of the park. The goals and guidelines also serve as design and implementation parameters for subsequent management and site-specific development plans.

4.1 CLASSIFICATION

In addition to California State Parks' mission, park management and development is further directed by park unit classification as specified by the California Public Resources Code (PRC). Big Basin Redwoods SP is classified a "state park." The PRC defines the state park classification as follows:

> **PRC 5019.53**. **State parks** consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing significant historical, archeological, ecological, geological, or other such 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 such improvements involve no major modifications of lands, forests, or waters. Improvements which do not directly enhance the public's enjoyment of the natural, scenic, cultural, or ecological values of the resource, which are attractions unto 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 nonmarine aquatic (lake or stream) environments of the state.

The PRC establishes several categories of classification that may be included within the boundaries of a unit of the State Park System. Big Basin Redwoods SP contains two of these sub-classifications: Theodore J. Hoover Natural Preserve and West Waddell Creek State Wilderness.

The PRC defines the natural preserve sub-classification as follows:

Big Basin Redwoods SP contains two sub-classifications: Theodore J. Hoover Natural Preserve and West Waddell Creek State Wilderness.

PRC 5019.71. Natural preserves consist of distinct areas of outstanding natural or scientific significance established within the boundaries of other State Park System units. The purpose of natural preserves shall be to preserve such features rare or endangered plant and animal species and their supporting ecosystems, representative examples of plant or animal communities existing in California prior to the impact of civilization, geological features illustrative of geologic processes, significant fossil occurrences or geological features of cultural or economic interest, or topographical features illustrative of representative or unique biogeographical patterns. Areas set aside as natural preserves shall be of sufficient size to allow, where possible, the natural dynamics of ecological interaction to continue without interference, and to provide in all cases, a practicable management unit. Habitat manipulation shall be permitted only in those areas found by scientific analysis to require manipulation to preserve the species or associations that constitute the basis for the establishment of the natural preserve.

The PRC defines the state wilderness sub-classification as follows:

PRC 5019.68. State wildernesses, in contrast with those areas where man and his works dominate the landscape, are hereby recognized as areas where the earth and its community of life are untrammeled by man and where man himself is a visitor who does not remain. A state

wilderness is further defined to mean an area of relatively undeveloped state-owned or leased land which has retained its primeval character and influence or has been substantially restored to a near-natural appearance, without permanent improvements or human habitation, other than semi-improved campgrounds, or structures which existed at the time of classification of the area as a state wilderness and which the State Park and Recreation Commission has determined may be maintained and used in a manner compatible with the preservation of the wilderness environment, or primitive latrines, which is protected and managed so as to preserve its natural conditions, and which:

(a) Appears generally to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.

(b) Has outstanding opportunities for solitude or a primitive and unconfined type of recreation.

(c) Consists of at least 5,000 acres of land, either by itself or in combination with contiguous areas possessing wilderness characteristics, or is of sufficient size as to make practicable its preservation and use in an unimpaired condition.

(d) May also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Please see **Section 4.5,** *Area-Specific Guidelines - Wilderness and Backcountry Areas,* for proposed changes to the state wilderness boundaries.

4.2 DECLARATION OF PURPOSE

A Declaration of Purpose describes the purpose of a park and is the broadest statement of management goals designed to fulfill the vision for the park. A Declaration of Purpose for each state park is required by PRC, Section 5002.2(b), "…setting forth specific long-range management objectives for the park consistent with the park's classification..."

The current Declaration of Purpose for the park was approved by the State Park and Recreation Commission on June 19, 1964, as follows:

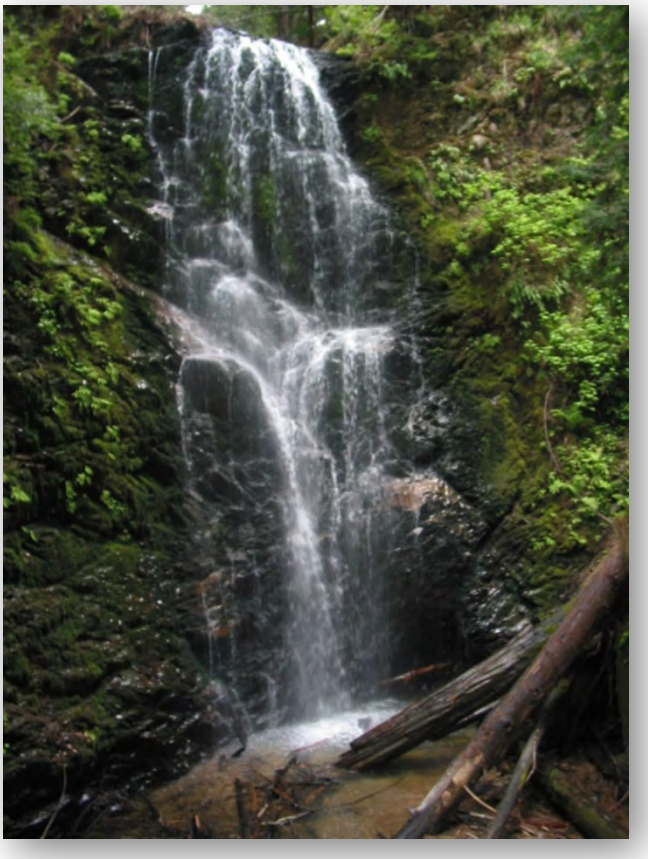
> *The purpose of Big Basin Redwoods State Park, which was established in 1902 as the first park unit of what is now the California State Park System, is to make available to the people forever, for their inspiration, enlightenment, and enjoyment, in an essentially natural condition, a Coast Redwood forest of the Santa Cruz Mountains, including the entire watersheds of Waddell and Año Nuevo Creeks, and embracing coastal chaparral, evergreen woodland, and ocean shore; together with the outstanding recreational resource of this area and all related scenic, historic, and scientific values.*
>
> *The function of the Division of Beaches and Parks at Big Basin Redwoods State Park is to manage the resources of the park in such a way as to perpetuate them for the continuing benefit of the people in accordance with the declared purpose of the park; to interpret them effectively; and to provide such facilities and services, consistent with the purpose of the park, as are necessary for the full enjoyment of the park by visitors.*

PROPOSED DECLARATION OF PURPOSE

Through this general planning process, the planning team examined the 1964 Declaration of Purpose statement. Revisions are recommended in order to update the statement language and assure that the current park ownership and its resources, which have greatly expanded beyond the original park ownership, are encompassed. The following is the revised Declaration of Purpose:

> *The purpose of Big Basin Redwoods State Park, which was established in 1902 as the first park unit of what is now the California State Park System and recognized as a catalyst in the emergence of the American Conservation*

Movement, is to protect, restore and perpetuate the outstanding coast redwood forests of the Santa Cruz Mountains, including the watersheds of Waddell and Año Nuevo creeks, and recognize these resources for their educational and recreational value. Significant cultural resources remain in the park, including early 20th century structures and those built by the Civilian Conservation Corps during the development of the park in the 1930s, as well as the buildings from the post World War II era. The park's wilderness characteristics and the outstanding scenic qualities of the old growth redwoods, canyon streams and waterfalls, and ridge top ocean vistas extending beyond the coastal resources at Rancho del Oso, together with its cultural history, high quality recreation and opportunities for the inspiration, enlightenment, and enjoyment of current and future park visitors, make Big Basin Redwoods State Park one of California's premier parks.



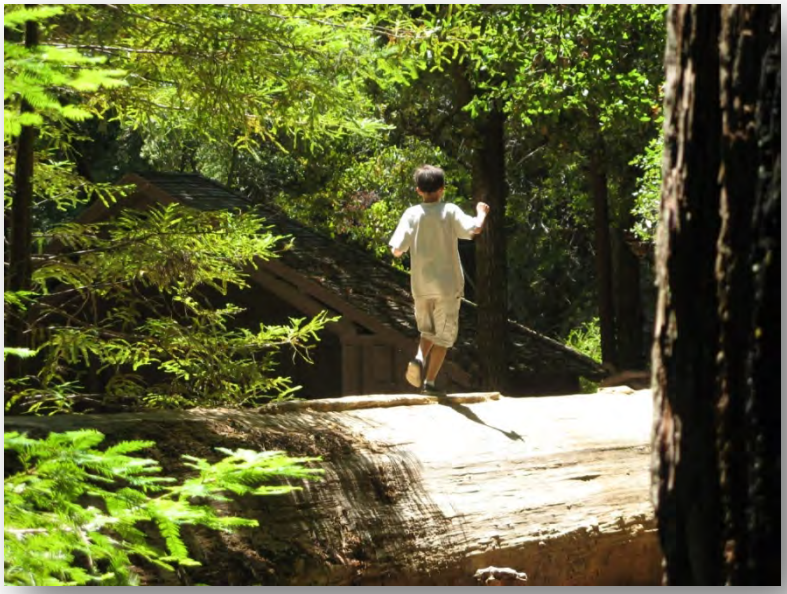
Berry Creek Falls on the Skyline to the Sea Trail

4.3 VISION

This vision statement provides an overview of desired future conditions within the park.

> Big Basin Redwoods State Park is a place of magnificent natural beauty combined with diverse recreation opportunities and a natural and cultural resources preservation ethic honoring its unique heritage and influence as California's oldest state park. The park extends from the peaks of the Santa Cruz Mountains and inland stands of majestic old growth redwood forest to the beaches at Rancho del Oso, offering a great diversity of scenic and recreational environments. The park provides a variety of overnight and day use facilities, trails, and other recreation opportunities with interpretive information allowing visitors to enjoy and appreciate the unique resources of the park and the region.
>
> The park features a rehabilitated historic Headquarters area, which preserves the old growth redwoods and historic buildings dating from an important period in the park's history. The 1930s setting has a pedestrian-oriented atmosphere encouraging visitors to adopt a more leisurely pace so that they can perceive and appreciate traditional park values and understand the significance of important events and people associated with the park's resource legacy. The south entrance on Highway 236 becomes the park's welcome center for visitors, with park administration and visitor services located at Saddle Mountain, providing information to visitors about recreation opportunities throughout the park, leaving the historic core area less congested from vehicle traffic during peak visitation periods. Additional recreation facilities are made available at Little Basin for group use and special events outside the old growth forest.
>
> The park's western entrance at Rancho del Oso offers direct access to park facilities on either side of Highway 1, providing highway travelers with uncomplicated routes to beach recreation activities and trails leading inland to wilderness and backcountry areas. Provisions are in place to accommodate bicyclists, backpackers, and equestrians traveling along the coastal routes or inland into the backcountry.

Within its backcountry and wilderness areas, Big Basin Redwoods State Park offers hiking opportunities in the Santa Cruz Mountains for visitors to experience such places, seek personal renewal, and to gain inspiration and knowledge from nature's complexity and beauty.



Child enjoys a fallen tree

4.4 PARKWIDE GOALS AND GUIDELINES

The following parkwide goals and guidelines respond to existing issues and provide ongoing guidance that is necessary to realize the long-term vision for the park. These guidelines are consistent with general plans, regional goals and management objectives approved for the adjacent Año Nuevo and Butano State Parks.

The *goals* establish the purpose and the *guidelines* provide the direction that State Parks will consider to achieve these goals. The following goals and guidelines address managing and interpreting the park's resources, providing recreational facilities and opportunities, and operating and maintaining the park.

PHYSICAL RESOURCE MANAGEMENT

Geology and Hydrology

Whether gradual or abrupt, Big Basin Redwoods SP's natural geologic and hydrologic processes are reshaping the park's landforms and changing its watercourses. The park's steep topography and unconsolidated soils, periodic heavy rainfall, and occasional earthquakes make this area naturally prone to floods, landslides, slope erosion, stream bank slumping, and stream sedimentation and clogging by debris. Human development and use, such as roads, trails, utilities, and recreation facilities, can increase the frequency and scale of these natural processes as well as introduce sediments, septic system wastes, and other pollutants into watersheds. Several traces of the active San Gregorio Fault traverse the coast and the potential exists for surface rupture and strong ground shaking. Appropriate initial site investigation, site planning, design, development, and operation of facilities is critical to avoid or minimize locating park development or activities in potentially geologically hazardous areas, which could lead to negative human impacts on water quality and habitat integrity, and possible loss of human life and property.

A close relationship between watershed integrity, water quality, facility development, and natural disaster preparedness is reflected in the following goals and guidelines. These goals and guidelines are further reinforced by implementing the policies presented in the Department Operations Manual (DOM) for watershed management, stream management, watershed and stream protection, stream restoration, floodplain management, wetlands management, coastal lagoon management, water quality and quantity, water rights, coastal erosion, geologic hazards, facility siting in geologically hazardous areas (including

seismic hazard zones), and protection of geologic and soil resources. In addition to the DOM, State Parks has developed Best Management Practices (BMPs) for road recontouring and rehabilitation, road removal, road-to-trail conversion, and culvert replacement. The current standard construction BMPs for erosion and sediment control are from the California Stormwater Quality Association (CASQA) as developed in their *2009 CASQA Construction BMP Handbooks*, which are used where appropriate. These BMPs will be implemented as applicable during site-specific development.

Geology and Hydrology Goal: *Minimize human impacts on natural geologic and hydrologic processes and values while protecting human life and property from these natural processes.*

Geology and Hydrology Guidelines:

Geology / Hydrology 1: Monitor and document the geologic and hydrologic processes affecting the park and its resources.

Geology / Hydrology 2: Determine if, where, and how human development or activities may be exaggerating the natural rates or scales of landslides, stream channel erosion, stream debris clogging, and sedimentation. Identify management actions that can reduce or avoid negative human impacts to slope and stream integrity and to water quality. Management actions could include road and trail rehabilitation or removal from highly erosive areas, stream modifications, debris management, and revegetation.

Geology / Hydrology 3: Understand and comply with the surface and groundwater beneficial uses and water quality objectives set forth in the Water Quality Control Plan for the Central Coast Region (Basin Plan) for the Big Basin Redwoods SP watersheds and take appropriate actions to prevent degradation of surface and groundwater within the park. Examples of appropriate actions include ensuring that park sewage treatment meets water quality standards and planning and implementing new park projects so they do not degrade surface or groundwater quality or affect the water production rates of pre-existing nearby wells.

Geology / Hydrology 4: Cooperate with other landowners and regulatory agencies to address and remediate sediment issues affecting the park.

Geology / Hydrology 5: As appropriate, use standard Best Management Practices (BMPs) for erosion, dust, sediment control, and storm water runoff for park projects, and update regularly.

Geology / Hydrology 6: Maintain and manage native riparian vegetation bordering streams and springs, where feasible, to filter sediments and other pollutants from runoff that enter water

bodies. Use biotechnical methods, where possible, when it is necessary for embankment stabilization.

Geology / Hydrology 7: Include professional biological, geological, and engineering evaluations as appropriate when designing and locating permanent structures, campgrounds, roads, utilities, and trails to avoid or reduce potential damage to people and property from unstable soil, landslides, debris flows, floods, and earthquakes

Geology / Hydrology 8: Construct new structures in the park in conformance with seismic design criteria in the newest edition of the Uniform Building Code or California Building Code.

Geology / Hydrology 9: Participate with others, such as resource/regulatory agencies and adjacent landowners, to develop watershed management plans or assessments for major watersheds contained in the park. The watershed planning effort will use current information from existing watershed assessments and studies. These watershed plans will analyze the sediment transport functions in the park's stream systems, evaluate impacts of facilities and park use, and provide a scientific basis for selection, design, implementation and monitoring of future fisheries habitat enhancement and sediment reduction projects. Elements of this plan may include, but not be limited to:

- Inventory and prioritize sediment sources, and analyze the sediment transport functions in the stream systems with respect to their impact on in-stream habitat and on sediment delivery to Waddell Creek, its tributaries, and Waddell Beach.
- Determine if fluvial geomorphic analyses are needed and at what level is required for all streams. Coordinate this analysis with the Regional Water Quality Control Board (RWQCB) monitoring efforts.
- Delineate the 100-year floodplain for West Waddell Creek, and other major creeks and tributaries

NATURAL RESOURCE MANAGEMENT

Protection and effective management of the park's natural resources is one of the major goals of this plan, especially the protection of special status plant and animal species, and management of regional habitat and linkages in the Santa Cruz bioregion. The natural resource management goals and guidelines presented in this section are related to vegetation and wildlife management, special status plants and animals, and regional habitat management.

Vegetation Management

Native plant communities are essential habitat for both special status as well as common wildlife species. Big Basin Redwoods SP protects one of the most extensive areas of native habitat remaining within the Santa Cruz Mountains bioregion, including the largest tract of old growth redwood forest. A few of the park's plant communities are considered of high inventory priority by the Department of Fish and Game California Natural Diversity Database due to their rarity and imperilment. These communities are *Schoenoplectus americanus* Herbaceous Alliance (American bulrush marsh), *Pinus radiata* Forest Alliance (Monterey pine forest), *Sequoia sempervirens* Forest Alliance (Redwood forest) and *Callitropsis abramsiana* Woodland Special Stands (Santa Cruz cypress grove).

Preservation of the park's native vegetation communities, wildlife habitats, and wildlife populations is key to the health of local and regional ecosystems.

The long term health of the park's native plant communities, which provide habitat for native wildlife, are threatened by invasive non-native plant species such as French broom, pampas grass, cape ivy, and periwinkle.

Fire is an important natural process that is integral to the ecology of the Santa Cruz Mountains bioregion. Many of the plant communities within this region, including some of those in Big Basin Redwoods SP, depend on periodic fires for renewal, regeneration, and maintenance of healthy ecosystems. This is especially true for the park's knobcone pine forest, northern mixed chaparral, and Monterey pine forest communities. However, natural fire regimes have been greatly altered since the Euroamerican settlement of the area. Subsequent land use conversion, resource utilization (e.g. by logging), and introduction of non-native plant species (e.g. European beachgrass) within the park and surrounding lands have created a mosaic of natural habitats interspersed with lands dominated by non-native species and areas developed for visitor services. In some locations, such as publicly owned lands, it is feasible and appropriate to implement a well-planned program of prescribed fire to promote natural processes and to rejuvenate and maintain healthy ecosystems. Prescribed fires are used as a management tool to eliminate exotic weeds from native habitats, promote the growth of native plant species, and enhance wildlife habitat. Prescribed fire is the planned application of fire implemented under safe weather conditions to restore healthy ecosystems and reduce the risk of catastrophic wildfires. By reintroducing fire cycles to the ecosystem, healthy landscape-level ecological dynamics are restored.

DOM Chapter 0300, Natural Resources, Section 0313.2 describes the Department's policy on fire management, including wildfire management (Section 0313.2.1) and prescribed fire management (Section 0313.2.2).

Vegetation Management Goal: *Protect, restore and maintain the native ecosystems, especially vegetation complexes and the old growth redwood forest habitat, at Big Basin Redwoods SP.*

Vegetation Management Guidelines:

Vegetation 1: Prepare and continually update the park's Vegetation Management Statement that identifies goals for vegetation management and desired conditions in each of the park's management units as described in the Department's Natural Resource Condition Assessment database. Re-establish and promote natural ecological processes, such as the use of fire under prescribed conditions, which are essential for the development and maintenance of native plant communities. Maintain sustainable forest management techniques to ensure healthy forests, which may contribute to the reduction of atmospheric carbon through carbon sequestration, especially in conifer tree species.

Vegetation 2: Identify locations in the park that are heavily impacted from past management practices (e.g. agricultural production, logging, and fire suppression) and implement appropriate vegetation and habitat restoration programs. Components of such restoration programs may include prescribed fire, revegetation with native species, fenced enclosures, facility relocations, and other methods. Reforestation, where appropriate, can also help to positively affect climate change by reducing greenhouse gases through carbon sequestration.

Vegetation 3: Manage invasive non-native plant species with appropriate methods to prevent their establishment and spread. Priority for control efforts will be given to those species that threaten native plant species, cause damage to facilities, have the most potential to spread rapidly, and are conspicuous in the park.

Vegetation 4: Prescribed fire should be used as part of a vegetation management strategy, when appropriate, to achieve natural and cultural landscape management goals. This program, including the Unit Prescribed Fire Plan, will be upgraded periodically to reflect the ongoing accomplishments and necessary refinements, changes in prescribed fire science and technology, state and federal regulations, and be reviewed for consistency with other programs affecting vegetation management strategies and public safety.

Special Status Plants

Fourteen special status plant species are reported to occur within the boundaries of Big Basin Redwoods SP **(Appendix I)**. Twelve of these are CNPS List 1B species and the other two are CNPS List 2 species. Several

other special status species are known to occur on lands adjacent to or near the park and suitable habitat for some of these species can be found in the park.

Known or potential threats exist for Monterey pine (CNPS List 1B), the federally endangered Ben Lomond spineflower (CNPS List 1B), and San Francisco campion (CNPS List 1B). The health of the entire Monterey pine population in the Santa Cruz Mountains is threatened by pine pitch canker, a disease that often kills infected trees. Ben Lomond spineflower, a small annual, occurs at Slippery Rock, an area accessible to visitors and subject to trampling. The occurrence of San Francisco campion is limited to less than a dozen plants along a steep section of a hiking trail in the Rancho del Oso area. Other threats to this species include shading of its habitat by encroaching Douglas-fir stands. The site is also subject to landslides. Appropriate management will be provided for all special status plant species that are considered to be at risk by park biologists.

Special Status Plants Goal: *Protect special status plants within the park and manage for their perpetuation.*

Special Status Plants Guidelines:

> **Special Plants 1:** Initiate surveys for special status plant species to document their distribution and abundance.
>
> **Special Plants 2:** Protect special status plant species to the degree necessary to maintain or enhance populations.
>
> **Special Plants 3:** Implement appropriate management actions using proven ecological principles and professionally accepted methods for those species identified as “at risk” or “with known threats”.

Wildlife Management

The protection and perpetuation of native wildlife species is contingent upon the successful rehabilitation and continuance of native plant and aquatic communities, combined with the removal of non-native, invasive plant and animal species. Also, measures to prevent wildlife feeding and encourage the secure storage of human food will help prevent the disruption of natural wildlife processes and facilitate the health and existence of native wildlife species.

Wildlife Management Goal: *Protect, restore and maintain the wildlife populations at Big Basin Redwoods SP.*

Wildlife Management Guidelines:

> **Wildlife 1:** Encourage and support scientific surveys and studies to be conducted in the park to gather more information about

the distribution, status, and condition of sensitive natural resources.

Wildlife 2: Cooperate with federal, state, and local agencies and with open space organizations to promote effective and efficient park and regional vegetation, habitat, and wildlife resource management.

Wildlife 3: Prepare and conduct surveys and inventories of natural resources in areas subject to development. Avoid or reduce negative impacts to sensitive resource areas and follow all applicable regulations and guidelines for minimizing adverse impacts from new facilities development.

Wildlife 4: Control and/or eradicate non-native animal species, such as bullfrogs and feral pigs, that have been identified by State Park biologists and/or park managers as creating significant impacts to special status wildlife species such as the federally listed as threatened California red-legged frog. Use methods that are based on sound principles of ecosystem management and that are consistent with the Department's *Non-Native Animal Control Policy* (DOM, Chapter 0300, Natural Resources, Section 0311.5.7.1). Priority for control efforts will be given to those species most detrimental to the environment and for which there is a reasonable probability of success.

Newt observed along the trail at Big Basin

Wildlife 5: Monitor San Francisco garter snake, California red-legged frog, marbled murrelet, western snowy plover, and other special status animal species to identify animal population trends and to develop management strategies for their protection and perpetuation.

Wildlife 6: Reduce and, where possible, eliminate wildlife access to human food and garbage by using wildlife-proof trash containers and dumpsters throughout the park, increasing the frequency of trash collection, and educating the public about the detrimental effects that human food can have on the ecological balance of the park and surrounding regions. Post signs throughout the park informing people not to feed wildlife and to cover and store food and trash appropriately. Also see listed actions for Marbled Murrelet Management and Conservation.

Wildlife 7: Protect common and special status wildlife and their habitats for the purpose of establishing and maintaining self-sustaining populations in a natural ecological setting and/or as required by laws and regulations. Avoid human-induced disturbance and degradation of natural areas. Protect special habitat elements, such as snags, where possible.

Forty-one special status animal species are confirmed or strongly suspected to occur in the park.

Special Status Animals

Forty-one special status animal species are confirmed or strongly suspected to occur within the boundaries of Big Basin Redwoods SP and suitable habitat exists within the park for an additional nine species. Ten of the species with confirmed sightings in the park have state and/or federal listing status. These are the American peregrine falcon, brown pelican, California black rail, California red-legged frog, coho salmon, marbled murrelet, San Francisco garter snake, steelhead (central California coast ESU), tidewater goby, and western snowy plover. Tidewater gobies have historically been found in Waddell Creek and the creek has been designated critical habitat. Due to the metapopulation dynamics of this species, sites may alternate between being occupied and unoccupied (i.e., temporarily extirpated) depending on annual conditions. Tidewater gobies were reintroduced into Waddell Creek in 1991 and were extirpated by high outflows in 1998. They were observed again in Waddell Creek Lagoon in October 2012.

Special Status Animals Goal: *Protect special status wildlife within the park and manage for their perpetuation.*

Special Status Animals Guidelines:

Special Animals 1: Protect all special status native wildlife species and their habitats. Include all taxa that are locally important (including endemic species) as well as those protected by federal and/or state law. A comprehensive list of species requiring special management attention should be prepared and regularly

updated. Implement specific programs using sound ecological principles and professionally accepted methods to protect and rehabilitate special status animal populations and their habitats.

Special Animals 2: Monitor marbled murrelet, snowy plover, San Francisco garter snake, California red-legged frog, and other special status animal species to identify population trends and to develop management strategies for their protection and perpetuation.

Special Animals 3: Minimize trail building, roadwork, and park facility maintenance activities in or near breeding areas during the breeding seasons for special status species.

Special Animals 4: Minimize disturbance to special status aquatic species, including California red-legged frog and anadromous fish, when scheduling and implementing activities that may result in streambed alteration or disturbance to wetlands or riparian habitat. This includes the sizing and placement of culverts beneath roads and trails throughout the park to facilitate fish passage. Culvert drainage patterns should follow the natural grade of the stream as much as possible to maximize fish passage.

Special Animals 5: Consider the needs of special status aquatic species into the timing and implementation of any activity that would result in streambed alteration or disturbance to wetlands or riparian habitat. Conduct in-stream work consistent with the requirements of CDFG, NOAA Fisheries, and the Federal Clean Water Act. Apply appropriate Best Management Practices (BMPs) to protect water quality.

Special Animals 6: Inspect structures for special status species, particularly for bat populations, prior to renovation removal or any other actions which could disturb or harm special status species. Take appropriate measures to protect any identified special status species.

Special Animals 7: Manage the Waddell Creek Beach critical habitat to support breeding western snowy plovers, implementing seasonal beach closures, trash management, interpretive signage, and any additional protective measures to ensure habitat suitability for breeding birds. Also, manage Waddell Creek tidewater goby critical habitat to support tidewater goby. State Parks will continue to reintroduce tidewater goby into Waddell Creek, should such efforts be proposed by the USFWS.

Marbled Murrelet Management and Conservation

The marbled murrelet is a federally threatened Pacific seabird that nests in the upper branches of old growth redwood and Douglas-fir trees in Big Basin Redwoods SP. Big Basin Redwoods SP contains the largest stand of old growth redwood forest in the Santa Cruz Mountains region, which is designated as critical habitat for this species by the U.S. Fish and Wildlife Service. The following guidelines and recommendations have been developed in coordination with the California Department of Fish and Game.

Interpretive panel in Headquarters area

Marbled Murrelet Management and Conservation Goal: *Coordinate with the U.S. Fish and Wildlife Service and California Department of Fish and Game toward the long-term recovery and survival of the Santa Cruz Mountains marbled murrelet population. Implement actions to minimize marbled murrelet population decline, protect and restore marbled murrelet breeding habitat, reduce the impacts of human presence on the breeding success of this bird, and contribute to the recovery of the species.*

Marbled Murrelet Management and Conservation Guidelines:

Murrelet 1: Consult with DFG and USFWS prior to initiating construction activities that may affect murrelets and/or their nesting habitat.

Murrelet 2: Control corvid populations and reduce the human influences that support unnaturally high corvid populations and concentrations in certain areas, especially in the Headquarters Area and Rancho del Oso; consider corvid management through

direct removal when other control measures prove inadequate, and consult with experts on appropriate methods of corvid control and/or removal. Expand existing trash management measures noted above to include food storage lockers and animal-proof, user-friendly trash bins throughout Little Basin. Expand and emphasize existing corvid management efforts by providing additional training to state park rangers and including corvid management as part of their regular duties.

Murrelet 3: Improve waste patrol and cleanup in visitor-use areas.

Murrelet 4: Educate visitors about the threatened status of the marbled murrelet and why they should not feed wildlife. Update the current trash education program to include "keep it crumb-free" signage and updated interpretive materials.

Murrelet 5: Minimize disturbances, trail building, and maintenance activities in old growth redwood habitat, including the use of loud motorized equipment, during the marbled murrelet breeding season (March – September).

Murrelet 6: Coordinate the park's Tree Safety Program with murrelet habitat protection, especially during the marbled murrelet breeding season.

Murrelet 7: Where possible, consider relocating camping and/or picnic facilities or rotating use in areas with marbled murrelet habitat.

Murrelet 8: Support and participate in marbled murrelet research that will contribute to the conservation of this species. Continue to make every effort to obtain funding for ongoing murrelet monitoring, management, and studies.

Murrelet 9: Formalize existing State Parks marbled murrelet management team for Big Basin Redwoods State Park and develop formal marbled murrelet adaptive management plan for the park. Continue to work with other agencies on solutions to regional challenges in marbled murrelet management.

Regional Habitat Management

The Santa Cruz Mountains bioregion comprises a mosaic of pristine or near pristine native habitats, habitats in various stages of succession, and lands converted for agriculture, road development, and home site/business purposes that provide little or no wildlife habitat value. Fragmentation is a primary concern regarding the sustainability of species populations, and linkage with other protected areas is central to long-term species protection. It is vital to maintain connections to regional

conservation, including reserve design and linkages, natural processes (such as fire and flooding), vegetation management, exotic species control, road maintenance and aquatic sedimentation, as well as routine inspections and monitoring. Big Basin Redwoods SP provides a valuable core of preserved native habitats within this bioregion that is contiguous with other protected public lands or is linked to other native habitats. These linkages, both terrestrial and aquatic, allow movement of wildlife from one suitable habitat to another. Linkages may take the form of stream corridors or parcels of wild land through developed areas. Identifying and protecting linkages between the park and other surrounding natural lands is essential for maintaining healthy ecosystems and supporting regional conservation.

Regional stressors affecting wildlife and habitats that are pertinent to Big Basin Redwoods SP include intensive agriculture effects (such as runoff of agricultural chemicals and sediment, consumption of oversubscribed water resources, and conversion and fragmentation of habitat); water management and degraded aquatics (such as riparian habitats, and coastal wetlands degradation caused by the use of water resources, flood control efforts, and the effects of surrounding land uses); recreation pressure on sensitive habitats (such as beaches and dunes, serpentine habitats, and riparian areas); and invasive species threats to biological diversity.

Regional Habitat Management Goal: *Maintain, enhance, or restore the movement of native species through the park and regional ecosystems in order to protect and promote species abundance and diversity.*

Regional Habitat Management Guideline:

> **Regional Habitat 1:** Protect known wildlife habitat linkages to permit movement of wildlife (both aquatic and terrestrial) and to increase species abundance and diversity. Collect baseline information to monitor the health and function of core habitat areas and these linkages. Monitor wildlife as necessary to gauge the effectiveness of linkages and to identify wildlife population trends.

The significance of the historic built environment has been recognized on a national and state level.

CULTURAL RESOURCE MANAGEMENT

Prehistoric archaeological resources reflecting the past life patterns of Native Californian Indians indigenous to the region are known to occur in the park. Also present are numerous historic buildings, structures, and features that represent early park development. Many of those resources were constructed by the CCC during the 1930s. A Historic Resources Study (Kennedy 2009) was completed for the Headquarters area and outlying portions of the park. This study documented historic buildings,

structures and features within the park and provided historic and architectural information used in this general plan.

Big Basin Lodge in 1938

The significance of the historic built environment has been recognized on a national and state level. California State Parks and the National Park Service prepared a Multi Property Documentation Form (MPD) (Avery 2010) for the National Register of Historic Places identifying three associated themes and historic contexts for the park that can be applied for future California Register of Historic Resources or National Register of Historic Places nominations.

The three historic contexts identified are:

- 1902-1933 Early Development at Big Basin Redwoods SP
- 1933-1941 The Civilian Conservation Corps in Big Basin Redwoods SP
- 1941-1955 Post World War II Development at Big Basin Redwoods SP

The MPD is an umbrella document which identifies historic resources and provides registration requirements for listing on the National Register of Historic Places. Through a process of recordation and evaluation, resources found to meet the registration requirements as outlined in the MPD may be nominated to the National Register. While the MPD streamlines this process by providing accepted contexts and registration requirements, the preparer must identify which context the resource reflects and demonstrate how it meets the registration requirements in a National Register nomination.

A National Historic Landmark nomination for the park's original 3,800 acres has been prepared for the park's association with the early social movement to preserve the nation's natural heritage (the old growth redwood forest) from destruction and for its association with the American Conservation Movement. A National Register nomination has also been prepared for the Lower Sky Meadow residence area as a Historic District. The ten buildings and one structure that define the Lower Sky Meadow Residential Area are recognized as the largest and most intact park employee housing development built between 1941 and 1955 in a California State Park (Avery 2010) and retains a high level of integrity of location, setting, workmanship, design and materials.

Historic Resources

Historic buildings, whether they are viewed as individual historic properties or contributors to a larger designated historic property, provide a tangible connection to the past and contribute to a park's

identity. They allow present day visitors to experience firsthand the social, economic, and aesthetic values of a particular period. The treatment and use of historic structures are affected by several sets of standards and regulations that provide management guidance during the planning stages for any project that will affect the integrity of a historic resource.

The *Secretary of Interior's Standards for the Treatment of Historic Properties* identifies management treatments that are applicable to historic buildings that are listed, nominated or presumed to be eligible to the National Register of Historic Places. These standards are used to promote responsible preservation practices that help protect resources. The four acceptable treatment types for historic properties are: Preservation, Rehabilitation, Restoration, and Reconstruction.

New development or redevelopment in Big Basin Redwoods SP must comply with the California Environmental Quality Act (CEQA) as well as PRC 5024 and 5024.5 in order to avoid or mitigate potential significant adverse impacts to historic resources. Projects undertaken on historic buildings must also adhere to the California State Historical Building Code (CHBC), which is designed to allow owners of historic properties (including state agencies) the flexibility to provide for public safety, adaptive use and accessibility while maintaining historic integrity.

California State Parks will follow the PRC, Department policies, and the Office of Historic Preservation (OHP) guidance for management and protection of cultural resources, consistent with the park's purpose, classification, and general plan guidelines. The entire mosaic of cultural

Park Headquarters Administration Building 2008

resources found at Big Basin Redwoods SP will benefit from implementing the following guidelines for their future protection, management, treatment, interpretation and adaptive use.

Historic Resources Goal: *Protect and preserve important and significant cultural resources, including significant cultural landscapes and those buildings in the park as identified as eligible, or potentially eligible, to the California Register of Historic Resources or the National Register of Historic Places.*

Historic Resources Guidelines:

Historic 1: Develop and implement a treatment plan for the historic resources located in the park. Development strategies should include cultural resource treatments, as defined by the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, for those historic buildings, structures and features that have been identified as significant, combined with the interpretive objectives for the landscape as a whole, including the periods of significance; the integrity of the landscape and its character-defining features; and the existing condition of these individual features.

Historic 2: Complete Historic Structure Reports (HSR) for those existing historic buildings that do not have them, and update existing HSRs as needed. Provide documentation including graphic and physical information about a property's history and existing conditions, recommend appropriate treatments, management actions and goals for preservation or rehabilitation and appropriate adaptive use of the property, and outline the scope of recommended work for current and future resource managers.

Historic 3: Establish compatible uses for historic buildings requiring minimal change to historic fabric and character-defining features. Repair and retain historic fabric, whenever possible, instead of replacing with new materials. If replacement is necessary, use "like-kind" materials, styles, finishes, colors and craftsmanship. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property should be preserved.

Historic 4: Complete and maintain an inventory of standing buildings and historic structures, roads and trails, historic objects and landscape features, with information including date of construction, significance, and character-defining features. Inventory and archive all historic maps into the Department's archive database.

Historic 5: Include cultural resource surveys in site-specific planning and development, to determine the resource presence,

significance, potential impacts, and to provide recommended mitigation, when appropriate.

Historic 6: Document and evaluate historic properties that have changed over time, and determine the appropriate treatment for those property changes that have acquired historic significance in their own right.

Historic 7: Preservation and rehabilitation of historic buildings shall follow the Secretary of the Interior's Standards and Guidelines and the California Historic Building Code.

Archaeological Resources

Archaeological sites originally recorded in the 1970s and 1980s are known to exist within the park. Additional surveys and updating site records is an on-going effort to identify and protect significant cultural resources. Guidelines to record and update archaeological records are provided by the OHP.

In adherence to Departmental Policy 2007-5, Native American Consultation Policy and Implementation Procedures, California State Parks will engage in open, respectful and ongoing consultation with appropriate Ohlone representatives and groups in the proper management of areas, places, objects or burials associated with their heritage, sacred sites and traditional cultural properties or cultural traditions.

In general, avoidance and preservation of archaeological sites is the preferred course of action by California State Parks. If these actions are not feasible, then appropriate mitigation methods would be employed. The archaeological resources goals and guidelines identified in the following section will benefit future protection and management of the park's significant cultural resources.

Archaeological Resources Goal: *Identify, document and evaluate prehistoric archaeological resources for long-term protection and preservation.*

Archaeological Resources Guidelines:

Archaeological 1: Implement the California State Parks Archaeological Site Condition Assessment (ASCAR) program to regularly inspect and record the status of archaeological sites. Conduct resource surveys and update the documentation and site records of the known archaeological sites to amplify or correct information about a resource, or confirm that the existing record remains accurate at the time of a subsequent field examination. This would include testing through limited excavation and/or collection of selected surface cultural materials, GPS mapping of sites, and establishment of resource sensitivity boundaries.

Archaeological 2: Prepare cultural resource management plans, as necessary, to further define a framework to identify, acknowledge, assess, and create effective management procedures for cultural sites within the park.

Archaeological 3: Nominate cultural resources, either as sites, districts or cultural landscapes, which may be eligible for listing in the National Register of Historic Places and/or the California Register of Historical Resources, to provide state and national recognition and context for resource management and protection.

Archaeological 4: Continue consultations with Ohlone representatives consistent with the Department's Native American Consultation Policy, and encourage participation in future park projects.

Archaeological 5: Identify, document, catalogue and curate artifacts and collections that have previously been recovered from archaeological sites within the park, according to the Office of Historic Preservation guidelines.

National Historic Landmark

National Historic Landmarks (NHLs) are cultural properties designated by the U.S. Secretary of the Interior as being nationally significant. Acknowledged as among the nation's most significant historic places, these buildings, sites, districts, structures, and objects possess exceptional value or quality in illustrating or interpreting the heritage of the United States in history, architecture, archaeology, engineering, and culture. Designation will also assist in managing the historic buildings, features, and sites by identifying those that contribute to the NHL and those that are non-contributing.

A portion of Big Basin Redwoods SP has been nominated as a historic district with national significance due to the Sempervirens Club's role in shaping the larger American Conservation Movement. The significant resources are considered to be the natural landscape directly associated with the Club's formation and advocacy, and the roads used by the Club members and visitors during the period of significance (1902-1908). The three contributing elements to the NHL are the *redwood forest*, *Sempervirens Falls*, and *Slippery Rock* (Sempervirens Club campsite) (see **Figure 11**).

National Historic Landmark Guideline:

NHL 1: Develop a cultural landscape management plan in order to preserve and maintain Sempervirens Falls, Slippery Rock, and the redwood forest landscape that defines the National Historic Landmark district nomination.

Museum Collections

Museum collections are important to understanding a park's cultural and natural histories and for interpreting that information to the public. The existing Scope of Collections Statement (updated in March 2006) is a management plan for museum collections at Big Basin Redwoods SP. The purpose of the Scope of Collections Statement is to define what objects constitute the permanent collection for this park, how the objects are used, and what objects are appropriate for the park to acquire. The Scope of Collections Statement describes how the park plans to interpret, exhibit, conserve, and make collections available for public research. It includes a description of the park's museum collections, historical time periods, interpretive themes, intended uses of museum objects, and recommendations for museum acquisitions and collection management goals.

Museum Collections Guidelines:

Collections 1: Periodically update the Scope of Collections Statement to provide clear guidelines on which objects to seek, acquire, decline, and deaccession.

Collections 2: As outlined in the unit's Scope of Collections Statement, the park's museum collections shall relate closely to the park's history, resources, interpretive themes, and values. Documents and artifacts of people, events, cultural features, or natural features shall be protected, curated, and accessible to the public.

Collections 3: Appropriate and relevant objects should be acquired and maintained to preserve original elements of the cultural and natural environment, to preserve documentation of people, events, and cultural or natural features that are central to the park's purpose, and to support the interpretation of park themes.

Collections 4: Collections acquired for or maintained at the park shall be managed in accordance with the policies and procedures outlined in Chapter 2000, Museum Collections Management, in the Department's Operations Manual. The Department will establish secure and climate-controlled collections storage, management, and research space for the park's collections.

AESTHETIC RESOURCE MANAGEMENT

All landscapes are dynamic and have multi-dimensional characteristics. Light, visual patterns, textures, temperature, scent, sound, expanding vistas, and focused views blend together to create the park's distinctive

aesthetic qualities. The park's intrinsic natural and cultural features also contribute to its aesthetic values.

Big Basin Redwoods SP was established to preserve its aesthetic and natural resources. To sustain the aesthetic qualities unique to this park, both in-park and surrounding land management practices are critical. Preserving the highest aesthetic standards for Big Basin Redwoods SP is a shared responsibility between State Park planners, managers, and staff, as well as representatives from other responsible agencies and neighboring landowners.

Aesthetics Goal: *Identify and protect positive aesthetic values to preserve the fundamental character of the park for future generations.*

Aesthetics Guidelines:

Aesthetics 1: Preserve and enhance positive aesthetic resources and remove or screen elements that have negative aesthetic qualities to preserve the parks scenic and recreation values.

Aesthetics 2: Integrate positive aesthetic features into the design of new park facilities, interpretive programs, and maintenance programs. The design style should be site-specific and contextual – reinforcing the colors, shapes, scale, and materials in the surrounding environment to integrate and complement the park's natural setting. Preserve and showcase scenic views, use native (or replicated) building materials where appropriate, use muted colors that reflect the natural surroundings, and take advantage of (or screen) ephemeral conditions (e.g. weather, wind, sunlight, etc.), as appropriate. Historic buildings should retain the Park Rustic style that embodies the harmonious blending of native stone and wood. New construction should be compatible with, but clearly differentiated from, the historic Park Rustic resources to avoid a false sense of history.

Replica of original log benches at campfire center

Aesthetics 3: Develop and implement design standards or guidelines for park facilities and signage to share similarities in style and/or materials, to create a sense of park identity and visual continuity, and to reflect and preserve positive aesthetic values. Evaluate "first impressions" at park entrances and access points and organize, consolidate, screen, or remove unnecessary, repetitive, or unsightly elements.

Aesthetics 4: Where appropriate, visually screen parking lots, roads, operations facilities, and storage areas from primary public use areas. Use native vegetation, rocks, elevation change, berms, and other methods that either use or mimic natural elements to minimize negative visual impacts from these facilities.

Aesthetics 5: Limit artificial lighting to avoid brightening the dark night sky. Restrict night lighting to the more developed areas of the park (e.g. buildings and parking lots) and provide lighting fixtures that focus the light downward. Light levels should be as low as possible, consistent with public safety standards. Refer to the Department's Lightscape Protection Policy (DOM, Chapter 0300, 2004) when evaluating lighting.

Aesthetics 6: Minimize vehicle noise in heavily-used areas, through screening, separation of use areas, and other appropriate techniques. Locate park administrative and maintenance functions away from public areas, if feasible, and take appropriate measures to minimize construction and maintenance noise.

Aesthetics 7: Restrict levels of sound from radios and other human-made devices and enforce park noise standards, especially during night and early morning hours. Refer to the Department's Soundscape Protection Policy (DOM, Chapter 0300, 2004) when planning new facilities or evaluating noise standards, and comply with federal and state noise ordinances and standards.

Aesthetics 8: Coordinate with local, state, and federal agencies, open space providers and community groups, landowners, and other stakeholders to preserve, protect, and enhance positive aesthetic features and viewsheds. Follow the Local Coastal Program and other applicable standards for aesthetic resources.

Aesthetics 9: Acquire property and conservation easements from willing sources to expand and protect the park's aesthetic resources.

LAND USE AND FACILITIES

Recreation

The unique resources found in Big Basin Redwoods SP and its location near high density urban centers has created a high demand for recreation. The park is a popular destination and has provided many recreation opportunities for more than 100 years. In the park's earliest days, people traveled here to stay for weeks under the magnificent

redwoods. Many recreation facilities were built in the park headquarters area, in the heart of the old growth redwood habitat. Over the years, the amount of leisure time and recreation trends has changed, and many of these facilities were relocated or removed to protect sensitive environments.

In the last two to three decades California's population has diversified and increased exponentially. As these trends continue, the demand for outdoor recreation will increase even further, both in the numbers of people desiring an outdoor experience and in the types of recreational activities they seek. Big Basin Redwoods SP will be challenged to accommodate visitors with new facilities and more diversified recreational activities while retaining its unique and special values and resources.

Recreation Goal: *Provide a range of high-quality recreational opportunities that allow California's diverse population to visit, enjoy, experience, and appreciate the important natural, cultural, recreational and aesthetic resources of Big Basin Redwoods SP.*

Recreation Guidelines:

Recreation 1: Provide facilities and programs that enhance the public's enjoyment and appreciation of the park's natural, cultural, recreational, and aesthetic resources. Include facilities that support appropriate activities such as hiking, camping, backpacking, nature, and history study, bicycling, surfing, wind surfing, horseback riding, picnicking, and the enjoyment of solitude, including provisions for concession-developed or operated recreation opportunities.

Recreation 2: Relocate, remove, and/or reorganize facilities to preserve and protect park resources, to better serve visitor recreation needs, and to provide efficient park administrative, public safety, and maintenance functions.

Recreation 3: Where appropriate, provide recreation access and program opportunities that expand the visitor use of the park in the spring, fall, and winter months.

Recreation 4: Create diversified recreation opportunities across the region's state parks to disperse recreation, reduce resource impacts, and provide facilities and recreational opportunities that respond to unique site characteristics. Coordinate with federal, state and county agencies and open space and community-based organizations to plan a regional network of recreation opportunities.

Recreation 5: Provide information and facilities to encourage visitation to nearby state parks and regional open space. Methods to encourage this cross-connection include information

describing regional resources and the area's historic connections, location maps and park and open space access information, trail connections, and mass transit opportunities.

Recreation 6: Provide additional day use and overnight accommodations outside the old growth forest, to serve the visitor needs reflected by California's changing demographic trends. Develop group recreation facilities, where appropriate, and make provisions to accommodate a wide range of user groups and for special events during year-round seasonal conditions.

Recreation 7: Evaluate new technologies and recreational activities and incorporate those that would enhance visitor experiences and benefit recreation facilities and programs, such as maximizing the use of the Internet for public outreach and providing wireless Internet access.

Recreation 8: Acquire adjacent properties from willing sellers that would provide recreation opportunities and/or improved connections between Big Basin Redwoods SP and other state and regional parks.

Access and Circulation

Big Basin Redwoods SP is a large park with a small number of perimeter access points and a relatively limited interior road system. Due to the park's large size and diverse topography, most visitors depend on personal transportation to access the park facilities and points of interest. State Highway 236 provides vehicle access from two directions into the Headquarters area, where the highest concentration of developed facilities are located. State Highway 1 provides access to RDO and Waddell Beach. Both highways include a mix of visitor and non-visitor traffic and divide park properties on each side of the highways. The backcountry areas are accessible by trails and unpaved logging roads. During peak use periods, visitor and non-visitor traffic at Headquarters and RDO entrances causes traffic congestion, vehicle-pedestrian conflicts, and localized noise that detracts from positive visitor experiences in the park.

Access and Circulation Goal: *Coordinate and maintain visitor access and circulation in order to optimize operations efficiency, security, emergency access, and visitor enjoyment of the park, while maintaining the park's character and avoiding resource degradation.*

Coastal Access Goal: *Maintain the quality and continuity of public access and Highway 1 as the primary public access corridor, scenic vantage point and recreational resource within the boundaries of the Park.*

Access and Circulation Guidelines:

Access 1: Establish a park access system that provides clear direction for visitor arrival to and departure from the park. Ensure that primary visitor contact areas are conveniently located so that their administrative functions proceed efficiently for both visitors and park staff. Where appropriate, provide or improve access to less-visited areas of the park. Coordinate with Caltrans and Santa Cruz and San Mateo counties to ensure that road construction and maintenance will result in safe, convenient, and enjoyable driving experiences for motorists as they access and traverse through the park.

Access 2: Work with state and local transportation agencies to support an integrated and efficient multi-modal transportation system that facilitates visitor access to the park. Coordinate with these agencies to provide facilities that encourage and support a variety of park access transportation modes, including pedestrian, bicycle, equestrian, bus, and shuttle, and that include support facilities, such as bus pullouts and transit shelters.

Access 3: Evaluate and upgrade existing signs along park access routes and in entrance areas to direct and orient visitors arriving at or leaving the park. Provide orientation information at park entrances that will permit visitors to easily access a range of available park experiences. Remove, combine, or relocate signs that are confusing, unnecessary, or negatively impact aesthetic resources. Create a parkwide continuity of placement and design for entrance signs to promote a recognizable park identity.

Access 4: During the peak visitor use season, coordinate with regional transit providers or concessionaires to provide transportation alternatives, such as a shuttle system, between park areas and nearby parks and open space preserves, to achieve more efficient use of existing facilities and to reduce park traffic and the size of parking facilities needed to serve visitor activities. Provide connections to park and regional trails, including connections to the California Coastal Trail, from convenient transit stops.

Access 5: Develop a circulation system that separates vehicular from non-vehicular traffic, where feasible, and public use areas from park administration and maintenance functions in order to reduce potential user conflicts and enhance non-vehicular modes of transportation.

Access 6: Protect the scenic qualities and maintain continuity of the California Coastal Trail (CCT) and Pacific Coast Bike Route (PCBR) along Highway 1 through the park, with safe shoulder widths, support facilities such as bike racks at destination points, and the proposed bike camp at RDO.

Parking

Limited parking is provided along Highway 236 at the park Headquarters for campsite registration and information, and in adjacent lots that serve the park store, campfire programs, nature trails, and picnic areas. The parking configuration and circulation in and around the Headquarters area has evolved since the early park development to serve the adaptive uses of remaining historic buildings. Some parking was removed near sensitive habitats while other parking areas were better defined to reduce resource impacts. The park reaches, and often exceeds, the available parking capacity during the holidays and weekends during the peak season (May-September).

Parking along Highway 236

At RDO, existing parking facilities at Waddell Beach are undersized for the high visitation at this beach location. The park is affected by high summer recreation demand that creates parking and vehicle traffic congestion. There is a 150-space gravel surface parking lot that provides a staging area for beach users. The west portion of the parking lot has undergone years of erosion from storm waves that have decreased the overall size of the parking area. Favorable wind, surfing and swimming conditions generally fill the parking lot to capacity on the weekends.

Parking Goal: *Provide safe and convenient day use and overnight parking, as well as parking for group use and special events, that minimize negative impacts to natural, cultural, aesthetic, and recreation resources and contribute to positive visitor experiences.*

Parking Guidelines:

Parking 1: Explore alternatives for accommodating special event parking, such as the use of unpaved areas and satellite parking areas. Reconfigure parking availability where necessary to address public safety concerns and improve visitor experiences. Pursue shared parking arrangements with adjoining municipalities and landowners.

Parking 2: Minimize the number of parking facilities near or adjacent to sensitive resource areas in order to reduce or avoid negative resource impacts.

Parking 3: Conduct periodic parking and circulation assessments in response to future parking demands and changing conditions. These assessments shall identify physical and environmental constraints, design capacity and deficiencies, parking and transportation alternatives, and potential parking to accommodate visitor use during peak visitation periods. Monitor the parking situation during peak use periods to determine and record visitor use patterns and take appropriate management

actions to mitigate resource impacts and improve parking efficiencies.

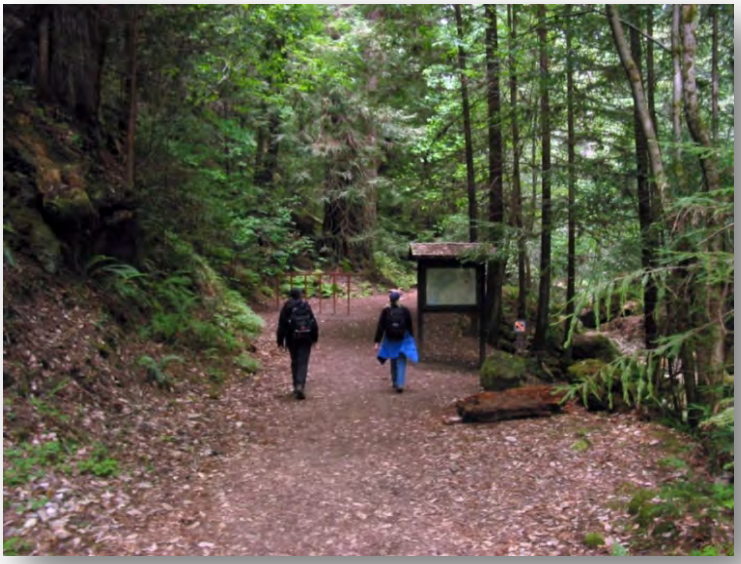
Trails

Trails are important recreational facilities within and surrounding Big Basin Redwoods SP and are in high demand by multiple user groups. The park's large backcountry provides an extensive multi-use trail system. The park's central location within the Santa Cruz Mountains offers great potential to serve as a primary node for trail connections within the region.

Trails Goal: *Provide a multi-use trail system within the park and trail access to regional and statewide trail systems.*

Trails Guidelines:

Trails 1: Develop new pedestrian, bicycle and equestrian multi-use trails and trailheads. Focus on providing trails that access natural, cultural, and scenic resources, the backcountry and wilderness areas, and that connect to regional trail systems. Promote and encourage the use of existing unpaved and paved roads within the park as multi-use trails. Improve existing trailheads and create new trailhead facilities and trail connections in less-visited areas of the park to reduce use levels in the heavily-visited historic core area. Use the Department's *Trails Handbook* to guide trail design, construction, management, and maintenance.



Skyline to the Sea Trail

Trails 2: Develop a parkwide Roads and Trails Management Plan that evaluates the park's entire trail system, trail use and user conflicts, and guides the placement and use of future trails, while avoiding negative impacts to significant natural and cultural resources. Emphasize opportunities for visitors to access and enjoy the park's natural and cultural resources, its recreation destinations and facilities, and its diverse topography, natural communities, and scenic views. The plan should recognize regional trail connections, recreation opportunities, habitat linkages, and provide opportunities for further public input. Consider a potential multi-use trail connection outside the state wilderness between the Hihn Hammond Road/trail and the Skyline to the Sea Trail at West Waddell Creek.

Trails 3: Develop multi-use trails and trail loops of shorter length near popular park attractions to accommodate visitors of all abilities. Provide support facilities such as trailheads that incorporate ADA-compliant picnic facilities, restrooms, and other amenities.

Trails 4: Locate trails and trailheads to minimize impacts to natural, cultural, and scenic resources and areas of geological instability.

Trails 5: Provide signs clarifying public property boundaries and provide trail users with information regarding park rules and regulations to minimize public/private use conflicts and impacts to private property.

Trails 6: Work with multiple jurisdictions, community-based organizations, and adjacent landowners to encourage alternative transportation systems, including pedestrian, bicycle, and equestrian trails and trail connections that connect Big Basin Redwoods SP with other parks and open space lands. Support federal, state, and regional trail objectives and plans, such as county local coastal programs, and work with local jurisdictions to create loop trails and trail connections. Provide maps that show park and regional trail systems and access points.

Trails 7: Focus on acquiring, from willing sellers, recreational corridors and easements on existing fire roads or other appropriate lands for multi-use trails that connect the park to other state and regional parks and open spaces.

Trails 8: Provide for protection and signing of existing coastal trail segments as part of the CCT, where suitable public trails already exist. Also, identify the remaining links necessary to provide a continuous, safe CCT route through the State Park that minimizes exposure to automobile traffic. In new development projects and during preparation of the unitwide Roads and Trails Management Plan, consider the findings and recommendations of the 2002

Coastal Conservancy report titled: Completing the California Coastal Trail and the Monterey Bay Sanctuary Scenic Trail planning process currently underway.

Accessibility

Currently there are universally-accessible camping, picnic, and trail facilities at Big Basin Redwoods SP. California State Parks is improving the facilities in the areas around the park Headquarters to improve access for persons with disabilities, and to comply with standards required by the American With Disabilities Act (ADA). Improvements include accessible pathways, parking spaces, and access ramps in and around the headquarters building, campfire center, store, and gift shop. Restroom buildings and water fountains are also being upgraded in these areas. Future projects will retrofit additional existing facilities to ADA standards and provide further universally-accessible facilities and recreation opportunities in the park.

Accessibility Goal: *Big Basin Redwoods SP recreation facilities shall become universally-accessible and provide high-quality recreational opportunities for all visitors.*

Accessibility Guidelines:

Accessibility 1: Provide universal access to the park's programs, 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.

Accessibility 2: Use the *California State Historic Building Code* as the guideline for providing appropriate accessibility in and to historic buildings, structures, sites and features. The historic building code provides alternative regulations to facilitate access and use by persons with disabilities to and throughout buildings, structures, sites and features designated as qualified historic buildings or properties. Reasonably equivalent access alternatives are evaluated as part of this process.

Concessions

Concessions play a supportive role in enhancing the mission of California State Parks by providing essential and appropriate services that the Department may not have the resources or expertise to provide and are not being provided nearby by private business.

Concessions Goal: *Provide high quality recreation and visitor services through concession's contracts while protecting the park's natural,*

cultural, recreation and aesthetic resources, and improve facilities and services that will meet the needs of increasing visitation and changing needs of park visitors.

Concessions Guidelines:

Concessions 1: Provide visitor services and products that enhance recreational and/or educational experiences at the park, consistent with the Public Resources Code, Department policies, the park's purpose and classification, and General Plan guidelines.

Concessions 2: Evaluate and implement new types of concessions at the park to respond to regional and statewide recreation trends, demographic changes, and needs that are not being met by the private sector.

Concessions 3: Improve services to major public use areas, possibly with a satellite concessions facility or mobile services, during periods of peak visitor use.

Concessions 4: Explore opportunities to meet the demand for more recreational activities through concession agreements for equipment rental such as sea kayaks, paddle boards, bicycles, horses, etc. as appropriate for this unit.

INTERPRETATION AND EDUCATION

Interpretation can enhance a park visitor's experience and their understanding of the park's resources. Interpretation promotes recreational enjoyment, visitor safety, cultural and natural resource protection and appreciation, and understanding of management and maintenance practices. It can also educate visitors about how to help preserve the resources they came to enjoy and how to have a safe visit.

California State Parks is a leader in providing education programs for California's grade K-12 school groups. There are opportunities to provide more education programs in and around Big Basin Redwoods SP and via remote media, especially in partnership with other area interpretation and education providers.

Big Basin Redwoods SP encompasses a wide topographical range and a diversity of habitats. It is the oldest state park in California, and important in the history of the American conservation movement in the state.

Interpretive Significance, Mission and Vision

These elements represent the broadest level of interpretation planning. Interpretive Significance gives the "what:" it documents the park resources and features that have been identified as important to interpret. Interpretation Mission gives the "who," "where," and "why:" the area being interpreted, who it is interpreted for, and why it is being interpreted. The Interpretation Vision presents the desired scenario to be created by park interpretation.

> **Interpretive Significance:** Big Basin Redwoods SP encompasses a wide topographical range and a diversity of habitats. It is the oldest state park in California, and important in the history of the American conservation movement in the state. Important natural resources for interpretation include the old growth redwood groves and marbled murrelet habitat, the coastal, riparian and wetland habitats of the RDO area, as well as other special status plants and animals found in the park. Important cultural history includes the park founding, use history and evolution of park culture—including visitors, employees, and, concessionaires; changing visitor uses of the park, and its importance as a recreation destination to generations of families; the Theodore Hoover family in RDO—especially Hulda Hoover McLean, Native California Indian occupation, and the Portolá expedition's stop in the Waddell Valley. Important cultural resources to be interpreted include significant cultural landscapes, and CCC-built and Post World War II Park Rustic historic buildings and structures in the Headquarters and outlying areas.
>
> **Interpretation Mission:** The mission of Big Basin Redwoods SP interpretation is to create a positive connection between park visitors and the natural, cultural, aesthetic, and recreational resources of the central Santa Cruz Mountains and adjacent coastline, and to support California State Parks' resource protection and preservation guidelines for the park.

Interpretation Vision: High-quality interpretation of Big Basin Redwoods State Park enhances participants' awareness, enjoyment, and appreciation of park natural resources, especially of the old growth redwood forest and coastal wetlands, the park's cultural resources, especially the historic buildings and landscape in the headquarters area, and the park's cultural history, particularly the history of resource preservation and the growth of the State Park System. Park interpretation sparks interest in learning broader science, history, and cultural concepts; increases visitor safety at the park, encourages visitors to take part in active outdoor recreation during and after their visit, and leads to further protection of irreplaceable cultural and natural resources both in and outside of the park.

Interpretation Goal A: *Reinforce the Department's mission and inspire people to use the park safely and preserve its resources.*

Interpretation Guidelines:

Interpretation A1: Reinforce the Department's strategic initiatives with park interpretation, including interpretation of what California State Parks has done and what visitors can do to help reduce global warming.

Interpretation A2: Deliver public safety and resource protection messages using interpretive techniques, in order to promote public safety and create emotional connections to park resources and an interest in resource stewardship.

Interpretation A3: Use interpretation to inform visitors of short-term park stewardship opportunities such as "Litter Getters" and coastal cleanup days; and long-term volunteer opportunities such as the docent program, trail building, and invasive plant removal volunteer program.

Interpretation Goal B: *Provide for the appreciation, understanding, and enjoyment of the park's special qualities.*

Interpretation Guidelines:

Interpretation B1: Reinforce the park's identity in all areas of the park and on all park communication such as press releases, websites, flyers, and brochures. Clearly identify RDO as part of Big Basin Redwoods SP.

Interpretation B2: Coordinate the interpretive programs of the historic core and RDO areas, while also using appropriate themes related to their individual senses of place.

Interpretation B3: To create links between past and present, develop cultural and natural history interpretation that uses a

flow of history approach to examine how different groups of people have viewed and used the park area's natural resources.

Interpretation B4: When developing interpretation for a particular park area, emphasize the special resources and history of that area, and consider how they relate to the resources, programs, facilities, and history of surrounding areas inside and outside the park, and to the Department's statewide interpretive program.

Interpretation B5: Make use of the abundant primary-source historical documents and oral history interviews related to Big Basin to create cultural history interpretation that links visitors to the resources via the voices of past people they can empathize with, and exposes them to multiple views of Big Basin's founding, growth, notable events, and resource management.

Interpretation B6: Integrate natural, cultural, and recreational interpretation. Interpret wildlife, plants, and people (past, present, and future) in the context of the park's ecology. Interpret processes and relationships (patterns, cycles, interactions and adaptations) rather than isolated facts.

Interpretive signing in the Headquarters area

Interpretation B7: Consider development of universally accessible self-guided interpretation in outdoors and/or indoors interpretation that is not only wheel chair accessible, but also accessible for visually- or hearing-impaired visitors. In all interpretation, use a mix of visual, tactile, auditory and object-related media and interpretive techniques to make exhibits and presentations more accessible, interesting and memorable.

Interpretation B8: Consider offering scheduled shuttle interpretive tours of backcountry areas using existing fire roads. These tours could also visit other park units in the Santa Cruz Mountains and offer an overview of the area's geology, wildlife, and plant communities.

Interpretation B9: Encourage concessionaires to incorporate the park's interpretive themes into their operations where appropriate and feasible.

Interpretation B10: If a visitor contact station or visitor center is added at Saddle Mountain in the future, provide an overview of the park's interpretive messages at this point, especially wayfinding and recreation, and information on where in the park they can learn more.

Interpretation B11: As areas farther from the existing interpretation cores are added to the park, or visitor uses are moved from the cores to other park areas, consider adding interpretive facilities and programs such as interpretive trails, panels, and Junior Rangers programs in these areas if visitation levels warrant.

Interpretation B12: Work with the cooperating associations to explore the development of additional park-specific interpretive sales items to reinforce park interpretive messages, such as park-specific natural history books, images, electronic media and objects; reprints of historical Big Basin and RDO images, and reproductions of appropriate historical objects, with accompanying interpretive information.

Interpretation Goal C: *Reach out to diverse populations, including underserved groups and non-traditional users.*

Interpretation Guidelines:

Interpretation C1: Implement training for volunteers and employees to support Department accessibility policies in park interpretive programs, displays, and publications.

Interpretation C2: Actively recruit minority and bilingual volunteer docents and park hosts, especially Spanish-speakers.

Interpretation C3: Attract and accommodate a more ethnically diverse audience with measures such as offering additional interpretive materials and exhibit translations in languages other than English—especially Spanish-language materials, offering programs such as guided walks in Spanish, coupled with further community outreach to increase attendance, partnering with area ethnic organizations on special events or education programs, and publicizing park programs via media outlets that

will reach more under-represented groups (for example, Spanish-language radio or African-American community newspapers).

Interpretation C4: Develop programs and partnerships with preschools, K-12th grade schools, environmental education programs, and youth groups that work with underserved populations or at-risk youth to fulfill parts of the state's educational content standards and/or the Children's Outdoor Bill of Rights at the park while bringing in underserved and non-traditional users.

Interpretation C5: Provide additional remote interpretation; for example, additional podcasts, web-based activities, and PORTS programs.

Interpretation Goal D: *Create long-term strategies to sustain park interpretation and education programming.*

Interpretation Guidelines:

Interpretation D1: Explore options to fund or share a permanent interpretive staff position at RDO, in order to create more personnel stability for interpretation and docent program management.

Interpretation D2: Evaluate visitor and management interests for interpretive programming to determine the most effective allocation of limited resources and staff.

Interpretation D3: Increase park interpretation program office and storage space.

Interpretation D4: Develop and implement a plan to maintain park archives and collections to Department standards, in order to ensure that interpretation research and artifact resources are protected.

Interpretation D5: Work closely with the park's cooperating associations and volunteers to improve park interpretive resources, programs, and opportunities.

Interpretation D6: Work with interested parties to continue and enrich outdoor environmental education opportunities in the area.

Interpretation D7: Coordinate interpretive programs and facilities with other area interpretation providers in order to enhance programs, share resources, and avoid unnecessary duplication.

Interpretation D8: Work with the cooperating associations to explore opportunities for fee-based value-added interpretive and

educational services, such as seminars, workshops, van tours, and special school/youth programs.

Interpretation Planning

State park unit interpretation planning takes place on multiple levels, each of which builds on the previous levels. The first park-specific level is the interpretation information in the unit's general plan. The general plan builds on State Parks system-wide interpretation planning and strategic initiatives. The subsequent unit levels are currently defined as the:

- Interpretation Master Plan
- Interpretation Action Plan
- Individual Project or Program Plans

Interpretation Master Plan: An Interpretation Master Plan takes a long-range approach to interpretive planning and may be developed for a unit, sector, or geographical region, or may be used for particular resources found throughout the state. It updates and expands upon the general plan and is intended to help guide park unit staff toward realizing its vision for interpretation. The Master Plan provides greater background and context, while analyzing existing conditions and looking at opportunities and constraints for expanding interpretation and meeting visitor needs. A Master Plan offers recommendations for facilities and media, with objectives and strategies that are in line with the park unit's goals and guidelines. The Master Plan can be a stand-alone document or combined with an Action Plan. Master Plans may be used to request and attract funding for project-specific development.

Interpretation Action Plan: An Interpretation Action Plan should follow the development of a Master Plan and may be set up as a stand-alone document. The Action Plan is a "roadmap," offering a realistic and flexible mechanism for achieving the park unit's interpretive goals, objectives and strategies. Guided by the Action Plan, park staff can methodically approach interpretive development, adapting to the continuing evolution of the park unit while moving toward the realization of the stakeholders' shared vision.

Project or Program Plans: This is the detailed planning for a specific project or program; for example, planning for a set of visitor center displays, or a new school group program offering.

Interpretation Planning Goal: *Fulfill the interpretation goals defined for Big Basin Redwoods SP in this general plan by completing more detailed levels of interpretation planning, updating planning as needed, and implementing these plans based on Action Plan prioritization and available funding.*

Interpretation Planning Guidelines

Interpretation Planning 1: Integrate all interpretation planning with regional and statewide interpretation planning and development, both within California State Parks and with other local agencies.

Interpretation Planning 2: Prepare an Interpretation Master Plan and an Interpretation Action Plan, review them on a regular basis, and update as necessary.

Interpretation Planning 3: Develop and implement specific interpretive project or program plans for all Big Basin Redwoods SP interpretation.

Interpretation Planning 4: Work with the district collection manager or the collection manager's designee to review and update the park Scope of Collections as needed, in order to ensure that collection guidelines and management fit with the needs of interpretation, and that interpretive use of collections fits with Department collections policy.

Interpretive Periods

Interpretive periods define the spans of time that will be covered by the park's cultural history interpretation. A primary interpretive period focuses interpretation on the time period of greatest significance in the park's cultural history. The significance is determined by important events associated with the park site, or by notable existing historic or prehistoric resources at the site. Choosing the primary and secondary interpretive periods also involves considering what stories are best told in a particular park, the distinctiveness of the resources, the amount of information available to draw upon, and the physical evidence available for visitors to relate to. A secondary interpretive period designates a time period that is worthy of interpretation but that should receive less emphasis than the primary period. Except for discrete time-related natural history concepts such as geological eras or natural disaster events, interpretive periods are only used for cultural resource interpretation.

Primary Interpretive Periods:

The Early Park Years: 1900 to 1941

This period begins with the end of tanbark harvesting in Big Basin, and the 1900 founding of the Sempervirens Club.

The Headquarters area primary interpretive period also includes the 1902 founding of the park, the 1904 fire, the 1908 park logging scandal, the construction of roads into the park, early park recreation, early park employees and concessionaires, and the CCC camps and their work.

The interpretive period ends with the 1941 closing of the CCC camps and the significant transitions in visitor use that began with the United States' entry into World War II.

The Hoover Family: 1912 to 2006

The Hoover family period starts with Theodore Hoover's purchase of 200 acres of land in the Waddell Valley, and ends with the death of Hulda Hoover McLean.

This period includes the time the Hoovers lived in the valley, the State Parks acquisition of Waddell Beach and most of the original RDO land, the transformation of the Casita to the Nature and History Center, and Hulda Hoover McLean's continued involvement in the RDO area of the park until her death.

Secondary Interpretive Periods:

Native California Indians: Prehistory to 1810

This period includes the prehistoric evidence of area occupation, the first contacts with people of European ancestry, the mission system and rebellions against it, and pre- and post-European contact lifeways of the Native California Indians of the area. It ends in 1810, by which point the tribes had been broken up and dispersed. Although the main period of occupancy and use by the various area tribes ends in the early 1800s, it is important to include the further story of these people in interpretation and the deep connection to this area that many descendants retain.

The Portolá Expedition: 1769

This period covers the passage of the Portolá Expedition through the park area, and their experience camping in Waddell Valley.

Logging, Homesteading, and Tanbark: 1862 to 1900

This period includes the arrival of William Waddell in Waddell Valley, his logging operation, and his death; the early homesteading of Tom Barlow and Tom Maddock, the tanbark harvesting industry in Big Basin, and a time when many logging camps and mills besides Waddell's operated in and around what is now park land.

The Park During and After World War II: 1941 to today

This period includes the changes in recreation use and park development, and Park Rustic architecture that happened during and post World War II, especially the huge increase in use post-war, the further expansion of the park boundaries, changing environmental awareness, and the discovery of the first documented marbled murrelet nest.

Interpretive Themes

Interpretation uses themes to connect visitors to the significant recreational, natural, and cultural resources of the park in personally meaningful ways. Themes provide a point of view for presenting information and inspiration through various interpretive media. The unifying theme integrates the park's themes. Some of the important stories of the park headquarters and RDO are area-specific, so are addressed in themes relevant just to that area.

See Figures 14 – 17 for this and other maps of the Headquarters Area (Governor's Camp) between the years 1924 - 2011

Unifying Theme: *Waddell Creek, its feeders and its tributaries are a major influence on Big Basin's cultural and natural history.*

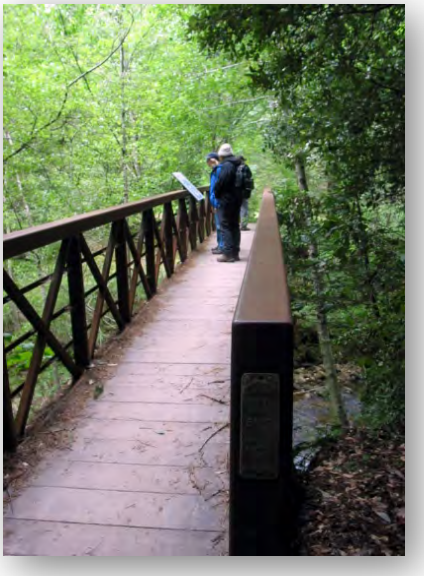
The Waddell Creek watershed provides the right growing conditions for coast redwoods in its upper reaches, and the distinctive mosaic of natural communities near its mouth, including the wetlands of the Theodore J. Hoover Natural Preserve. The year-round streams have provided people with refreshment, livelihood, beauty and rejuvenation for millennia.

Primary Themes

Redwood Park Preservation: *A small group of far-sighted and committed individuals saved Big Basin's old growth redwoods,*

planted the seeds of today's California State Park System, and inspired other grass-roots preservation movements.

The establishment of California Redwood Park is the most significant aspect of Big Basin's cultural and natural history. This theme encompasses the stories of A.P. Hill's photography and activism, the founding of the Sempervirens Club, the club's first exploratory outings to Big Basin, statewide lobbying for the formation of California Redwood Park, Governor Gage's visit, park legislation, and the continuing preservation efforts of the Sempervirens Fund, the Save the Redwoods League, and other groups and individuals.



West Waddell Creek bridge on the Skyline to the Sea Trail

Governor's Camp: *Between 1904 and the beginning of World War II, visitors to the park enjoyed a summer camp-like experience that offered a sense of community and a wide range of recreational diversions and amenities, but also heavily impacted the headquarters area ecosystem.*

This theme covers the park's early recreational years when Governor's Camp was a close-knit lively resort village under the redwood trees, with many amenities and activities. It also interprets the costs to the natural environment– vegetation trampling, soil compaction, and wildlife taming and feeding.

Big Basin Recreation through the Years: *The changes in visitor culture and natural resource use in Big Basin's core area from park founding to now are a microcosm of cultural and conservation changes in America.*

This theme connects visitors to past recreation uses at the park, and how they reflect changes in American society and natural resource use through the 20th century and into the 21st century. Connecting this theme with the "Big Basin Recreation and Preservation Today" theme will help visitors understand changes in park management through the years.

Big Basin Recreation and Preservation Today: *We can enjoy Big Basin today and preserve the park for tomorrow.*

This theme addresses visitors' need for orientation to the park and its recreational opportunities as well as tips on how to enjoy a safe and low impact visit.

Physical Forces and Natural Communities: *Geology, weather, water, and fire continue to shape Big Basin's plant and animal communities.*

This theme covers the geologic formation of the Waddell Creek Watershed, how the park's topography transforms weather into

microclimates, and how geology, wind, water, and fire determine plant and animal communities. This theme also covers the evolutionary adaptations that species in the park use to survive, the park's special status plant communities and plant and animal species, the scientific research opportunities the park provides, and how global climate change may affect the park's natural communities.

Coast Redwoods: *The redwood, impressive and well-adapted as it appears, lives on the edge at Big Basin Redwoods SP.*

This theme explores the specialties and adaptations of the coast redwood, especially its adaptations to the conditions found at Big Basin. It goes further to explain how the redwood's need for a damp cool climate place groves in the southern portions of its range, like those at Big Basin, at risk from global warming.

Marbled Murrelets: *Marbled murrelets nest in the old growth redwood groves of Big Basin.*

This theme covers the natural history of the marbled murrelet, especially its nesting behavior, and the cultural/natural history account of how the mystery of where they nest was solved at Big Basin. It also addresses threats to the marbled murrelet, especially corvids, reasons behind park policies in nesting areas and campgrounds, and actions visitors can take to help protect the species.

Hoover Family: *Influenced by her father's love of nature, her mother's interest in history, and her uncle's public service, Hulda Hoover McLean chose to conserve Rancho del Oso for future generations.*

This theme encompasses the Hoover family's time at Rancho del Oso, including Theodore's interest in nature and sense of connection to the Waddell Valley, Mildred Hoover's influential California history writings, Herbert Hoover's visits to Rancho del Oso, the transfer of land from the family to State Parks—especially Hulda Hoover McLean's home and surrounding land—Hulda's natural and cultural history writings and artwork, her commitment to public service, and her continued involvement with the park and the Waddell Creek Association until her death.

Nature and History Center wildlife exhibit

Secondary Themes

Native California Indians: *The Ohlone tribes of the Quiroste, Achistaca, Cotoni and Sayante used Big Basin as a food source, a place of refuge, and a trading corridor. Many of their descendants continue to feel a connection to this land.*

This theme covers the prehistory, history and lifeways of the Native California Indian groups who lived in and around the park, and passed through it on trade and travel routes. It also covers the descendants of those people, their continuing connection to the land, and the resurgence and renewal of traditional Ohlone culture.

Portolá Expedition: *Gaspar de Portolá's 1769 expedition named the Rancho del Oso area Cañada de la Salud (Canyon of Health) after several very ill men recovered during their stay there.*

This theme focuses on the Portolá expedition's experience in the Rancho del Oso area, with brief background information on their explorations from Mexico up the California coast.

Lumber, Tanbark, and Early Settlement: *Logging and tanbark harvesting flourished in and around the Big Basin area in the second half of the 1800s, and a few settlers made homes in the redwoods during that time.*

This theme covers the forest product production in the Big Basin area, including William Waddell's large operation, the people who worked in the forest, and the hardy handful of early settlers such as Thomas Barlow and Tom Maddock.

Big Basin Workers: *Big Basin park workers have made important contributions to the park and to the State Park System, and working at the park has been an important life experience for many of them.*

This theme covers the Big Basin state park employees, concessionaires, and volunteers who have worked at the park through the years. It incorporates workers' memories of their time at Big Basin, and their accomplishments.

The Civilian Conservation Corps: *Young men, desperate for work in the Great Depression and given the opportunity by the federal government to earn a small wage, joined the CCC and built many of the park's trails, roads, and buildings still used today.*

This theme blends cultural history and existing cultural resources. It covers the purposes of the CCC, the CCC Companies active in the park, CCC camp life, the role of the National Park Service in designing park improvements, the Park Rustic style, and surviving examples of their work.

Post-War Development: *California's population boom, improved roads, and leap in automobile use during World War II caused a huge jump in park visitor numbers post-war, necessitating the development of new facilities to serve visitors and house additional staff.*

Minimal traditional Park Rustic architecture buildings and structures in the headquarters area and Lower Sky Meadow, in most cases built from standard state plans used throughout the park system during this period of expansion, represent the catch-up effort that State Parks had to undertake to cope with the dramatic increase in visitors between pre-war and post-war years.

Recreational Resources: *No matter how you like to interact with the outdoors, from active sports to kicking back and relaxing, you'll find something to enjoy at Big Basin Redwoods State Park.*

This theme covers the many types of recreation available at the park, such as sailboarding, kite-surfing, horseback riding, mountain biking, hiking, birding, camping, picnicking, and just relaxing and enjoying the ambiance.

California Grizzly Bear: *Rancho del Oso was named for the grizzly bears that were once found there, and was the site of one of the last California grizzly bear attacks on a human.*

Cultural and natural history are tied together in this theme, in the cultural and natural history of the now-extinct California grizzly,

and the attack on William Waddell. It also addresses changes in scientific understanding of large predators' roles in the ecosystem that have taken place since the California grizzly was exterminated.

PARK OPERATIONS

Operations and Public Safety

Infrastructure and operations are at the core of a functional unit and integral to meeting the Park's purpose and vision and managing resources and visitor uses. Because future staffing and management structures may change, interagency and intra-district cooperation and sharing of personnel and resources can make it easier to ensure efficient operations and visitor safety.

Operations Goal: *Develop adequate infrastructure for efficient use of energy, water, and other resources; protect public health and safety; and reduce waste, pollution, and environmental degradation.*

Operations Guidelines:

Operations 1: Review long-term infrastructure requirements needed to handle increased future use of the park.

Operations 2: Continue to work with adjoining landowners for efficient park operations and emergency vehicle access.

Operations 3: Provide a well-defined and clearly signed year-around safe park entry for visitors and a variety of recreation and emergency vehicles, especially during peak-use days.

Operations 4: Work with CAL FIRE and other agencies to ensure that emergency response vehicles can reach most park locations, given the unit's paved roads, bridges, and unpaved fire roads, and that alternative emergency response measures are explored.

Operations 5: Maintain and improve park entrance roads to maximize efficiency and safety for parking, day use, and future facilities development.

Little Basin Operations and Maintenance Facilities

Operations 6: Maintain and develop clear signage for visitor access and orientation throughout the park. Define trail use for bicycling, hiking, backpacking and equestrian use. Define the

multi-use pathways. Enhance the entrance signage to the park from Highway 1 and Highway 236.

Operations 7: Provide ADA-compliant facilities and recreational use access (e.g., trails) where practicable.

Operations 8: Coordinate with Caltrans and the Santa Cruz County Roads Department to identify short-term and long-term safety and signage improvements that can be made at road intersections, trail junctions, and parking areas.

Public Safety Goal: *Ensure that current and future facility developments are planned and appropriately designed for safe public access and use, including the routes into and out of the park.*

Public Safety Guidelines:

Safety Guideline 1: Establish goals for interoperable radio communications within the park and with surrounding agencies, with considerations for changes in technology, expanding boundaries etc.

Safety Guideline 2: Provide for appropriate training and equipment for personnel in all aspects of public safety, law enforcement, education, and resource management and protection.

Safety Guideline 3: Continue to work with outside agencies and organizations to include the communities surrounding the park.

Safety Guideline 4: Address public safety issues by emphasizing the principles of crime prevention through environmental design (CPTED), and other law enforcement practices. Four CPTED principles to consider are:

- **Natural access control:** This ensures that paths, roads, and trails be as direct as possible and avoid blind turns or corners while considering all natural resource elements. Gates and signs alert the public where and when the park is open.
- **Natural Surveillance:** This allows visitors to see and be seen. Locating facilities and activities where others will pass by (including law enforcement staff) will deter the criminal element. In some parks (especially in urban areas) it may be appropriate to keep trails/paths clear from dense shrubs, large rocks or other obstacles that can be used as hiding places. Locating facilities, such as restrooms, in the center of an activity area or a campground makes observing persons and activities easier for the visitor to see if something is out of place, and to check on children or other visitors. Ensure there is

adequate lighting in areas of the park that are used at night.

- **Territorial Reinforcement:** This includes posting signs, providing fencing, or using some other forms of demarcation to demonstrate where visitors should or should not be. Signage that includes directions and maps provides orientation to assist the visitor.
- **Maintenance:** Keeping appropriate vegetation well-trimmed and maintained, picking up litter, cleaning graffiti and other forms of facility maintenance demonstrates to the visitor that the park personnel care about the environment that is provided for the visitor and promotes visitor care of the environment (this is often referred to as the Broken Windows Theory). Ensure that benches and tables do not attract elements that may lead to criminal activity and that trash cans and recycle containers are animal-proof and placed in appropriate locations to make it easy for visitors to find and use.

Wildfire Prevention and Suppression

The prevention and suppression of destructive wildland fires threatening human lives, property, and sensitive natural resources is of prime importance. Wildland fires can have a significant effect on park resources and operations. DOM Chapter 0300, Natural Resources, Section 0313.2 describes the Department's policy on fire management, including wildfire management (Section 0313.2.1) and prescribed fire management (Section 0313.2.2). An Interagency Fire Protection Agreement concerning wildland fire protection between California State Parks and CAL FIRE outlines the primary agency responsibilities, modified fire suppression techniques, and post-fire rehabilitation. Primary responsibilities of State Parks personnel concerning life and safety include the protection and evacuation of visitors and park personnel, area closures, law enforcement, protection of park facilities and resources, and initial fire response. State Parks has also prepared guidelines for the protection of buildings and structures near wildland vegetation (Guidelines for the Protection of Structures from Wildland Fire, March 2009). These guidelines are intended to minimize the probability that structures near flammable vegetation will ignite and burn during a wildland fire. The guidelines consider structural design, maintenance, and specific actions to minimize fuel in the structure ignition zone, defensible space zone, and wildland fuel zone. These actions include, but are not limited to, installing fire screens on chimneys; enclosing the area beneath overhanging wooden decks and foundations to prevent accumulations of organic debris below; removing dead organic matter within two feet of any wooden part of the structure; and removing all needles, leaves, and organic debris from roofs, gutters, exterior beams, and decking.

Wildfire Management Goal: *Protect human lives, property, and sensitive natural resources through the prevention and suppression of destructive wildland fires.*

Wildfire Management Guideline:

Wildfire 1: The Department shall coordinate with appropriate agencies, such as CAL FIRE and the county and volunteer fire departments, to complete and update the Wildfire Management Plan for this unit, addressing all aspects of wildfire planning, including prevention, pre-suppression, and suppression.

Wildfire 2: The Department shall follow the fire management policy, including wildfire management (DOM Section 0313.2.1), and guidelines developed through the interagency agreement with CAL FIRE concerning wildland fire protection.

Special Agreements

The park has a variety of legal agreements with different entities. It is important that these agreements are kept current and that they respect the purpose and vision of the park while honoring any legal requirements.

Special Agreements Goal: *Enhance the functionality of the park operations through coordination and cooperation with adjacent land owners, and ensure that all easements, access agreements, or other legal arrangements are in the best interests of the Department and consistent with the park's purpose and vision.*

Special Agreements Guidelines:

Agreement 1: Monitor current stream water diversion practices and ensure that the methods comply with current legal agreements.

Agreement 2: Investigate and seek opportunities for securing easements or parcel additions that will enhance the functionality of the park.

Agreement 3: Contact adjacent landowners to identify any parcels that may be available from willing sellers and suitable as park additions.

Agreement 4: Review all legal agreements regularly and check operating language to ensure compatibility with the park's mission and operations, monitor physical effects over time, if any, and update and modify agreements as necessary.

Agreement 5: Coordinate with the Sempervirens Fund and Save the Redwoods League to appropriately locate and sign dedicated memorial groves and trees located in the park. Ensure that access

requirements and resource protection measures are sufficiently addressed and incorporated into the process for dedicating new groves and maintaining existing sites. Dedicated memorial groves and trees shall not prohibit or prevent public access and use of park lands that are authorized by this general plan and approved by the Park Superintendent.

Staffing Needs and Facilities

Efficient park operations require adequate staffing and associated facilities. Identifying long-term needs and plans for staff operations will prevent piecemeal developments and inefficient park operations.

Staffing and Facilities Goal: *Provide adequate staffing and all-season work space for visitor services and maintenance operations, and ensure there are enough storage facilities for maintenance supplies, tools and equipment. Provide sufficient employee housing units to meet long-term operational needs.*

Staffing and Facilities Guidelines:

Staffing and Facilities 1: Maintain and upgrade existing park residences for staff housing and upgrade structures for fire safety and functionality.

Staffing and Facilities 2: Ensure adequate office space for the rangers, maintenance staff and volunteers to provide self-contained, onsite management.

Staffing and Facilities 3: Design multi-purpose all-weather work areas for maintenance operations and for storage of supplies and tools. Locate work areas close to vehicle storage and maintenance shops.

Staffing and Facilities 4: Identify temporary housing or other facility needs that would attract and provide for seasonal workers.

Staffing and Facilities 5: Accommodate and promote opportunities for site-related seasonal interns and workers.

Staffing and Facilities 6: Provide sufficient staffing to conduct perimeter patrols and surveillance in the backcountry areas for resource protection and visitor safety purposes.

Sustainability

The concept of sustainable design represents a desire to harmonize the built environment with natural systems by emphasizing the principles of energy conservation, waste reduction, and pollution prevention. California State Parks can apply sustainable design principles that

complement the Department's mission to provide recreation opportunities while preserving resources for future generations and to focus on creating environments that promote good health. It is especially important that park units use sustainable design principles, including energy and water conservation, to reduce greenhouse gas emissions in light of the potential environmental changes due to global climate change. In doing so, California State Parks will also encourage the development of new technology and innovations that will reduce these heat-trapping emissions, and will illustrate to visitors examples of positive actions to reduce energy use and greenhouse gas emissions.

Sustainability Goal: *Incorporate sustainable design principles into the design, development, operations, and maintenance of park facilities and programs.*

Sustainability Guidelines:

The concept of sustainable design represents a desire to harmonize the built environment with natural systems by emphasizing the principles of energy conservation, waste reduction, and pollution prevention.

Sustainability 1: Use sustainable design strategies to minimize impacts to the park's natural, cultural and aesthetic resources. Choose low-impact building sites, structures, building, and landscape materials, and maintenance and management practices that avoid the use of environmentally-damaging, waste-producing, or hazardous materials. Use natural, renewable, indigenous, and recyclable materials, and energy-efficient design.

Sustainability 2: The use of sustainable materials shall be compatible with the aesthetics goals and guidelines.

Sustainability 3: Interpret sustainable design elements in the park to encourage a sense of connection to the surrounding natural and cultural resources and inspire personal behavior that reduces negative impacts to the environment and promotes energy conservation.

Sustainability 4: Consult the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) standards for ways to reduce energy use and maximize the use of energy-efficient products and materials. These standards have been developed to promote environmentally healthy design, construction, and maintenance practices.

Sustainability 5: Use low- or zero-emission vehicles, when possible, for park operations and maintenance, and a potential shuttle system. Use low- or zero-emission grounds maintenance equipment, when possible, such as electric trimmers, chain saws, and mowers. Substitution of lower-emission and alternative energy-source tools and vehicles will reduce air quality impacts and heat-trapping emissions, and promote energy efficiency.

Utilities

Park buildings date from the early 20th century to modular buildings constructed in the late 1990s and more recent structures from the 2000s. Current utilities for use in a public park may require upgrades to existing services. One of the biggest constraints is the limited amount of potable water for public consumption and the limited water storage and distribution, primarily in the vicinity of RDO and Little Basin.

Utilities Goal: *Ensure long-term sustainable, environmentally compatible and energy-efficient infrastructure for the park.*

Utilities Guidelines:

> **Utilities 1:** Repair and upgrade the current potable water supply and distribution systems to the existing park buildings and key visitor locations. This would include items, such as the repair or replacement of the main water storage tank, water lines, and reservoirs.
>
> **Utilities 2:** Upgrade the secondary wastewater treatment system and replace or relocate sewer lines, where necessary, to protect creeks and drainages.
>
> **Utilities 3:** Identify other utility needs and implement utility improvements comprehensively to avoid unnecessary site disturbance and expensive rerouting of utility corridors and junctions over time.
>
> **Utilities 4**: Locate and map the current utility systems in the park including telephone, electricity and water, so that all staff can recognize and respond to utility problems efficiently.
>
> **Utilities 5**: Develop an infrastructure plan that reflects long-term facility needs and is compatible with other park management goals and guidelines.

Regional Planning and Community Involvement

The proximity of Big Basin Redwoods SP to other state parks in the region and the similarity of their natural, cultural and recreational resources provide opportunities for management in a coordinated and integrated way. Working in partnership with the region's open space agencies and recreation providers along with adjacent property owners can strengthen natural, cultural, and scenic resource protection, enhance park operations, improve recreational and educational opportunities, and protect private property interests.

Regional Planning Goal: *Integrate the planning and management programs at Big Basin Redwoods SP with the planning and management*

programs of other parks and open space providers in the Santa Cruz Mountains.

Regional Planning Guidelines:

Regional Planning 1: Coordinate natural, cultural, and aesthetic resource management, operations, staff housing, interpretation, visitor and emergency services, and facility development programs at Big Basin Redwoods SP with other state parks in the area to promote healthy ecosystems, protected cultural and aesthetic resources, high-quality recreational opportunities, and operational efficiencies.

Regional Planning 2: Work in partnership with state, regional, and local agencies, private landowners, and other organizations to provide a network of regional open space and a variety of educational and recreational opportunities. Coordinate park planning with local open space planning efforts, such as those of the Midpeninsula Regional Open Space District, the Peninsula Open Space Trust, and other organizations.

Regional Planning 3: Coordinate and collaborate with universities, colleges and other research organizations on natural and cultural resource studies to increase the knowledge of resources in the park and in the Santa Cruz Mountains region. Seek cooperative agreements with adjacent landowners, neighbors, and local jurisdictions responsible for zoning and land use management to provide for open space buffer areas to protect sensitive park resources and to identify and preserve wildlife habitat linkages.

Regional Planning 4: Communication systems within the park and with the greater Santa Cruz Mountains region should be maintained to provide the greatest transmission area possible to allow park staff to respond effectively to emergencies. Visitors should be aware of locations where there is no access to telephone communication in remote areas of the park.

Regional Planning 5: Coordinate and establish mutual support arrangements or agreements with state, county, city, and local organizations to provide effective and efficient public safety programs in the park, and to maintain emergency evacuation routes to allow safe and immediate exit from areas of the park where people visit, work, or reside.

Regional Planning 6: To expand affordable housing for park employees, coordinate with other parks and agencies in the region to identify and utilize potential shared housing opportunities.

4.5 AREA-SPECIFIC GUIDELINES

There are five planning areas identified in Big Basin Redwoods SP. Each of these areas has a distinct combination of resource characteristics, visitor experience and activities, types of access and facilities, development potentials, and operational requirements. The planning areas for Big Basin Redwoods SP are:

- Park Headquarters and Sky Meadow
- Saddle Mountain and Highway 236
- Waddell Beach and Rancho del Oso
- Little Basin
- Wilderness and Backcountry

The management intent for each park planning area is a more specific application of the broader park vision and the parkwide goals and guidelines. Management intent statements define the future uses and desired visitor experiences for the five planning areas. Management intent statements describe State Parks' approach to protecting natural, cultural, and aesthetic resources, creating desired visitor experiences and opportunities for recreation and education, as well as park operations, maintenance and visitor facilities.

PARK HEADQUARTERS AND SKY MEADOW

The park Headquarters is located in the heart of the old growth forest. It includes the oldest sections of the park and contains old growth redwoods, unique cultural resources, developed facilities, and a variety of recreational opportunities. This area in the northeastern part of the park includes a portion of the original 3,800 acres acquired in 1902, and is accessible by public roads and trails. The oldest and tallest redwood trees occur in the old growth forest in the park Headquarters area. Hiking trails, day use picnicking and camping facilities in the old growth forest are among the most popular visitor attractions at this park.

Cultural resources in need of protection range from archaeological sites significant to early Native Californians to standing structures from the CCC era, as well as the buildings from the post World War II era. Several of the significant historic resources in this planning zone are eligible for listing in the National Register of Historic Places.

Campgrounds, picnic areas, and visitor facilities are located in some of the most important remaining old growth nesting areas for marbled murrelets. In the past, uncontrolled human food subsidies have resulted in significant increases in corvid populations in prime old growth nesting

habitat, which often leads to high nest predation of murrelets, resulting in low nesting success. Park managers, as stewards of the resources, are challenged to provide recreation and camping facilities within the old growth redwoods while protecting the nesting habitat of marbled murrelets. This will be achieved in coordination with DFG and USFWS.

Management Intent

The Headquarters area will be managed to protect the combination of high-quality natural, recreational, and cultural values. The old growth forest and associated habitats are the highest priority for preservation. Significant historic buildings that remain will receive appropriate treatments to ensure their long-term protection and use. Recreation facilities and visitor services will be maintained as long as the natural and cultural resource integrity and significance is not diminished. No new building construction is proposed within the old growth forest (see **Figure 18**).

Headquarters Goal A: *Preserve the old growth redwood forest and protect native plants and wildlife habitats.*

Headquarters Guidelines:

Headquarters A1: Coordinate with DFG and USFWS toward the long-term recovery and survival of the Santa Cruz Mountains marbled murrelet population.

Headquarters A2: Limit new facilities construction in the old growth redwoods and manage visitor activities to protect sensitive resources and achieve long-term management objectives.

Headquarters A3: Relocate developed recreation facilities, where necessary, to protect sensitive natural resources and significant cultural resources.

Headquarters A4: Restore forest understory vegetation and reduce soil compaction, where possible, within developed public use areas.

Headquarters A5: Protect sensitive aquatic species, including the California red-legged frog and anadromous fish, and take appropriate measures to minimize disturbances in critical habitats during breeding and spawning seasons.

Headquarters Goal B*: Improve the park's setting and overall visitor experience in the historic Headquarters area, rehabilitate historic buildings for adaptive reuse and accessibility, and reduce vehicle traffic and high intensity uses.*

Headquarters Guidelines:

Headquarters B1: The concession-operated park store is considered an appropriate use for the historic Nature lodge/store building in the Headquarters area. The concessionaire shall adhere to the requirements of the contract in relation to maintaining the historic integrity of the building while providing services to the public in accordance with their contract. Other appropriate adaptive uses may be considered for this building. Concession opportunities may exist in the development of the Saddle Mountain property, to provide essential programs and visitor services.

Big Basin Lodge 1938

Headquarters B2: Rehabilitate the Lodge building and provide suitable adaptive uses for this building. Rehabilitation will include sensitive new construction that is compatible with the rustic environment and setting. Consideration also may be given to the front entry, an outdoor veranda, and pergola that are compatible with the historic setting, but do not attempt to replicate nonexistent historic structures.

Headquarters B3: Improve wayfinding for visitors in the Headquarters area by opening sight lines between buildings and designated use areas, consistent with the cultural landscape; establishing path connections between activity areas and improving information and directional signing to program areas and available services.

Headquarters B4: Establish the primary visitor contact and campground registration outside the Headquarters area, and relocate some park administrative functions to a new facility at Saddle Mountain. Retain the traditional visitor information counter at the Park Headquarters Administration building.

Headquarters B5: Consider the cultural resource evaluations and recommendations in the National Register nominations for significant cultural resources, during the planning, design, and implementation of future development projects. Consult with State Historians and Restoration Architects when developing plans and mitigation measures for projects affecting historic buildings and structures, such as improvements necessary for park operations or ADA accessibility.

Headquarters B6: Provide park shuttle and satellite parking areas to reduce Headquarters traffic congestion during peak visitor use periods.

Headquarters B7: Make provisions for equestrian trailer parking and access to equestrian trails from locations outside the Headquarters area. A potential site is located along Highway 236 near East Ridge Road/trail.

Headquarters B8: Explore State Scenic Highway and Federal Scenic Byway status for Highway 236.

Sky Meadow

The Sky Meadow area is comprised of the Lower Sky Meadow residential area and the Sky Meadow group camp, located on either side of a four-acre wet meadow. The structures providing staff housing within the 1940s residential area are clustered in a flat grassy area surrounded to the north by remnant native perennial bunchgrasses and chaparral transitioning to a Douglas-fir and oak-dominated canopy. The south side of this developed area is bordered by mature coast live oak and well-spaced old growth redwoods and Douglas-fir. A spur road off Sky Meadow Road provides access to the group camp along a gentle ridge dominated by old growth redwood clumps, huge Douglas-fir and mature coast live oak and madrone. The first parking area for the group camp sits below a wet swale where the forest floor is dominated by sedges, rushes and an uncommon occurrence of California fescue. Saturated soils are evidenced by several large uprooted trees. Sky Meadow itself is a wet meadow with rhizomatous sedges, rushes and large patches of California oat grass and Santa Barbara sedge. The perimeter is surrounded by clusters of redwoods, large coast live oaks and Santa Cruz Mountain oaks.

Lower Sky Meadow Goal: *Protect and preserve historic residences and associated features and structures that contribute to the nominated National Register Historic District located in the Lower Sky Meadow residential area.*

Lower Sky Meadow Guidelines:

Lower Sky Meadow 1: Conduct site-specific surveys and investigations for sensitive plant and animal species protection, and coordinate with the Sempervirens Fund early in the site planning to locate new facilities and avoid dedicated trees and memorial groves.

Lower Sky Meadow 2: Allow for development of additional staff housing, trailer pads, and amenities outside of the designated National Register boundaries of the Lower Sky Meadow residence area when addressing future housing needs, to maintain the historic integrity of this significant 1940s residence area.

Sky Meadow Group Camp area

Sky Meadow Group Camp Goal: *Provide for group recreation and preserve the wet meadow and surrounding old growth redwood and Douglas-fir forest habitats.*

Sky Meadow Group Camp Guidelines:

Sky Meadow Group Camp 1: Limit visitor use of the meadow to the existing historic Girl Scout camping platform and adjoining trail.

Sky Meadow Group Camp 2: Upgrade parking and utilities infrastructure to support continued use of existing facilities.

Sky Meadow Group Camp 3: Minimize disturbances to marbled murrelet breeding habitat by locating future visitor amenities outside the old growth forest.

SADDLE MOUNTAIN AND HIGHWAY 236

The Saddle Mountain property is located at the southern park boundary at the intersection of Highway 236 and Little Basin Road. This is the first park encounter for visitors arriving on Highway 236 from Highway 9 at Boulder Creek. The property includes older buildings and structures that remain from previous uses prior to state park ownership, and are currently being used for an outdoor environmental education program under a short-term agreement with a nonprofit organization. The property location along Highway 236 and situated outside of the old growth forest presents an opportunity to create an important future park entry gateway that includes long-term park administrative and visitor serving facilities. It is one of the few sites available within state park ownership that would accommodate new development and uses to help reduce the high visitor use intensity occurring in the Headquarters area.

Management Intent

Through highway signing and development of new entrance facilities, Saddle Mountain property will be transformed into the primary visitor contact facility and gateway into Big Basin Redwoods SP headquarters area. The Highway 236 entrance from the north will continue to serve visitor and non-visitor traffic, viewed as a secondary access for most visitors (**see Figure 19**).

Saddle Mountain Goal: *Establish a "front door" park entrance for primary visitor contact and park orientation on Highway 236 at the southern park boundary.*

Saddle Mountain Guidelines:

Saddle Mountain 1: Develop a park welcome center for primary visitor contact, orientation, park information, and campground registration. Buildings and site development shall include provisions for park administration, offices, interpretation, restrooms, and parking for visitors and authorized vehicles. Other provisions that may be considered in the site planning and development include, but are not limited to, the following:

- Multi-purpose room that could be used for meetings, training, activities, or rented out for special event activities. This could be included in the welcome center or in a separate building designed for this and other uses listed below.
- Office space for administrative services and work areas for staff and other program volunteers.
- Interpretive sales area, gift shop, or other types of visitor services offered through a cooperating association and/or concessionaire, or nonprofit organization.
- Information kiosk or display panels providing public information when staff is unavailable.
- Day use picnic areas, with tables, shade, restrooms, and parking.

Saddle Mountain 2: Preserve and maintain the scenic quality of Highway 236 and establish appropriate "first impression" treatments that are compatible with the character of the park and create an attractive and welcoming park entry experience into Big Basin Redwoods SP.

Saddle Mountain 3: Develop a park shuttle/metro bus stop on Highway 236 and integrated into site development with adequate visitor parking. Provide additional parking to support a park shuttle system for visitor transport to other park areas during peak visitor use periods. Investigate shuttle operations implemented or proposed in other state, national, and local parks to help determine the required components and feasibility of implementing a shuttle system for Big Basin Redwoods SP.

Saddle Mountain 4: Consider provisions for trailhead parking at Saddle Mountain, and establish multi-use trail connections between Saddle Mountain, Little Basin, and Headquarters area, where possible.

Saddle Mountain 5: Preserve the meadow and open space qualities in the planning and design of future park facilities, and establish adequate vegetative screening and buffers between administrative and visitor activity areas, and between park development and adjacent properties.

Saddle Mountain 6: Conduct additional natural and cultural resource surveys, as necessary, to determine the presence of significant resources; implement protective measures, and interpret the site's history and important resources through effective interpretation methods and media dissemination.

Highway 236 Goal: *Maintain the scenic quality of the Highway 236 corridor and enhance the park entry experience for visitors through appropriate signing, vegetation management, and facility improvements.*

Highway 236 Guidelines:

Highway 236 - 1: Coordinate with Caltrans to manage visitor and non-visitor traffic along Highway 236 through the park, and improve signage on Highway 9 at Waterman Gap to redirect visitors to the south entrance at Saddle Mountain.

Highway 236 - 2: Explore State Scenic Highway and Federal Scenic Byway status for Highway 236, to help provide grant funding for the costs of planning, designing and developing byway-related projects. For example, Federal scenic byway designation helps provide grant funding for scenic byway improvement projects, such as:

- Safety improvements: This can include safety improvements due to changing traffic patterns on a scenic byway,
- Planned development of a corridor management plan: If an area has had increased tourism, lodging and other amenities may be needed on a scenic byway,
- Improvements to a State or Native American Tribal Scenic Byway: This includes the planning, designing and development of the byway,
- Construction of new facilities,
- General Improvements for recreational purposes,
- Protection: This type of project allows for protection of historical, cultural, recreational, etc. areas on the byway,
- Tourist Information: These projects will provide information to tourists about the area, and
- Marketing program.

Highway 236 through the park

Highway 236 - 3: Evaluate the historic Gatehouse for California National Register eligibility. Rehabilitate the historic Gatehouse to serve as an employee residence, park office, or for other appropriate adaptive uses. Consider site improvements to accommodate trailhead parking or a possible shuttle/bus stop.

Highway 236 - 4: Develop and/or improve highway turnouts, where appropriate, to accommodate short-term parking, shuttle/bus stops, or temporary pull-outs for vehicles.

Highway 236 - 5: Develop trailhead parking, where feasible, for access to multi-use trails, with provisions for horse trailers at the following locations: (a) East Ridge Road/trail and Highway 236, (b) East Ridge Road and China Grade Road, (c) China Grade Road near Lane Trail Camp, and (d) Gazos Creek Road and Whitehouse Canyon Road.

Highway 236 - 6: Consider acquiring easements or acquisition of additional properties if available from willing sellers, to accommodate facilities development, highway, or trail improvements and/or to ensure long-term capability between park-related activities, resource protection, and adjacent land uses.

WADDELL BEACH AND RANCHO DEL OSO

The Waddell Beach and Rancho del Oso (RDO) planning zone is located on both the inland and ocean sides of Highway 1 where Waddell Creek meets the Pacific Ocean. It is the western entrance into Big Basin Redwoods SP, the West Waddell Creek State Wilderness, and is the coastal terminus of the Skyline to the Sea Trail. The area is characterized by steep coastal bluffs to the north and south, a pocket beach at the mouth of the creek, a protected wetland area, a riparian corridor through the Waddell Valley, grassy meadows, northern coastal scrub, inland redwood forests, and adjacent private agricultural fields. The northernmost population of native Monterey pine grows within this zone.

The character of this coastal portion of Big Basin Redwoods SP is very different from the redwood forested Headquarters area. Waddell Beach has favorable winds for surfing sports and beach parking is often filled on the weekends. RDO offers a variety of visitor facilities that includes a nature and history center, a ranger station, an equestrian camp, trail camps, and an interpretive trail. RDO and Waddell Beach are comprised of land once used by Native California Indians, Spanish explorers, and early homesteaders before the RDO property was purchased by Theodore J. Hoover in 1914, and contains sensitive and significant cultural resources. The 23-acre Theodore J. Hoover Natural Preserve protects the valuable wildlife habitat and sensitive species of the coastal freshwater and brackish marsh. Staff housing provides security for this portion of the park.

Management Intent

The Waddell Beach and RDO will be managed to protect and preserve its natural and cultural resources while providing outdoor recreation opportunities and public access. Natural plant communities and habitat include the native Monterey pine, Waddell Creek riparian, and the plants and wildlife of the Theodore J. Hoover Natural Preserve. Management will protect and preserve important and significant cultural resources, including potentially significant cultural landscapes such as those that may feature resources from the eras of early Spanish exploration, timber harvesting, homesteading, and Native Californian encampments. Parking will accommodate day use and overnight visitors, including equestrian use.

Visitor contact will be improved at the Highway 1 entrance to the park, with more visitor orientation and information emphasizing the opportunities available to visitors in the inland portions of Big Basin and throughout the Santa Cruz Mountains region. Visitors will continue to enjoy activities such as hiking, picnicking, horseback riding, mountain biking, camping, nature study, and photography as well as beachcombing and water sports at Waddell Beach. Individuals, families, and school groups will learn about and experience the park's plant communities and

wildlife habitat at the RDO Nature and History Center and on the nature trails (**see Figure 20**).

Waddell Beach Goal: *Preserve the long-term health of the Waddell Creek watershed and coastal beach environment, and provide safe public beach access and visitor parking to support ocean-oriented recreational activities associated with Waddell Beach.*

Waddell Beach Guidelines:

Waddell Beach 1: Coordinate with Caltrans to maintain and expand Waddell Beach parking facilities, as feasible, to support beach activities and ocean view parking. Maintain and improve, as necessary, the bus transit stop, parking, and restroom facilities to maintain functional efficiency, safe pedestrian and vehicle circulation, and attractiveness. Consider asphalt paving and striping to improve parking and circulation efficiency and public safety.

Waddell Beach and the T. J. Hoover Natural Preserve

Waddell Beach 2: Improve highway signage and implement effective measures to slow vehicle traffic and provide early warning to motorists for approaching intersection and pedestrian crossing.

Waddell Beach 3: As part of a fully integrated plan for both sides of the highway, incorporate day use parking (50 -100 spaces), distributed on either side of Highway 1 depending on resource constraints and future roadway alignment, with safe pedestrian access from the inland side of the highway to Waddell Beach.

Waddell Beach 4: Protect habitat at the mouth of Waddell Creek, and implement best management practices that may include seasonal beach closures during snowy plover nesting periods.

Ranch del Oso Goal: *Promote RDO as the western gateway to Big Basin and the West Waddell Creek State Wilderness, providing a safe public entry that is welcoming and conveys a sense of arrival and area identity. Develop facilities and manage use in the appropriate manner to ensure resource protection and meet the visitor needs for long-term access and use.*

Rancho del Oso Guidelines:

RDO 1: Relocate the RDO entrance road gate further inland (+/-100 ft.), and develop a vehicle turnaround, parking, and park information kiosk for visitors. Incorporate trail and camping information and interpretation on the area's history and significant natural and cultural resources. Include highway and park entrance signs that clearly identify this area as part of Big Basin Redwoods SP.

RDO entrance road off Highway 1

RDO 2: Develop a fully functional ranger station/interpretive facility, which could be an upgrade of an existing facility or a new building. This facility can function as a center for RDO activities, interpretation, and orientation as well as a gateway into the backcountry and the West Waddell Creek State Wilderness.

RDO 3: Upgrade or reconfigure the horse camp and equestrian staging facilities to improve campsites, trailer parking and vehicle circulation. Continue to monitor and evaluate current equestrian facilities and use to minimize potential impacts to natural and cultural resources.

RDO 4: Protect special status plant and wildlife habitats; conduct resource surveys and monitor use along roadways and near sensitive habitats; and implement resource management and protective measures to eliminate or mitigate human impacts on significant natural resources.

RDO 5: Prepare site plan(s) to determine the location, size, and configuration of desired public use and park operations facilities, addressing public health and safety issues, resource sensitivities, accessibility requirements, aesthetics, interpretation, and management of visitor capacity.

Existing Ranger office and interpretive facility

RDO 6: Develop a bicycle camp and walk-in campground facilities (approximately 15 sites) at a location either adjacent to the horse camp or in an open area along the road north of the day use parking lot. Consider alternative forms of camp facilities, such as yurts or tent cabins, with provisions to serve backpackers and touring bicyclists utilizing the California Coastal Trail (CCT) and Highway 1 Pacific Coast Bike Route (PCBR).

RDO 7: Conduct visitor and potential user surveys to determine future visitor needs and recreation demands for day use and overnight facilities in RDO and the coastal region. Additional campground development (accessible from Highway 1) may be considered in the area of RDO, if additional properties suitable for this use became available from willing sellers.

RDO 8: Improve area aesthetics by removing, screening, or relocating on-site storage containers and other non-visitor use facilities.

RDO 9: Develop an all-season footbridge across Waddell Creek, where feasible, to enhance trail access between the RDO ranger station and the Nature and History Center.

RDO 10: Retain park staff residences for public safety and protection of public property.

RDO 11: Rehabilitate the Nature and History Center building and install new interpretive displays (currently underway) to serve as the primary interpretive center for RDO. Differentiate interpretation from that offered at the ranger station by focusing on historical and ecological topics. Prepare site-specific plans to define day use parking, circulation, picnic areas, accessible restroom facilities and use of outdoor open space areas for visitor education and interpretive programs *(also refer to **Section 4.4,** Parkwide Goals and Guidelines – Interpretation and Education).*

RDO 12: Repair and upgrade the current potable water supply and distribution systems to existing and new park buildings and key visitor locations. Ensure that water diversions out of West Waddell Creek do not adversely affect resources or interfere with park operations.

RDO 13: Investigate and seek opportunities for securing easements or suitable parcel additions from willing sellers that will enhance the functionality of the park.

RDO Nature and History Center

LITTLE BASIN

The Little Basin property was recently acquired in 2011 and added to Big Basin Redwoods SP. This planning zone is approximately 535 acres comprised of scenic woodlands and coast redwoods, and includes a residence, maintenance shop, and developed 150-acre campground with several group-oriented recreation facilities. Little Basin is a unique camping destination with campsites, cabins, ball fields, a tennis court, a basketball court, playground, picnic areas, open space meadows and miles of hiking trails that connect with the trail system in Big Basin. Access to the property is via Little Basin Road, a narrow 1.7 mile county road off Highway 236 and adjacent to the Saddle Mountain property. The Big Basin Headquarters area is approximately four miles from Little Basin. Initial resource surveys have been conducted and no sensitive natural resources have been identified. Two significant archeological sites have been identified. However, no historic buildings or structures exist on this property.

Little Basin Entrance

Management Intent

The Little Basin facilities will be managed to provide for group recreation, environmental education, and special event opportunities with provisions for day use and overnight accommodations. Initially, these facilities will be managed and operated by the nonprofit group United Camps, Conferences and Retreats (UCCR), under a concessions agreement scheduled through 2017. The concessionaire is responsible to manage all aspects of the maintenance and support required to operate Little Basin as a first-class camping and recreational facility, which also includes maintaining the on-site water treatment plant and potable water distribution system, campground and recreation facility reservations, and security. State Parks will provide ranger patrols and law enforcement as needed. Further site studies, resource monitoring and recreation surveys are needed to determine the long-term management, development, and use of the Little Basin property (see **Figure 21**).

Little Basin Goal: *Establish a public day use and overnight recreation area for group use, and destination for special events.*

Little Basin Guidelines:

Little Basin 1: Upgrade and expand utility systems and infrastructure to support recreational activities, such as camping

(including cabins), hiking, biking, horseback riding, fishing, interpretive and group activities. Consider potential for expansion of recreation facilities and program needs for a possible environmental education center.

Little Basin 2: Upgrade and/or modify existing facilities to satisfy operational needs and to meet ADA accessibility requirements.

Little Basin 3: Complete inventories and resource evaluations, and implement resource protection measures as necessary. Remove or relocate existing facilities, as necessary, to preserve and protect sensitive and significant natural and cultural resources.

Little Basin 4: Interpret resource values, site history, and past use of Little Basin property.

Little Basin 5: Consider a concession-developed and operated overnight lodge with group dining facilities and additional cabins.

Little Basin 6: Coordinate with Santa Cruz County to identify any road improvements and county maintenance actions that may be necessary to maintain public vehicle access on Little Basin Road from Highway 236 to the Little Basin property.

WILDERNESS AND BACKCOUNTRY AREAS

Wilderness

The West Waddell Creek State Wilderness is approximately 5,900 acres in size, which encompasses a significant portion of the Waddell Creek watershed that has retained its primeval character without roads, buildings, and structures other than a few trails and bridge crossings. Its boundaries were based on the state's property ownership in 1982. Property acquisition since 1982 presents opportunities to expand the wilderness into other roadless areas of the park.

Management Intent

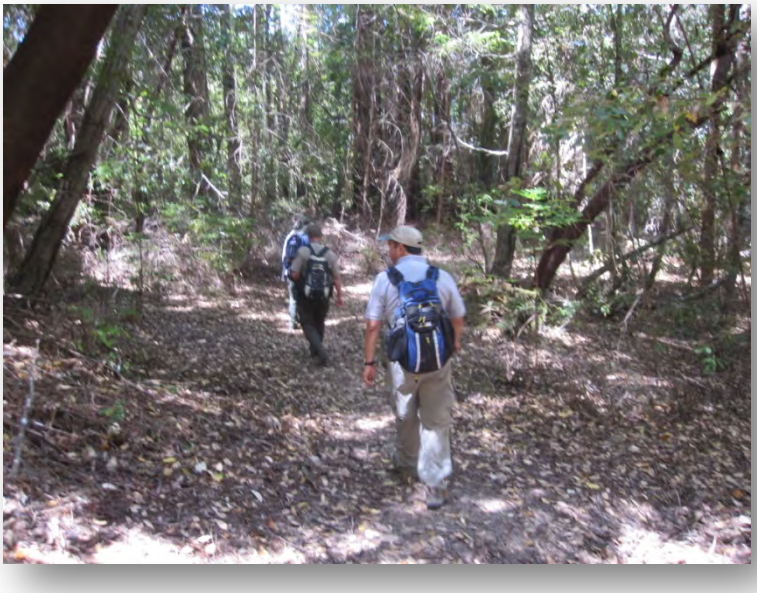
The West Waddell Creek State Wilderness will be managed to preserve the primitive visitor experience and natural character of the landscape, where roads and the use of mechanized vehicles (including bicycles) is prohibited. Management of the West Waddell Creek State Wilderness will support natural processes and preserve the native habitats and scenic characteristics.

State Wilderness Goal: *Preserve the natural landscape and wilderness characteristics and manage for primitive visitor experiences.*

State Wilderness Guidelines:

Wilderness 1: Preserve and protect the integrity and character of the Waddell Creek watershed through effective management of resources and visitor use. Identify and monitor environmental conditions and use patterns, and implement adaptive management actions to reduce adverse impacts to less than significant levels.

Wilderness 2: Expand the state wilderness to include approximately 390 acres of additional lands, north to Gazos Creek Road and west to Whitehouse Canyon Road, to provide a distinct boundary for park management purposes. The proposed wilderness boundary will be set back 50 feet from San Mateo County's right-of-way on Gazos Creek Road and 50 feet from the edge of park roads and trails that define the limits of the state wilderness **(**see **Figure 22).**



Backcountry trail

Backcountry

The park's backcountry includes the steeper and more remote areas of the park where visitors must walk, ride a horse, or mountain bike in order to enjoy. These areas are characterized by forested mountains, rolling hills covered with grass and chaparral, and riparian canyons with lush undergrowth. These areas are mostly natural with little recreational development and are usually far enough from public roads that visitors can't see or hear highway traffic noise. Much of the park ownership falls into the backcountry planning area.

Management Intent

The backcountry will be managed to preserve its sense of solitude, natural and aesthetic resource values, and for its low-impact recreational opportunities and visitor experiences. It will be managed to preserve the natural landscape with minimal recreational facility development. Fire roads and trails will remain in the backcountry to ensure visitor safety and provide access and trail connections between park areas and regional trail systems. The area's quiet forests, expansive brushlands, native wildlife and plants, ridgetop vistas of the Santa Cruz Mountains and cultural resources are invaluable qualities that will be preserved.

New facilities in the backcountry may include new and/or realigned trails and trailhead parking, vista overlooks, and trail camps, based on a future Roads and Trails Management Plan. Hikers, bicyclists, and equestrians can explore the park and connect with regional trails leading to surrounding Santa Cruz Mountains open space areas. Trails provide backcountry hikers, backpackers, and equestrians with access to the remote wilderness areas to experience the solitude of old growth redwoods and to observe and photograph wildlife and the expansive vistas of the surrounding landscape. Fire roads provide access to backcountry ridges for bicyclists and potential shuttle tours. Multi-use trails will provide access and linkages for bicyclists between Highway 236 through Big Basin and Highway 1 on the coast (see **Figure 22**).

Backcountry Goal: *Preserve and protect the wild and remote natural landscape and provide opportunities for backcountry visitor experiences.*

Backcountry Guidelines:

Backcountry 1: Preserve the remote natural forested mountain character of the backcountry.

Backcountry 2: Manage Santa Cruz cypress and Monterey pine stands for their species protection and preservation.

Backcountry 3: Establish trailheads for access to the backcountry at vehicular access points near park boundaries and along existing roads outside the old growth forest, where visitor safety and security issues can be adequately addressed. Backcountry trailheads will provide an alternative access to trails, which are intended to help relieve headquarters area traffic congestion and disperse park visitors during peak use periods.

McCrary Ridge Trail

Backcountry 4: Implement appropriate trail stabilization and/or trail relocation as necessary to minimize the West Waddell Creek stream bank erosion currently threatening segments of the Skyline to the Sea Trail.

Backcountry 5: Establish additional trail camps for backpackers and cyclists, outside sensitive resource areas and accessible from existing roads and trails. Consider relocation or permanent closure of Camp Herbert (trail camp) due to access difficulties from erosion problems on segments of the Skyline to the Sea Trail.

Backcountry 6: Establish additional low-profile, non-intrusive interpretive signs/panels, where appropriate.

Backcountry 7: Consider offering shuttle tours on backcountry fire roads through a concession contract or as a part of park interpretation and accessibility programs.

4.6 MANAGING VISITOR CAPACITY

The section presents California State Parks' methodology to evaluate existing and future desired conditions and to analyze the capacity issues related to general plan concepts and recommendations for the future development and use of the park. It is intended that the general plan and this discussion of visitor capacity will satisfy the initial requirements of the PRC, Section 5019.5, which states:

> *"Before any park or recreational area development plan is made, the department shall cause to be made a land carrying capacity survey of the proposed park or recreational area, including in such survey such factors as soil, moisture, and natural cover."*

Big Basin Redwoods SP contains developed areas with recreation and administrative facilities as well as a large amount of undeveloped open space land. The general plan recommends preserving and protecting the park's important natural and cultural resources as well as recommending desired and appropriate visitor and recreational activities for Big Basin Redwoods SP.

Some recreational activities that have occurred in the park for many years have impacted some of the park's important natural and cultural resources. If conditions change or visitor experience diminishes, there is a process for recognizing and responding to such changes and potential impacts. General plan goals and guidelines for resource management present the desired future conditions against which park managers can measure visitor use and take the appropriate actions to avoid or reduce negative impacts using the adaptive management process. This process also considers possible alternatives for continuing desired and appropriate visitor experiences.

Physical constraints for development and public use exist in the park, such as the presence of old growth and recovering redwood forests, sensitive vegetation communities and wildlife, archaeological and historic sites and features, steep topography, existing roads, easements, and drainages. These elements will all be important factors in park design and determining visitor capacities.

Park visitor experience is shaped by the physical environment and character of specific park areas. The character of an area helps determine the types of visitor opportunities that promote enjoyment or appreciation of a park's defining qualities, the variety of possible activities, and types and amount of development that serve those visitor activities. The quality and character of visitor experience is also influenced by visitor demographics and recreation trends. These dynamic influences

contribute to defining the nature of desirable park experiences and conditions.

Social constraints also exist due to the increased population levels and diversity in California and within the communities in the region. These population trends will have an influence on future park development and facility design and can be viewed as opportunities for cultural awareness and exchange.

California State Parks' methodology focuses on the initial capacity of developed facilities and desired resource and social conditions. Subsequent surveys, analysis, and monitoring programs are necessary in order to make final determinations and adjustments in visitor capacity through future management actions. The methodology and steps to be used in this process are outlined below.

ADAPTIVE MANAGEMENT

The following represents an adaptive management cycle, or methodology, that involves research, planning, monitoring, and management actions to achieve sustainable resources and social conditions. This methodology was initiated during this general planning effort and applied with the level of detail commensurate with the conceptual nature of this plan. This includes the identification of existing opportunities and constraints and the description of desired resources and social conditions. Visitor capacities are addressed for park areas when sufficient data is presented.

Visitor Capacity Management is defined by State Parks as:

> *A methodology used to determine and maintain the desired resource and social conditions that fulfill the purpose and mission of a park. It includes establishing initial visitor capacities, then monitoring key indicators in order to identify appropriate management actions in response to unacceptable conditions.*

Adaptive Management Process

The following tasks are usually carried out during the resource inventories, unit classification, and general planning processes. Subsequent management plans and site investigations provide the more detailed information necessary for project-level analysis and impact assessments in order to initiate required mitigation and monitoring programs. These tasks are presented here for an understanding of the iterative process that State Parks considers from the programmatic planning stages of the general plan through the project implementation and monitoring phases.

1. **Identify Existing Opportunities and Constraints:** Through ongoing research, surveys, and site investigations we are able to document existing resources and social conditions. This data helps identify opportunities and constraints, and establishes the baseline condition for natural, cultural, and recreational resources.

2. **Determine Vision and Desired Conditions:** The analysis of current uses and condition assessments begin to shape the types of activities and experiences that are desired. This increases our ability to determine the resource conditions we desire and the protective measures, including thresholds (standards) of acceptable resource conditions that are necessary to maintain those resource conditions.

3. **Identify Issues and Evaluate Alternatives:** The analysis of resource and social impacts related to current use helps identify the issues, problems, and thresholds that shape the vision or desired conditions of the park. Additional surveys, studies, or site analysis may be necessary to understand the full effects of existing uses, potential alternatives, or feasibility of desired improvements. It is at this stage that the objectives of visitor use and capacity for specific units are determined, which may include quantitative limits on certain park uses (e.g., the number of campsites or parking spaces in the park).

4. **Develop Measurable Indicators and Thresholds:** Key indicators are identified that can diagnose whether the desired conditions for a park are being met. These indicators must be measurable and have a direct relationship to at least one desired condition (e.g. the number of exposed tree roots per mile of trail). Thresholds that reflect desired conditions are then identified for each indicator (for example: 100 tree roots per trail mile maximum). Through monitoring processes, management is alerted when conditions exceed a determined threshold or deviate outside the acceptable range.

5. **Establish Initial Visitor Capacities:** Initial visitor capacities are formulated based on the analysis of existing conditions, alternative considerations, desired future conditions, and prescribed goals and objectives. Implementation occurs when sufficient knowledge is gained and plans are finalized. As environmental impact assessments and monitoring programs are initiated, plans are implemented and new patterns of use are generated.

6. **Monitor Use and Identify Changing Conditions:** Through monitoring and further study we can assess the degree of impact or changing conditions that occur over a specified period of time. Thresholds and indicators are used in the monitoring process to determine when an unacceptable condition exists. Unacceptable

conditions trigger management action(s) appropriate to correct the unacceptable condition.

7. **Adjust Environmental or Social Conditions:** As monitoring efforts reveal that conditions may be approaching or exceeding thresholds, management must consider alternatives and take appropriate action. The analysis of impacts and their causes should direct management toward actions that adjust resource/experience conditions to a desired state. This may include further studies, new project design, and stronger enforcement of rules and regulations, which may also require adjustments to the initial visitor capacities.

Research, Investigations, and Monitoring

Data from research, pre-project site investigations, visitor impact assessments, post-project evaluations, and baseline resource monitoring can all be captured and used to make sure the desired condition of the park is maintained. A program of continued research and site investigations provides and documents updated data on resource conditions and new problems as they may occur. Periodic surveys provide a measure of visitor satisfaction and identify recreation trends and public opinions on the types of activities and experiences people are seeking. These ongoing efforts build the unit data file for subsequent planning and analysis, and monitoring programs ensure that development actions achieve the desired outcomes.

Desired Outcomes and Indicators

The following (**Table 4-1**) provides a list of indicators and potential management actions that may be developed based on the goals and guidelines identified in **Section 4-4** and **Section 4-5** and their associated desired outcomes. These indicators may be modified on a regular basis, based on site-specific knowledge, recent observations in the field, and updates in scientific understanding, in order to achieve the desired outcome.

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
Natural Resources Protect all special status native wildlife species and their habitats. Include all taxa that are locally important (including endemic species) as well as those protected by federal and/or state law.	▪ Sustainable populations of special status wildlife species.	▪ Occurrence of special status native wildlife species. ▪ Active nest sites. ▪ Presence of suitable habitat. ▪ Abundance of prey species. ▪ Periodic sightings reported.	▪ Periodic field surveys. ▪ Check for active nest sites prior to construction activities. ▪ Avoid sensitive habitats and provide protective mitigation.
Protect special status plant species to the degree necessary to maintain or enhance populations.	▪ Sustainable populations of special status plant species.	▪ Occurrence of special status plant species. ▪ Active special-status native wildlife species nest sites. ▪ Presence of associated healthy plant communities.	▪ Initiate a survey for special status plant species in the park as staffing and funding become available. ▪ Periodic field surveys. ▪ Relocate/remove developed recreation facilities or rotate use in the marbled murrelet's old-growth nesting habitat
Cultural Resources Protect significant cultural sites and features.	▪ Retention of the integrity and value of cultural resources.	▪ Disturbance to known archaeological sites. ▪ Retention of historic building fabric and character defining features.	▪ Develop a program for archaeological survey, site recordation, evaluation, GPS mapping, and record and report preparation for the cultural resources within the park.

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
	▪ Appropriate treatment and adaptive use of historic buildings, structures and landscapes, as defined by the Secretary of the Interior's Standards for the Treatment of Historic Properties.	▪ Retention of cultural landscape elements	▪ Prepare management documents (Historic Structures Reports, Cultural Landscape Reports) for significant cultural resources. ▪ Develop specific management guidelines for inventory and significance evaluation. ▪ Staff observations of park resources and visitor activity during day-to-day operations. ▪ Periodic maintenance and building inspections/risk assessments.
Preserve and protect those resources found to be eligible for listing on the National Register of Historic Places. Protect significant prehistoric sites through identification, preservation, and avoidance.	▪ Retention of the integrity and value of cultural resources.	▪ Disturbance to known archaeological sites. ▪ Retention of historic building fabric and character defining features. ▪ Retention of cultural landscape elements	▪ Develop treatment guidelines and recommendations for significant historic buildings, structures, and features. Where rehabilitation is appropriate, identify compatible and non-compatible uses. ▪ Staff observations during day-to-day operations.

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
			▪ Periodic maintenance and building inspections/risk assessments.
Preserve and protect Native American historic, cultural, or sacred sites, features, and objects.	▪ Input from Native American representatives on archaeological resources and sites in the park. ▪ ▪ Retention of the integrity and value of cultural resources.	▪ Lack of disturbance to known archaeological sites.	▪ Native American monitoring on specific park projects and activities. ▪ Consultation with Native American representatives prior to any action, program or project that has the potential to affect Native American sites, features, and objects. ▪ Staff observations during day-to-day operations.
Recreation Resources Provide a range of high-quality outdoor recreation opportunities that allow California's diverse population to visit, enjoy, experience, and appreciate all of the park's resources.	▪ A variety of recreation experiences that enhances appreciation and enjoyment of the park's resources.	▪ Presence of returning park visitors. ▪ Diversity of recreation activity throughout the park. ▪ Diversity in park visitation demographics. ▪ Conflict among park users and differing recreation activities.	▪ Staff observations of park recreation activity during day-to-day operations. ▪ Design facilities for user needs. ▪ Visitor satisfaction surveys. ▪ Evaluate new recreation opportunities, trends, and activities. ▪ Adjust or respond park visitor

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
		▪ Effects on park resources with increases in park visitation.	opportunities to changing demographics. ▪ Conduct periodic visitors use and satisfaction surveys.
Planning Zone Guidelines			
Headquarters Area Preserve and protect the old growth redwood forest and historic character of park development, and maintain access for visitor education and enjoyment. Reduce potential user conflicts and traffic congestion, and improve public safety and non-vehicular circulation in the headquarters and developed recreation areas. Preserve and protect historic buildings, structures and cultural landscape elements.	▪ Preservation of park heritage and historic character. ▪ Quality visitor experiences, appreciation, and enjoyment of park resources. ▪ Effective park operations and services for quality visitor experiences. ▪ Improved health of the forest and associated plant and wildlife habitats. ▪ Preservation, restoration, or rehabilitation of historic buildings and structures. ▪ Safer non-vehicular travel in and out of the headquarters	▪ Retention of historic building fabric. ▪ Retention of cultural landscape elements. ▪ Reduction of soil compaction. ▪ Reestablishment of native understory vegetation in old growth forest areas. ▪ Increased presence of wildlife associated with understory vegetation. ▪ Decrease in user conflicts. ▪ Increase in returning park visitors.	▪ Initiate appropriate historic building treatments and preservation of historic building fabric and character defining features. ▪ Perform condition assessments and monitor changes. Establish appropriate treatment options, adaptive uses and required maintenance. ▪ Staff observations of park resources, facilities, and visitor activity during day-to-day operations. ▪ Periodic maintenance inspections/risk assessments. ▪ Establish a shuttle system, if feasible, to transport visitors to

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
	area. ▪ Reduced air pollution ▪ Reduced traffic congestion with safe vehicle travel through the park.		the historic zone from outlying areas. Implement shuttles as part of historic tours, concession services, and interpretive program activities. ▪ Take necessary measures to reduce soil compaction from vehicles and concentrated visitor use, and promote rehabilitation of understory vegetation. ▪ Prior to construction of new facilities at Saddle Mountain, conduct traffic study for Highway 236, and implement road improvements as identified in the traffic study including appropriate signage to reduce traffic congestion and facilitate safe vehicle travel through the park.
Waddell Beach and Rancho del Oso Improve park entrance and Highway 1 access, day use parking, visitor information, and RDO identity as a sub-unit of Big Basin	▪ Sufficient parking and provisions for day use activities. ▪ Safe pedestrian access between inland watershed	▪ Adequate parking, fewer law enforcement responses, and high visitor satisfaction. ▪ Continuation of natural seasonal stream flows.	▪ Staff observations during day-to-day park operations. ▪ Periodic maintenance inspections and stream channel monitoring, especially during

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
Redwoods SP. Preserve the long-term health of the Waddell Creek watershed and coastal beach environment, and provide safe public beach access and visitor parking to support ocean-oriented recreational activities associated with Waddell Beach. Maintain and improve, as necessary, the bus transit stop, beach parking, and restroom facilities to maintain functional efficiency, safe pedestrian and vehicle circulation, and attractiveness. Incorporate day use parking (approx. 50 spaces) on the inland side of Highway 1, with safe pedestrian access along Waddell Creek from the inland side of the highway to the beach. Develop a fully functional ranger station to function as a center for RDO and visitor orientation as well	areas and the beach. ▪ Enhancement of creek channel conditions and riparian habitat. ▪ Special protection for sensitive natural and cultural features. ▪ Visitor enjoyment of beach, trails, and wilderness area. ▪ Visitors more educated about area history and the importance and sensitivity of natural and cultural resources. ▪ Enhanced overnight recreational experience and improved accommodations for equestrians, backpackers, and bicyclists. ▪ Provide visitor facilities to support day use and program activities.	▪ Enhancement of riparian vegetation and habitat. ▪ Abundance of wildlife presence and activity (particularly at nearby T.J. Hoover Natural Preserve) ▪ Presence of special status plant and wildlife species. ▪ Sightings of wildlife reported. ▪ Disturbance to known archeological sites. ▪ Increase in loss vegetation and soil erosion. ▪ Increased exposure and damage of archaeological sites and features. ▪ Increase or decrease in emergency response and rescues on backcountry	storms and high water conditions. ▪ Conduct resource surveys and check for active special status wildlife species nest sites and presence of special status plant and wildlife species prior to new development or facilities improvements. ▪ Observe and record visitor use patterns and thresholds for determining visitor capacity. ▪ Design improvements to accommodate visitor needs and locate facilities outside sensitive resource areas. Consider limiting the numbers of visitors at any one time, to manage use and minimize resource impacts to less than significant levels. ▪ Conduct cultural resource surveys to identify and evaluate significant cultural resources, including archeological sites and features, buildings, structures

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
as a gateway into the backcountry and the West Waddell Creek State Wilderness. Upgrade or reconfigure the horse camp and equestrian staging facilities to improve campsites and trailer parking and vehicle circulation. Develop a bicycle camp and walk-in campground facilities, and consider alternative forms of camp facilities, such as yurts, with provisions to serve backpackers and touring bicyclists utilizing the California Coastal Trail (CCT) and Highway 1 Pacific Coast Bike Route (PCBR). Rehabilitate the Nature and History Center building, parking and support facilities, as necessary, to serve as the primary interpretive center for RDO.		trails, traffic accidents, and ocean-related incidents. ▪ Visitor appreciation as indicated through visitor surveys and return visits. ▪ Increase in volunteers and support for interpretive programs and trail maintenance and patrols.	and cultural landscape elements. ▪ Monitor and evaluate visitor uses and the adequacy of existing facilities, and take appropriate actions to minimize potential environmental and cultural impacts (fencing, screening, signage, accessibility, visual and physical connectivity, facility redesign, etc.). ▪ Conduct site-specific surveys to identify resource constraints and sensitivities. ▪ Conduct visitor and potential user surveys to determine future visitor needs and recreation demands. ▪ Prepare site-specific plans to define day use parking, circulation, picnic areas, accessible restroom facilities, and use of outdoor open space areas for visitor education and interpretive programs.

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
Saddle Mountain Establish a "front door" park entrance for primary visitor contact and park orientation on Highway 236 at the southern park boundary. Develop a park welcome center for primary visitor contact, orientation, park information, and campground registration, with provisions for park administration, offices, interpretation, ADA accessibility, restrooms, parking, meetings, training, potential concessions, special event activities, and picnic areas. Develop park shuttle/metro bus stop on Highway 236 with adequate parking to support a park shuttle system for visitor transport to other park areas during peak visitor use periods. Maintain the scenic quality of the Highway 236 corridor, preserve the site's open space qualities, and enhance the park entry experience	▪ Reduced traffic movements along Highway 236 through the park headquarters area. ▪ Convenient park visitor access and circulation. ▪ Efficient park operations and administrative functions. ▪ Facilities and programs accessible to all visitors. ▪ Safe and convenient transportation and circulation along park roads and trails. ▪ Entrance into state park invokes a lasting "first Impression" for visitor's arrival at the welcome center and their transition into the ancient redwood forest.	▪ Effective traffic signage and safe vehicle access and egress from Highway 236 into site. ▪ Proper vegetation management and controlled uses. ▪ Sufficient number and size of administrative, maintenance, and visitor serving facilities. ▪ Sufficient utilities and infrastructure to support desired functions. ▪ Effective interpretation methods and media.	▪ Conduct additional site surveys to determine the presence of prehistoric and historic resources and implement protective measures for significant properties. ▪ Establish adequate vegetative screening and buffers between administrative and visitor activity areas, and between park development and adjacent properties. ▪ Conduct visitor satisfaction surveys and seek partnerships and/or concession opportunities to increase visitor experience and provide improved services, facilities, transportation, and visitor accommodations. ▪ Conduct surveys to identify law enforcement problems and unresolved issues, and solicit public input in developing appropriate and effective management actions.

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
for visitors. Develop trailhead parking, where feasible, for access to multi-use trails, with provisions for horse trailers.			
Little Basin Establish a public day use and overnight use recreation area for family and group use, and destination for special events. Upgrade and expand utility systems and infrastructure to support recreational activities, such as camping (including cabins), hiking, biking, horseback riding, fishing, interpretive and group activities. Consider program needs for possible environmental education center. Consider a concession-developed and operated overnight lodge with dining facilities and additional cabins.	▪ Year around recreation opportunities for groups and facilities that support educational programs and special events. ▪ Sufficient utilities to support program needs. ▪ Variety of public recreation facilities and opportunities that could not be offered in the Big Basin old growth forest. ▪ Opportunities to support environmental education programs and interests in the ecology and history of the Santa Cruz Mountains.	▪ Number and severity of recorded traffic incidents on Little Basin Road. ▪ Recorded sound levels that reach or exceed established threshold for peak use period and events. ▪ Water quality and availability. ▪ Occurrence of special status plant species. ▪ Sightings of wildlife reported. ▪ Frequency of group reservations and return visitors.	▪ Monitor and evaluate visitor uses and the adequacy of existing facilities, and take appropriate actions to minimize potential environmental and cultural impacts (fencing, screening, signage, accessibility, visual, and physical connectivity, facility redesign, etc.). ▪ Conduct site-specific surveys to identify resource constraints and sensitivities. ▪ Conduct visitor and potential user surveys to determine future visitor needs and recreation demands.

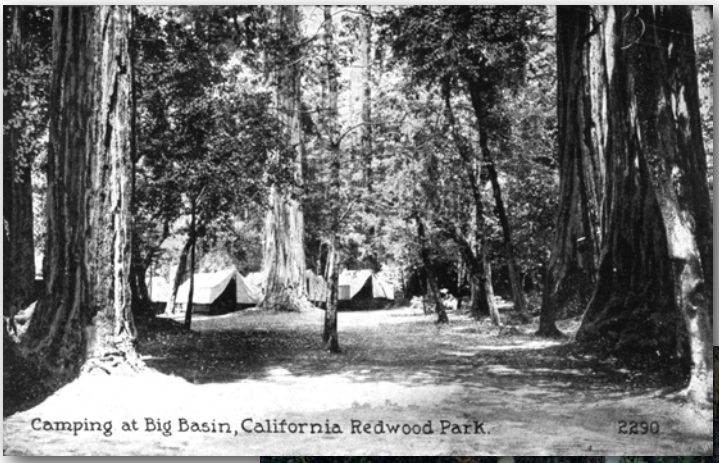
TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

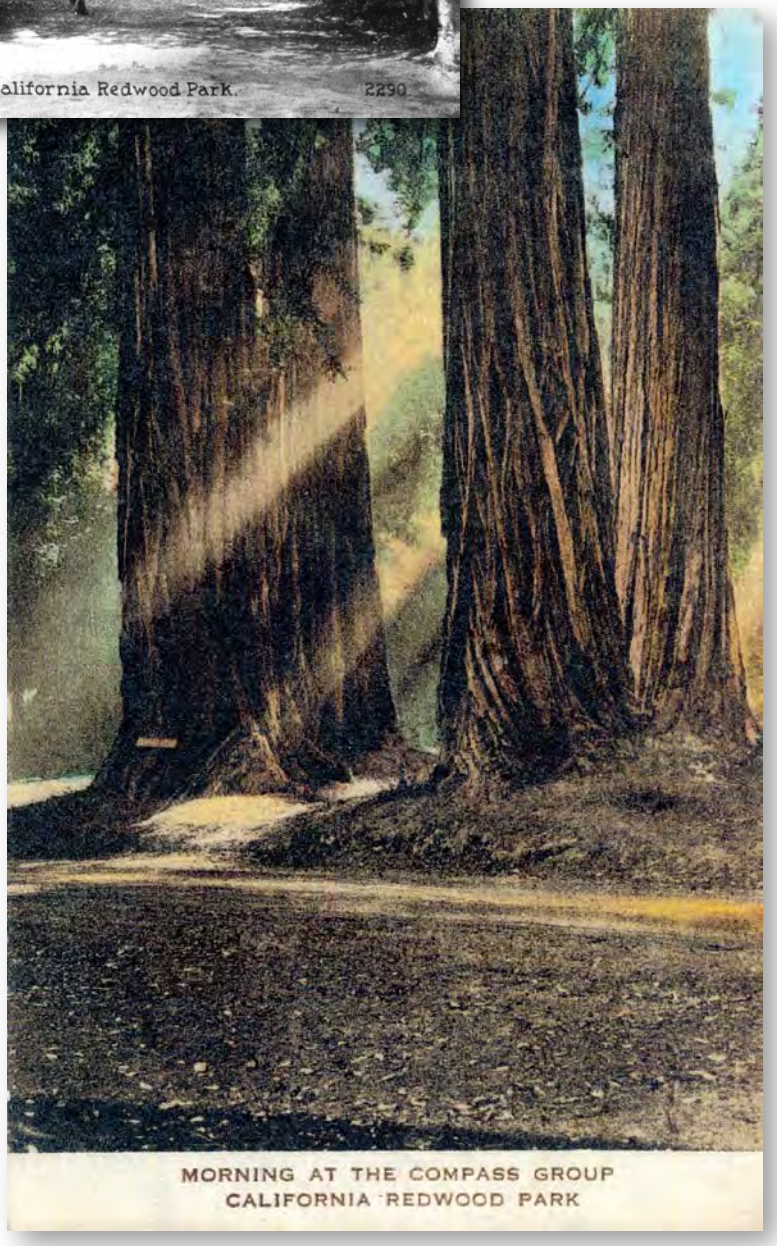
Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
State Wilderness Expand the state wilderness into other roadless areas of the park. Manage the wilderness areas to preserve the primitive visitor experience and natural character of the landscape. Preserve and protect the integrity and character of the West Waddell Creek watershed through effective management of resources and visitor use.	▪ Minimal and infrequent human encounters on trails, and absence of motorized vehicles and bicycles. ▪ Primitive visitor experience, with little evidence of man's influence on the natural landscape. ▪ Protected native plant communities and wildlife habitats.	▪ Presence of special status plant and wildlife species and suitable habitat. ▪ Sightings of wildlife reported. ▪ Number of trail users at any one time.	▪ Conduct visitor satisfaction surveys to measure the quality of visitor experience and identify user conflicts. ▪ Monitor visitor access and use of the wilderness areas, and take appropriate actions to modify, reduce, or eliminate activities that may threaten resources, visitor safety, or diminish the primitive visitor experience.
Backcountry Preserve the backcountry natural, cultural, and scenic resources, and sense of solitude. Provide visitor/recreation opportunities that encourage appreciation of the backcountry.	▪ Visitor access to backcountry trails, and connections to a regional multi-use trail network. ▪ Trail camps and picnic sites provided for small groups. ▪ Horse and/or bicycle trail camps, accessible from multi-use trails.	▪ Presence of special status plant and wildlife species. ▪ Trail and road erosion. ▪ Presence of suitable wildlife and plant habitat. ▪ Sightings of wildlife reported. ▪ Disturbance of known	▪ Conduct periodic field resources surveys. ▪ Conduct periodic trail condition appraisal and evaluation of use impacts, and modify trails to reduce impacts of recreation use. ▪ Check for presence of special-status plant and wildlife species before developing any new camps.

TABLE 4-1
DESIRED OUTCOMES AND INDICATORS
(Carrying Capacity Objective)

Goals and Guidelines	Desired Outcomes	Indicators (Environmental and Social)	Potential Management Actions & Monitoring Activities
		archaeological sites. ▪ Conflicts between different types of trail users.	

NOTE: Indicators and possible management actions also pertain to additional resource topics and may be updated by park staff based on field observations, new scientific knowledge, lack of current indicators to accurately reflect changes, etc.





ENVIRONMENTAL ANALYSIS

5

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CHAPTER 5:

ENVIRONMENTAL ANALYSIS

5.1 INTRODUCTION

PURPOSE OF THE EIR

This general plan for Big Basin Redwoods State Park (SP), with all its sections, constitutes an environmental impact report (EIR), as required by Public Resources Code (PRC) §5002.2 and 21000 et seq. The General Plan/Draft EIR is subject to approval by the California State Park and Recreation Commission (Commission). The Commission has sole authority for the plan's approval and adoption. Following certification of the EIR and approval of the general plan by the Commission, the Department will prepare specific management plans and development plans as staff and funding become available. Future projects within the park, based on the proposals in this general plan, are subject to further environmental reviews and permitting requirements and approval by other agencies, such as Caltrans, the Department of Fish and Game, and the California Coastal Commission.

Fencing is used along the Redwood Loop Trail to protect the root zone of ancient redwood trees.

FOCUS OF THE EIR

The Notice of Preparation (NOP) for this general plan was circulated to the appropriate federal, state, and local planning agencies on January 28, 2010. Based on known issues affecting the long-term management of the park and on comments received during the planning process, this General Plan/Draft EIR was prepared to address potential environmental impacts that may result from the implementation of the plans management goals and guidelines. Emphasis is given to potentially significant environmental impacts that may result from all future park management, development, and uses within Big Basin Redwoods SP that are consistent with these goals and guidelines.

SUBSEQUENT ENVIRONMENTAL REVIEW PROCESS

The tiering process of environmental review is used for this EIR. Tiering in an EIR, 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 [PRC Section 21093; California Environmental Quality Act (CEQA) Guidelines Section 15152]. This document represents the first tier of environmental review.

At each planning level, specific projects will be subject to further environmental review to determine if they are consistent with the General Plan and to identify any potentially significant environmental impacts.

As a first tier of planning, this plan provides parkwide goals and guidelines. Future second tier review will provide more detailed information and environmental analysis. At each planning level, specific projects will be subject to further environmental review to determine if they are consistent with the general plan and to identify any potentially significant environmental impacts, mitigation measures and monitoring that would be required by the project. More comprehensive environmental review will be possible at the specific levels of planning, where facility size, location, and capacity can be explicitly delineated, rather than at the general plan level. Additional potentially significant environmental impacts and mitigation measures specific to the project will be identified at that time.

Visitors hike on the Skyline to the Sea Trail near Berry Creek Falls.

CONTENTS OF THE EIR

This programmatic EIR includes the following sections:

Introduction: This section includes a brief overview of the environmental review process, legal requirements, and approach to the environmental analysis.

EIR Summary: The EIR summary represents a summary of potential environmental impacts associated with the proposed general plan, an overview of the environmental effects of alternatives considered to be the preferred general plan, and a description of any areas of controversy and/or issues that need to be resolved.

Project Description: This section provides an overview of the proposed general plan, which is the focus of the programmatic EIR.

Environmental Setting: This section provides a description of the physical environmental conditions in the vicinity of the project from a local and regional perspective. The environmental setting constitutes the baseline physical conditions to determine whether an impact is significant.

Environmental Effects Eliminated from Further Analysis: This section describes those environmental topics that did not warrant detailed environmental analysis and the supporting rationale for their elimination.

Environmental Impacts: This section analyzes potential environmental impacts associated with implementation of the proposed general plan.

Other CEQA Considerations: This section contains information on other CEQA-mandated topics, including significant and unavoidable impacts, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts.

Alternatives to the Proposed Project: The alternatives analysis describes the alternatives to the proposed general plan (including the No Project Alternative) that are considered in this EIR and the associated environmental effects of these alternatives relative to the proposed project.

This General Plan for Big Basin Redwoods State Park, with all its sections, constitutes an environmental impact report (EIR), as required by the Public Resources Code.

5.2 EIR SUMMARY

SUMMARY OF IMPACTS AND MITIGATION

This plan is conceptual in identifying new facilities, and is focused primarily on the desired programs and actions to protect park resources and improve visitor experiences. Due to the resources sensitivity, the park has limited potential for development of new facilities. The plan describes a park vision, management goals, planning guidelines, and desired outcomes, but the Department can only speculate on the appropriate types, locations, and potential impacts of new facilities to meet these goals and accommodate future visitor needs. Implementation of the general plan would require additional studies at the project level and subject to further environmental review. Implementation of the goals and guidelines contained in **Chapter 4**, along with the Department's compliance with federal and state laws and regulations, avoids potential significant effects or maintains them at a less than significant level. Additional mitigation measures are, therefore, not necessary.

SUMMARY OF ALTERNATIVES CONSIDERED

Four alternatives are considered in this EIR, including the Preferred Alternative, Facilities Removal and Increased Resource Protection Alternative, Wilderness Expansion Alternative, and the No Project Alternative. Descriptions of the alternatives are provided in **Section 5.8**.

5.3 PROJECT DESCRIPTION

In **Chapter 4** of this general plan, the project description establishes the overall long-range purpose and vision for Big Basin Redwoods SP. Management goals and supporting guidelines in Chapter 4 are designed to address the currently identified critical planning issues and to mitigate the adverse environmental effects of uses that would be permitted in Big Basin Redwoods SP.

In **Chapter 5**, this Environmental Analysis focuses on the environmental effects of the Preferred Plan for five separate park planning zones: 1) Park Headquarters and Sky Meadow, 2) Saddle Mountain and Highway 236, 3) Little Basin, 4) Waddell Beach and Rancho del Oso, and 5) Wilderness and Backcountry. See Map **Figure 3** for the location of

planning areas, and **Chapter 4** for complete descriptions. The general plan proposals improve and expand existing resource protection; provide park improvements enhancing current and future coastal park visitor use; and establish new park visitor access and recreation opportunities to inland park areas. The following is a summary of the general plan's land use, development, and visitor opportunity proposals:

PARK HEADQUARTERS AND SKY MEADOW

- Limit new facilities construction in the old growth redwoods and manage visitor activities to protect sensitive resources and achieve long-term management objectives. Relocate developed recreation facilities, where necessary, to protect sensitive natural resources and significant cultural sites and features.
- Establish the primary visitor contact and campground registration outside the Headquarters area, and relocate some park administrative functions to a new facility at Saddle Mountain.
- Provide park shuttle and satellite parking areas to reduce Headquarters traffic congestion during peak visitor use periods.
- Coordinate with DFG and USFWS toward the long-term recovery and survival of the Santa Cruz Mountains marbled murrelet population.
- Preserve the old growth redwood forest and protect native plants and wildlife habitats. Restore forest understory vegetation and reduce soil compaction, where possible, within developed public use areas. Protect sensitive aquatic species, including the California red-legged frog and anadromous fish, and take appropriate measures to minimize disturbances in critical habitats during breeding and spawning seasons.
- Make provisions for equestrian trailer parking and access to equestrian trails from locations outside the Headquarters area. A potential site is located along Highway 236 near East Ridge Road/trail.
- Protect and preserve historic structures and adapt historic buildings to appropriate uses. Rehabilitate the historic Lodge to provide suitable adapted uses for this historic building.
- Upgrade parking and utilities infrastructure to support continued use of existing facilities in the Sky Meadow area.
- Limit visitor use of the meadow to the existing historic Girl Scout camping platform and adjoining trail.
- Allow for development of additional staff housing, trailer pads, and amenities outside of the designated National Register boundaries of the Lower Sky Meadow residence area when addressing future housing needs, to maintain the historic integrity of this significant 1940s-era residence area.
- Minimize disturbances to marbled murrelet breeding habitat by locating future visitor amenities outside the old growth forest.

SADDLE MOUNTAIN AND HIGHWAY 236

- Develop a park welcome center for primary visitor contact, orientation, park information, and campground registration. Buildings and site development shall include provisions for park administration, offices, interpretation, restrooms, and parking for visitors and authorized vehicles.
- Evaluate existing buildings and structures before accommodating new development. Preserve the meadow and open space qualities in the planning and design of future park facilities, and establish adequate vegetative screening and buffers between administrative and visitor activity areas, and between park development and adjacent properties.
- Develop a park shuttle/metro bus stop on Highway 236 and integrated into site development with adequate visitor parking. Provide additional parking to support a park shuttle system for visitor transport to other park areas during peak visitor use periods.
- Consider provisions for trailhead parking at Saddle Mountain, and establish multi-use trail connections between Saddle Mountain, Little Basin, and Headquarters area, where possible.
- Explore State Scenic Highway and Federal Scenic Byway status for Highway 236 to help provide grant funding for the costs of planning, designing and developing byway-related projects.
- Evaluate the historic Gatehouse for California National Register eligibility. Rehabilitate the historic Gatehouse to serve as an employee residence, park office, or for other appropriate adaptive uses. Consider site improvements to accommodate trailhead parking or a possible shuttle/bus stop.
- Conduct traffic studies, as necessary, to implement road improvements including signage to reduce traffic congestion and facilitate safe vehicle travel through the park.
- Develop and/or improve highway turnouts, where appropriate, to accommodate short-term parking, shuttle/bus stops, or temporary pull-outs for vehicles.
- Develop trailhead parking, where feasible, for access to multi-use trails, with provisions for horse trailers at the following locations: (a) East Ridge Road/trail and Highway 236, (b) East Ridge Road and China Grade Road, (c) China Grade Road near Lane Trail Camp, and (d) Gazos Creek Road and Whitehouse Canyon Road.

WADDELL BEACH AND RANCHO DEL OSO

- Coordinate with Caltrans to maintain and expand Waddell Beach parking facilities, as feasible, to support beach activities and ocean view parking. Maintain and improve, as necessary, the bus transit stop, parking, and restroom facilities to maintain functional efficiency, safe pedestrian and vehicle circulation, and attractiveness. Consider asphalt paving and striping to improve parking and circulation efficiency and public safety.
- As part of a fully integrated plan for both sides of the highway, incorporate day use parking (50 – 100 spaces), distributed on either side of Highway 1, depending on resource constraints and future roadway alignment, with safe pedestrian access from the inland side of the highway to Waddell Beach.
- Relocate the RDO entrance road gate further inland (+/- 100 ft.), and develop a vehicle turnaround, parking, and park information kiosk for visitors.
- Develop a fully functional ranger station/interpretive facility, which could be an upgrade of an existing facility or a new building. This facility can function as a center for RDO activities, interpretation, and orientation as well as a gateway into the backcountry and the West Waddell Creek State Wilderness.
- Upgrade or reconfigure the horse camp and equestrian staging facilities to improve campsites, trailer parking and vehicle circulation. Continue to monitor and evaluate current equestrian facilities and use to minimize potential natural and cultural resource impacts.
- Develop a bicycle camp and walk-in campground facilities (approximately 15 sites) at a location either adjacent to the horse camp or in an open area along the road north of the day use parking lot. Consider alternative forms of camp facilities, such as yurts, with provisions to serve backpackers and touring bicyclists utilizing the California Coastal Trail (CCT) and Highway 1 Pacific Coast Bike route (PCBR).
- Develop an all-season footbridge across Waddell Creek, where feasible, to enhance trail access between RDO and the Nature and History Center.
- Rehabilitate the Nature and History Center building and install new interpretive displays (completed in 2013) to serve as the primary interpretive center for RDO. Prepare site-specific plans to define day use parking, circulation, picnic areas, accessible restroom facilities and use of outdoor open space areas for visitor education and interpretive programs.
- Repair and upgrade the current potable water supply and distribution systems to existing and new park buildings and key visitor locations. Ensure that water diversions out of West Waddell Creek do not adversely affect resources or interfere with park operations.

LITTLE BASIN

- Upgrade and expand utility systems and infrastructure to support recreational activities, such as camping (including cabins), hiking, biking, horseback riding, fishing, interpretive and group activities. Consider potential for expansion of recreation facilities and program needs for a possible environmental education center.
- Upgrade and/or modify existing facilities to satisfy operational needs and to meet ADA accessibility requirements.
- Complete inventories and resource evaluations, and implement resource protection measures as necessary. Remove or relocate existing facilities, as necessary, to preserve and protect sensitive and significant natural and cultural resources.
- Interpret resource values, site history, and past use of Little Basin property.
- Consider a concession-developed and operated overnight lodge with group dining facilities and additional cabins.
- Coordinate with Santa Cruz County to identify any road improvements and county maintenance actions that may be necessary to maintain public vehicle access on Little Basin Road from Highway 236 to the Little Basin property.

WILDERNESS AND BACKCOUNTRY AREAS

- Expand the state wilderness to include approximately 390 acres of additional lands, north to Gazos Creek Road and west to Whitehouse Canyon Road, to provide a distinct boundary for park management purposes. The proposed wilderness boundary will be set back 50 feet from San Mateo County's right-of-way on Gazos Creek Road and 50 feet from the edge of park roads and trails that define the limits of the state wilderness **(**see **Figure 22).**
- Establish additional trail camps for backpackers and cyclists, outside sensitive resource areas and accessible from existing roads and trails. Consider relocation or permanent closure of Camp Herbert (trail camp) due to access difficulties from erosion problems on segments of the Skyline to the Sea Trail.
- Implement appropriate trail stabilization and/or trail relocation as necessary to minimize the West Waddell Creek stream bank erosion currently threatening segments of the Skyline to the Sea Trail.
- Develop a parkwide Roads and Trails Management Plan that evaluates the park's entire trail system, trail use and user conflicts, and guides the placement and use of future trails, while avoiding negative impacts to significant natural and cultural resources. Consider a potential multi-use trail connection outside the state wilderness between the Hihn Hammond Road/trail and the Skyline to the Sea Trail at West Waddell Creek.
- Develop multi-use trails and trail loops of shorter length near popular park attractions to accommodate visitors of all abilities.

Provide support facilities such as trailheads that incorporate ADA-compliant picnic facilities, restrooms, and other amenities.

- Consider offering shuttle tours on backcountry fire roads through concession contract or as a part of park interpretation and accessibility programs.
- Provide universal access to the park's programs, 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.

5.4 ENVIRONMENTAL SETTING

Existing conditions that characterize Big Basin Redwoods SP, including descriptions of the important resources within the park and the regional planning context, are described in **Chapter 2.**

This general plan is consistent with other applicable state and regional plans, such as the Santa Cruz County Local Coastal Program, the Wildlife Action Plan (Central Coast Region), the Master Plan for the Coast Redwood, the Regional Transportation Plan, and local community and open space plans, including the Midpeninsula Regional Open Space District Master Plan.

5.5 ENVIRONMENTAL EFFECTS ELIMINATED FROM FURTHER ANALYSIS

The following topics were eliminated for future analysis in the EIR because there is no potential for significant environmental effects resulting from implementation of the general plan. A brief reason for their elimination is provided for each respective topic.

Land Use and Planning: The general plan proposals would not result in the division of an established community or conflict with applicable land use plans, habitat conservation plans, or the policies or regulations of any agency with jurisdiction over the project. Therefore, no significant land use and planning effects would occur and no further environmental analysis on the effects on land use and planning is necessary.

Mineral Resources: Implementation of the general plan would not result in the loss of availability of known mineral resources that are or would be of value to the region and residents of the state, or are a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, no further environmental analysis on the effects on mineral resources is necessary.

Population and Housing: Big Basin Redwoods SP is a destination for residents throughout California, although most visitors come from the metropolitan areas of northern and central California. Visitation is expected to increase as the State's population grows by 1.4% annually through 2020. Staff at Big Basin Redwoods SP and the people involved in the regional tourist-serving industries primarily live in Santa Cruz and San

Mateo counties. Between 1997 and 2020, the population of San Mateo County is projected to increase by approximately 20%, and a 49% increase is projected for Santa Cruz County (California Dept. of Housing and Community Development 2011).

Guideline **Regional Planning 6** encourages cooperation with other agencies to identify and provide potential shared affordable employee housing opportunities. While implementation of the general plan would not directly induce regional population growth, additional recreational facilities could increase visitation and potentially add to the employment base of the immediate area. Given the latest unemployment rate (U.S. Bureau of Labor October 2011) in Santa Cruz (10.1.7%) and San Mateo (7.9%) counties and the latest housing vacancy rate (State Dept. of Finance January 2011) in San Mateo County (4.9%) and Santa Cruz (9.7%), the increase in demand for labor and housing would be met by the existing local population. No additional housing would be needed to serve growth associated with additional visitation. The general plan does not include proposals for infrastructure that would generate more growth in the immediate vicinity. For these reasons, no significant population, employment, and housing effects would occur as a result of implementation of the general plan and no further consideration is necessary for this topic.

Public Services: The general plan proposals for new facilities at the park are limited primarily to the Saddle Mountain and Little Basin areas. New facilities would supplement existing facilities and uses that require the same level of services for public health and safety. Existing public services such as fire and police protection, schools, parks, and other public facilities are adequate to maintain acceptable service ratios, response times, and other performance objectives for these services. Therefore, no further environmental analysis is necessary on the effects of public services.

Big Basin Redwoods SP is a destination for residents throughout California, although most visitors come from the metropolitan areas of northern and central California.

5.6 ENVIRONMENTAL IMPACTS AND MITIGATION

The purpose of this section is to identify potential impacts of the project that may be considered significant. This analysis uses criteria from the model Initial Study Checklist (Appendix G of the CEQA Guidelines) and CEQA's mandatory findings of significance (PRC sec. 21083, Guidelines sec. 15065 and sec. 15064.5) as tools for determining the potential for significant environmental effects. A significant effect on the environment is generally defined as a substantial or potentially substantial adverse change in the physical environment.

General plan proposals include development and maintenance of day use and camping facilities, parking areas, trails, road modifications, education and research facilities, multimodal transportation facilities, and natural resource management activities that could create adverse impacts. The impacts are considered potential because the actual size, location, and design of the proposed facilities or structures have not been determined. All park plans and projects shall be in compliance with state and federal permitting and regulatory requirements and subject to subsequent tier CEQA review and project specific mitigation. Appropriate mitigation specific to detailed project design will be implemented, as necessary, in later planning and development stages.

Any potential impacts at this programmatic level would be avoided or reduced to a less than significant effect by implementing the general plan goals and guidelines, as described in the following analysis for each topic, *or filed as overriding findings*. The analysis is organized alphabetically by topic following the model Initial Study Checklist (Appendix G of the CEQA Guidelines).

AESTHETICS

This section analyzes impacts related to aesthetic resources that could result from implementation of the general plan. A summary of aesthetic resources that exist within the park may be found within the **Aesthetics** section of **Chapter 2** (Existing Conditions).

Any changes that substantially degrade visual experiences for visitors to the park and others from adjacent properties have the potential to cause significant impacts. Adverse visual impacts may occur on scenic and public use areas, as well as degradation of historic sites and cultural landscape settings, if positive aesthetic features are not adequately integrated into the design and location of new park facilities and programs.

The significance of visual impacts is dependent upon expectations and perceptions. For example, the presence of recreation facilities or numerous visitors would generally be more visually offensive to visitors on a backcountry hike than in areas where higher levels of social interaction are expected, such as a picnic area or campground. The historic setting and sense of place in the park Headquarters area could be degraded if park facility improvements are not made compatible with the Park Rustic architecture and characteristics of historic buildings that remain in the ancient redwood forest. Plan proposals and potential impacts are discussed below with reference to Plan guidelines that with proper implementation will reduce impacts to no significance or a less than significant level.

Thresholds

The analysis of aesthetic impacts uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant aesthetic impact if it would:

- Have a substantial adverse effect on a scenic vista,
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings,
- Substantially degrade the existing visual character or quality of the site and its surroundings, or
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Impact Analysis

Adverse Effect on Scenic Vistas: The general plan would allow for the development of improved access, management and recreation facilities in specific areas of the park. While new trails, trail camps and trailhead parking may be developed in the backcountry, scenic views and the natural character of backcountry and wilderness areas will be protected. Facilities will be sited and designed to blend in with the natural environment and to not obstruct viewsheds.

Scenic views and the natural character of backcountry and wilderness areas will be protected.

Appropriate vegetation and habitat restoration programs will be implemented in park locations that were heavily impacted from past management practices (e.g. logging and fire suppression). Components of restoration programs will include the use of prescribed fire, revegetation with native species, fenced enclosures, facility relocations, and other methods as appropriate. Implementation of these programs and actions identified in the general plan would be considered a beneficial impact to aesthetic resources.

Degradation of Existing Visual Character: Implementation of the general plan proposals may create adverse impacts to visual resources, which can be avoided or reduced by implementing the general plan's guidelines for appropriate and sustainable setting, design, and selection of materials for

park projects (see guidelines **Aesthetics 2** and **Sustainability 1**), revegetation of disturbed areas (see guideline **Vegetation 2**), and screening of facilities (see guideline **Aesthetics 4**).

New development will occur outside the old growth forest, and in areas previously disturbed by development or past uses. New building construction is proposed for Saddle Mountain, a site along Highway 236 that includes a new welcome center for park administration and visitor services, with additional parking and day use facilities that would be visible from Highway 236. Undesirable non-historic buildings and facilities that remain from prior non-park uses would be replaced by new construction and would be carefully sited and designed to blend into the environment to provide an attractive and welcoming park entry experience into Big Basin Redwoods SP. Guidelines **Saddle Mountain 1, 2, and 5** describe the site planning considerations for new facilities and criteria to protect significant resources and preserve the open space qualities. The Department will explore State Scenic Highway and Federal Scenic Byway status for Highway 236, to help provide funding for planning, design, and developing scenic byway improvement projects (see guideline **Highway 236-2**).

The design style for new development will be site-specific and contextual – reinforcing the colors, shapes, scale, and materials in the surrounding environment to integrate and complement the park's natural setting, and preserve scenic views. Native (or replicated) building materials will be used where appropriate, with muted colors that reflect the natural surroundings and take advantage of (or screen) ephemeral conditions (e.g. weather, wind, sunlight, etc.), as appropriate. Building architecture in the Headquarters area will retain the existing historic "Park Rustic" style that embodies the harmonious blending of native stone and wood. New construction will be compatible with, but clearly differentiated from, the historic "Park Rustic" resources to avoid a false sense of history.

The general plan also proposes new development at Waddell Beach and Rancho del Oso along Highway 1. Major road and parking development may occur on state park property as part of a Caltrans Waddell Creek bridge replacement project. The plan promotes RDO as the western gateway to Big Basin with a safe public entry that is welcoming and conveys a sense of arrival and area identity. The general plan provides guidance on the desired facilities and improved conditions for access and public safety (see guidelines **Waddell Beach 1** and **RDO 5**). Guideline **Aesthetics 8** calls for plan proposals to comply with Local Coastal Program standards for Highway 1 for aesthetic resources, which would include minimizing visual impacts from park development on county-designated scenic roads. Park development will follow the Local Coastal Program and other applicable standards for aesthetic resources. The Department will coordinate with local, state, and federal agencies, open space providers and community groups, landowners, and other stakeholders to preserve, protect, and enhance positive aesthetic features and viewsheds.

High-profile directional, informational, and interpretive signs along trails, park and local roads could contribute to visual clutter. Implementation of guideline **Aesthetics 3** calls for organizing and presenting elements that exist together in specific areas of the park in a clear and uncluttered way. Design standards and/or guidelines for park facilities and signage will be developed and implemented to create a sense of park identity and visual continuity in style and/or materials, and to reflect and preserve positive aesthetic values. Park entrances and access points will be evaluated for enhancing "first impressions" with the purpose to organize, consolidate, screen, or remove unnecessary, repetitive, or unsightly elements.

Sustainable design strategies will be used to minimize impacts to the park's natural, cultural, and aesthetic resources. Low-impact building sites, structures, and building and landscape materials will be selected. Natural, renewable, indigenous, and recyclable materials will be incorporated into energy-efficient project design. Maintenance and management practices that avoid the use of environmentally-damaging, waste-producing, or hazardous materials will also be utilized.

Sustainable design strategies will be used to minimize impacts to the park's natural, cultural, and aesthetic resources.

Developed parking and maintenance facilities may be visible from the existing or proposed visitor use areas. Guideline **Aesthetics 4** describes the use of screening methods with appropriate native plants, rocks, or elevation changes. These elements could also soften the visual effect of parking areas, campground facilities, roads, and trails, buffer intrusive or distracting views and activities outside park boundaries, and enhance scenic views.

New Sources of Light and Glare: Artificial lighting from new park development can have an adverse effect on the dark night sky. Through guideline **Aesthetics 5**, artificial lighting would be limited to developed areas of the park, be shielded or focused downwards, and emit the lowest light levels possible while meeting the park's goals for public safety. Therefore, there would be no substantial adverse impact due to light or glare issues.

Summary

With implementation of the general plan guidelines listed in **Chapter 4** (Park Plan), substantial adverse impacts to aesthetic resources at Big Basin Redwoods SP would not occur; thus maintaining any environmental impacts to a less-than-significant level.

AIR QUALITY

This section analyzes air quality impacts that could result from implementation of the general plan. A description of the environmental setting for air quality, climate and topography is provided in **Chapter 2** (Existing Conditions).

The majority of Big Basin Redwoods SP is located within the northernmost portion of the North Coast Central Air Basin (NCCAB), which includes Santa Cruz, San Benito, and Monterey counties. A small portion of the park that is located in San Mateo County is included in the southern portion of the San Francisco Bay Area Air Basin (SFBAAB). The main emission sources in the NCCAB are the Moss Landing Power Plant, a large cement plant at Davenport located approximately 11 miles south of RDO, agricultural activities, and vehicle emissions from Highway 101 traffic. The wind can move air pollution from the SFBAAB to the NCCAB, even though the air basins are separated by the Coast Range (Santa Cruz Mountains). The NCCAB is a non-attainment zone for ozone and $PM_{10.}$ The nearest air monitoring site is approximately 11 miles south of the park in Davenport. Two air quality components of concern are ozone and particulate matter. In general, the region has very good air quality.

Thresholds

The air quality analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have significant air quality impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan,
- Violate any air quality standards or contribute substantially to an existing or projected air quality violation,
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors),
- Expose sensitive receptors to substantial pollutant concentrations, or
- Create objectionable odors affecting a substantial number of people.

Impact Analysis

Short-Term Construction-generated Criteria Air Pollutant Emissions: Construction related emissions are described as short-term or temporary in duration and have the potential to represent a significant impact with respect to air quality. Implementation of the general plan would take place over time with the implementation of various projects and plans (e.g., Saddle Mountain, RDO, and Little Basin development, or a Road and Trails Management Plan). Most projects require minor construction activity, such as trail construction, road management, or vegetation management, and would not result in substantial temporary emissions. A limited number of projects could involve more extensive construction, such as development at Saddle Mountain. For these plans or projects, State Parks would include standard control measures to limit emissions to less-than-significant levels.

The air quality impacts from construction can be substantially reduced by the use of dust control measures and other construction best management practices (see guideline Geology/Hydrology 5). Dust control measures would be developed during site-specific planning. During the construction phase of specific projects, the following Best Management Practices will be considered for mitigating fugitive dust when applicable:

- Water all active construction areas at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities during periods of high winds.
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area.
- Haul trucks shall maintain at least 2'0" of freeboard..
- Cover all trucks hauling dirt, sand, or loose materials.
- Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Pave all roads on construction sites.
- Sweep streets if visible soil material is carried out from the construction site.
- Post a publicly visible sign which specifies the telephone number and person to contact regarding
- dust complaints. This person shall respond to complaints and take corrective action within 48
- hours. The phone number of the Monterey Bay Unified Air Pollution Control District should be
- visible to ensure compliance with Rule 402 (Nuisance).
- Limit the area under construction at any one time.

Air quality may also be temporarily impacted by prescribed burning programs or wildfires in the park. Under guideline **Vegetation 4**, the Department would use prescribed fire as part of a vegetation management strategy. This strategy would identify conditions under which prescribed burning would be allowed in order to minimize impacts to air quality. The following strategies were jointly developed by the California Department of Parks and Recreation and the Air District to mitigate smoke and to better inform nearby residents when conducting prescribed fires:

- Website - During the planning stage for burns likely to extend a week or more, set up an informational web-site that can be used to notify and inform residents about the burn. This could include

information on the reason for the burn and the operational burn plan. Following ignition, the site could show daily maps of the fire progress as well as smoke projections.

- Burn Size - When feasible, create smaller burn plots.
- Alternatives - When feasible, consider using chipping, hauling or pile burning as well as lop & scatter as alternatives.Each individual plan and project would go through separate environmental review to ensure that the necessary standard control measures are included. Therefore, implementation of the general plan would not result in short term construction-generated impacts to air quality.

Long-Term Operational Criteria Air Pollutant Emissions: There may be increased park visitation as a result of additional directional signage on regional roads as well as from new and expanded facilities and interpretive opportunities, but would not be expected to be of a magnitude that would alter general traffic patterns on local roadways. Emissions associated with this number of vehicle trips (existing and new users) would be similar to current uses. Thus, operation of the project would not result in a substantial increase in long-term regional ROG, NOX, PM10, or CO emissions associated with increases in vehicle trips. In addition, implementation of the project would not substantially increase vehicle miles traveled (VMT), because the overall number of park visitors is expected to remain moderate as a result of the remote location of the park and limited local population density. Consequently, implementation of the general plan would not conflict with or obstruct implementation of MBUAPCD air planning efforts. Potential air quality impacts will be analyzed in greater detail when each specific element of the General Plan is considered. For instance, emissions associated with increases in motor vehicle activity would be evaluated using an emissions model such as CalEEMod. Estimated emissions would be compared to recommended thresholds, as described in Chapter 5 of the Air District's CEQA Air Quality Guidelines.

New facilities in the backcountry may include trails, parking, vista overlooks and trail camps based on a future Roads and Trails Management Plan. The plan guideline (**Backcountry 7**) considers offering shuttle tours on backcountry fire roads through a concession contract or as part of park interpretation and accessibility programs. The effects of dust generation and required mitigation would be addressed during subsequent environmental review if such a program was initiated.

Most visitors currently arrive by private vehicles. An increase in visitor use may cause a minor increase in total vehicle emissions in the region. The general plan recommends coordinating with San Mateo and Santa Cruz counties and local transit agencies to encourage and develop public transit and multi-modal transportation opportunities for visitor access to the park and to other parks and recreation areas in the region (see guideline **Access 2**). The general plan also recommends the use of low-emission park vehicles, such as maintenance vehicles, and potential

shuttles to reduce emissions and contribute to better air quality (see guideline **Sustainability 5**). Subsequent plans and studies (Roads and Trails Management Plan, traffic studies, concessions evaluations) would help determine the viability and timing of implanting plan proposals and further assessment of environmental impacts. The plan proposals are not expected to conflict with, obstruct implementation of, or violate air quality standards set by the California Air Resources Board.

Air quality is also affected by air pollutants such as ozone and fine particles that come from a variety of sources. **Table 2-6** (Existing Conditions) summarizes the air quality in the North Central Coast Air Basin from 1990 through 2010.

Subsequent plans and studies would help determine the viability and timing of implementing plan proposals and further assessment of environmental impacts.

Summary

Implementation of the general plan is not expected to result in significant short-term or long-term adverse effects on air quality. With implementation of the plan's guidelines listed in **Chapter 4** (Park Plan), substantial adverse impacts to air quality at Big Basin Redwoods SP would not occur; thus maintaining any project impacts at a less-than-significant level.

BIOLOGICAL RESOURCES

This section analyzes impacts related to biological resources that could result from implementation of the general plan. A description of biological resources (plant life and animal life) that exist within the park may be found in the **Natural Resources** section of **Chapter 2** (Existing Conditions).

Big Basin Redwoods SP exhibits a significant diversity of vegetation types, consisting of at least 15 types. Four of these vegetation types are considered by the CNDDB to be of high inventory priority because of their rarity and imperilment. In addition, the Redwood Forest type is of special significance because it provides habitat for listed wildlife species and because protection of remnant old growth redwood stands was the primary impetus for the park establishment. The park also provides important habitat for a number of unique wildlife species, and is of great importance to regional wildlife populations. It contains valuable old growth and older second growth redwood habitat.

Thresholds

The biological resources analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the GPA would have a significant impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate,

sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service,

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service,
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means,
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impact Analysis

The general plan proposals have the potential to adversely affect the park's biological resources, especially where new facilities are introduced into previously undisturbed areas, such as trails and trail camps in the backcountry. Adverse impacts to biological resources can be avoided or reduced by implementing the general plan's guidelines for protecting and preserving these resources in the park and region.

Special status wildlife, wildlife habitats, and sensitive plant communities occur at Big Basin Redwoods SP. There are 22 special status plant species and 52 special status wildlife species for which potential habitat exists in the park. Two vegetation types that occur within the park are considered rare natural plant communities. Additional site-specific surveys for special status species and sensitive habitats will be completed as part of the planning process for resource management projects, construction, maintenance, or rehabilitation of facilities and trails. Where appropriate, state and federal resource agencies will be consulted to assist with appropriate resource protection, habitat enhancement, and management techniques.

Generally, most of the new facility development recommended in the plan would occur in areas that have been previously disturbed (such as Saddle Mountain and RDO). There would be minimal adverse impacts to vegetation and wildlife in these portions of the park. Site-specific impact evaluations will occur when projects and facilities are proposed. The general plan recommends preparing and updating comprehensive natural resource management plans, including marbled murrelet, fire management, trails and watershed management plans that will provide additional guidance for identification, protection, habitat restoration, and

adaptive management of the park's resources, especially special status species and sensitive habitats.

The general plan recommends actions, in coordination the USFWS and CDFG (renamed California Department of Fish and Wildlife), for the long-term recovery and survival of the marbled murrelet, state-listed as endangered and federally-listed as threatened (see guideline **Murrelet 1**). Included are guidelines for minimizing recreational facility development in areas of marbled murrelet nesting habitat and in other special status species habitat. In addition, noise-producing activities such as construction or maintenance activities would be minimized during the breeding season and would comply with applicable federal and state regulations (see guidelines **Special Animals 3** and **Murrelet 1**). Human food and garbage will be controlled with wildlife-proof trash containers and public education that addresses the detrimental effects of these materials on wildlife (see guideline **Wildlife 6**).

Structures would be inspected for special status species, including bat populations, and protective measures established prior to major maintenance, construction, renovation, or structure demolition (see guideline **Special Animals 5**). The federally-threatened steelhead trout and state-endangered and federally-threatened coho salmon spawn in West Waddell Creek that provides limited but good quality spawning for anadromous fish. The plan recommends that the timing of streambed alterations or disturbance to wetlands or riparian habitat take into account the needs of special status aquatic species, including migrating fish and the California red-legged frog (see guidelines **Special Animals 3** and **Special Animals 4**).

Facility removal, rehabilitation and new development, including trails, have the potential to disturb, degrade, or remove wildlife habitat or sensitive plant communities. If there is any potential for significant adverse effects to sensitive habitat, including wetland and riparian habitat, proposed facilities will be designed to avoid or minimize adverse impacts (see guideline **Wildlife 3**). This may include limiting access to some areas of the park, or temporarily closing or relocating facilities to promote restoration (see guideline **Vegetation 2**). The plan's adaptive management process, outlined in **Section 4.6,** Managing Visitor Capacity, describes a process for evaluating, monitoring, and mitigating visitor impacts so that adverse impacts to wildlife are minimized.

Ground disturbance, including grading, soil compaction, vegetation removal, and some recreation activities, has the potential to provide habitat for non-native invasive species. The spread of invasive exotic plant species and exotic animal species may have adverse impacts by promoting the loss of native habitat and reducing species diversity. Ground disturbance could include new facility construction (structures, parking lots) as well as trail and trail camp development. Trails and roads can also become dispersal corridors for invasive plants. The plan proposes goals and guidelines to reduce and avoid any negative impacts to prevent

the spread of invasive non-native plant and animal species in the park and region (see guidelines **Wildlife 3** and **Vegetation 3**). This would include conducting additional surveys and using appropriate methods to control invasive species.

There are important habitat linkages both within the park and between the park and surrounding properties, such as riparian corridors with continuous vegetative cover and coast redwood stands. To continue resource protection and enhancement, on-going cooperation with regulatory agencies, local jurisdictions, adjacent landowners, and recreation and open space providers will be pursued to encourage conservation easements and property acquisition for habitat preservation and to maintain buffers and habitat linkages (see guideline **Regional Planning 3**).

Adaptive management describes a process for evaluating, monitoring, and mitigating visitor impacts on natural and cultural resources.

The planning areas outlined in the general plan also support additional resource protections by designating appropriate land use, facility development, and visitor use areas. Visitor use impacts to wildlife can be substantially reduced or eliminated by placing facilities away from known nesting sites and sensitive habitat, as outlined in guidelines **Special Animals 3** and **7**, **Sky Meadows Group Camp 1** and **3**, and **Murrelet 1**. Foremost among the necessary precautions observed during the planning and implementation of resource management actions are adherence to existing laws, regulations, and protocols. Specific activities with the potential for impacts beyond park boundaries will include disclosure of potential impacts specific to each activity. Mitigation for future significant impacts for site-specific projects shall be developed as part of the project level planning and environmental review process.

Summary

Compliance with general plan guidelines would ensure that future development and improvements within Big Basin Redwoods SP would not result in significant disturbance or losses of sensitive plant communities, special status plants, special status wildlife, or wildlife habitats; thus maintaining any impacts of project implementation at a less-than-significant level.

State Parks finds that there is a significant, unavoidable impact with respect to the speculative nature of the marbled murrelet research at this time. It is unclear what is causing the decline in numbers, and conversely, it cannot be said with certainty that the activity of Parks visitors in the old-grove redwoods is the reason for the dwindling numbers. This lack of definitive information leads State Parks to make overriding findings for a significant unavoidable impact on the marbled murrelet population.

CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

This section analyzes impacts related to climate change and greenhouse gas emissions that could result from or affect the implementation of the general plan. A description of the environmental setting for climate and the potential effects of global climate change on the park are provided in **Chapter 2** (Existing Conditions).

Thresholds

The analysis of greenhouse gas (GHG) emissions uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact on GHG emissions if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

Sea Level Rise: Sea level rise and extreme event impacts are expected to dramatically increase in severity this century (Natural Resources Agency 2009). Though these impacts will vary locally, scientific research has projected average sea levels along the California coast to increase 55 inches or 1.4 meters by the year 2100 (California Climate Change Center 2009).

The year 2100 map projections show sea level rise in the lower terrain of Big Basin Redwoods SP's Rancho del Oso (RDO), which includes Waddell Beach. The areas unaffected by the projected sea level rise are farther inland and located on higher ground, such as the horse camp, RDO parking lot, and ranger office. The Waddell Beach parking lot and restrooms would be subject to wave run-up action and inundation, but are expendable and replaceable. If this lower ground area is not accessible or useable, new parking areas and restrooms would be developed at higher ground.

Due to sea level rise, some areas would experience a change in the vegetation and wildlife habitats. Sensitive plant and animal species found in this area could be affected due to these long-term changes. However, the change is expected to be a gradual transition over an undetermined amount of years. This would allow most species time to adapt to their changing environment. These changes may also have an increase for listed or sensitive aquatic animal species (see **Section 2.3** and **Appendices I and J**). Examples include marine bird species and special amphibians (e.g., California red-legged frog) and reptiles (e.g., San Francisco garter

snake) by increasing the wetland and riparian habitats that provides cover and foraging in the tidally active area.

The projected tsunami hazard area show a similar flooding pattern as the 1.4 meter sea level rise projections, leaving the higher-ground areas with insignificant impacts. The close proximity of the Theodore J. Hoover Natural Preserve may also act as a buffer for storm surges, sea level increases, and even a tsunami.

The map projections of a 100-year storm (year 2100) would have a more significant impact than a 1.4 meter sea level rise, with flooding reaching inland more than a mile in a narrow corridor from Waddell Beach through the Theodore J. Hoover Natural Preserve to near the Alder Trail Camp. Portions of the Skyline to the Sea Trail would be affected and may need to be rerouted. The RDO ranger stations and horse camp would not be impacted.

Greenhouse Gas Emissions: GHGs play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and is trapped by GHGs. Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons, chlorofluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's climate, known as global climate change or global warming.

The amount of new development envisioned by this general plan, if implemented, was not substantial enough to generate specific studies (i.e. traffic generation, water usage, waste treatment, etc.) as necessary to analyze and determine the direct or indirect generation of greenhouse gas emissions and the environment effects.

Summary

Implementation of the general plan will require specific project proposals and subsequent environmental review that will provide more detailed information necessary to determine the project's full impact on the environment and level of significance. Based on a program-level environmental assessment, implementation of the general plan would not result in the generation of substantial short-term construction-related or long-term operation related emissions of greenhouse gases (GHGs).

CULTURAL RESOURCES

This section analyzes impacts to cultural resources that could result from the implementation of the general plan. The **Cultural Resources** section of **Chapter 2** (Existing Conditions) provides a summary of archaeology, ethnography, and history of Big Basin Redwoods SP.

Prehistoric archaeological resources reflecting the past life patterns of Native Californian Indians indigenous to the region are known to occur in the park. Also present are numerous historic buildings, structures, and features that represent early park development. Many of those resources were constructed by the CCC during the 1930s. A Historic Resources Study (Kennedy 2009) was completed for the Headquarters area and outlying portions of the park. This study documented historic buildings, structures, and features within the park and provided historic and architectural information used in this general plan.

Thresholds

The cultural resources analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of historical resources,
- Cause a substantial adverse change in the significance of an archaeological resource, or
- Disturb any human remains, including those interred outside of formal cemeteries.

Impact Analysis

Big Basin Redwoods SP contains potentially significant cultural resources that could be disturbed, destroyed or degraded by new development and facility improvements proposed in the general plan. These resources include prehistoric and ethnographic sites, historic and ethnohistoric resources, and historic roads and trails. Extensive research and inventory of the park's cultural resources has occurred over the past several years, but is not considered complete; therefore, the potential exists for the discovery of previously unknown prehistoric and historic sites during facilities construction, rehabilitation, resource management projects, restoration, or maintenance operations.

The general plan calls for additional site surveys and inventory be completed for historic-period resources to assist in significance evaluations, including significant cultural landscapes and those buildings in the park as identified as eligible, or potentially eligible, to the California Register of Historic Resources or the National Register of Historic Places (see guidelines **Historic 1, 2, 3, 4, 5, 6,** and **7**). Areas of high probability for prehistoric archaeological sites will be surveyed and recorded and criteria of significance developed for each class of resource for sites encountered in the future (see guidelines **Archaeological 1, 2, 3, 4,** and **5**).

As part of any new development project, the Department will inventory and review areas of potential impact to determine the presence and significance of cultural resources, the potential impact, and recommended mitigation, if appropriate. Impacts may be reduced by

As part of any new development project, the Department will inventory and review areas of potential impact to determine the presence and significance of cultural resources, the potential impact, and recommended mitigation, if appropriate.

project avoidance, site capping, structural stabilization/renovation, project redesign, and data recovery (see guidelines **Historic 5** and **6**). Implementation of the Cultural Resource Management guidelines would protect significant cultural resources, thus maintaining any impacts of the implementation of the general plan at a less-than-significant level.

Cultural resources in need of protection range from archaeological sites significant to early Native Californians to standing structures from the CCC era, as well as the buildings from the post-World War II era. The significant historic resources in the park are potentially eligible for listing in the National Register of Historic Places. The general plan calls for rehabilitation of historic buildings for appropriate adaptive uses. Cultural resource evaluations and recommendations in the National Register nominations for significant cultural resources will be considered during the planning, design, and implementation of future development projects. Consultation with State Historians and Restoration Architects will occur when developing plans and mitigation measures for projects affecting historic buildings and structures, such as improvements necessary for park operations or ADA accessibility (see guideline **Headquarters B5)**.

A National Register nomination has been prepared for the Lower Sky Meadow residential area as a Historic District. This 1940s park employee housing development retains a high level of integrity of location, setting, workmanship, design and materials. Guideline **Headquarters C3** will guide potential new development of additional staff housing, trailer pads, and amenities in the Lower Sky Meadow residence area to avoid significant impacts to the historic integrity of this significant 1940s residence area (also see guidelines **Historic 4** and **Historic 5**).

All construction, maintenance, or improvements of historic buildings, structures, and features will be in conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (see guideline **Historic 1**). Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties and it's guidelines for preserving, rehabilitating, restoring, and reconstructing historic buildings shall be considered as mitigated to a level of less than a significant impact on the historical resource.

Summary

With implementation of the general plan guidelines listed in **Chapter 4** (Park Plan), substantial adverse impacts to cultural resources at Big Basin Redwoods SP would not occur; thus maintaining any impacts of general plan implementation at a less-than-significant level.

GEOLOGY, SOILS AND SEISMICITY RESOURCES

This section analyzes impacts related to geology, soils, and seismicity that would result from the implementation of the general plan. The **Physical Resources** section of **Chapter 2** (Existing Conditions) provides a summary of the geology, soils, and known geologic hazards at Big Basin Redwoods SP.

Most soils in Big Basin Redwoods SP are moderately deep to very deep. Drainage is quite variable, ranging from somewhat poorly drained to somewhat excessively drained. Soil limitation ratings are slight to moderate on all Soquel soils for these uses. For all other park soils, there are moderate to severe constraints for development of camp and picnic areas. Constraints for paths and trails range from slight to severe. The most common limiting factor for development is steepness of slope.

Landslides are common in the park. Several large landslides occur on the northwest side of Pine Mountain and the north and west sides of Mount McAbee. Many smaller landslides occur on the canyon slopes of Waddell Creek and its tributaries.

The Big Basin area is located within an active seismic zone, between the San Gregorio and San Andreas Fault systems. The Zayante Fault cuts through the east central portion of Big Basin Redwoods SP. Strong seismic shaking can be expected to occur in some areas of Big Basin Redwoods SP. Therefore, the possibility of ground rupture exists within Big Basin Redwoods SP. Secondary seismic hazards, such as liquefaction and landsliding, may occur during an earthquake. A zone of high potential for liquefaction is identified within the Waddell Creek drainage. The zone includes the lower reach of Waddell Creek, from the ocean to the intersection of the east and west branches of Waddell Creek. Strong seismic shaking may also trigger movement on any of the many landslides within Big Basin Redwoods SP.

Thresholds

The geology, soils, and seismicity analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact related to geology, soils, and seismicity if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial

evidence of a known fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, and/or landslides,
- Result in substantial soil erosion or the loss of topsoil,
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse,
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property,
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater, or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact Analysis

The park is subject to earthquakes, and has the potential for damage from ground shaking, ground surface rupture, liquefaction, lateral spreading, and landslides. Guideline **Geology/Hydrology 7** directs the Department to conduct professional geologic and engineering evaluations to identify potentially hazardous soils or geologic areas prior to any permanent facility development and to avoid or reduce damage to people and property from unstable soil and seismic hazards. The general plan provides guidelines to protect the public from natural hazards, such as using interpretive media to educate visitors about natural hazards and how to avoid danger (see **Interpretation Goal A** and guideline **Interpretation A1**).

The Department will conduct professional geologic and engineering evaluations to identify potentially hazardous soils or geologic areas prior to any permanent facility development.

Areas of the park contain highly erodible soils. Land disturbance, such as grading and trail development, can trigger or accelerate soil erosion. Development of some of the general plan's proposals would decrease permeable areas in the park, potentially leading to greater runoff rates and concentrated flows that have greater potential to erode exposed soils. Guidelines **Geology/Hydrology 3, 4,** and **5** direct the Department to follow best management practices (BMPs) to reduce soil erosion and stormwater runoff and to ensure water quality during facility removal, maintenance, or construction. California State Parks has developed BMPs for road recontouring and rehabilitation, road removal, road to trail conversion, and culvert replacement. In addition, the standard construction BMPs for erosion and sediment control from the California Stormwater Quality Association will also be used, where appropriate. The plan also recommends biotechnical methods, where possible, to provide embankment stabilization and enhance stream restoration (see guideline **Geology/Hydrology 6**).

Summary

Current and future facilities and infrastructure in Big Basin Redwoods SP could be subject to potentially hazardous geologic and soil conditions, including seismic events. Implementation of the general plan guidelines, as well as compliance with the California Building Standards Code for any future development would maintain the risks of these hazards at an acceptable level, and this impact would be less than significant.

There are no known unique paleontological resources in Big Basin Redwoods SP. If present, any paleontological resources would likely be detected during site specific inventories conducted to detect cultural resources. Any feature of geologic significance would be detected during site specific geotechnical investigation. If unique resources are detected during future surveys, adverse impacts to these resources would be avoided during site specific design; thus, implementation of the general plan would not result in any adverse impact to any features of geologic significance in the park.

HAZARDS AND HAZARDOUS MATERIALS

This section analyzes impacts related to hazards and hazardous materials that could result from implementation of the general plan.

Thresholds

The hazards and hazard materials analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact related to hazards and hazard materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials,
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment,
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school,
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment,
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area,

- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area,
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact Analysis

There are no known classified hazardous materials sites within Big Basin Redwoods SP. The park is not located within one-quarter mile of any schools. The Las Trancas Airport, a privately owned airstrip is located .7 mile south from the park (RDO) along Highway 1, which is six miles northwest of Davenport in Santa Cruz County. The nearest public use airport is approximately 35 miles away to the northeast in San Jose. Implementation of the general plan would not result in development that would be in conflict with the operation of the nearest airports.

During construction of facilities, ground disturbance may expose hazardous materials through excavation, especially in previously developed areas. Construction activities may require the use of certain potentially hazardous materials, such as fuels, oils, and solvents for construction equipment. Hazardous materials spills may occur, including into drainages. If hazardous materials are found in the park, including during construction, building removal, renovation or rehabilitation, and maintenance activities, all regulations for hazardous material transport, use, and disposal will be adhered to, following Department policies and procedures (Department Operations Manual, Chapter 0800, Hazardous Materials).

The Department uses pesticides and herbicides, where appropriate, in the park to help control pests and vegetation. Staff will follow Department policies and other state and federal requirements for herbicide and pesticide application, incorporating all safety measures and recommended concentrations. Only chemicals that are appropriate for use near water will be used in or near wetland areas. Sustainable maintenance and management practices also discourage the use of environmentally damaging or hazardous materials (see guideline **Sustainability 1**).

The general plan recommends updating and following the current Wildfire Management Plan that addresses potential wildfire risks and specifies emergency actions for public safety, park structures, and adjacent landowner structures (see guideline **Wildfire 1**). The Wildfire Management Plan also specifies strategies for pre-suppression measures, such as the creation of defensible space around structures, wildfire education programs, and park fire regulations.

As stated in guideline **Wildfire 2**, the Department shall follow the fire management policy, including wildfire management (DOM Section 0313.2.1). State Parks is also guided by an Interagency Agreement with Cal Fire concerning wildland fire protection and has prepared a **Wildfire Local Operating Agreement** (a regional wildfire plan for Big Basin Redwoods SP, Butano SP, and Año Nuevo SP), and developed guidelines for the protection of structures from wildland fire (2009). These guidelines outline actions to minimize the probability that structures near flammable vegetation will ignite and burn during a wildland fire.

Summary

The park is not located on hazardous materials sites nor will the plan proposals physically interfere with an adopted emergency response plan or evacuation plan. Should any hazardous substances or other health hazards be identified, appropriate warning and protective methods would be developed and implemented. Implementation of the general plan will not result in or expose people to substantial health hazards.

HYDROLOGY AND WATER QUALITY

This section analyzes impacts related to hydrology and water quality that could result from the implementation of the general plan. A description of the hydrology and water quality in the park may be found in the **Physical Resources** section of **Chapter 2, Section 2.4** (Significant Resource Values). Flood hazard conditions are also described on **figures 23, 24,** and **25.**

Thresholds

The hydrology and water quality analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact related to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements,
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted),
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site,

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site,
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff,
- Otherwise substantially degrade water quality,
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map,
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows,
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or
- Inundation by seiche, tsunami, or mudflow.

Impact Analysis

Development and recreation facilities in general have the potential to cause short-term and long-term hydrologic and water quality impacts the park's creeks and wetlands. Under guideline **Geology/Hydrology 3**, the Department would comply with applicable water quality objectives developed by the San Francisco Regional Water Quality Control Board. Guideline **Geology/Hydrology 5** recommends the use of best management practices to control erosion and surface runoff. Impacts to park water quality from grading, filling, construction equipment use and storage, and mechanical or chemical control in resources and facilities management programs would be minimized by implementing guidelines **Geology/Hydrology 2, 3, 5, 6**, and **7**. Guideline **Geology/Hydrology 2** also recommends an assessment of human activities on park geological and hydrological processes, and identification of appropriate management actions that would reduce or avoid negative impacts. The general plan calls for the preparation of site specific plans such as a Roads and Trails Management Plan. These plans would be develop and designed for consistency with the general plan to protect water quality, manage runoff, respect floodplain processes, and address other hydrological issues.

West and East Waddell Creek, Blooms Creek, and Opal Creek contain spawning and potential spawning grounds for threatened and endangered anadromous fish species; therefore, any increase in sediment loading to the park's creeks may be considered a significant impact. Guideline **Special Animals 2** recommends protection of all special status native wildlife species and their habitats, which would include the protection of anadromous fish from the impacts of any activity that results in disturbance to riparian habitat, including increased sediment loading in creeks. Appropriate biotechnical stream bank erosion control

methods will be used, where feasible, to reduce sediment (see guideline **Geology/Hydrology 6**).

The plan proposes further study and analysis to determine where any remediation efforts are necessary to improve water quality in the park (see guideline **Geology/Hydrology 9**). These studies would analyze such elements as sediment sources, transport functions, and fluvial geomorphic conditions in streams, and assess impacts to ecology, the watershed, and water quality from recreation and other park activities. Based on the analysis and findings, the Department would restore geomorphic function to the watershed to the extent possible, thereby, substantially reducing or eliminating unnatural soil and stream bank erosion, stream sedimentation, and habitat degradation.

As part of the process for preparation of site-specific plans, resource management plans, or facility construction, site-specific studies of soil conditions and facility siting will be conducted. All new projects and increased visitor use in the park will be evaluated to ensure that they do not contribute to degradation of water quality, substantially alter existing drainage patterns, or result in on- or offsite erosion, siltation, pollution, or flooding (see guidelines **Geology/Hydrology 1, 3,** and **7**). Measures to reduce construction impacts include avoiding storage of surplus or waste materials in the floodplain, in areas of potential landslides, near surface waters, or in drainages (see guideline **Geology/Hydrology 5**). The Federal Emergency Management Agency has not delineated the full extent of the 100-year floodplain for West Waddell Creek and Opal Creek. The plan calls for determination of the 100-year floodplain in these areas to ensure that developed structures would not impede or redirect flood flows (see guideline **Geology/Hydrology 9**).

Interpretive programs will educate the public about park management goals, including information on the potential effects of recreation to water quality and the importance of water quality and the environment (see guideline **Interpretation B5**).

A portion of the park adjacent to Highway 1 may be affected by seiches or tsunamis due to its location, elevation and proximity to the beach and wetlands at the mouth of Waddell Creek (see **Figure 23**). Areas along Waddell Creek subject to flooding or inundation from such events are predominately open space, wetlands, and adjacent private agricultural lands. Facilities located in these areas are expendable and serve primarily as trail camps and parking for beach use and overnight uses that occur in higher elevations further up the watershed. Public safety is the highest priority for immediate evacuation to higher elevations during the early warnings of potential tsunami events. Mudflows may also present a hazard to people and structures.

Based upon the 2100 map projections (see **Figure 24**), management actions would include relocating facilities farther inland as the shoreline changes. Although shoreline protection devices, such as seawalls and

riprap are not typically used for protecting expendable items and areas, the Department would consider the placement of rock by Caltrans as part of the bluff stabilization efforts to maintain the highway and beach parking facilities. The planning and design for the proposed Highway 1 bridge replacement at the mouth of Waddell Creek should also be considered for projected sea level rise (see **Figure 25**), storm inundation, and tsunamis. The Caltrans bridge replacement project (including Highway 1 alignment) would be designed and constructed to sustain the long-term conditions projected for the new mean-high tide, tsunami effects, and 100-year flood protection. New parking lots and entrance road improvements would be located and designed in conjunction with the bridge replacement project, and constructed with Caltrans highway standards for public safety and sustainability. All long term planning should take into account any permanent changes, concept designs, construction, or projects at RDO. Potential adverse impacts would be minimized with the implementation of guideline **Geology/Hydrology 7** which directs the Department to prepare professional geological and engineering evaluations when locating facilities.

Summary

With implementation of the general plan guidelines listed in **Chapter 4** (Park Plan), hydrology and water quality effects resulting from implementation of the general plan would be at a less-than-significant level.

NOISE

This section analyzes impacts from noise that could result from implementation of the general plan.

Thresholds

The noise analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact related to noise if it would cause:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies,
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels,
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, or
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Analysis

The primary sources of noise expected to occur within Big Basin Redwoods SP are related to facility operations, construction activities, and vehicular traffic. Vehicular traffic noise levels in the Headquarters area could be reduced if a park shuttle/metro bus stop and a day use park-and-ride lot were placed at the Saddle Mountain property. The construction equipment used for the rehabilitation of historic structures may also add a temporary increase in noise levels in the Headquarters area. By implementing guidelines **Aesthetics 6** and **Aesthetics 7**, the park would take appropriate measures to minimize construction and maintenance noise and would comply with federal and state noise ordinances.

Noise impacts from vehicles would be reduced by separation of use areas, screening, and other appropriate techniques, and maintenance and service functions would be located away from public areas as much as possible (see guideline **Aesthetics 6**). The Department will follow the Soundscape Protection Policy (Department Operations Manual: 0312.4.1) by restricting sound from human-made devices and enforcing park noise standards.

At Little Basin, anecdotal information shows that there was an increase in noise level when the Hewlett-Packard Company (HP) owned the facility (from 1963-2007) and had company picnics/gatherings. Little Basin's facilities are now managed and operated by the nonprofit group, United Camps, Conferences and Retreats (UCCR), under a concessions agreement scheduled through 2017. Noise levels could be higher than average in the Little Basin area if outdoor concerts or similar-type events are presented. Current noise levels will be monitored by UCCR.

The park is not located within two miles of a public use airport and will not expose people working or residing in the project area to excessive noise levels associated with airports. The plan proposals will not generate or expose people to excessive groundborne vibrations or groundborne noise levels.

Summary

With implementation of the general plan guidelines listed in **Chapter 4** (Park Plan), noise effects resulting from implementation of the general plan would be at a less-than-significant level.

RECREATION

This section analyzes impacts related to recreation that could result from implementation of the general plan. The **Existing Park Land Use and Facilities** section of **Chapter 2** (Existing Conditions) provides a summary of the park's land use and existing facilities in each of the planning areas.

Thresholds

The recreation resource analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact on recreation resources if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impact Analysis

The plan proposes new facilities to improve conditions and opportunities for current and future visitor use, including the development of day use picnicking and trail camping facilities, overnight cabins, new interpretive facilities and information, additional trails (including loop trails), and connections to local and regional trails outside the park boundaries. The plan also recognizes the potential for expansion of group recreation facilities at Little Basin, new development at Saddle Mountain, and facility improvements to accommodate accessibility for disabled persons.

Using the adaptive management process, any potentially significant impacts will be minimized to ensure protection of the park's important resource values and visitor opportunities.

As noted in the plan, population growth and changing demographics will influence the Department's efforts to consider new forms of recreation and new technologies to respond to visitor demand and recreation trends (see guidelines **Recreation 6** and **7**), but also calls for restricting or modifying some types of recreation activities, as necessary, in order to minimize adverse resource impacts (see guideline **Recreation 2**). The plan recommends providing increased opportunities for interpretation and education, and to expand facilities and programs that allow more recreational opportunities in the spring and fall (see guideline **Recreation 3)**. Prior to new development at Saddle Mountain, additional site surveys and evaluations will be conducted to determine the presence of significant natural, prehistoric, and historic resources; and protective measures would be implemented (see guideline **Saddle Mountain 6)**. At RDO, additional resource surveys and monitoring would occur, and site plan(s) would be prepared to determine the location, size, and configuration of desired facilities, to protect special status plant and wildlife habitats. Resource management and protective measures would be implemented to eliminate or mitigate human impacts on significant natural resources (see guidelines **RDO 4** and **RDO 5**).

The plan recommends the use of an adaptive management process that would help implement the general plan's vision and desired conditions for natural, cultural, and recreational resources and visitor experiences in the park. Samples of these desired outcomes, indicators, and potential management actions are listed in **Table 4-1.** This process would provide

an ongoing method to evaluate and avoid or reduce impacts associated with recreational uses, visitor experiences, and park resources. Using the adaptive management process, any potentially significant impacts will be minimized to ensure protection of the park's important resource values and visitor opportunities as expressed in the general plan.

The plan's proposals may increase the use of regional parks, open space, and public recreation facilities by encouraging regional trail connections and interpretation of the natural, cultural, aesthetic, and recreational resources in the Santa Cruz Mountains region (see guidelines **Recreation 4** and **Recreation 5**). However, this increased use would be minor and would not cause or accelerate significant physical deterioration of the facilities.

Summary

With implementation of the general plan guidelines, the development of recreation facilities at Big Basin Redwoods SP would not result in an adverse physical effect on the environment.

TRANSPORTATION AND TRAFFIC

This section analyzes transportation and circulation impacts that could result from implementation of the general plan. A description of the park roads, trails, and circulation may be found in **Chapter 2** (Existing Conditions), **Section 2.3**.

Thresholds

The transportation and traffic analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact on transportation and traffic if it would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit,
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways,
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks,

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment),
- Result in inadequate emergency access, or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Impact Analysis

The general plan proposes facilities that may require modifications to existing roads and parking facilities, directional signage, multi-use trails and trailheads, and multi-modal transportation facilities.

In the summer season and during other peak use periods, increased visitor traffic and an inadequate number of existing picnic sites and parking spaces in the park Headquarters area are resulting in congestion in the park along the main park entrance road (Highway 236). Due to the resources sensitivity, the park has limited potential for new facilities development, therefore, this plan is focused primarily on desired programs and actions to protect park resources and improve visitor experiences. The general plan calls for the development of alternative transportation facilities to support more efficient and energy-saving modes of transportation, and the development of a shuttle system to supplement the transport of visitors into the Headquarters area and to trailhead locations with access to the backcountry and to other state parks and destinations in the region (see guideline **Access 4**). A park shuttle/metro bus stop with a day use park-and-ride lot at Saddle Mountain, if implemented, could help alleviate some traffic and parking congestion in the Headquarters area along with the monitoring of parking and visitor use, and reconfiguring parking spaces in the Headquarters area (see guidelines **Access 1, 3,** and **4,** and **Parking 1** and **3,** and **Saddle Mountain 3**). Future park concessions contracts and agreements may consider providing new facilities and services, such as the park shuttle, through further studies and cost/benefit analysis.

The general plan proposes development of a welcome center at Saddle Mountain, to serve for park administration and visitor parking (see guideline **Saddle Mountain 1**), whereby reducing some of these functions in the Headquarters area. Site planning for Saddle Mountain development will consider other provisions that may be included based on further parking and traffic analysis, and second level environmental review. The potential impacts of new development on traffic and circulation along Highway 236 and Little Basin Road will be assessed during project-specific planning and design. Little Basin Road may have increased traffic generated by the type and use of existing or new recreational facilities developed at Little Basin. State Parks will coordinate with Santa Cruz County to identify necessary road improvements and county maintenance actions to manage public vehicle access on Little Basin Road, as recommend by guideline **Little Basin 6**.

The Department will coordinate with Caltrans to manage visitor and non-visitor traffic along Highway 236 through the park, and improve signage on Highway 9 and Highway 236 locations (see guideline **Highway 236 – 1**). To improve visitor parking conditions and public safety, the general plan proposes to develop and/or improve highway turnouts to accommodate short-term parking, shuttle/bus stops, or temporary pull-outs for vehicles on Highway 236 through the park. Trailhead parking would also improve access to multi-use trails with added provisions for horse trailers (see guidelines **Highway 236 – 4** and **5**).

The Department will explore obtaining State Scenic Highway and Federal Scenic Byway status for Highway 236, to help provide grant funding for implementing safety improvements and resource protections due to changing traffic patterns and use (see guideline **Highway 236 – 2**)

The general plan calls for the development of a parkwide Roads and Trails Management Plan that evaluates the park's entire trail system, trail use and user conflicts, and guides the placement and use of future trails, while avoiding negative impacts to significant natural and cultural resources (see guideline **Trails 2**).

Separation of vehicle traffic from pedestrians, bicyclists, and equestrians, where feasible, is recommended by guideline **Access 6** and the installation of safety signage by guideline **Access 3**. These provisions would improve traffic safety. The plan also recommends adequate roadway signage and coordination with San Mateo/Santa Cruz County and Caltrans to implement roadway maintenance and improvements to increase traffic safety along Highway 1 and Highway 236 through the park (see guideline **Access 1**).

At Waddell Beach, the general plan calls for improved parking, circulation efficiency, and public safety. The Department will coordinate and provide input to Caltrans and other agencies on their planning and design for the future Waddell Creek bridge replacement project, to promote desirable hydrological, riparian, and estuarine conditions, protect habitat at the mouth of Waddell Creek, and facilitate parking and safe vehicle ingress and egress from Highway 1 (see guidelines **Waddell Beach 1, 3,** and **4).**

Summary:

There could be a minor increase in regional vehicle traffic due to the improvement or addition of new park facilities and programs. The plan's proposals would not cause the current levels of service standards established by the county congestion management agency for roads or highways to be exceeded. The plan proposals will not cause a change in existing air traffic patterns, result in inadequate emergency access or parking capacity, or conflict with adopted policies, plans or programs supporting alternative transportation.

Any improvements to roads and circulation made as a result of implementation of the general plan would better accommodate and

manage existing and future uses, improving circulation and visitor safety and provide safe and adequate parking. As such, impacts on transportation and traffic resulting from implementation of the general plan would be less than significant.

UTILITIES AND SERVICE SYSTEMS

This section analyzes impacts on utilities and service systems that could result from implementation of the general plan. A description of park utilities may be found in **Chapter 2** (Existing Conditions), **Section 2.3**.

Thresholds

The utilities and service system analysis uses criteria from the State CEQA Guidelines Appendix G. According to these criteria, implementation of the general plan would have a significant impact on utilities and service systems if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board,
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects,
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects,
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed,
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments,
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, or
- Comply with federal, state, and local statutes and regulations related to solid waste.

Impact Analysis

The general plan recommends upgrading the Little Basin utility systems and infrastructure, as necessary, to accommodate group recreational use, and for special events with both indoor and outdoor facilities. New development at Saddle Mountain would also require upgrading or replacing existing utilities and infrastructure to support the development of a new welcome center and administrative and visitor use facilities. The Department would comply with the water quality objectives and requirements of the San Francisco Bay Regional Water Quality Control

Board (see guideline **Geology/Hydrology 3**) and would utilize sustainable design strategies to construct and maintain utility and service systems in the park (see guideline **Sustainability 1**).

Implementation of guidelines **Utilities 1** through **Utilities 4** would evaluate the current park infrastructure, repair and upgrade the current water supply and distribution system, as necessary, identify utility needs, and develop recommendations for utility upgrades and replacement. The repair or replacement of older pipes and structures may contact hazardous materials such as asbestos. Removal and handling of these materials will be done in compliance with the Monterey Bay Unified Air Pollution Control District Rule 424 National Emission Standards for Hazardous Air Pollutants (NESHAPS).

Currently, Big Basin Redwoods SP is served by state-owned septic systems; therefore, plan proposals would not impact outside wastewater treatment providers. The plan's recommended development will continue to be served by state-owned septic systems.

Summary

Construction and operations of the equipment and facilities would be in compliance with state and federal regulations, as well as management strategies and actions of the general plan. As such, new infrastructure and services would be environmentally compatible with the resources within Big Basin Redwoods SP, and any degradation of environmental values would not be substantial. Additional environmental review for new development would be required. While the exact nature of the infrastructure and service needs would not be determined until the development proposals become available, any adverse effects would be mitigated to less-than-significant levels. Thus, this impact would be less than significant.

5.7 Unavoidable Significant Environmental Effects

Evaluation at the specificity of this first tier review indicates that the potential effects from projects proposed in this general plan can be reduced to less than significant levels with appropriate facility siting, the implementation of the goals, guidelines, and resource management programs, and further reduced with the development of specific mitigation measures, if necessary, when future site-specific development plans are proposed.

Until the uses, locations, and scope of facilities or management plans are specified, the actual level of impact cannot be determined. However, all

plans and projects are required to be in compliance with applicable local, state, and federal permitting and regulatory requirements and subject to subsequent tier CEQA review and project-specific mitigation.

At this level of planning, unavoidable significant environmental effects are not anticipated as a result of the proposals in this General Plan /Environmental Impact Report.

State Parks finds that there is a significant, unavoidable impact with respect to the speculative nature of the marbled murrelet research at this time. It is unclear what is causing the decline in numbers, and conversely, it cannot be said with certainty that the activity of Parks visitors in the old-grove redwoods is the reason for the dwindling numbers. This lack of definitive information leads State Parks to make overriding findings for a significant unavoidable impact on the marbled murrelet population.

Significant Irreversible Environmental Changes

This first tier environmental review indicates that no significant irreversible changes to the physical environment are anticipated from the adoption and implementation of this general plan. Appropriate facility siting, implementation of goals and guidelines included in this plan, and the development of specific mitigation measures during the project-level environmental review process can maintain any impacts at a less-than-significant level.

Facility development, including structures, roads, and trails, may be considered a long-term commitment of resources; however, the impacts can be reversed through removal of the facilities and discontinued access and use. The Department does remove, replace, or realign facilities, such as trails and campsites, where impacts have become unacceptable either from excessive use or from a change in environmental conditions.

The construction and operation of facilities may require the use of non-renewable resources. This impact is projected to be minor due to the limited amount of facilities planned for development and to the consideration of sustainable practices in site design, construction, maintenance, and operations as proposed in the general plan, **Section 4.4**. Sustainable practices used in design, management, and operations emphasize environmental sensitivity in construction, the use of non-toxic materials and renewable resources, resource conservation, recycling, and energy efficiency.

Destruction of any significant cultural or natural resources would be considered a significant irreversible effect. To avoid this impact, proposed development sites will be surveyed for sensitive resources, all site and

facility designs will incorporate methods for protecting and preserving significant resources, and human activities will be managed to ensure resource protection.

GROWTH-INDUCING IMPACTS

State CEQA Guidelines Section 15126.2(d) requires that an EIR evaluate the growth-inducing impacts of a proposed project. Specifically, an EIR must discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth inducement itself is not an environmental effect, but may lead to environmental effects. Such environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or wildlife habitats, or conversion of agricultural and natural land to urban uses. The analysis of indirect growth-inducing impacts for the general plan focuses on two main factors: (1) promotion of development and population growth, and (2) elimination of obstacles to growth.

If implemented completely, the general plan may indirectly foster economic and population growth in the region. With complete development of all proposals, park visitation is likely to increase. This would be due to the proposed improvements and development of additional day use and overnight facilities, interpretive opportunities, and improvements to park circulation, including new trails and trail connections from the park to regional trails, and multi-modal opportunities to access the park and surrounding areas. Additional directional and informational signage and interpretive information outside the park boundaries (on the highway, in other state and regional parks, and in the community) should raise the park's profile as a destination for recreational opportunities and the appreciation and enjoyment of natural and cultural resources.

Any improvement to recreational facilities and programs or increase in the park's design capacity can encourage increased use, which may create additional tourism and the need for tourist services (such as recreation equipment, supplies, food, and related facilities) in adjacent communities, state parks, open space and recreation areas, and the surrounding region. The economy of the Central California Coast depends considerably upon recreation and tourism, and an increase in visitor use may be considered an economic benefit. The increased visitor capacity and interpretive potential of the plan's proposals may result in the need for an increased number of permanent and seasonal park staff.

CUMULATIVE IMPACTS

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant, projects taking place over a period of time" (State CEQA Guidelines §15355[b]).

Land management agencies in the Santa Cruz Mountains region recognize the importance of the natural qualities of the area that have been preserved over time, and base their planning and development efforts on the importance of preserving these values into the future. The intent of the Santa Cruz County general plan and LCP in this portion of the county is to maintain rural open space and regulate new development.

The general plan for Big Basin Redwoods State Park was prepared concurrently and in coordination with the general plans for Año Nuevo State Park and Butano State Park. The planning effort also coordinated as much as possible with surrounding land use planning, resource management, and recreation networks, such as Peninsula Open Space Trust and Sempervirens Fund. This coordination resulted in a general plan that is integrated with the surrounding regional open space planning on multiple levels. Future land use conflicts should be minimal.

The Department will continue to work cooperatively with regional land management agencies to achieve common management strategies that would enhance and preserve existing natural, cultural, and recreational resource values region-wide. To the extent that the loss of biological, cultural, and aesthetic resources is occurring in the region, any loss, disturbance, or degradation of these resources would contribute to cumulative impacts.

Any facility development and resource management efforts that may occur with the implementation of the general plan would not result in significant project-level environmental impacts. The goals and guidelines in the general plan would direct management actions that would preserve, protect, restore, or otherwise minimize adverse effects related to biological resources, cultural resources, aesthetics, seismic hazards, water quality, traffic, and water supply. These management actions would also maintain Big Basin Redwoods SP's contribution to cumulative impacts to a less-than-significant level.

State Parks finds that there is a significant, unavoidable impact with respect to the speculative nature of the marbled murrelet research at this time. It is unclear what is causing the decline in numbers, and conversely,

it cannot be said with certainty that the activity of Parks visitors in the old-grove redwoods is the reason for the dwindling numbers. This lack of definitive information leads State Parks to make overriding findings for a significant unavoidable impact on the marbled murrelet population.

5.8 ALTERNATIVES TO THE PROPOSED PLAN

The guiding principles for the analysis of alternatives in this EIR are provided by the State CEQA Guidelines Section 15126.6, which indicates that the alternatives analysis must: (1) describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project; (2) consider alternatives that could reduce or eliminate any significant environmental impacts of the proposed project, including alternatives that may be more costly or could otherwise impede the project's objectives; and (3) evaluate the comparative merits of the alternatives. The State CEQA Guidelines Section 15126.6(d) permits the evaluation of alternatives to be conducted in less detail than is done for the proposed project. A description of the project alternatives, including the No Project Alternative, is provided in this EIR to allow for a meaningful evaluation, analysis, and comparison of these alternatives with the Preferred Alternative, which is the general plan as described in **Chapter 4.** Located at the end of this section is **Table 5-2**, which compares the plan alternatives with one another, as they relate to each of the main park areas.

ALTERNATIVE 1: FACILITIES REMOVAL AND INCREASED RESOURCE PROTECTION

Description

Alternative 1 would focus on the protection, sustainability, and biodiversity of the plants and animals within the old growth redwood forest. Measures to ensure this protection would include: removing some or all of the existing campgrounds and picnic areas within the old growth redwood forest; relocating the food service concessionaire, administrative and maintenance offices to Saddle Mountain and to Little Basin; adapting the Headquarters historic buildings for interpretive and educational purposes; removing long-term parking from the Headquarters area; and establishing a visitor shuttle system to park destinations. Traffic flow would be redesigned in order to accommodate vehicles while reducing congestion and minimizing resource impacts.

Parking, trails, and trailheads would be established outside of the Headquarters area away from the most sensitive habitats.

Modification or removal of existing facilities would occur in the Headquarters area to protect and restore native habitats and natural processes. This action would reduce the overall amount and variety of visitor facilities in the park. The campgrounds would be removed or reduced in size, or closed on a seasonal and rotational basis to aid the recovery of forest habitat.

Evaluation

Removing, or reducing in size, recreational facilities within the old growth redwood forest would minimize the negative impacts to the forest understory, and minimize soil compaction around the redwood trees. This would also help restore the health of associated plant and wildlife habitats, with special attention to the federally protected marbled murrelet. This action would reduce the overall amount and variety of visitor facilities in the park. Removing food sources to jays, ravens, and raccoons would also help protect murrelets and other nesting birds.

Vehicular traffic and associate noise and air quality effects would be reduced in the day use and overnight use areas. Visitor and non-visitor traffic would still traverse through the park on Highway 236.

Visitor surveys indicate a strong interest to maintain the opportunities to enjoy the traditional camping, hiking and picnicking experiences at Big Basin, which is part of its legacy for family traditions in past, present, and future generations. With the few areas suitable for development outside the old growth forest and within current state park ownership, this alternative was not selected because it would result in the loss of recreational facilities currently serving visitors to the Santa Cruz Mountains region, and would not address the increasing recreational demands for visitor camping, group picnic areas, and tent-cabin facilities.

ALTERNATIVE 2: WILDERNESS EXPANSION

Description

Alternative 2 would convert the backcountry to an expanded wilderness (potential addition of 4,000 acres) within Big Basin Redwoods SP. This would encourage greater use of the park for more primitive visitor experiences and low-impact type of recreational use. Because a state wilderness area, by definition, should have “no permanent road within any wilderness” (Wilderness Act of 1964), this alternative would require the closure and/or removal of all roads, or roads converted to trails. This action would also prohibit bicycle use and use of mechanized equipment within the designated wilderness areas. This alternative would also

include the removal of developed trail camps, with opportunities remaining for informal primitive camping.

In addition, this alternative would establish a threshold for visitor carrying capacity and reduce the overall use intensity within the Headquarters area during the peak use periods, through a reduction of long-term parking and overnight camping. Administrative and maintenance functions and concession services would be relocated, as feasible, to transform the Headquarters area into a pedestrian oriented low intensity use area with greater emphasis on natural resource protection goals and management objectives. Visitor access would rely on short-term parking and a shuttle system to reduce traffic and congestion. The remaining backcountry would accommodate multi-use trails and trail camps for individuals and group use.

Evaluation

This alternative would increase opportunities for visitors seeking a more primitive wilderness experience. With imposed restrictions on development and use within a state wilderness, other benefits would include greater protection of the old growth forest and reduced impacts on watersheds, streams and associated native plant and wildlife habitats. However, with more areas set aside as wilderness, more active forms of recreation, such as mountain bikes, would be displaced and concentrated in surrounding park areas and in adjacent public and private properties in the Santa Cruz Mountains.

An expanded wilderness could potentially increase fire danger and public safety because of a longer response time to get to these remote roadless areas. Park enforcement could also be compromised for similar reasons.

ALTERNATIVE 3: NO PROJECT

Description

The California Environmental Quality Act requires an evaluation of the "No Project" Alternative and its impact (CEQA Guidelines §15126.6[e][1]). The No Project Alternative represents perpetuation of existing management actions, and its analysis is based on the physical conditions that are likely to occur in the future if the project (the proposed general plan) is not approved and implemented. The purpose of describing and analyzing the no project alternative is to allow decision-makers to compare the impacts of approving the proposed general plan with the expected impacts of not approving the general plan. Without a general plan for Big Basin Redwoods SP, it is assumed that the existing patterns of operation and management would continue and no new major recreational or operational facilities would occur. Visitation and park use would be expected to increase as the state-wide and regional populations

grow. Many of the management actions that would protect, preserve, and restore natural and cultural resources beyond the requirements of laws and regulations may not occur under the No Project Alternative.

Evaluation

The existing conditions, deterioration of historic facilities, traffic and parking congestion, and impacts on the park's resources would continue if the general plan was not adopted.

Without the improvements to accommodate and manage the existing visitor demands, as well as a projected increase in visitor use, sensitive natural and cultural resources may be expected to degrade over time due to overuse. There would also be fewer facilities to accommodate the needs for mountain bikers and equestrians, resulting in increased impacts in existing use areas.

Under the No Project Alternative, the park's natural and cultural resources may not receive an increased level of protection. Resource management plans and policies for natural and cultural resources may not be developed.

Demand for recreation facilities and programs are increasing along with population increases in the San Francisco Bay Area and Central Valley. However, without a general plan, the Department would not have the authority to develop or enhance facilities to respond to this demand, especially for day and overnight use. Recreational and interpretive improvements that could enhance the visitor experience at the park's current level of use or anticipated future needs would not be developed.

Under the No Project Alternative, a comprehensive evaluation of park, regional, and statewide trail systems may not be accomplished. Opportunities would be missed to create a higher quality visitor experience through trail linkages to the California Coastal Trail, to regional state parks and recreation and open space areas, and to local or regional community destinations.

Also, under the No Project Alternative, land use management may not be evaluated on a parkwide basis, and the park's potential for planned and integrated land use, recreational facility development, and possible future acquisitions may not occur. Without organized land use or management plans and development guidelines, incremental cumulative impacts may adversely impact the park in the future.

Traffic and circulation improvements at Headquarters area will not be accomplished with the No Project Alternative. With expected increased visitor and non-visitor traffic on highways 236 and 1, impacts in the Headquarters area and Waddell Beach would continue or worsen.

With the absence of a general plan and additional guidance for cultural resource management, deterioration of historic buildings and impacts on

cultural sites and features are likely to continue if the No Project Alternative is selected.

Improvements to informational and directional signage may not occur. The existing visual and aesthetic character of the park may not be improved under the No Project Alternative and existing scenic and other aesthetic resources may be affected.

Existing interim facilities, programs and uses at Saddle Mountain would likely continue under an agreement with a nonprofit or concessionaire. Aging facilities (buildings and infrastructure) would support similar uses, but limit the opportunity to replace these facilities for other important functions and use.

Existing facilities, programs, and uses at Rancho del Oso would continue at current levels, preventing new visitor facilities or site improvements desirable to support increasing visitation and on-going demands for coastal recreation activities or implement new measures to protect resources.

Little Basin would continue to operate for group recreation and educational program activities under the current or similar agreement. Opportunities for new recreation, infrastructure, and operational facilities and more sustainable systems would not be possible under the No Project Alternative.

Table 5-1 Plan Alternatives			
	Preferred Alternative	**Alternative 1 -** Facilities Removal and Increased Resource Protection	**Alternative 2 -** Wilderness Expansion
Park Headquarters and Sky Meadow	Desired facilities and improvements: ▪ Provide park shuttle and satellite parking areas to reduce HQ traffic congestion during peak use periods. ▪ Allow additional trailer pads and amenities in Sky Meadow residence area for future housing needs. ▪ Provide additional equestrian trailer parking and access to trails outside HQ area. Potential impacts from facility rehabilitation and improvements, and traffic redesign will be minimized or avoided through the implementation of plan goals and guidelines ensuring protection of significant resources, and application of the adaptive management process.	Implements measures to protect the old growth redwood forest, including: ▪ Remove some or all of camping and picnic facilities within the old growth to protect ancient redwoods and associated habitats. ▪ Remove or relocate food store from Headquarters area to reduce food source and corvid population for protection of marbled murrelet nesting habitat. Removal of camping and picnic areas would exacerbate the documented need and visitor demand for additional recreational facilities in the Santa Cruz Mountains region. This could result in increased and uncontrolled use and environmental impacts on adjacent public and private open space lands.	Provides additional protection to natural and cultural resources with seasonal closures and rotation of campground use. Includes many of the same actions proposed in the Preferred Alternative and Alternative 1.

Table 5-1 Plan Alternatives			
	Preferred Alternative	**Alternative 1 -** Facilities Removal and Increased Resource Protection	**Alternative 2 -** Wilderness Expansion
Wilderness and Backcountry Zone	Desired facilities and improvements: ▪ Provide additional loop trails, trailheads, and trails for multiple users, including trail connections to regional trail systems. ▪ Potential for auto tour concession for backcountry roads. ▪ Evaluate existing and potential trails and roads (including unpaved roads), roads and trails management, maintenance, location, and use intensity through a parkwide Roads and Trails Management Plan. Potential impacts from facility development and visitor use. Impacts will be minimized or avoided through the implementation of plan goals and guidelines ensuring protection of significant resources, appropriate facility location, and application of the adaptive management process.	Less development and visitor opportunities than the Preferred Alternative: ▪ Remove or relocate some trails and trailheads to restore wildlife habitat corridors. ▪ No additional trails or trailheads developed. Less potential for impacts than Preferred Alternative due to fewer proposed visitor facilities (trails and trailheads and less potential visitor use).	Recognized potential to nearly double the size of the existing State Wilderness. ▪ Remove roads and facilities within the designated wilderness, and restore these areas to near natural conditions. ▪ Prohibits mountain bikes and use of mechanized equipment in state wilderness areas. This alternative would increase opportunities for visitors seeking a primitive wilderness experience, but could increase fire dangers and public safety because of a longer response time to get to these remote areas. More active forms of recreation would be displaced and concentrated in surrounding park areas.

Table 5-1 Plan Alternatives			
	Preferred Alternative	**Alternative 1 -** Facilities Removal and Increased Resource Protection	**Alternative 2 -** Wilderness Expansion
Saddle Mountain Property	Desired facilities and improvements: ▪ Develop new park Welcome Center for primary visitor contact, park orientation and campground registration. ▪ Develop park shuttle/metro bus stop with a day use park-and-ride lot. ▪ Develop trailhead parking and signage at locations along Hwy. 236 at China Grade Road and south of Waterman Gap. Potential impacts from facility renovation and visitor use. Impacts will be minimized or avoided through implementation of plan goals and guidelines and permit or operating agreement conditions, ensuring protection of significant resources and appropriate visitor use and intensity.	Locates new facilities outside the old growth forest. However, this would likely be at a smaller scale of development to minimize or eliminate potential impacts. ▪ Considers joint operations and use of educational programs and interpretive facilities. ▪ Considers site for visitor parking or shuttle stop to supplement the loss of developed facilities in the HQ area.	Same as Alternative 1.
Table 5-1			

Plan Alternatives			
	Preferred Alternative	**Alternative 1 -** Facilities Removal and Increased Resource Protection	**Alternative 2 -** Wilderness Expansion
Rancho del Oso and Waddell Beach	▪ Develop day use parking (approx. 50 spaces) on the inland side of Hwy. 1 and pedestrian underpass to the beach. ▪ Relocate the entrance gate to RDO further inland, and develop a vehicle turnaround, parking, and park information kiosk for visitors. ▪ Upgrade or reconfigure the horse camp and equestrian staging facilities to improve campsites and trailer parking, and vehicle circulation. ▪ Develop new bicycle camp and walk-in campground facilities at a location north of the day use parking lot. ▪ Develop new ranger station for visitor contact, public safety, education, and RDO operational needs to address an increase in visitation and concentration of visitor activities.		

Table 5-1 Plan Alternatives			
	Preferred Alternative	**Alternative 1 -** Facilities Removal and Increased Resource Protection	**Alternative 2 -** Expand State Wilderness
Little Basin	▪ Rehabilitate facilities, utilities and infrastructure, as needed, for full public use. ▪ Improve Little Basin's 1.7 mile county access road from Hwy. 236 for safe, two-way traffic, and general public use. ▪ Connect an unimproved road-trail from Little Basin to Big Basin HQ area. Initial natural resource surveys have been conducted. No sensitive natural resources have been identified. Initial cultural resource surveys have been conducted for the developed 17 acres. A few archaeological sites have been identified.	Same as Preferred Plan, except: ▪ Relocate camping and picnic areas from HQ to Little Basin.	Same as Alternative 1, with relocation of some HQs functions and facilities to Little Basin.

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Top photo: Photo depicting the entrance to California Redwood Park circa 1920s

Bottom photo: Post card showing Boulder Creek Stage

CHAPTER 6:
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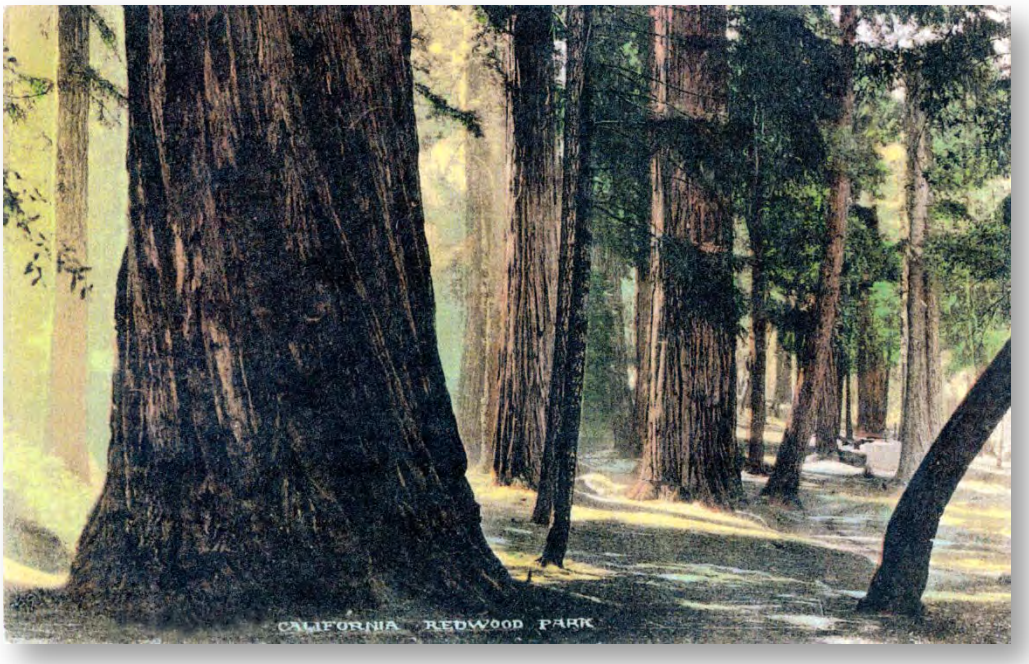

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APPENDIX A

ACRONYMS AND ABBREVIATIONS

ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
BLM	Bureau of Land Management
BMP	Best Management Practice
Caltrans	California Department of Transportation
CCC	Civilian Conservation Corps
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CSP	California State Parks
CZMA	Coastal Zone Management Act
DPR	(California) Department of Parks and Recreation
DWR	(California) Department of Water Resources
EIR	Environmental Impact Report
LCP	Local Coastal Program
MROSD	Midpeninsula Regional Open Space District
NCCAB	North Central Coast Air Basin
NHL	National Historic Landmark
NHRP	National Register of Historic Places

NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
POST	Peninsula Open Space Trust
PRC	Public Resources Code
RDO	Rancho del Oso
RWQCB	Regional Water Quality Control Board
SB	State Beach
SCMTD	Santa Cruz Metropolitan Transit District
SFBAAB	San Francisco Bay Area Air Basin
SP	State Park
SR	State Reserve
SWRCB	State Water Resources Control Board
TPL	The Trust for Public Land
USACOE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VCM	Visitor Capacity Management

APPENDIX B

LOCATION OF EIR REQUIRED CONTENT IN THE GENERAL PLAN/EIR

CEQA Guidelines Content	Location in General Plan/EIR
Section 15122. Table of Contents or Index	Beginning of this document/Table of Contents
Section 15123. Summary	Executive Summary
Section 15124. Project Description	Ch. 4 Park Plan (description) Sec. 5.3 Project Description (summarized) Ch. 1 Introduction (information about project purpose, planning context, and general plan process)
Section 15125. Environmental Setting	Ch. 2 Existing Conditions Sec. 5.4 Environmental Setting
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(a) (and Section 15126.2) Significant Environmental Effects of the Proposed Project	Sec. 5.6 Environmental Impacts and Mitigation
(b) Significant Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented	Sec. 5.7 Unavoidable Significant Environmental Effects
(c) Significant Irreversible Environmental Changes Which Would be Involved in the Proposed Project Should it be Implemented	Sec. 5.7 Unavoidable Significant Environmental Effects
(d) Growth-Inducing Impact of the Proposed Project	Sec. 5.7 Unavoidable Significant Environmental Effects , Growth-Inducing Impacts
(e) (and Section 15126.4) The Mitigation Measures Proposed to Minimize the Significant Effects	Ch. 4 The Park Plan, Goals and Guidelines (intended to minimize adverse environmental effects) Sec. 5.6 Environmental Impacts and Mitigation

(f) Alternatives to the Proposed Project	Sec. 5.8 Alternatives to the Proposed Action
Section 15127. Limitations on Discussion of Environmental Impact	Sec. 5.7 Unavoidable Significant Environmental Effects , Significant Irreversible Environmental Changes
Section 15128. Effects Not Found to be Significant	Sec. 5.5 Environmental Effects Eliminated from Further Analysis
Section 15129. Organizations and Persons Consulted	Ch. 6 References
Section 15130. Discussion of Cumulative Impacts	Sec. 5.7 Unavoidable Significant Environmental Effects , Cumulative Impacts
Section 15131. Economic and Social Effects (optional topic)	Ch. 4 Park Plan Throughout the document under discussions of recreation and visitor experience

APPENDIX C

PUBLICLY-OWNED RECREATION FACILITIES IN THE VICINITY OF BIG BASIN REDWOODS STATE PARK

NAME OF FACILITY	CAMPSITES	PICNIC SITES	TRAILS	OTHER(S)	COMMENTS
STATE PARKS					
Año Nuevo Coast NP	None	10 picnic tables	3-mile round trip		Guided tours to view the seals
Año Nuevo SP	None	None	The 1.5-mi. Whitehouse Ridge Trail connects with Big Basin		
Butano SP	21 drive-in; 18 walk-in; also 7 backpacking sites at trail camp	12 picnic tables	~36 miles trails for hiking. Biking, horseback riding on fire roads only		Guided nature walks and weekend campfire programs offered during the summer.
Portola SP	53 tent spaces: 1 for disabled, 9 tent/RV; 4 walk-in group camps: 3 hold 50, 1 holds 25; also 6 sites for backpackers	Group day use for 75; also 2 parking for 30 cars; 3 picnic areas with 20 sites	18 miles of trails for hiking only		

Castle Rock SP	Primitive for backpackers only: 26 units	None	"32+" miles: hiking, riding trails	Rock climbing	The 6.5 miles of the Skyline-to-the-Sea trail closest to Castle Rock is in that park. Only one fire road open to bikes to access the trail camp.
H. Cowell RSP	110 campsites	Group picnic for 50-60; 15 family sites	20 miles: hiking, riding; bikes on paved or fire roads	Nature Center; nature trail	The Roaring Camp and Big Trees Railroad is in the park
COUNTY PARKS - San Mateo County					
Pescadero Creek	Primitive walk-in camps (18 sites in two groups)	None	46.8 miles with loops; for hikers & equestrians	Biking on designated service roads only; Important plant and wildlife resources	Trail connections to Sam McDonald, Memorial and Portola parks; also Hikers' Hut, a hostel run by the Sierra Club, with a capacity of 14 people
Memorial Park	156 campsites; 6 youth group areas; 2 group camps (75 people each)	4 reservable picnic areas (350 people max.)	12.5 miles of hiking and interpretive trails	Campfire center	Emphasis on interpretation: walks, programs
Sam McDonald	3 youth group camps (300 capacity); also horse camp for individuals or groups (8 sites, 80 people max.)	None	6.7 miles for hikers, joggers, and equestrians	Biking on designated service roads only	Trail connections to Memorial and Pescadero Creek parks; park has volunteer program
Heritage Grove	None	None	1.5 miles	Largest redwood trees in the Santa Cruz Mts.	Used for access to Pescadero Creek Park and the Hikers' Hut.

COUNTY PARKS - Santa Cruz County					
Ben Lomond Park	None	12 picnic sites	No trails; street parking only	1-acre neighborhood park	Basketball court, playground; historic dam
Felton Covered Bridge	None	6 picnic sites	~1/4 mile trail around park	32 parking spaces	Covered bridge; recreational amenities include a volleyball court, playgrounds, lawn, fishing
Highlands Park	None	2 reservable group sites; ~12 family picnic sites	~1/2-mile trails	26 acres	Reservable house, sports field
Quail Hollow Ranch	None	10 picnic sites	3.5 - 4 miles of trails	Gravel lot accommodating 50 cars	Emphasis on interpretation of natural resources; docent-led walks, nature programs available (also has historic ranch house, pond - no fishing), weddings.
COUNTY PARKS - Santa Clara County					
Sanborn County Park	13 RV sites plus 1 for disabled persons; 1 youth group camp for 35-40; 1 walk-in campground with 33 sites	3 reservable grp areas: 2 hold 100; 1 holds 200; 3 other areas first come first served for up to 420 (42 sites x 10 each)	15 miles of hiking & horse trails; 1-mile nature trail; 267 parking spaces plus 10 for disabled persons	Lake for fishing	Emphasis on nature study, interpretation, ranger-led walks. Is adjacent to Castle Rock State Park, and has connecting trails

Upper Stevens Creek	None	None	~8 miles of trails for hiking, mt. biking, and horse-back riding; only 5 parking spaces	"Wilderness" experience	
Stevens Creek	None	3 group picnic areas, capacity: 100, 75, and 50 people; also family sites, first come first served, total capacity of 800; 363 parking spaces	~8 miles of trails for hiking, mt. biking, and horseback riding (on specific trails)	Small lake – boating, fishing – no motorized craft	Archery, birding. Adjacent to Midpeninsula Open Space preserve (Fremont-Older)
MIDPENINSULA OPEN SPACE DISTRICT					
Russian Ridge Open Space Preserve			8 mi. trails	Open grasslands, wildflowers, wildlife (raptors); views	Connections to: Bay Area Ridge Trail to Skyline Ridge OSP
Coal Creek Open Space Preserve			5 mi. trails; hiking, biking, equestrian	Forested areas, seasonal waterfalls	Connections to Skyline Blvd., Russian Ridge, and Portola Valley. Trail loops.
Los Trancos Open Space Preserve			5 mi. trails; no bicycles; 1.5-mi San Andreas Fault Trail	Grasslands, brushlands, forested areas; views	Self-guided geology interpretation along the Fault Trail

Skyline Ridge Open Space Preserve		Several tables at Horseshoe Lake overlook	10 mi. trails; ~2 mi. of accessible trails; 3 mi. of Bay Ridge Trail	Meadows; pond with pier for nature study; lakes; chaparral; ridgetop views	Nature center offers docent-led tours
Monte Bello Ridge Open Space Preserve	Backpack walk-in camp; 4 single sites and 1 group site		~15 mi. trail system for hikers, bikers. Stevens Creek Nature Trail is a self-guided 3-mile loop	Grasslands, creekside forests; vistas; rich wildlife area	The 72-year-old Picchetti Ranch Area is in the southwestern corner of the preserve and features a working winery complex.
Long Ridge Open Space Preserve			10 mi. trails	Grasslands and oak, madrone and Douglas fir forests; great views.	Many connections, possibilities for trail loops. Connects to Skyline Ridge and Saratoga Gap preserves and Upper Stevens Creek County Park; also access from Highway 35 and 3-mile segment of Bay Area Ridge Trail; hiking trail to Portola SP
Saratoga Gap Open Space Preserve			Less then 2 miles of trail; ~1 mile paralleling Skyline Blvd.	Largely Douglas fir forest	Many trail connections: Sanborn-Skyline Park, Castle Rock SP, Big Basin Redwoods SP, Upper Stevens Cr. Park, Monte Bello Open Space Preserve, Saratoga Gap-Page Mill Rd. trail, Bay Area Ridge Trail; 9-mi. loop through Long Ridge
Fremont Older Open Space Preserve			~9 mi. hiking, biking, and equestrian trails	Open grasslands, brushy hillsides; historic house; vistas	
El Sereno Open Space Preserve			5.6 mi. hiking, biking & equestrian trails	Chaparral	

APPENDIX D

PRIVATELY-OWNED/OPERATED RECREATION FACILITIES IN THE VICINITY OF BIG BASIN REDWOODS STATE PARK

GROUP/ ORGANIZATION	ADDRESS	TYPE OF FACILITY
Environmental education		
Exploring New Horizons at Sempervirens	20161 Big Basin Hwy. Boulder Creek, CA 95066	Outdoor School - Environmental Education programs
Campgrounds available to the general public		
Costanoa	2001 Rossi Rd. Pescadero, CA 94060	Resort & Campground
Cotillion Gardens RV Park	300 Old Big Trees Rd. Felton CA 95018	Campground
Redwood Resort	150 East Grove, Boulder Creek, CA 95006	Campground
River Grove Park	4980 Highway 9 Felton, CA 95018	Campground
Smithwoods RV Park	4770 Highway 9 Felton, CA 95018 or PO Box 27 Felton, CA 95018	Campground
Private Campgrounds		
Boulder Creek Scout Reservation	250 Scout Ranch Road (formerly 14586 Bear Creek Rd.) Boulder Creek, CA 95006	Boy Scout Camp
Camp Butano Creek	1400 Canyon Rd. Pescadero, CA 94060	Girl Scout Camp
Camp Chesebrou	25005 Highway 9 Boulder Creek, CA 95006-9078	Boy Scout Camp

Camp Krem	Boulder Creek, CA	Camp for developmentally disabled
Cutter Scout Reservation	2500 China Grade Boulder Creek, CA 95006	Boy Scout Camp
YMCA Camp Jones Gulch	11000 Pescadero Rd. La Honda, CA 94020	YMCA Camp/Lodging
YMCA of the East Bay Camping	990 Pescadero Creek Rd. Loma Mar, CA	YMCA Camp/Lodging
YMCA of the Redwoods, Camp Campbell	16275 Hwy. 9 Boulder Creek, CA 95006-9652	YMCA Camp/Lodging
Retreats/Lodging		
Camp Hammer	21401 Big Basin Hwy. Boulder Creek, CA 95066-9097	Group Retreats/lodging (Twin Lakes Church owns; open for Christian groups)
Camp Harmond	16403 Hwy. 9 Boulder Creek, CA 95006	Retreats/Lodging
Mission Springs Conference Center	1050 Lockhart Gulch Rd. Scotts Valley CA 95066	Retreats/Lodging
Mount Hermon Christian Conference Center	PO Box 413 Mount Hermon CA 95041	Retreats/Lodging
Mount Cross Lutheran Camp	PO Box 387 Felton, CA 95018	Retreats/Lodging
Quaker Center	PO Box 686, Ben Lomond CA 95005	Retreats/Lodging
Redwood Christian Park	15000 Two Bar Rd. Boulder Creek, CA 95006	Retreats/Lodging
Redwood Glen Camp and Conference Center	3100 Bean Creek Rd. Scotts Valley, CA 95066	Retreats/Lodging (Salvation Army; open to public; no alcohol) 205 acres; 300 people sleeping
Taungpulu Monastery	18335 Big Basin Hwy. Boulder Creek, CA 95006	Retreat/Lodging
Vajrapani Institute	19950 Kings Creek Rd. Boulder Creek, CA 95006 or PO Box 213 Boulder Creek, CA 95006	Retreats/Lodging

Overnight Accommodations		
Boulder Creek Lodge and Conference Center	16901 Big Basin Hwy. Boulder Creek, CA 95006	Lodge and Conference Center
Pigeon Point Lighthouse Hostel	210 Pigeon Point Rd. (@ Hwy 1) Pescadero, CA 94060-9713	Hostel operated by Hosteling-International
Costanoa	2001 Rossi Rd. Pescadero, CA 94060	Lodge, cabins
Best Western Inn	6020 Scotts Valley Drive Scotts Valley, CA 95066	Motel
Davenport Bed and Breakfast Inn	31 Davenport Avenue Davenport, CA 95017	Bed and Breakfast
Econo Lodge	9733 Highway 9 Ben Lomond, CA 95005-9204	Motel
Fairview Manor Bed and Breakfast Inn	245 Fairview Avenue Ben Lomond, CA 95005	Bed and Breakfast
Felton Crest Inn	780 El Solyo Heights Drive Felton, CA 95018	Bed and Breakfast
Fern River Resort Motel	5250 Highway 9 Felton, CA 95018	Motel
The Hilton Santa Cruz/Scotts Valley	6001 La Madrona Drive Scotts Valley, CA 95060	Hotel
Jaye's Timberlane Resort	8705 Highway 9 Ben Lomond, CA 95005	Motel
Merrybrook Lodge	13420 Big Basin Way Boulder Creek, CA 95006	Motel
Pescadero Creek Inn Bed and Breakfast	393 Stage Road Pescadero, CA 94060	Bed and Breakfast
Valley View Inn	600 Hacienda Scotts Valley, CA 95066	Bed and Breakfast

Additional privately–owned overnight accommodations, recreation facilities, and conference facilities are located in Santa Cruz.

APPENDIX E

EXISTING ROADS
BIG BASIN REDWOODS STATE PARK, AÑO NUEVO STATE PARK AND BUTANO STATE PARK

Road #	Name (YEAR CONSTRUCTED)	Description	Type of Use	Length in Miles	# Bridges
1	China Grade Road (1880)	Paved	Public Road	3.7	0
2	Rogers Road (1880)	Paved/Unpaved	Public Road	0.6	0
3	Lodge Road (1903)	Paved	Public Road	1.8	0
4	East Ridge Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	1.4	0
5	Sky Meadow Road	Paved	Public Road	3.8	0
6	Little Basin Road	Paved	Public Road, Authorized Vehicles	0.6	0
7	Pine Mountain Road (1960)	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	1.1	1
8	North Escape Road (1895)	Paved	Public Road	3.1	1
9	Gazos Creek Road (1934)	Paved/Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	5.3	0

Road #	Name (YEAR CONSTRUCTED)	Description	Type of Use	Length in Miles	# Bridges
10	Middle Ridge Road (1905)	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	3.8	0
11	Johansen Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	1.8	0
12	Hihn Hammond Road (1940)	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	2.5	1
13	Last Chance Road (1970)	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	2.2	0
14	Anderson Landing Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	0.9	0
15	Whitehouse Canyon Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	2.4	0
16	Chalks Mountain Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	3.1	0
17	East Waddell Road (1945)	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	5.1	0
18	Upper Canyon Road (1940)	Paved	Public Road	0.5	0
19	Lower Canyon Road (1947)	Paved	Public Road	0.3	0
20*	Sky Meadow Campground Road	Paved	Public Road	0.2	0

Road #	Name (YEAR CONSTRUCTED)	Description	Type of Use	Length in Miles	# Bridges
21*	Huckleberry Campground Road (1968)	Paved	Public Road	1.0	0
22*	Sempervirens Campground Road (1949)	Paved	Public Road	0.3	0
23*	Blooms Creek Campground Road (1930)	Paved	Public Road	0.4	1
24*	Alder Campground Road (1945)	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	0.1	0
25	Highway 236 (1929-1938)	Paved	Public Road	6.5	0
26	Highway 1	Paved	Public Road	1.2	1
27*	Union Creek Road (1974)	Unpaved	Public Road	0.2	0
28	Butano Fire Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	5.2	6
29	Olmo Fire Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	3.2	7
30	Butano SP Entrance Road	Paved	Public Road	1.0	1
31	Gazos Creek Road	Paved	Public Road	3.6	8
32	Old Womans Creek Road	Unpaved	Public Road	1.6	5
33	Whitehouse Canyon Road	Unpaved	Public Road	1.4	4
34	Chalk Mountain Fire Road	Unpaved	Authorized Vehicles, Hiking, Mt. Biking, Equestrian	0.78	3

Road #	Name (YEAR CONSTRUCTED)	Description	Type of Use	Length in Miles	# Bridges
35	Año Nuevo SNR Entrence Road	Paved	Public Road	0.4	1
36	Año Nuevo SNR Service Road	Paved	Authorized vehicles	0.5	2

* Road not located/numbered on Existing Roads and Trails Map

Total Paved Roads	34.8 miles
Total Unpaved Roads	36.78 miles
TOTAL ROADS:	**71.58 miles**

APPENDIX F

EXISTING TRAILS
BIG BASIN REDWOODS STATE PARK, AÑO NUEVO STATE PARK AND BUTANO STATE PARK

Trail #	Name (YEAR CONSTRUCTED)	Type of Use	Length in Miles	# Bridges
1	Skyline to the Sea (1914)	Hiking	14.4	24
	Skyline to the Sea	Equestrian	7.2	
2	East Ridge Trail	Equestrian, Hiking	4.6	2
3	Eagle Rock Trail (1985)	Hiking	1.0	0
4	Shadowbrook Trail	Hiking	2.8	5
5	Sequoia Trail (1875)	Hiking	2.9	2
6	Pine Mountain Trail (1932)	Hiking	1.8	0
7	Basin Trail	Hiking	3.2	0
8	Hollow Tree Trail (1977)	Hiking	3.2	3
9	Meteor Trail	Hiking	1.0	0
10	Creeping Forest Trail	Hiking	1.3	0
11	Dool Trail	Hiking	0.8	1
12*	Redwood Trail (1938)	Hiking, Interpretive	0.6	0
13	Blooms Creek Trail	Hiking	0.6	1
14	Sunset Trail (1914)	Hiking	4.9	6
15	Howard King Trail (1972)	Hiking	4.7	0
16	Timms Creek Trail (1914)	Hiking	0.9	0
17	McCrary Ridge Trail	Equestrian, Hiking	2.6	0
18	Berry Creek Falls Trail (1914)	Hiking	1.1	1
19	Henry Creek Trail (1964)	Equestrian, Hiking	2.0	0
20	Westridge Trail	Equestrian, Hiking	4.1	0
21	Clark Connection	Equestrian, Hiking	1.1	0
22	Marsh Trail	Equestrian, Hiking	0.4	0

Trail #	Name (YEAR CONSTRUCTED)	Type of Use	Length in Miles	# Bridges
23	Nature Trail	Equestrian, Hiking	0.8	0
24	Whitehouse Ridge Trail	Equestrian, Hiking	0.6	0
25**	Sempervirens Campground-Blooms Ck. Campground	Hiking	0.2	0
26**	Blooms Ck. Campground-Park HQ	Hiking	0.4	0
27**	Hihn Hammond-Skyline to the Sea	Hiking	0.4	0
28**	Sunset-Skyline to the Sea	Hiking	0.2	0
29**	Eastridge-Shadowbrook (Hwy. 236)	Hiking	0.2	0
30**	Eastridge-Shadowbrook (Huckleberry)	Hiking	0.4	0
31**	Sequoia-Shadowbrook	Hiking	0.1	0
32**	Shadowbrook-Wastahi Campground	Hiking	0.3	0
33**	Shadowbrook-Huckleberry Campground	Hiking	0.1	0
34**	Sequoia Campground-Park HQ	Hiking	0.4	0
35**	Sempervirens Falls Trail	Hiking	0.1	0
36	Ray Linder Trail	Hiking	1.0	0
37	Indian Trail	Hiking	0.9	0
38	Canyon Trail	Hiking	2.8	0
39	Doe Ridge Trail	Hiking	1.6	0
40	Jackson Flats Trail	Hiking	2.8	0
41	Butano Creek Trail	Hiking	1.5	0
42	Goat Hill Trail	Hiking	1.8	0
43	Gazos Trail	Hiking	0.8	0
44	Mill Ox Trail	Hiking	0.5	0
45	Six Bridges Trail	Hiking	1.0	0
46	Año Nuevo Trail	Hiking	1.3	0
47	Whitehouse Ridge Trail	Hiking	1.5	0
48	New Year's Creek Trail	Hiking	0.25	0
49	Cove Beach Trail	Hiking	0.04	0
50	Pond Loop Trail	Hiking	0.4	0
51	Año Nuevo Point Trail	Hiking	1.3	0
52	Cascade Creek Trail	Hiking	0.5	0

Trail #	Name (YEAR CONSTRUCTED)	Type of Use	Length in Miles	# Bridges
53	Whitehouse Creek Trail	Hiking	0.19	0
54	Atkinson Bluff Trail	Hiking	1.8	0
55	Franklin Point Trail	Hiking	0.6	0
56	Unmaintained Trails	Hiking	1.8	0
57	Candelabra Trail	Hiking	1.5	0

* ADA accessible trail

** Trail/Connector not located/numbered on Existing Roads and Trails Map

Total Hiking only	72.38 miles
Total Equestrian and Hiking	23.4 miles
TOTAL TRAILS:	**95.78 miles**

APPENDIX G

SYSTEMWIDE PLANNING POLICIES, PROCEDURES AND GUIDELINES

Public Resources Code

In addition to the State Constitution and Statutes, California Law consists of 29 codes covering various subject areas in the California Code of Regulations. The California Public Resources Code (PRC) addresses natural, cultural, aesthetic, and recreational resources of the state. PRC sections 5019.50 to 5019.80, Classification of Units of the State Park System, provide guidelines for the designation of state park units and guiding principles for state park improvements. The PRC also classifies different types of state park improvements of park units.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is a state law requiring state and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an Environmental Impact Report (EIR) must be prepared and certified as to its adequacy before taking action on the proposed project. General plans are considered a "project" for the purposes of CEQA; therefore require the appropriate environmental impact assessment and review.

California Department of Parks and Recreation Administrative Manual

The Administrative Manual provides the policies and procedures by which California State Parks functions. Departmental manuals are intended to contain general matters of policy and procedure. In certain areas there will be information and specifications that are too lengthy to include in a manual. These more detailed materials will be prepared and issued in the form of handbooks, with each handbook devoted to a single topic (such as planning or trail maintenance).

California Department of Parks and Recreation Operations Manual

The 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.

Department Operations Manual Chapter 0300, Natural Resources

The California State Parks' Department Operations Manual Chapter 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.

Department Operations Manual Section 0400 (old Section 1600), Cultural Resources

The Department Operations Manual Section 0400 (when published) will be the basic cultural resource policy document for the State Park System. 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.

California State Park System Plan

The California State Parks System Plan is the Department's document containing both the challenges that face the State Park System as well as the goals, policies, objectives, and proposals for new programs and initiatives needed to guide the State Park System.

State Parks Accessibility Guidelines

The Americans with Disabilities Act (ADA), the federal law that prohibits discrimination on the basis of disability, is applicable to all programs, services, and activities by the state. In compliance with the ADA, the Department published the State Parks Accessibility Guidelines in 2005, which were first issued in 1994. The Accessibility Guidelines details procedures to make state parks universally accessible while maintaining the quality of park resources. The Department has also published the All Visitors Welcome: Accessibility in State Park Interpretive Programs and Facilities (2003), which provides guidance on developing accessible interpretive programs and facilities.

The Department's Transition and Trail Plans for Accessibility in State Parks (2001) outlines its commitment to achieve programmatic access throughout state parks. The vision of the Plans is embodied in the Big Basin Redwoods State Park General Plan.

California Recreational Trails Plan

The California Recreational Trails Plan (Phase One) addresses the mission and overall role of the California State Parks Statewide Trails Office as well as provides guidelines for future actions of the Statewide Trails Office. The mission and vision of the Statewide Trails Office is to:

> Promote the establishment and maintenance of 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 Department's trail programs with the local government agencies and private organizations that operate and maintain the trails. The plan and the Trails Maintenance Handbook serve as planning and maintenance guides for trails within the park system.

California State Park Systemwide Concessions Policies

The Department partners with a variety of businesses, non-profits, and public agencies through concession contracts, cooperative agreements, and operating agreements to offer the public these goods and services. How these opportunities are made available to the public is regulated by the California Public Resources Code, Section 5080 et seq.

APPENDIX H

REGULATORY INFLUENCES

There are a number of agencies involved in regulatory authority for the region that includes Big Basin Redwoods SP.

California Coastal Commission, Central Coast District

The California Coastal Commission was established by voter initiative in 1972 and made permanent by the Legislature in 1976 as the California Coastal Act. The primary mission of the Commission, as the lead agency responsible for carrying out California's federally-approved coastal management program, is to plan for and regulate land and water uses in the coastal zone consistent with the policies of the Coastal Act.

Commission jurisdiction in the coastal zone (which is specifically mapped) is broad and applies to all private and public entities. It covers virtually all manner of development activities, including any division of land, a change in the intensity of use of state waters and of public access to them. The Coastal Act includes specific policies (see Division 20 of the *Public Resources Code*) relating to public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, universities and public works. These policies constitute the statutory standards applied to planning and regulatory decisions pursuant to the Coastal Act.

For all projects at Big Basin Redwoods SP within the Coastal Zone, compliance with the Coastal Act is administered through a Local Coastal Program by the counties (see Santa Cruz County General Plan, Local Coastal Program and San Mateo County General Plan, Local Coastal Program).

All future development, as defined by Coastal Act Section 30106, is subject to the provisions of the California Coastal Act including its provisions for delegation of coastal permit authority upon certification of a Local Coastal Program (LCP). Developments of all kinds within the CZ portion of the park are subject to first obtaining a Coastal Development Permit (CDP). Except for a small area of "original" jurisdiction in the vicinity of the Waddell Creek estuary, CDP applications are submitted to Santa Cruz County for review and hearings.

The County's standard of review is the Coastal Commission-certified LCP, including the LCP's Land Use Plan and implementing ordinances. Certain actions contemplated in the Preliminary GP, such as reduction or relocation of the Waddell Beach parking area, may first require amendment of the County's LCP. Realignment of Highway 1 may similarly trigger the need for LCP amendment.

For qualifying public works projects, the Coastal Act also provides an alternative development review process that does not entail a locally-issued CDP. This process requires prior Coastal Commission approval of a Public Works Plan (PWP). At nearby Wilder Ranch State Park, for example, projects identified in the approved PWP do not need separate approval as CDPs. Although only rarely utilized, the PWP process is an available option for future State Parks (or Caltrans) projects subject to the California Coastal Act.

The Coastal Zone Management Act (CZMA), enacted in 1972, is the corresponding federal legislation. In accordance with the CZMA, the California Coastal Act and the various Local Coastal Programs comprise the federally-designated California Coastal Management Program (CCMP). In addition to its primary development review responsibilities under the California Coastal Act, an ongoing role for the Coastal Commission is to review Federal agency actions for consistency with the CCMP.

Appeals of County actions, original jurisdiction CDPs, requests for approval of PWPs, federal consistency matters, and any submitted LCP amendment requests are heard by the Coastal Commission at its regularly-scheduled meetings.

State Water Resources Control Board

Big Basin Redwoods SP lies almost entirely within the jurisdiction of the Central Coast Regional Water Quality Control Board as the Big Basin Hydrologic Unit. This hydrological unit covers 226,240 acres. A small section of the northern part of the park lies within the Pescadero Creek watershed which falls under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board. The RWQCB has regulatory authority in regard to water quality matters at the park.

The Central Coast Regional Water Quality Control Board falls within the oversight of the State Water Resources Control Board (SWRCB). The mission of the SWRCB is to ensure the highest reasonable quality of waters in the state, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters. The mission of the Regional Water Quality Control Boards (RWQCBs) is to develop and enforce water quality objectives and implementation plans which will best protect the beneficial uses of the State's waters, recognizing local differences in climate, topography, geology and hydrology.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District's jurisdiction encompasses seven counties - Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa, and portions of two others - southwestern Solano and southern Sonoma. The District uses a progressive approach to regulating air pollution. By adopting reasonable air quality plans and then following through with regulations sensitive to the socio-economic impacts, flexible permitting, helpful compliance assistance, and proactive enforcement, the District has one of the most responsive air programs in the nation.

Monterey Bay Unified Air Pollution Control District

The mission of the Monterey Bay Unified Air Pollution Control District (MBUAPCD) is to protect the public health while balancing economic and air quality considerations. The MBUAPCD's jurisdiction includes Monterey, San Benito, and Santa Cruz counties. This area is designated as the North Central Coast Air Basin, a single region sharing the same air pollution problems.

As required by the California Clean Air Act and Amendments (HSC Section 40910 et seq.) and the Federal Clean Air Act and Amendments (42 U.S.C. Section 7401 et seq.) the District is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education and public information activities related to air pollution. California Health and Safety Code Sections 39002, et seq. and 40000, et seq. requires local districts to be the primary enforcement mechanism for air pollution control.

Districts must have rules and regulations for the implementation and enforcement for the attainment and maintenance of federal and state ambient air standards.

California Department of Fish and Game

The California Department of Fish and Game (CDFG) is the trustee agency for the state's plant and wildlife resources. As such, they have regulatory authority over all of the state's special plant and wildlife species. Any project that has the potential for direct or indirect impacts to state-listed plant or animal species or Species of Concern requires consultation with CDFG. Authorization for "take" of listed species (i.e., an Incidental Take Permit) and mitigation may be required.

Any project that involves work within a streambed or stream banks of any permanent or intermittent stream requires a permit from the CDFG under Section 1601 (i.e., a Streambed Alteration Agreement) of the Fish and Game Code. A Streambed Alteration Agreement is also needed for any project that will divert, obstruct, or change the natural flow of any river, stream, or lake; use materials from a streambed; or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) has regulatory authority over Federal Threatened and Endangered plant and animal species and Species of Concern. Whenever a federally-listed plant or wildlife species, Species of Concern, or designated (or proposed) critical habitat occurs within a proposed project area, State Parks is required to consult with the USFWS on direct or indirect impacts to those species or their habitat as a result of the project. Consultation with the USFWS may result in the need for an Incidental Take Permit and/or required mitigation measures.

National Marine Fisheries Service

The National Marine Fisheries Service (NMFS) has regulatory authority over federally-listed marine or anadromous fish species and their habitats. Whenever a proposed project has the potential to result in direct or indirect impacts to a federally-listed marine or anadromous fish or their habitats, State Parks is required to consult with NMFS. Consultation with NMFS may result in the need for an Incidental Take Permit and/or required mitigation for project impacts to these species or habitats.

National Oceanic and Atmospheric Administration, Monterey Bay Marine National Sanctuary

The Monterey Bay Marine National Sanctuary (MBMNS) is a federally-protected marine area of California's central coast, designated in accordance with the National Marine Sanctuaries Act. The Sanctuary is administered by the National Marine Fisheries Service in the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). The mission of NOAA's National Marine Sanctuary Program is to serve as trustee for the nation's system of marine protected areas, to conserve, protect, and enhance their biodiversity, ecological integrity and cultural legacy. NOAA's sanctuaries help monitor both human and natural changes in the environment that can help prevent further harmful impacts.

Stretching from Marin County to Cambria, the MBMNS extends an average distance of 30 miles from shore. Big Basin Redwoods SP's coastline lies within the MBMNS boundaries. Management of Big Basin Redwoods SP's

coastline areas must be consistent with MBMNS management programs as well as the laws and regulations established to protect the Sanctuary's resources.

United States Army Corps of Engineers

The United States Army Corps of Engineers (USACOE) is a federal agency mandated to regulate certain types of activities in wetlands and waters of the U.S. under the following sections of Federal law: 33 CFR – Navigation and Navigable Waters (COE); 40 CFR – Protection of Environment (EPA); Section 9 of the Rivers and Harbors Act of 1899; Section 10 of the Rivers and Harbors Act of 1899; Section 404 of the Clean Water Act; and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. Under these sections, the USACOE requires permits for the discharge of dredged or fill material into any water of the U.S. or wetland under its jurisdiction. A permit from USACOE must also be obtained for any and all structures, whether permanent or temporary, that are planned to be in or over any navigable water of the U.S. and those that affect the course, location, or condition of the water body. Types of projects requiring permits from the USACOE include: placement of wharves, dams, dikes, pilings, weirs, breakwaters, jetties, bank protection, aerial or subaqueous power transmission lines, intake or outtake pipes, permanently moored floating vessels, tunnels, artificial canals, boat ramps, aids to navigation, and any other permanent or semi-permanent obstacle or obstruction. Permits are also required from the USACOE for any project that requires dredging of, or placement of fill into, any wetland or water of the U.S. and for the transportation of dredged material for the purpose of dumping it into ocean waters.

REGIONAL AGENCIES AND NON-GOVERNMENTAL ORGANIZATIONS

The following are several regional agencies and non-governmental organizations that are actively involved in planning and acquiring natural open space lands in this region.

Association of Bay Area Governments

The Association of Bay Area Governments (ABAG) is a regional council of local governments operated by the cities and counties of the San Francisco Bay Area. It was established in 1961 to protect local control, plan for the future, and promote cooperation on regional issues. ABAG's regional jurisdiction includes the nine counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. Through its role as an association of cities and counties, ABAG has been designated by the state and federal governments as the official comprehensive planning agency for the Bay Area. Its locally-adopted Regional Plan provides a policy guide for planning the region's housing, economic development, environmental quality, transportation, recreation, and health and safety. One of ABAG's vital functions is to provide a forum to resolve local differences through workable compromises. Its active public information program encourages citizen involvement in planning and policy decisions.

Useful ABAG publications cover demographics, maps, transportation, air and water quality, earthquake information, smart growth, the Bay Trail, and land-use planning. Understanding the conditions and trends in the region helps understand visitors who come from this area and how they may affect the park.

Association of Monterey Bay Area Governments

The Association of Monterey Bay Area Governments (AMBAG) is "a forum for planning, discussion and study of regional problems of mutual interest and concern to the counties of Monterey, San Benito and Santa Cruz, and for the development of studies, plans, policy, and action recommendations." Useful AMBAG studies and reports cover demographics, Geographic Information Systems, transportation, air and water quality, and land-use planning.

Midpeninsula Regional Open Space District

The Midpeninsula Regional Open Space District (MROSD) is an independent special district with the purposes of preserving regional open space lands in a natural condition and allowing limited public recreational use of these lands. The MROSD, located in the mid- and southern portions of the San Francisco peninsula, currently manages nearly 50,000 acres of land, in 26 open space preserves. These preserves range in size from 55 acres to 15,000 acres. The MROSD has an active land acquisition program.

Peninsula Open Space Trust

The Peninsula Open Space Trust (POST) is a regional nonprofit organization working to protect land as parks and open space. POST has purchased lands in this region using a combination of public and private funds, and has sold the land to public agencies when further public funds were available. Through this productive partnership, important open space has been protected and POST has been able to leverage its available land acquisition funds. POST has been involved most recently in open space acquisitions north of Butano SP, with its 640-acre conservation easement for Pesky Ranch, and at Pigeon Point Light Station State Historic Park, where a 3-acre parcel of land known as Whaler's Cove was transferred to State Parks in 2005.

Save-the-Redwoods League

The Save-the-Redwoods League was founded in 1918. As a leader in the movement to preserve the coast redwood and giant sequoia, the League has assisted in permanently protecting hundreds of thousands of acres of redwood forest. Its primary conservation tool is acquisition of forest land from willing sellers. The League has assisted in establishment and expansion of parks in the southern range of the redwood forest including Big Basin Redwoods, Portola, Butano, Wilder Ranch, Julia Pfeiffer Burns, and Limekiln State Parks.

Sempervirens Fund

The Sempervirens Fund is a nonprofit organization working to preserve redwood forest lands as parks and open space. Together with the State of California, the Sempervirens Fund has identified thousands of acres of unprotected lands within the proposed expansion boundaries of Big Basin Redwoods SP, Butano SP, Castle Rock SP and Portola Redwoods SP. As the Sempervirens Fund is able to acquire these lands, it transfers them to the State Park System for public recreational access and permanent stewardship.

The Trust for Public Land

The Trust for Public Land (TPL) is a national nonprofit organization working to protect land as parks and open space. TPL is not a government agency, although it sometimes works with agencies to protect open space land. TPL helps communities and government agencies identify land for protection. It helps identify funds that might be used to protect that land, and sometimes helps raise those funds through charitable campaigns and

legislative or voter initiatives. TPL's real estate and legal staff also help complete the transaction itself, often optioning or purchasing a property and holding it until it can be permanently protected by a government or community land trust. TPL has been involved in open space planning in this region, particularly at Coast Dairies and Año Nuevo SP.

APPENDIX I

SPECIAL STATUS PLANT SPECIES REPORTED TO OCCUR WITHIN BIG BASIN REDWOODS STATE PARK

Common Name	Scientific Name	California Rare Plant Rank *	State/Federal List*
Arcuate bush mallow	*Malacothamnus arcuatus*	1B.2	
Ben Lomond spineflower	*Chorizanthe pungens* var. *hartwegiana*	1B.1	FE
Kellman's bristle moss	*Orthotrichum kellmanii*	1B.2	
Kings Mountain manzanita	*Arctostaphylos regismontana*	1B.2	
Monterey pine	*Pinus radiata*	1B.1	
Norris' beard moss	*Didymodon norrisii*	2.2	
Pine rose	Rosa pinetorum	1B.2	
San Francisco campion	*Silene verecunda* ssp. *verecunda*	1B.2	
San Francisco collinsia	*Collinsia multicolor*	1B.2	
Santa Cruz cypress	*Hesperocyparis abramsiana ssp. abramsiana*	1B.2	SE/FE
Santa Cruz manzanita	*Arctostaphylos andersonii*	1B.2	
Santa Cruz Mountains beardtongue	*Penstemon rattanii var. Kleei*	1B.2	
Slender silver moss	*Anomobryum filiforme*	2.2	
White-flowered rein orchid	Piperia candida	1B.2	

Special Status Plant Species For Which Potential Habitat Exists Within Big Basin Redwoods State Park			
Common Name	**Scientific Name**	**CNPS List***	**State/Federal List***
Blasdale's bent grass	*Agrostis blasdalei*	1B.2	
Branching beach aster	*Corethrogyne leucophylla*	3.2	
Brewer's calandrinia	*Calandrinia breweri*	4.2	
Coast rock cress	*Arabis blepharophylla*	4.3	
Gairdner's yampah	*Perideridia gairdneri* ssp. *gairdneri*	4.2	
Monterey Indian paintbrush	*Castilleja latifolia*	4.3	
San Francisco wallflower	*Erysimum franciscanum*	4.2	
Santa Cruz microseris	*Stebbinsoseris decipiens*	1B.2	
Schreibers manzanita	*Arctostaphylos glutinosa*	1B.2	
Stinkbells	*Fritillaria agrestis*	4.2	
White-rayed pentachaeta	*Pentachaeta bellidiflora*	1B.1	SE/FE

*Status Codes: SE = State Endangered; FE = Federal Endangered. In the spring of 2011, CNPS officially changed the name "CNPS List" to "California Rare Plant Rank." **Rank 1B** = Plants rare, threatened, or endangered in California and elsewhere; **Rank 2** = Plants rare, threatened, or endangered in California, but more common elsewhere; **Rank 3** = Plants about which we need more information, a review list; **Rank 4** = Plants of limited distribution, a watch list; the CNPS Threat Rank is an extension added onto the California Rare Plant Rank and designates the level of endangerment by ranking from 1 to 3, with 1 being the most endangered and 3 being the least endangered.

APPENDIX J

SENSITIVE WILDLIFE SPECIES (JUNE 2011) THAT OCCUR, OR FOR WHICH POTENTIAL HABITAT EXISTS WITHIN BIG BASIN REDWOODS STATE PARK

TYPE	SPECIES	COMMON NAME	STATUS*	PROBABILITY IN BBRSP
AMPHIBIANS	*Rana aurora draytonii*	California red-legged frog	FT, CSC, CP	Present
	Rana boylii	Foothill yellow-legged frog	FSC, CSC, CP	Possible
	Ambystoma californiense	California Tiger Salamander	FT, CSC, CP	Unlikely
BIRDS	Gavia immer	Common loon	CSC	Present
	Pelecanus occidentalis californicus	California Brown pelican	FE, SE, CFP	Present
	Phalacrocorax auritus	Double-crested cormorant	CSC	Present
	Ardea herodias	Great blue heron	Local concern	Present
	Nycticorax nycticorax	Black-crowned night heron	Local concern	Possible
	Accipiter cooperi	Cooper's hawk	CSC	Present
	Accipiter striatus	Sharp-shinned hawk	CSC	Present
	Aquilla chrysaetos	Golden eagle	CSC, CFP	Probable
	Circus cyaneus	Northern harrier	CSC	Probable
	Elanus leucurus	White-tailed kite	CFP	Probable
	Falco columbarius	Merlin	CSC	Probable
	Falco peregrinus anatum	American peregrine falcon	SE, CFP	Present
	Haliaeetus leucocephalus	Bald eagle	CE, FT (FPD),CFP	Possible

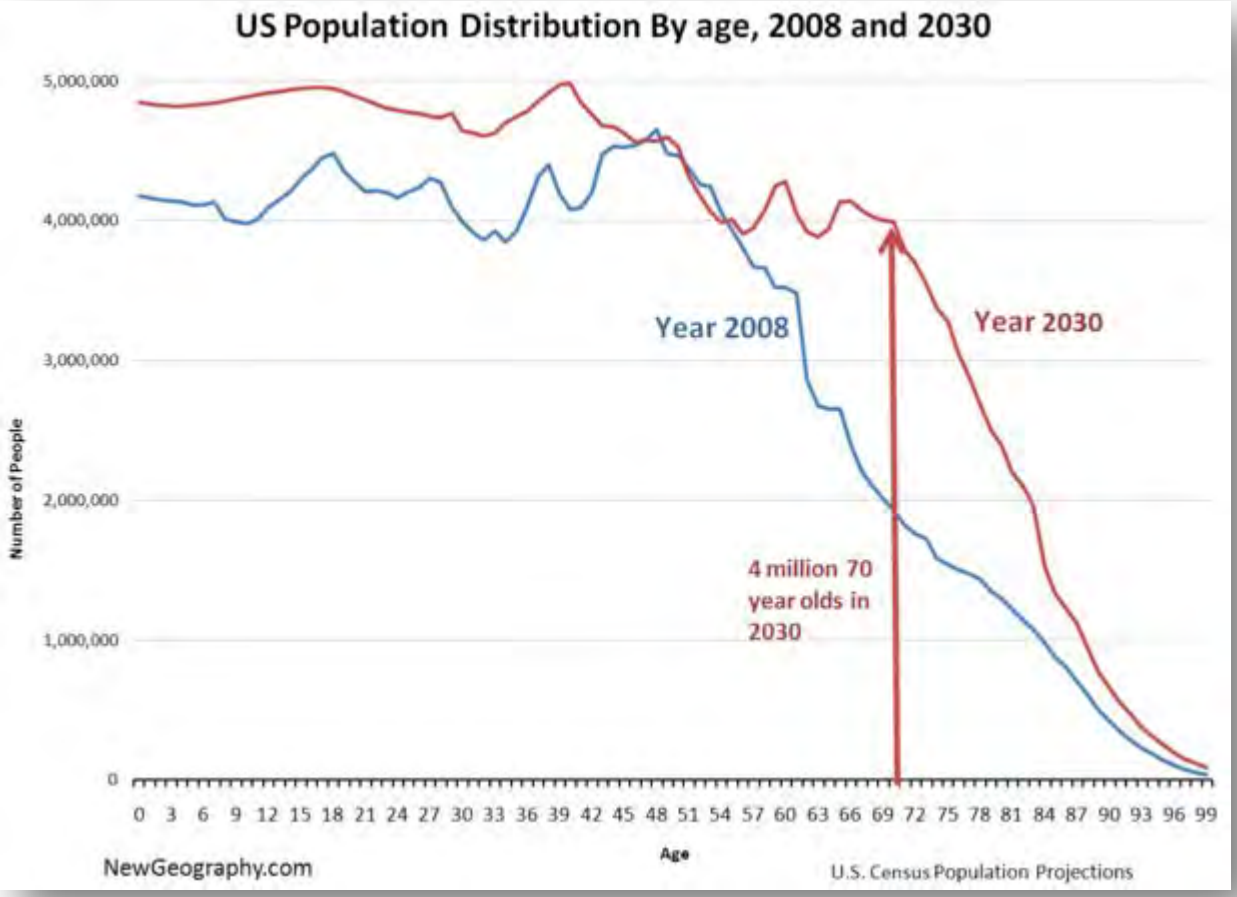
TYPE	SPECIES	COMMON NAME	STATUS*	PROBABILITY IN BBRSP
	Pandion haliaetus	Osprey	CSC	Probable
	Laterallus jamaicensis coturniculus	California black rail	FSC, ST, CFP	Present
	Charadrius alexandrinus nivosus	Western snowy plover	FT, CSC	Present
	Numenius americanus	Long-billed curlew	CSC	Probable
	Larus californicus	California gull	CSC	Present
	Sterna antillarum browni	California least tern	FE, SE, CFP	Possible?
	Sterna elegans	Elegant tern	CSC	Possible?
	Brachyramphus marmoratus	Marbled murrelet	FT, SE, CFP	Present
	Cerorhinca monocerata	Rhinoceros auklet	CSC	Possible
	Asio otus	Long-eared owl	CSC	Probable
	Cypseloides niger	Black swift	CSC	Present
	Chaetura vauxi	Vaux's swift	CSC	Present
	Empidonax trailii	Willow flycatcher	SE	Probable
	Progne subis	Purple martin	CSC	Probable
	Lanius ludovicianus	Loggerhead shrike	FSC, CSC	Probable
	Agelaius tricolor	Tricolored blackbird	FSC, CSC	Probable
	Setophaga petechia brewsteri	California Yellow warbler	CSC	Probable
	Geothlypis trichas sinuosa	Saltmarsh Common Yellowthroat	FSC, CSC	Present?
MAMMALS	*Corynorhinus townsendii townsendii*	Townsend's western big-eared bat	FSC, CSC	Present
		Pallid bat		
	Antrozous pallidus	Long-eared myotis	CSC	Probable
	Myotis evotis	Yuma myotis	FSC	Probable
	Myotis yumanensis	Fringed myotis	FSC, CSC	Probable
	Myotis thysanodes	Western mastiff bat	FSC,	Present
	Eumops perotis	Ringtail	FSC, CSC	Possible

TYPE	SPECIES	COMMON NAME	STATUS*	PROBABILITY IN BBRSP
	Bassiriscus astutus		CFP?	Probable
REPTILES	*Clemmys marmorata*	Western pond turtle	FSC, CSC	Present
	Phrynosoma coronatum frontale	California horned lizard	FSC, CSC, CP	Present
	Thamnopsis sirtalis tetrataenia	San Francisco garter snake	FE, CE, CFP	Present
FISHES	*Onchorynchus kisutch*	Coho salmon	FT, SE	Present
	Onchorynchus mykiss	Steelhead - Central California coast ESU	FT	Present
	Eucyclogobius newberryi	Tidewater goby	FE (FPD), CSC	Present
INVERTE-BRATES	*Speyeria adiaste adiaste*	Unsilvered fritillary butterfly	FSC	Present
	Cicindela hirticollis gravida	Sandy beach tiger beetle	FSC	Possible
	Tryonia imitator	California brackish water snail	FSC	Possible

*Status Codes: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate for listing; FPD = Federal Proposed for Delisting; FSC = Federal Species of Concern; SE = State Endangered; ST = State Threatened; CFP = California Fully Protected; CP = California Protected; CSC = California Species of Special Concern; MNBMC = Fish and Wildlife Service's Migratory Nongame Birds of Management Concern.

Information Sources:
CNDDB, 2011
California State Parks Natural Resources Baseline Condition Assessment, FY 2001/02

APPENDIX K



Source: U.S Census Bureau

Image by Mark Schill 08/25/2008

APPENDIX L

TRAVEL DISTANCE TO BIG BASIN REDWOODS STATE PARK

Destination and route	Distance from Big Basin Headquarters Area (in miles)	Travel Time
Little Basin (Hwy 236)	4	8 mins.
Boulder Creek (Hwy 236)	9	18 mins.
Santa Cruz (Hwy 9 & Hwy 17)	24	44 mins.
Davenport (Bonny Doone & Empire Grade)	24	45 mins.
Saratoga (Hwy 236 & Hwy 9)	23	49 mins.
Los Gatos (Hwy 9 & Hwy 17)	26	51 mins.
Rancho del Oso (Hwy 1, Bonny Doone, & Empire Grade)	32	59 mins.
Half Moon Bay (Hwy 1, Bonny Doone, & Empire Grade)	46	1 hr. 18 mins.

*Distance and travel time based on Mapquest inquiries

Santa Cruz Metro Bus Service

Destination and bus route	Distance from Santa Cruz Metro Transit Center (in miles)	Travel Time from Santa Cruz Metro Transit Center	Distance and time to Big Basin Headquarters Area by car
Big Basin Headquarters Area Route 35A	24	1 hr. 15 mins.	NA.
Scotts Valley, Cavallaro Transit Center Route 35	6	15 mins.	20 mi. (50 mins.)
Waddell Beach & Rancho del Oso Route 40	19	45 mins.	32 mi. (59 mins.)

*Bus travel time based on Aug. 2008 bus schedule

APPENDIX M

GLOSSARY

Access (Egress/Ingress) – The ability to enter a site (ingress) from a roadway or trail and exit a site (egress) onto a roadway or trail by vehicle, walking, bike, horse, etc.

Accessibility (for people with disabilities) – Under the Americans with Disabilities Act of 1990, state and local governments that construct new buildings and facilities, or make specific alterations to existing buildings, facilities and programs, must make them accessible. Title II requires a public entity to ensure that persons with disabilities are not excluded from services, programs, and activities because existing building and facilities are inaccessible. Beyond Federal law, the state has established standards for accessibility in the California Building Code. Title I and Title III would also be applicable. See **Americans with Disabilities Act of 1990**.

Adaptive Use – Use of a historic structure for a purpose other than that for which it was originally intended. This may require alterations to a structure's interior while maintaining the original exterior appearance.

Alluvium – Sand, gravel, silt, and clay deposited by rivers and streams in valley bottoms.

Americans with Disabilities Act of 1990 (ADA) – Ensures equal access to all users of public (and private) facilities and programs. This federal civil rights legislation for persons with disabilities passed in 1990. The ADA covers a wide range of disabilities, from physical conditions affecting mobility, stamina, sight, hearing, and speech, to conditions such as emotional illness and learning disorders. The ADA also addresses access to the workplace. See **Accessibility**.

Aquifer - A layer of water-bearing permeable rock, sand, or gravel capable of providing significant amounts of water to wells or springs. The upper boundary of the topmost aquifer is known as the water table. Some areas have several aquifers, each capped on top by an impervious layer (aquitard). If the recharge area is elevated higher that the capping layer, the water may be under considerable pressure, and flowing or Artesian wells may be likely.

Best Management Practice – The most current methods, treatments, or actions in regard to environmental mitigation responses.

Buffer – An area or strip of land separating two distinct and/or incompatible land uses or zones, which acts to soften or mitigate the effects of one land use on another. It should function as a barrier for both vision and sound.

California Environmental Quality Act (CEQA) – The California Environmental Quality Act, Public Resources Code Section 21000 et. seq.; Title 14, California Code of Regulations Section 15000 et. seq. CEQA is a statute that requires state and local agencies to identify the significant environmental and historical impacts of their proposed actions and to avoid or mitigate any adverse impacts, if feasible.

California State Park and Recreation Commission – Established in 1927 to advise the Director of Parks and Recreation on the recreational needs of the people of California. The commissioners are appointed by the Governor and conduct public hearings on naming, classification and the approval of general plans (and amendments) for State Park System units.

Concessions – A contract with persons, corporations, partnerships, or associations for the provision of products, facilities, programs and management and visitor services that will provide for the enhancement of park visitor use, enjoyment, safety, and convenience. Concessions may be for food service, overnight accommodation, equipment rentals (canoes, raft, skis), gift stores, etc.

Direct Impacts – Primary environmental effects that are caused by a project and occur at the same time and place.

Environment – The California Legislature defined 'environment' to refer to "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, noise, objects of historic or aesthetic significance."

Environmental Analysis – The task of addressing the potential impact of any given plan or development project on the state's environment, an analysis that can range across any number of topics including air pollution, toxins, and impacts on plants, animals and historical resources.

Environmental Impact Report (EIR) – An informational document prepared by the lead agency responsible for carrying out a project as part of the CEQA public review process that describes and analyzes a project's potential significant environmental effects and discusses ways to mitigate or avoid those effects. See **California Environmental Quality Act**, **Tiered Approach/Tiering**.

Exotic Species (or alien, non-native or non-indigenous species) – A species occurring in an area outside of its historically known natural range that has been intentionally introduced or has inadvertently penetrated the system. Also known as introduced, non-native, non-indigenous or ornamental species. See **Non-native Species**.

General Plan – A document providing broad public policy and programmatic guidance regarding development and management of an individual unit of the State Park System, essential to the managers, staff and stakeholders. A General Plan is sometimes called a "comprehensive plan" or "master plan." See **Master Plan**.

Gravel – All sedimentary particles (rock or mineral) larger than 2 millimeters and smaller than 64 millimeters in diameter.

Greenway – A linear area maintained as open space in order to conserve natural and cultural resources, and to provide recreational opportunities, aesthetic and design benefits, and linkages. More specifically, a coordinated system or open space that links existing facilities using streets, railroad rights-of-way, utility easements and natural features such as stream corridors and drainage channels. Greenways also provide corridors for wildlife habitat, as well as acting as visual buffer zones between developments.

Guidelines – General statements of policy direction around which specific details may later be established.

Habitat – The physical location or type of environment in which an organism or biological population lives or occurs, often characterized by a dominant plant form or physical characteristic (e.g., the oak-savanna, wetland, or a coastal habitat).

Historic District – A geographic area that contains a concentration of historic buildings, structures, or sites united historically, culturally, or architecturally. Historic districts are defined by precise geographic boundaries.

Historic Resource(s) – Any object, building, structure, site, area, place, record, or manuscript which is historically significant or which is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, archaeological or cultural history of California.

Indirect Impacts – Also referred to as secondary effect, indirect impacts are caused by a project and occur later in time or at some distance from the project.

Interpretation – A communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource. The term is used to describe communication activities designed to improve understanding at parks, zoos, museums, nature centers, historic sites and other travel destinations. *www.interpnet.com*

Interpretive Activities – Hikes, talks, tours or demonstrations that provide the participants with information and inspiration on a given natural or cultural resource. Participants learn and discover new ideas or concepts about the subject.

Lead Agency – The governmental agency responsible for compliance with CEQA for a proposed project. Generally, it is the agency with the broadest permit discretion for the project or the agency actually carrying out the project. For example, California State Parks is the Lead Agency for Departmental projects, and has the authority to approve its own projects, even though permits may also be required from other agencies. See **California Environmental Quality Act (CEQA)**.

Management Plans – In California State Parks, management plans define the objectives, methodologies, and/or designs regarding how management goals will be accomplished. Occurring on an as-needed basis, they are typically focused on specific management topics, goals, or issues. Depending on their focus, the plans can apply to all or part of a unit. Management plans are consistent with system-wide plans and policies, and with the unit's general plan.

Master Plan – Master plans are tangible statements of where the park is now, what it should be in the future and what is required to get there. While circumstances vary from place to place, the decision to develop a master plan is often determined by the need to understand the current conditions of the park, to generate and build community interest and participation, to create a new and common vision for the park's future, and/or to develop a clear and solid set of recommendations and implementation strategies. See **General Plan**.

Mission Statement – A broad statement of purpose derived from an organization's values and goals. See **Vision Statement**.

Mitigate, Mitigation – To ameliorate, alleviate, or avoid to the extent reasonably feasible – usually impacts to the environment associated with a project or undertaking. According to CEQA, mitigation for environmental impacts include: (a) avoiding an impact by not taking a certain action or parts of an action; (b) minimizing an impact by limiting the degree or magnitude of the action and its implementation; (c) rectifying an impact by repairing, rehabilitating or restoring the environment affected; (d) reducing or eliminating an impact by preserving and maintaining operations during the life of the action; (e) compensating for an impact by replacing or providing substitute resources or environments. Refer also to Section 106 of the National Historic Protection Act.

Mitigation Measure – Under the California Environmental Quality Act (CEQA), when an environmental impact or potential impact is identified, measures must be proposed that will eliminate, avoid, rectify, reduce or compensate for those environmental effects.

Multi-use or Multi-purpose Trail – An appropriately surfaced trail intended as a circulation connection for a variety of uses (bicycle, hiking, pedestrian).

Native Species – A plant or animal that is historically indigenous to a specific area.

Non-native Species – Introduced species or exotic species; refers to plants and animals that originate in other regions of the world and are brought into a new region, where they may dominate the local species or in some way negatively impact the environment for native species. Also known as non-indigenous species. See **Exotic Species**.

Province – A broadly defined geographical area. It is a term that helps predict where plant species can be expected to grow.

Public Resources Code (PRC) – California law that addresses natural, cultural, aesthetic, and recreational resources of the State, in addition to the State Constitution and Statutes.

Riparian – (land or area) – The strip of land adjacent to a natural watercourse such as a river or stream. Often supports vegetation that provides fish habitat when growing large enough to overhang the bank.

Runoff – That portion of rainfall or surplus water that does not percolate into the ground and flows overland and is discharged into surface drainages or bodies of water.

Sand – Loose particles of rock or mineral that range from 0.0625-2.0 millimeters in diameter.

Shale – A fine-grained detrital sedimentary rock, formed by the deposition and compaction of clay, silt, or mud. It has finely laminated (layered) structure, which gives it a fissility along which the rock splits readily, especially on weathered surfaces. Shale is well indurated, but not as hard as argillite or slate. It may be red, brown, black, or gray. A diatomaceous shale is usually a light colored, soft rock composed mostly of the opaline frustules (the hard, siliceous bivalve shell of a diatom).

Significant Effect – A substantial, or potentially substantial, adverse change in the environment.

Silt – Loose particles of rock or mineral that range from 0.002-0.0625 millimeters in diameter.

Stakeholder – Group or individual who can affect, or is affected by, the achievement of the jurisdiction or organization's mission; examples include managers, employees, policy makers, suppliers, vendors, citizens, users, community activists, businesses, and community groups; and who should have a right to participate in the decision-making process.

Sustainable Design – To locate, design, reconstruct, construct, rehabilitate, renovate, operate, and maintain built environments that are models of energy, water, and materials efficiency, while providing healthy, productive, and comfortable habitable environments and long term benefits. This design approach is sometimes called "green design" or "green technology."

Tiered Approach (Tiering) – In General Plans, used to meet the requirement of CEQA. The first tier EIR will be prepared for the general plan. Subsequent management plans, area development plans, and specific project plans, implementing the general plan may be subject to additional environmental review (second and third tiers, etc.) The degree of specificity will reflect the level of detail in the general plan and subsequent plans. See **California Environmental Quality Act**, **Environmental Impact Report**, and **General Plan**.

Unit Data File (UDF) – In California State Parks, the working file that contains an organized body of information about a unit, and references the location of other information. It acts as an organized library of both unit data and the status of current issues.

Viewshed – The total area within a view from a defined observation point.

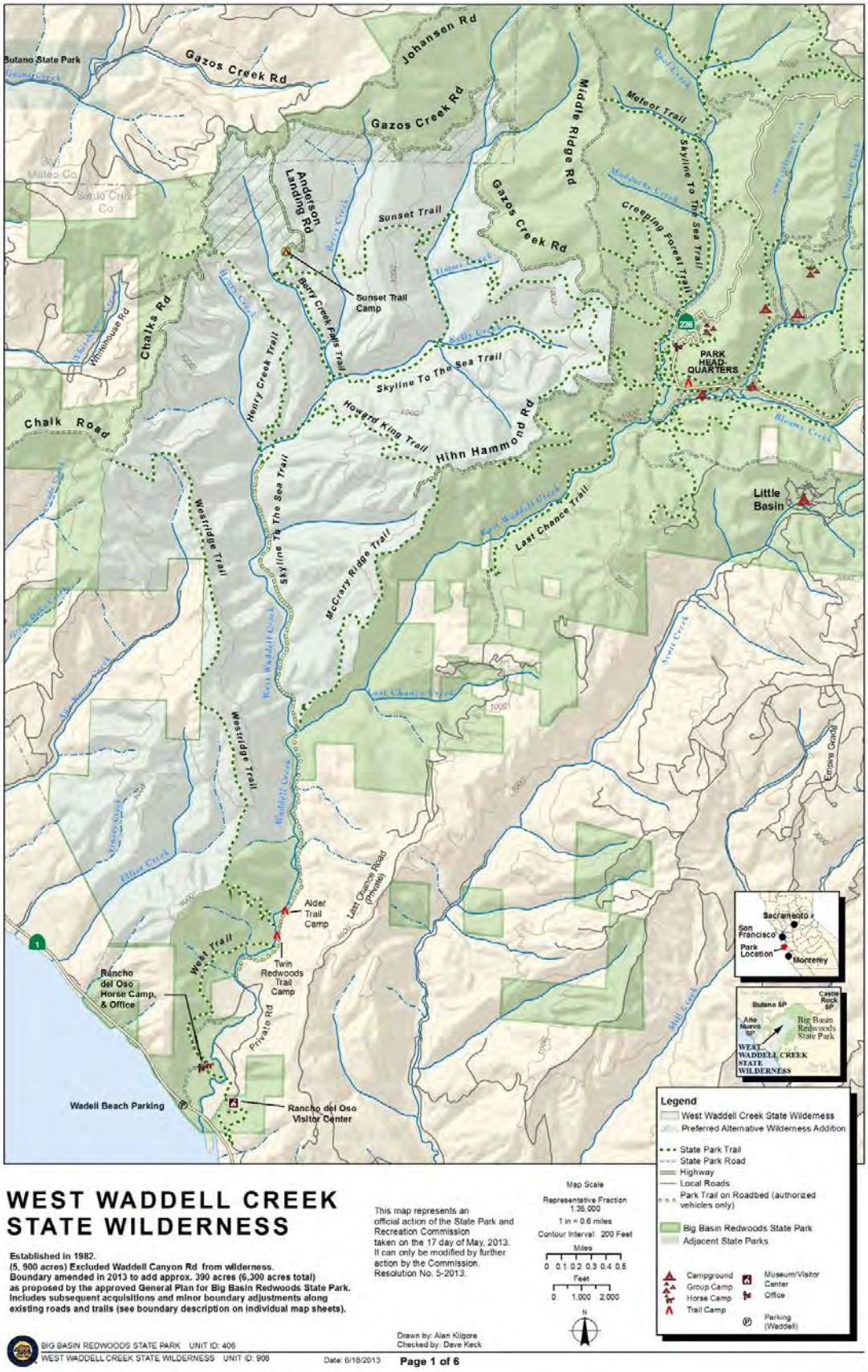
Vision Statement – A vision statement is a compelling image (description) of a desirable state of reality made possible by accomplishing the mission in a way that is consistent with the core values of key stakeholders. The vision statement is an inspiring view of the preferred future. See **Mission Statement**.

Watershed – The total area above a given point on a waterway that contributes water to its flow; the entire region drained by a waterway or watercourse that drains into a lake, reservoir, or other body of water. A watershed may, and often does, cover a very large geographical region.

APPENDIX N

WEST WADDELL CREEK STATE WILDERNESS MAP

The following 6-map set represents an official action of the State Park and Recreation Commission taken on May 17, 2013 Resolution No. 5-2013, which added approximately 390 acres (6,300 acres total) including a boundary description for the West Waddell Creek State Wilderness.



WEST WADDELL CREEK STATE WILDERNESS

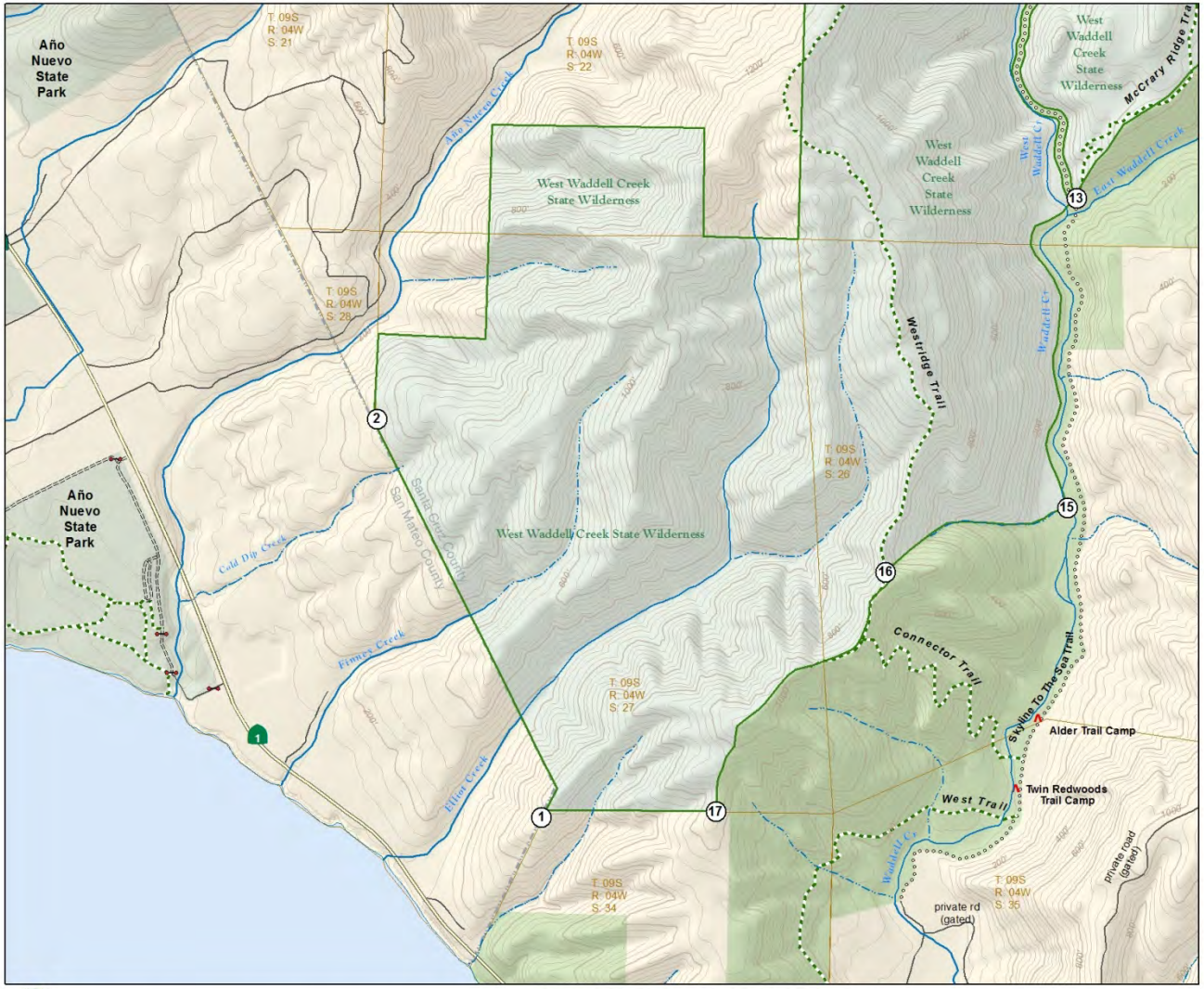
Established in 1982.
(5, 900 acres) Excluded Waddell Canyon Rd from wilderness.
Boundary amended in 2013 to add approx. 390 acres (6,300 acres total) as proposed by the approved General Plan for Big Basin Redwoods State Park. Includes subsequent acquisitions and minor boundary adjustments along existing roads and trails (see boundary description on individual map sheets).

This map represents an official action of the State Park and Recreation Commission taken on the 17 day of May, 2013. It can only be modified by further action by the Commission. Resolution No. 5-2013.

Drawn by: Alan Kilgore
Checked by: Dave Keck

BIG BAIN REDWOODS STATE PARK UNIT ID: 406
WEST WADDELL CREEK STATE WILDERNESS UNIT ID: 908

Date: 6/18/2013 **Page 1 of 6**



BOUNDARY DESCRIPTION: WEST WADDELL CREEK STATE WILDERNESS

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(1) Beginning on map Page 2 of 6. Section 27, Township 9 S, Range 4 W, Mt. Diablo Baseline and Meridian, on the Santa Cruz and San Mateo County line, approximately 2,100 feet NE of the coastline, the western edge of the West Waddell Creek State Wilderness is coincident with the county line and Big Basin Redwoods State Park boundary. Continuing in a generally NW direction along the county line for a distance of appox. 5,500 feet to the intersection of the county line and the western boundary of Section 27 at map marker (2)

(2) Continuing coincidentally along the western park boundary to map marker (3) on page 3 of 6, a length of about 21,800 feet.

(3) Continue northward along the ridgeline separating Ano Nuevo Creek from Cascade Creek about 5,400 feet northward along ridge line to Chalk Mtn., map marker (4)

(4) The boundary continues northward adjacent to Chalk Mtn. Rd, and offset east of road by 50', to the junction with Henry Creek Trail, about 10,300 feet, map marker (5) map page 4.

(5) Continuing northward along Whitehouse Canyon Rd, offset 50 feet east of road, for about 4,800 feet to map marker (6) where Whitehouse Canyon Rd turns east.

(6) Boundary continues east along Whitehouse Canyon Rd to junc. with Anderson Landing Rd, a length of about 2,800 feet, and offset 50 feet south of road.

(7) Sunset Trail Camp and Anderson Landing Rd are excluded from wilderness. The exclusion includes 50 feet on each side Anderson Landing Rd.
The boundary continues northerly adjacent to Whitehouse Canyon Rd, and offset by 50' to the east for about 1,300 ft to marker 8 at junction with Gazos Creek Rd.

(8) The boundary follows Gazos Creek Rd approx. 16,000 ft to marker (9) on map page 5. The boundary is offset by 25 ft. per San Mateo County easement, and an additional 50 ft identified by State Parks south of the road.

(9) Boundary is on the SW side of Gazos Cr Rd, offset by 50 ft, approx. 10,700 ft.

(10) Continue south, 50 ft offset to the west of Middle Ridge Rd approx. 3,600 ft to junction with Hihn Hammond Rd at map marker 11.

(11) Boundary continues, 50 ft west of Hihn Hammond Rd, approx. 12,400 ft, to the end of rd, and back to marker (12) map page 6.

(12) Boundary continues southwesterly, following McCrary Ridge Trail, along the ridgeline separating East and Waddell Creeks approx. 11,500 ft to map marker (13) on map page 2.

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(15) The boundary runs west along an un-named tributary of Waddell Creek upstream to Westridge Trail, a length of about 2,600 ft.

(16) Boundary continues southwesterly along ridge to southern park boundary, 4,100 ft at map marker (17)

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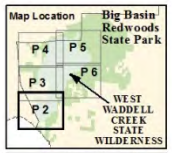


Legend

- West Waddell Creek State Wilderness
- Preferred Alternative Wilderness Addition
- Big Basin Redwoods State Park
- (1) Map markers corresponding to wilderness boundary descriptions above.
- State Park Trail
- State Park Road
- Highway
- Local Roads
- Park Trail on Roadbed (authorized vehicles only)
- Office
- Trail Camp
- CampfireCenter
- Gate
- Sections

Representative Fraction 1:15,000

Miles: 0, 0.1, 0.2, 0.3, 0.4

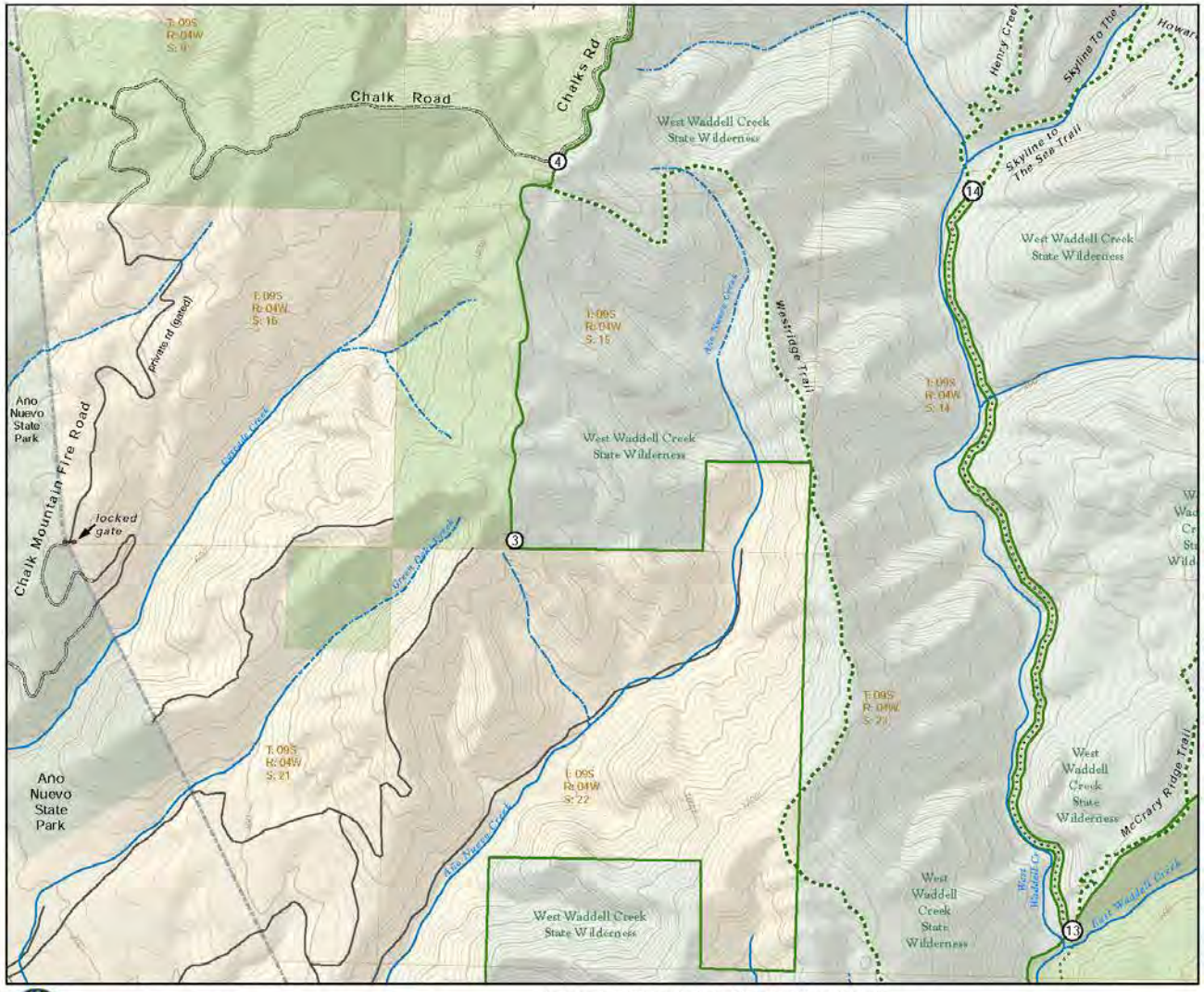
Feet: 0, 1,000, 2,000

Drawn by: Alan Kilgore
Checked by: Dave Keck

Date: 7/2/2013

Map Sources: Park and Wilderness boundaries: California Dept. of Parks and Recreation, Background topographic map: US Geological Survey 7.5' topographic map series. Contour interval 40 ft.

BIG BIN REDWOODS STATE PARK UNIT ID: 406
WEST WADDELL CREEK STATE WILDERNESS UNIT ID: 908



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Legend

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- State Park Road
- Highway
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- Trail Camp
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- Sections

Representative Fraction 1:15,000

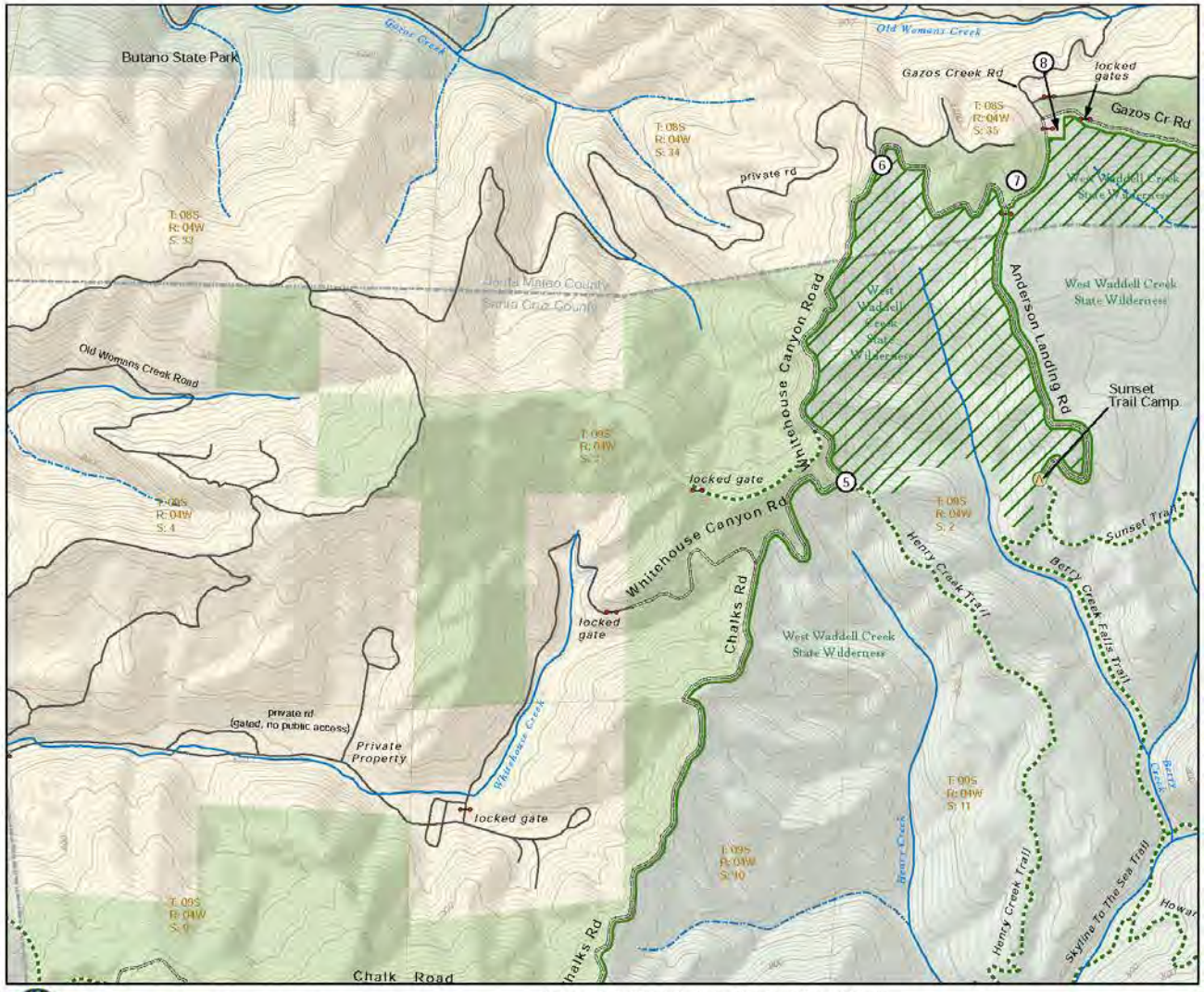
Miles: 0, 0.1, 0.2, 0.3, 0.4

Feet: 0, 1,000, 2,000

Drawn by: Alan Kilgore
Checked by: Dave Keck

Date: 6/18/2013

Map Sources: Park and Wilderness boundaries: California Dept. of Parks and Recreation.
Background topographic map: US Geological Survey 7.5' topographic map series. Contour interval 40 ft.



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Representative Fraction 1:15,000

Miles: 0 0.1 0.2 0.3 0.4

Feet: 0 1,000 2,000

Drawn by: Alan Kilgore
Checked by: Dave Keck

Date: 6/18/2013

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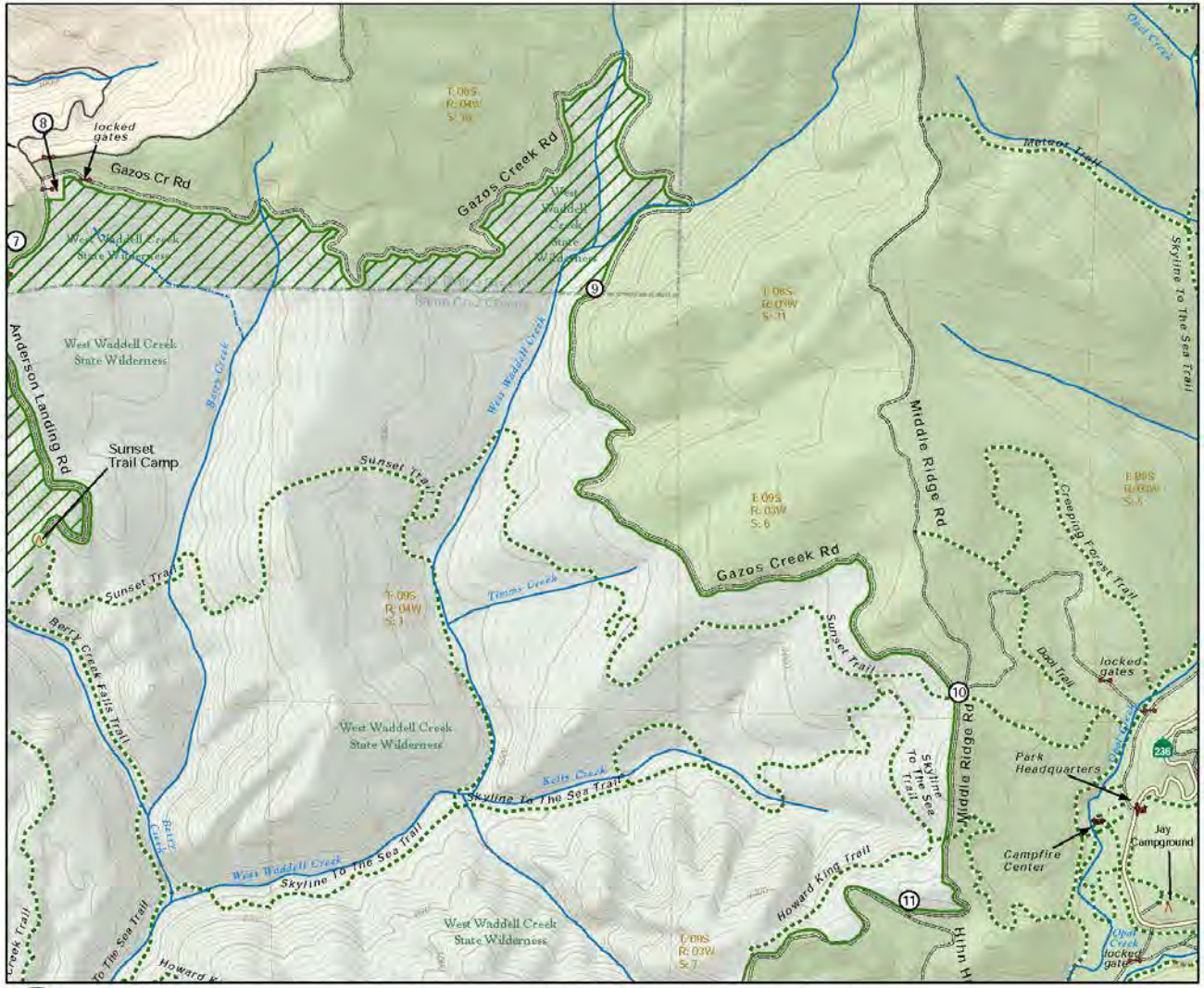

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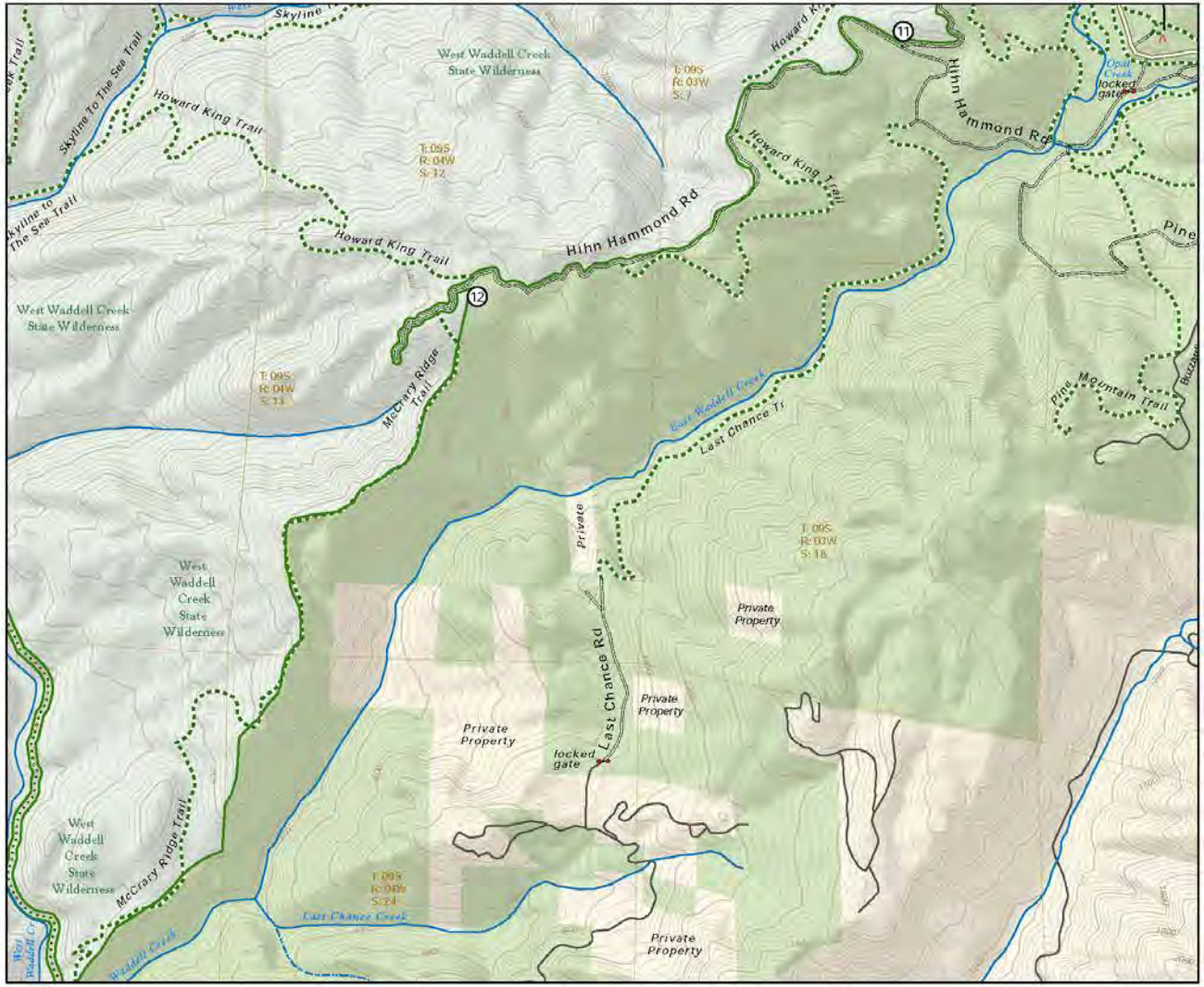
Representative Fraction 1:15,000

Drawn by: Alan Kilgore
Checked by: Dave Keck

Date: 6/18/2013

Map Sources: Park and Wilderness boundaries: California Dept. of Parks and Recreation.
Background topographic map: US Geological Survey 7.5' topographic map series. Contour interval 40 ft.



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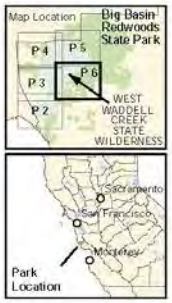

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Drawn by: Alan Kilgore
Checked by: Dave Keck

Date: 6/18/2013

BIG BAIN REDWOODS STATE PARK UNIT ID: 406
WEST WADDELL CREEK STATE WILDERNESS UNIT ID: 908

Map Sources: Park and Wilderness boundaries: California Dept. of Parks and Recreation.
Background topographic map: US Geological Survey 7.5' topographic map series. Contour interval 40 ft.

APPENDIX O

BIG BASIN REDWOODS STATE PARK
General Plan/EIR
May 17, 2013

Findings for Overriding Consideration

The Final Environmental Impact Report (FEIR) prepared for the Big Basin Redwoods State Park General Plan addresses the environmental analysis and the consideration of alternatives in the General Plan, in conformance with the California Environmental Quality Act (CEQA) requirement to analyze and disclose the potential environmental effects of a proposed action. The environmental analysis is programmatic in scope and serves as a first tier EIR. Tiering is a process where a lead agency prepares a series of environmental documents, progressing from general concerns to more site-specific evaluations with the preparation of each new document. The environmental analysis in this document evaluates broad environmental matters and does not contain project-specific analysis for the facilities that are considered in the General Plan. It is a reference for future environmental documents that will provide more detailed information and analysis for site specific developments and projects.

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

These findings have been prepared to comply with the requirements of CEQA (Public Resources Code section 21000 et seq.) and the CEQA Guidelines (California Code Regs. Title 14 Section 15000 et seq.).

The documents of other material constitute the record of the proceedings upon which the decision-makers use to approve the General Plan are under the custodianship of the California Department of Parks and Recreation (CSP) and are located at 1416 9th Street, 14th Floor, Sacramento, California 95814.

Project Description

PARK HISTORY

With its first parcels acquired in 1902, Big Basin Redwoods State Park (Big Basin) is California's oldest state park. One element of California's natural history represented by the

park is the value of preserving and protecting California's natural resources. The acquisition of Big Basin, originally known as California Redwood Park, represents the first successful effort to save coast redwoods from logging. The Sempervirens Club became the voice for the preservation of the redwoods and the driving force behind this effort. A bill to create California's first state park, called California Redwood Park, was presented to the state legislature in 1901, and was passed in 1902. The purpose of the park was to bring the public to view and experience the redwoods to ensure their preservation. By 1904, the park was open to the public. The 3,800 acres that comprised the original California Redwood Park is nominated as a National Historic Landmark property. This area contains the heart of the redwood grove that inspired admirers to form the Sempervirens Club and advocate for the creation of a state park.

In the early years of the park's history, park plans were made to preserve the ancient redwood forest and provide public access and recreation opportunities. Most of the existing buildings and park facilities were constructed during the first 50 years after the park was established, yet a General Plan was never completed for the park. The need for formal planning was highlighted by recent acquisitions, new potential for regional natural lands and open space connections, a growing demand from the expanding California population for new recreation options and coastal access, and the opportunity to coordinate planning with several other state parks in the region. A comprehensive planning effort was initiated to create a long-term and visionary general plan that would be commensurate with the park's significance within the region as well as in the California State Park System.

This General Plan was developed by CSP as part of a regional planning effort, along with general plans approved for Año Nuevo State Park and Butano State Park. These three parks in proximity to each other share natural, cultural and visitor demographics, and face similar issues. Regional characteristics and common issues were researched at the beginning of the planning process and used as a foundation for the resulting park plans. The General Plan process also recognized each park's unique assets and needs separately. The plans recognize the close relationship between California state parks and other nearby public and private lands, and emphasize the potential for regional collaboration in resource management, recreational use, education and interpretation, and park management.

PROJECT OBJECTIVES

The goals and objectives for the Big Basin Redwoods State Park are contained in Table 4-1 of the Final Environmental Impact Report (FEIR) and attached as Exhibit 1.

SITE LOCATION

Big Basin consists of more than 18,000 acres in the Santa Cruz Mountains of California, 43 miles southeast of San Francisco and 23 miles northwest of the city of Santa Cruz. The park is accessible via Highways 9 and 236, near the small town of Boulder Creek, from coastal Highway 1 to Waddell Beach, and inland at Rancho del Oso (RDO). The park is located within two county jurisdictions: the southern portion of the park is in Santa Cruz County and a small northern portion is in San Mateo County. The Santa Cruz Mountains region includes many recreation and open space providers. In addition to public open space, the region contains small towns, rural housing, small businesses, timber companies, and private

recreation providers. Three watersheds (Waddell Creek, East Waddell Creek, and Scott Creek) form the dominant landscape features of the park. Approximately 5,810 acres within the state park is designated a state wilderness, and together with the backcountry (10,540 acres) constitutes 85% of the park, offering quiet solitude among the large evergreen trees and steep canyon slopes. The westerly half the park is located within the coastal zone, which falls in the jurisdiction of the County of Santa Cruz and State Coastal Commission for required permits under the approved County of Santa Cruz 1994 General Plan and Local Coastal Plan. The Headquarters area, located along Highway 236, has the highest concentration of development and visitor activity in the park, with campgrounds, interpretive facilities, picnic areas, store and gift shop, and trails situated under the towering redwoods. Remnants of the park's early history, including Civilian Conservation Corps (CCC)-era and post-World War II construction, are present in varying degrees of preservation. At Waddell Beach, the big surf, persistent winds, and ease of access, attract surfers, kite surfers, windsurfers, and spectators to this well-known water sport venue. Inland from Highway 1 is the RDO sub-unit and the 23-acre Theodore J. Hoover Natural Preserve. This area includes remnants of the early Theodore Hoover farm operations, the Nature and History Center, an equestrian camp and trailhead facilities. In 2011, the Little Basin property (535 acres) was acquired and added to Big Basin, which includes a developed campground and group recreation facilities. The estimate is 11,301 acres of second growth redwoods (redwood dominant) and 4,202 acres of old growth redwood.

PROJECT COMPONENTS

Major programs and projects implemented during the lifespan of the General Plan will require additional planning. This planning will take the form of management plans or specific project plans. Management plans define the specific objectives, methodologies and/or designs for accomplishing management goals. Occurring on an as-needed basis, they typically focus on specific management topics, goals, or issues. Management plans can apply to all, or part, of a park unit. They usually include program-level decisions that describe how and when management actions are appropriate and necessary and they are often based on funding and staffing capabilities. Some of the goals and guidelines comprising Chapter 4, Park Plan, recommend preparing and updating specific management plans and more detailed site investigations subsequent to the adoption of the General Plan, including the following:

- Roads and Trails Management Plan
- Interpretation Management Plan
- Watershed Management Plans
- Wildfire Management Plan
- Scope of Collections Statement
- Cultural Resource Management Plan

Significant Effects and Mitigation Measures

BIOLOGICAL RESOURCES

The old growth redwood forest in Big Basin is of special significance because it provides habitat for listed wildlife species and because protection of remnant old growth redwood

stands was the primary impetus for the park establishment. The park also provides important habitat for a number of unique wildlife species, and is of great importance to regional wildlife populations. It contains valuable old growth and older second growth redwood habitat.

The General Plan proposals have the potential to adversely affect the park's biological resources, especially where new facilities are introduced into previously undisturbed areas, such as trails and trail camps in the backcountry. Adverse impacts to biological resources can be avoided or reduced by implementing the General Plan's guidelines for protecting and preserving these resources in the park and region.

Special status wildlife, wildlife habitats, and sensitive plant communities occur at Big Basin Redwoods SP. There are 22 special status plant species and 52 special status wildlife species for which potential habitat exists in the park. Two vegetation types that occur within the park are considered rare natural plant communities. Additional site-specific surveys for special status species and sensitive habitats will be completed as part of the planning process for resource management projects, construction, maintenance, or rehabilitation of facilities and trails. Where appropriate, state and federal resource agencies will be consulted to assist with appropriate resource protection, habitat enhancement, and management techniques.

Generally, most of the new facility development recommended in the plan would occur in areas that have been previously disturbed (such as Saddle Mountain and RDO). There would be minimal adverse impacts to vegetation and wildlife in these portions of the park. Site-specific impact evaluations will occur when projects and facilities are proposed. The General Plan recommends preparing and updating comprehensive natural resource management plans, including marbled murrelet, fire management, trails and watershed management plans that will provide additional guidance for identification, protection, habitat restoration, and adaptive management of the park's resources, especially special status species and sensitive habitats.

The General Plan recommends actions, in coordination the US Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), for the long-term recovery and survival of the marbled murrelet, state-listed as endangered and federally-listed as threatened (see guideline **Murrelet 1**). Included are guidelines for minimizing recreational facility development in areas of marbled murrelet nesting habitat and in other special status species habitat. In addition, noise-producing activities such as construction or maintenance activities would be minimized during the breeding season and would comply with applicable federal and state regulations (see guidelines **Special Animals 3 and Murrelet 1**). Human food and garbage will be controlled with wildlife-proof trash containers and public education that addresses the detrimental effects of these materials on wildlife (see guideline **Wildlife 6**).

> **Murrelet 1:** Consult with DFG and USFWS prior to initiating construction activities that may affect murrelets and/or their nesting habitat.
>
> **Special Animals 3:** Minimize trail building, roadwork, and park facility maintenance activities in or near breeding areas during the breeding seasons for special status species.

Wildlife 6: Reduce and, where possible, eliminate wildlife access to human food and garbage by using wildlife-proof trash containers and dumpsters throughout the park, increasing the frequency of trash collection, and educating the public about the detrimental effects that human food can have on the ecological balance of the park and surrounding regions. Post signs throughout the park informing people not to feed wildlife and to cover and store food and trash appropriately. Also see Guidelines for Marbled Murrelet Management and Conservation.

Facility removal, rehabilitation and new development, including trails, have the potential to disturb, degrade, or remove wildlife habitat or sensitive plant communities. If there is any potential for significant adverse effects to sensitive habitat, including wetland and riparian habitat, proposed facilities will be designed to avoid or minimize adverse impacts (see guideline **Wildlife 3**). This may include limiting access to some areas of the park, or temporarily closing or relocating facilities to promote restoration (see guideline **Vegetation 2**). The plan's adaptive management process, outlined in Section 4.6, Managing Visitor Capacity, describes a process for evaluating, monitoring, and mitigating visitor impacts so that adverse impacts to wildlife are minimized.

Wildlife 3: Prepare and conduct surveys and inventories of natural resources in areas subject to development. Avoid or reduce negative impacts to sensitive resource areas and follow all applicable regulations and guidelines for minimizing adverse impacts from new facilities development.

Vegetation 2: Identify locations in the park that are heavily impacted from past management practices (e.g. agricultural production, logging, and fire suppression) and implement appropriate vegetation and habitat restoration programs. Components of such restoration programs may include prescribed fire, revegetation with native species, fenced enclosures, facility relocations, and other methods. Reforestation, where appropriate, can also help to positively affect climate change by reducing greenhouse gases through carbon sequestration.

There are important habitat linkages both within the park and between the park and surrounding properties, such as riparian corridors with continuous vegetative cover and coast redwood stands. To continue resource protection and enhancement, on-going cooperation with regulatory agencies, local jurisdictions, adjacent landowners, and recreation and open space providers will be pursued to encourage conservation easements and property acquisition for habitat preservation and to maintain buffers and habitat linkages (see guideline **Regional Planning 3**).

Regional Planning 3: Coordinate and collaborate with universities, colleges and other research organizations on natural and cultural resource studies to increase the knowledge of resources in the park and in the Santa Cruz Mountains region. Seek cooperative agreements with adjacent landowners, neighbors, and local jurisdictions responsible for zoning and land use management to provide for open space buffer areas to protect sensitive park resources and to identify and preserve wildlife habitat linkages.

The planning areas outlined in the General Plan also support additional resource protections by designating appropriate land use, facility development, and visitor use areas. Visitor use impacts to wildlife can be substantially reduced or eliminated by placing facilities away from known nesting sites and sensitive habitat, as outlined in guidelines **Special Animals 3 and 7, Sky Meadows Group Camp 1 and 3,** and **Murrelet 1**. Foremost among the necessary precautions observed during the planning and implementation of resource management actions are adherence to existing laws, regulations, and protocols. Specific activities with the potential for impacts beyond park boundaries will include disclosure of potential impacts specific to each activity. Mitigation for future significant impacts for site-specific projects shall be developed as part of the project level planning and environmental review process.

> **Murrelet 1:** Consult with DFG and USFWS prior to initiating construction activities that may affect murrelets and/or their nesting habitat.
>
> **Special Animals 3:** Minimize trail building, roadwork, and park facility maintenance activities in or near breeding areas during the breeding seasons for special status species.
>
> **Special Animals 7:** Manage the Waddell Creek Beach critical habitat to support breeding western snowy plovers, implementing seasonal beach closures, trash management, interpretive signage, and any additional protective measures to ensure habitat suitability for breeding birds. Also, State Parks will continue to support efforts by the USFWS to reintroduce tidewater goby into Waddell Creek, should such efforts be proposed by the USFWS.
>
> **Sky Meadow Group Camp 1:** Limit visitor use of the meadow to the existing historic Girl Scout camping platform and adjoining trail.
>
> **Sky Meadow Group Camp 3**: Minimize disturbances to marbled murrelet breeding habitat by locating future visitor amenities outside the old growth forest.

AESTHETICS

The General Plan would allow for the development of improved access, management and recreation facilities in specific areas of the park. While new trails, trail camps and trailhead parking may be developed in the backcountry, scenic views and the natural character of backcountry and wilderness areas will be protected. Facilities will be sited and designed to blend in with the natural environment and to not obstruct viewsheds.

Appropriate vegetation and habitat restoration programs will be implemented in park locations that were heavily impacted from past management practices (e.g. logging and fire suppression). Components of restoration programs will include the use of prescribed fire, revegetation with native species, fenced enclosures, facility relocations, and other methods as appropriate. Implementation of these programs and actions identified in the General Plan would be considered a beneficial impact to aesthetic resources.

New development will occur outside the old growth forest, and in areas previously disturbed by development or past uses. New building construction is proposed for Saddle Mountain, a site along Highway 236 that includes a new welcome center for park administration and visitor services, with additional parking and day use facilities that would be visible from Highway 236. Undesirable non-historic buildings and facilities that remain from prior non-park uses would be replaced by new construction and would be carefully sited and designed to blend into the environment to provide an attractive and welcoming park entry experience into Big Basin. Guidelines **Saddle Mountain 1, 2, and 5** describe the site planning considerations for new facilities and criteria to protect significant resources and preserve the open space qualities.

> **Saddle Mountain 1:** Develop a park welcome center for primary visitor contact, orientation, park information, and campground registration. Buildings and site development shall include provisions for park administration, interpretation, restrooms, and parking for visitors and authorized vehicles. Other provisions that may be considered in the site planning and development include, but are not limited to, the following:
>
> - Multi-purpose room that could be used for meetings, training, activities, or rented out for special event activities. This could be included in the welcome center or in a separate building designed for this and other uses listed below.
> - Office space for administrative services and work areas for staff and other program volunteers.
> - Interpretive sales area, gift shop, or other types of visitor services offered through a cooperating association and/or concessionaire, or nonprofit organization.
> - Information kiosk or display panels providing public information when staff is unavailable.
> - Day use picnic areas, with tables, shade, restrooms, and parking.
>
> **Saddle Mountain 2:** Preserve and maintain the scenic quality of Highway 236 and establish appropriate “first impression” treatments that are compatible with the character of the park and create an attractive and welcoming park entry experience into Big Basin.
>
> **Saddle Mountain 5:** Preserve the meadow and open space qualities in the planning and design of future park facilities, and establish adequate vegetative screening and buffers between administrative and visitor activity areas, and between park development and adjacent properties.

The design style for new development will be site-specific and contextual—reinforcing the colors, shapes, scale, and materials in the surrounding environment to integrate and complement the park’s natural setting, and preserve scenic views. Native (or replicated) building materials will be used where appropriate, with muted colors that reflect the natural surroundings and take advantage of (or screen) ephemeral conditions (e.g. weather, wind, sunlight, etc.), as appropriate. Building architecture in the Headquarters area will retain the existing historic “Park Rustic” style that embodies the harmonious blending of native stone

and wood. New construction will be compatible with, but clearly differentiated from, the historic “Park Rustic” resources to avoid a false sense of history.

The General Plan also proposes new development at Waddell Beach and RDO along Highway 1. Major road and parking development may occur on state park property as part of a Caltrans Waddell Creek Bridge replacement project. The plan promotes RDO as the western gateway to Big Basin with a safe public entry that is welcoming and conveys a sense of arrival and area identity. The General Plan provides guidance on the desired facilities and improved conditions for access and public safety (see guidelines **Waddell Beach 1 and RDO 5**). Guideline **Aesthetics 8** calls for plan proposals to comply with Local Coastal Program standards for Highway 1 for aesthetic resources, which would include minimizing visual impacts from park development on county-designated scenic roads. Park development will follow the Local Coastal Program and other applicable standards for aesthetic resources. CSP will coordinate with local, state, and federal agencies, open space providers and community groups, landowners, and other stakeholders to preserve, protect, and enhance positive aesthetic features and viewsheds.

> **Waddell Beach 1:** Coordinate with Caltrans to maintain and expand Waddell Beach parking facilities, as feasible, to support beach activities and ocean view parking. Maintain and improve, as necessary, the bus transit stop, parking, and restroom facilities to maintain functional efficiency, safe pedestrian and vehicle circulation, and attractiveness. Consider asphalt paving and striping to improve parking and circulation efficiency and public safety.
>
> **RDO 5:** Prepare site plan(s) to determine the location, size, and configuration of desired public use and park operations facilities, addressing public health and safety issues, resource sensitivities, accessibility requirements, aesthetics, interpretation, and management of visitor capacity.
>
> **Aesthetics 8:** Coordinate with local, state, and federal agencies, open space providers and community groups, landowners, and other stakeholders to preserve, protect, and enhance positive aesthetic features and viewsheds. Follow the Local Coastal Program and other applicable standards for aesthetic resources.

Sustainable design strategies will be used to minimize impacts to the park’s natural, cultural, and aesthetic resources. Low-impact building sites, structures, and building and landscape materials will be selected. Natural, renewable, indigenous, and recyclable materials will be incorporated into energy-efficient project design. Maintenance and management practices that avoid the use of environmentally-damaging, waste-producing, or hazardous materials will also be utilized.

Developed parking and maintenance facilities may be visible from the existing or proposed visitor use areas. Guideline **Aesthetics 4** describes the use of screening methods with appropriate native plants, rocks, or elevation changes. These elements could also soften the visual effect of parking areas, campground facilities, roads, and trails, buffer intrusive or distracting views and activities outside park boundaries, and enhance scenic views.

Aesthetics 4: Where appropriate, visually screen parking lots, roads, operations facilities, and storage areas from primary public use areas. Use native vegetation, rocks, elevation change, berms, and other methods that either use or mimic natural elements to minimize negative visual impacts from these facilities.

AIR QUALITY

Construction related emissions are described as short-term or temporary in duration and have the potential to represent a significant impact with respect to air quality. Implementation of the general plan would take place over time with the implementation of various projects and plans (e.g., Saddle Mountain, RDO, and Little Basin development, or a Road and Trails Management Plan). Most projects require minor construction activity, such as trail construction, road management, or vegetation management, and would not result in substantial temporary emissions. A limited number of projects could involve more extensive construction, such as development at Saddle Mountain. For these plans or projects, State Parks would include standard control measures to limit emissions to less-than-significant levels. The air quality impacts from construction can be substantially reduced by the use of dust control measures and other construction best management practices (see guideline **Geology/Hydrology 5**). Dust control measures would be developed during site-specific planning. Air quality may also be temporarily impacted by prescribed burning programs or wildfires in the park. Under guideline **Vegetation 4**, CSP would use prescribed fire as part of a vegetation management strategy. This strategy would identify conditions under which prescribed burning would be allowed in order to minimize impacts to air quality.

Geology / Hydrology 5: As appropriate, use standard Best Management Practices (BMPs) for erosion, dust, sediment control, and storm water runoff for park projects, and update regularly.

Vegetation 4: Prescribed fire should be used as part of a vegetation management strategy, when appropriate, to achieve natural and cultural landscape management goals. This program, including the Unit Prescribed Fire Plan, will be upgraded periodically to reflect the ongoing accomplishments and necessary refinements, changes in prescribed fire science and technology, state and federal regulations, and be reviewed for consistency with other programs affecting vegetation management strategies and public safety.

Most visitors currently arrive by private vehicles. An increase in visitor use may cause a minor increase in total vehicle emissions in the region. The general plan recommends coordinating with San Mateo and Santa Cruz counties and local transit agencies to encourage and develop public transit and multi-modal transportation opportunities for visitor access to the park and to other parks and recreation areas in the region (see guideline **Access 2**). The general plan also recommends the use of low-emission park vehicles, such as maintenance vehicles, and potential shuttles to reduce emissions and contribute to better air quality (see guideline **Sustainability 5**). Subsequent plans and studies (Roads and Trails Management Plan, traffic studies, concessions evaluations) would help determine the viability and timing of implanting plan proposals and further assessment of environmental impacts. The plan proposals are not expected to conflict with, obstruct implementation of, or violate air quality standards set by the California Air Resources Board.

Access 2: Work with state and local transportation agencies to support an integrated and efficient multi-modal transportation system that facilitates visitor access to the park. Coordinate with these agencies to provide facilities that encourage and support a variety of park access transportation modes, including pedestrian, bicycle, equestrian, bus, and shuttle, and that include support facilities, such as bus pullouts and transit shelters.

Sustainability 5: Use low- or zero-emission vehicles, when possible, for park operations and maintenance, and a potential shuttle system. Use low- or zero-emission grounds maintenance equipment, when possible, such as electric trimmers, chain saws, and mowers. Substitution of lower-emission and alternative energy-source tools and vehicles will reduce air quality impacts and heat-trapping emissions, and promote energy efficiency.

Each individual plan and project would go through separate environmental review to ensure that the necessary standard control measures are included. Therefore, implementation of the General Plan would not result in short term construction-generated impacts to air quality.

CULTURAL RESOURCES

Big Basin contains potentially significant cultural resources that could be disturbed, destroyed or degraded by new development and facility improvements proposed in the General Plan. These resources include prehistoric and ethnographic sites, historic and ethnohistoric resources, and historic roads and trails. Extensive research and inventory of the park's cultural resources has occurred over the past several years, but is not considered complete; therefore, the potential exists for the discovery of previously unknown prehistoric and historic sites during facilities construction, rehabilitation, resource management projects, restoration, or maintenance operations.

The General Plan calls for additional site surveys and inventory to be completed for historic-period resources to assist in significance evaluations, including significant cultural landscapes and those buildings in the park as identified as eligible, or potentially eligible, to the California Register of Historic Resources or the National Register of Historic Places (see guidelines **Historic 1, 2, 3, 4, 5, 6, and 7**). Areas of high probability for prehistoric archaeological sites will be surveyed and recorded and criteria of significance developed for each class of resource for sites encountered in the future (see guidelines **Archaeological 1, 2, 3, 4, and 5**).

Archaeological 1: Implement the CSP Archaeological Site Condition Assessment (ASCAR) program to regularly inspect and record the status of archaeological sites. Conduct resource surveys and update the documentation and site records of the known archaeological sites to amplify or correct information about a resource, or confirm that the existing record remains accurate at the time of a subsequent field examination. This would include testing through limited excavation and/or collection of selected surface cultural materials, GPS mapping of sites, and establishment of resource sensitivity boundaries.

Archaeological 2: Prepare cultural resource management plans, as necessary, to further define a framework to identify, acknowledge, assess, and create effective management procedures for cultural sites within the park.

Archaeological 3: Nominate cultural resources, either as sites, districts or cultural landscapes, which may be eligible for listing in the National Register of Historic Places and/or the California Register of Historical Resources, to provide state and national recognition and context for resource management and protection.

Archaeological 4: Continue consultations with Ohlone representatives consistent with CSP's Native American Consultation Policy, and encourage participation in future park projects.

Archaeological 5: Identify, document, catalogue and curate artifacts and collections that have previously been recovered from archaeological sites within the park, according to the Office of Historic Preservation guidelines.

As part of any new development project, CSP will inventory and review areas of potential impact to determine the presence and significance of cultural resources, the potential impact, and recommended mitigation, if appropriate. Impacts may be reduced by project avoidance, site capping, structural stabilization/renovation, project redesign, and data recovery (see guidelines **Historic 5 and 6**). Implementation of the Cultural Resource Management guidelines would protect significant cultural resources, thus maintaining any impacts of the implementation of the general plan at a less-than-significant level.

Historic 5: Include cultural resource surveys in site-specific planning and development, to determine the resource presence, significance, potential impacts, and to provide recommended mitigation, when appropriate.

Historic 6: Document and evaluate historic properties that have changed over time, and determine the appropriate treatment for those property changes that have acquired historic significance in their own right.

A National Register nomination has been prepared for the Lower Sky Meadow residential area as a Historic District. This 1940s park employee housing development retains a high level of integrity of location, setting, workmanship, design and materials. Guideline Headquarters C3 will guide potential new development of additional staff housing, trailer pads, and amenities in the Lower Sky Meadow residence area to avoid significant impacts to the historic integrity of this significant 1940s residence area (also see guidelines **Historic 4 and Historic 5**).

Historic 4: Complete and maintain an inventory of standing buildings and historic structures, roads and trails, historic objects and landscape features, with information including date of construction, significance, and character-defining features. Inventory and archive all historic maps into CSP's archive database.

Historic 5: Include cultural resource surveys in site-specific planning and development, to determine the resource presence, significance, potential impacts, and to provide recommended mitigation, when appropriate.

All construction, maintenance, or improvements of historic buildings, structures, and features will be in conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (see guideline **Historic 1**). Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties and it's guidelines for preserving, rehabilitating, restoring, and reconstructing historic buildings shall be considered as mitigated to a level of less than a significant impact on the historical resource.

Historic 1: Develop and implement a treatment plan for the historic resources located in the park. Development strategies should include cultural resource treatments, as defined by the Secretary of the Interior's Standards for the Treatment of Historic Properties, for those historic buildings, structures and features that have been identified as significant, combined with the interpretive objectives for the landscape as a whole, including the periods of significance; the integrity of the landscape and its character-defining features; and the existing condition of these individual features.

GEOLOGY, SOILS AND SEISMICITY RESOURCES

The Physical Resources section of Chapter 2 (Existing Conditions) provides a summary of the geology, soils, and known geologic hazards at Big Basin Redwoods SP.

Landslides are common in the park. Several large landslides occur on the northwest side of Pine Mountain and the north and west sides of Mount McAbee. Many smaller landslides occur on the canyon slopes of Waddell Creek and its tributaries.

The park is subject to earthquakes, and has the potential for damage from ground shaking, ground surface rupture, liquefaction, lateral spreading, and landslides. Guideline **Geology/Hydrology 7** directs CSP to conduct professional geologic and engineering evaluations to identify potentially hazardous soils or geologic areas prior to any permanent facility development and to avoid or reduce damage to people and property from unstable soil and seismic hazards. The general plan provides guidelines to protect the public from natural hazards, such as using interpretive media to educate visitors about natural hazards and how to avoid danger (see **Interpretation Goal A** and guideline **Interpretation A1**).

Geology/Hydrology 7: Include professional biological, geological, and engineering evaluations as appropriate when designing and locating permanent structures, campgrounds, roads, utilities, and trails to avoid or reduce potential damage to people and property from unstable soil, landslides, debris flows, floods, and earthquakes.

Interpretation A1: Reinforce CSP's strategic initiatives with park interpretation, including interpretation of what California State Parks has done and what visitors can do to help reduce global warming.

Areas of the park contain highly erodible soils. Land disturbance, such as grading and trail development, can trigger or accelerate soil erosion. Guidelines **Geology/Hydrology 3, 4,**

and 5 direct CSP to follow best management practices (BMPs) to reduce soil erosion and stormwater runoff and to ensure water quality during facility removal, maintenance, or construction. CSP has developed BMPs for road recontouring and rehabilitation, road removal, road to trail conversion, and culvert replacement. In addition, the standard construction BMPs for erosion and sediment control from the California Stormwater Quality Association will also be used, where appropriate. The plan also recommends biotechnical methods, where possible, to provide embankment stabilization and enhance stream restoration (see guideline **Geology/Hydrology 6**).

> **Geology/Hydrology 3:** Understand and comply with the surface and groundwater beneficial uses and water quality objectives set forth in the Water Quality Control Plan for the Central Coast Region (Basin Plan) for the Big Basin watersheds and take appropriate actions to prevent degradation of surface and groundwater within the park. Examples of appropriate actions include ensuring that park sewage treatment meets water quality standards and planning and implementing new park projects so they do not degrade surface or groundwater quality or affect the water production rates of pre-existing nearby wells.
>
> **Geology / Hydrology 4:** Cooperate with other landowners and regulatory agencies to address and remediate sediment issues affecting the park.
>
> **Geology / Hydrology 5:** As appropriate, use standard Best Management Practices (BMPs) for erosion, dust, sediment control, and storm water runoff for park projects, and update regularly.
>
> **Geology / Hydrology 6:** Maintain and manage native riparian vegetation bordering streams and springs, where feasible, to filter sediments and other pollutants from runoff that enter water bodies. Use biotechnical methods, where possible, when it is necessary for embankment stabilization.

There are no known unique paleontological resources in Big Basin. If present, any paleontological resources would likely be detected during site specific inventories conducted to detect cultural resources. Any feature of geologic significance would be detected during site specific geotechnical investigation. If unique resources are detected during future surveys, adverse impacts to these resources would be avoided during site specific design; thus, implementation of the general plan would not result in any adverse impact to any features of geologic significance in the park.

HYDROLOGY AND WATER QUALITY

Development and recreation facilities in general have the potential to cause short-term and long-term hydrologic and water quality impacts to the park's creeks and wetlands. Under guideline **Geology/Hydrology 3,** CSP would comply with applicable water quality objectives developed by the San Francisco Regional Water Quality Control Board. Guideline **Geology/Hydrology 5** recommends the use of best management practices to control erosion and surface runoff. Impacts to park water quality from grading, filling, construction equipment use and storage, and mechanical or chemical control in resources and facilities management

programs would be minimized by implementing guidelines **Geology/Hydrology 2, 3, 5, 6, and 7**. Guideline **Geology/Hydrology 2** also recommends an assessment of human activities on park geological and hydrological processes, and identification of appropriate management actions that would reduce or avoid negative impacts. The general plan calls for the preparation of site specific plans such as a Roads and Trails Management Plan. These plans would be develop and designed for consistency with the general plan to protect water quality, manage runoff, respect floodplain processes, and address other hydrological issues.

> **Geology / Hydrology 2:** Determine if, where, and how human development or activities may be exaggerating the natural rates or scales of landslides, stream channel erosion, stream debris clogging, and sedimentation. Identify management actions that can reduce or avoid negative human impacts to slope and stream integrity and to water quality. Management actions could include road and trail rehabilitation or removal from highly erosive areas, stream modifications, debris management, and revegetation.
>
> **Geology / Hydrology 7:** Include professional biological, geological, and engineering evaluations as appropriate when designing and locating permanent structures, campgrounds, roads, utilities, and trails to avoid or reduce potential damage to people and property from unstable soil, landslides, debris flows, floods, and earthquakes.

West and East Waddell Creek, Blooms Creek, and Opal Creek contain spawning and potential spawning grounds for threatened and endangered anadromous fish species; therefore, any increase in sediment loading to the park's creeks may be considered a significant impact. Guideline **Special Animals 2** recommends protection of all special status native wildlife species and their habitats, which would include the protection of anadromous fish from the impacts of any activity that results in disturbance to riparian habitat, including increased sediment loading in creeks. Appropriate biotechnical stream bank erosion control methods will be used, where feasible, to reduce sediment (see guideline **Geology/Hydrology 6**).

> **Special Animals 2:** Monitor marbled murrelet, snowy plover, and other special status animal species to identify population trends and to develop management strategies for their protection and perpetuation.
>
> **Geology / Hydrology 6:** Maintain and manage native riparian vegetation bordering streams and springs, where feasible, to filter sediments and other pollutants from runoff that enter water bodies. Use biotechnical methods, where possible, when it is necessary for embankment stabilization.

The plan proposes further study and analysis to determine where any remediation efforts are necessary to improve water quality in the park (see guideline **Geology/Hydrology 9**). These studies would analyze such elements as sediment sources, transport functions, and fluvial geomorphic conditions in streams, and assess impacts to ecology, the watershed, and water quality from recreation and other park activities. Based on the analysis and findings, CSP would restore geomorphic function to the watershed to the extent possible, thereby, substantially reducing or eliminating unnatural soil and stream bank erosion, stream sedimentation, and habitat degradation.

Geology / Hydrology 9: Participate with others, such as resource/regulatory agencies and adjacent landowners, to develop watershed management plans or assessments for major watersheds contained in the park. The watershed planning effort will use current information from existing watershed assessments and studies. These watershed plans will analyze the sediment transport functions in the park's stream systems, evaluate impacts of facilities and park use, and provide a scientific basis for selection, design, implementation and monitoring of future fisheries habitat enhancement and sediment reduction projects. Elements of this plan may include, but not be limited to:

- Inventory and prioritize sediment sources, and analyze the sediment transport functions in the stream systems with respect to their impact on in-stream habitat and on sediment delivery to Waddell Creek, its tributaries, and Waddell Beach.
- Determine if fluvial geomorphic analyses are needed and at what level is required for all streams. Coordinate this analysis with the Regional Water Quality Control Board (RWQCB) monitoring efforts.
- Delineate the 100-year floodplain for West Waddell Creek, and other major creeks and tributaries.

As part of the process for preparation of site-specific plans, resource management plans, or facility construction, site-specific studies of soil conditions and facility siting will be conducted. All new projects and increased visitor use in the park will be evaluated to ensure that they do not contribute to degradation of water quality, substantially alter existing drainage patterns, or result in on- or offsite erosion, siltation, pollution, or flooding (see guidelines **Geology/Hydrology 1, 3, and 7**). Measures to reduce construction impacts include avoiding storage of surplus or waste materials in the floodplain, in areas of potential landslides, near surface waters, or in drainages (see guideline **Geology/Hydrology 5**). The Federal Emergency Management Agency has not delineated the full extent of the 100-year floodplain for West Waddell Creek and Opal Creek. The plan calls for determination of the 100-year floodplain in these areas to ensure that developed structures would not impede or redirect flood flows (see guideline **Geology/Hydrology 9**).

Geology/Hydrology 1: Monitor and document the geologic and hydrologic processes affecting the park and its resources.

Geology/Hydrology 3: Understand and comply with the surface and groundwater beneficial uses and water quality objectives set forth in the Water Quality Control Plan for the Central Coast Region (Basin Plan) for the Big Basin Redwoods SP watersheds and take appropriate actions to prevent degradation of surface and groundwater within the park. Examples of appropriate actions include ensuring that park sewage treatment meets water quality standards and planning and implementing new park projects so they do not degrade surface or groundwater quality or affect the water production rates of pre-existing nearby wells.

Geology/Hydrology 5: As appropriate, use standard Best Management Practices (BMPs) for erosion, dust, sediment control, and storm water runoff for park projects, and update regularly.

Geology/Hydrology 7: Include professional biological, geological, and engineering evaluations as appropriate when designing and locating permanent structures, campgrounds, roads, utilities, and trails to avoid or reduce potential damage to people and property from unstable soil, landslides, debris flows, floods, and earthquakes.

Geology/Hydrology 9: Participate with others, such as resource/regulatory agencies and adjacent landowners, to develop watershed management plans or assessments for major watersheds contained in the park. The watershed planning effort will use current information from existing watershed assessments and studies. These watershed plans will analyze the sediment transport functions in the park's stream systems, evaluate impacts of facilities and park use, and provide a scientific basis for selection, design, implementation and monitoring of future fisheries habitat enhancement and sediment reduction projects. Elements of this plan may include, but not be limited to:

- Inventory and prioritize sediment sources, and analyze the sediment transport functions in the stream systems with respect to their impact on in-stream habitat and on sediment delivery to Waddell Creek, its tributaries, and Waddell Beach.
- Determine if fluvial geomorphic analyses are needed and at what level is required for all streams. Coordinate this analysis with the Regional Water Quality Control Board (RWQCB) monitoring efforts.
- Delineate the 100-year floodplain for West Waddell Creek, and other major creeks and tributaries

Interpretive programs will educate the public about park management goals, including information on the potential effects of recreation to water quality and the importance of water quality and the environment (see guideline **Interpretation B5**).

Interpretation B5: Make use of the abundant primary-source historical documents and oral history interviews related to Big Basin to create cultural history interpretation that links visitors to the resources via the voices of past people they can empathize with, and exposes them to multiple views of Big Basin's founding, growth, notable events, and resource management

NOISE

The primary sources of noise expected to occur within Big Basin Redwoods SP are related to facility operations, construction activities, and vehicular traffic. Vehicular traffic noise levels in the Headquarters area could be reduced if a park shuttle/metro bus stop and a day use park-and-ride lot were placed at the Saddle Mountain property. The construction equipment used for the rehabilitation of historic structures may also add a temporary increase in noise levels in the Headquarters area. By implementing guidelines **Aesthetics 6 and Aesthetics 7**, the park would take appropriate measures to minimize construction and maintenance noise and would comply with federal and state noise ordinances.

Aesthetics 6: Minimize vehicle noise in heavily-used areas, through screening, separation of use areas, and other appropriate techniques. Locate park administrative

and maintenance functions away from public areas, if feasible, and take appropriate measures to minimize construction and maintenance noise.

Aesthetics 7: Restrict levels of sound from radios and other human-made devices and enforce park noise standards, especially during night and early morning hours. Refer to the Department's Soundscape Protection Policy (DOM, Chapter 0300, 2004) when planning new facilities or evaluating noise standards, and comply with federal and state noise ordinances and standards.

Noise impacts from vehicles would be reduced by separation of use areas, screening, and other appropriate techniques, and maintenance and service functions would be located away from public areas as much as possible (see guideline **Aesthetics 6**). CSP will follow the Soundscape Protection Policy (Department Operations Manual: 0312.4.1) by restricting sound from human-made devices and enforcing park noise standards.

At Little Basin, anecdotal information shows that there was an increase in noise level when the Hewlett-Packard Company (HP) owned the facility (from 1963-2007) and had company picnics/gatherings. Little Basin's facilities are now managed and operated by the nonprofit group, United Camps, Conferences and Retreats (UCCR), under a concessions agreement scheduled through 2017. Noise levels could be higher than average in the Little Basin area if outdoor concerts or similar-type events are presented. Current noise levels will be monitored by UCCR.

The park is not located within two miles of a public use airport and will not expose people working or residing in the project area to excessive noise levels associated with airports. The plan proposals will not generate or expose people to excessive groundborne vibrations or groundborne noise levels.

RECREATION

The plan proposes new facilities to improve conditions and opportunities for current and future visitor use, including the development of day use picnicking and trail camping facilities, overnight cabins, new interpretive facilities and information, additional trails (including loop trails), and connections to local and regional trails outside the park boundaries. The plan also recognizes the potential for expansion of group recreation facilities at Little Basin, new development at Saddle Mountain, and facility improvements to accommodate accessibility for disabled persons.

As noted in the plan, population growth and changing demographics will influence the CSP's efforts to consider new forms of recreation and new technologies to respond to visitor demand and recreation trends (see guidelines **Recreation 6 and 7**), but also calls for restricting or modifying some types of recreation activities, as necessary, in order to minimize adverse resource impacts (see guideline **Recreation 2**). The plan recommends providing increased opportunities for interpretation and education, and to expand facilities and programs that allow more recreational opportunities in the spring and fall (see guideline **Recreation 3**). Prior to new development at Saddle Mountain, additional site surveys and evaluations will be conducted to determine the presence of significant natural, prehistoric, and historic resources; and protective measures would be implemented (see guideline

Saddle Mountain 6). At RDO, additional resource surveys and monitoring would occur, and site plan(s) would be prepared to determine the location, size, and configuration of desired facilities, to protect special status plant and wildlife habitats. Resource management and protective measures would be implemented to eliminate or mitigate human impacts on significant natural resources (see guidelines **RDO 4 and RDO 5**).

> **Recreation 2:** Relocate, remove, and/or reorganize facilities to preserve and protect park resources, to better serve visitor recreation needs, and to provide efficient park administrative, public safety, and maintenance functions.
>
> **Recreation 3:** Where appropriate, provide recreation access and program opportunities that expand the visitor use of the park in the spring, fall, and winter months.
>
> **Recreation 6:** Provide additional day use and overnight accommodations outside the old growth forest, to serve the visitor needs reflected by California's changing demographic trends. Develop group recreation facilities, where appropriate, and make provisions to accommodate a wide range of user groups and for special events during year-round seasonal conditions.
>
> **Recreation 7:** Evaluate new technologies and recreational activities and incorporate those that would enhance visitor experiences and benefit recreation facilities and programs, such as maximizing the use of the Internet for public outreach and providing wireless Internet access.
>
> **Saddle Mountain 6:** Conduct additional natural and cultural resource surveys, as necessary, to determine the presence of significant resources; implement protective measures, and interpret the site's history and important resources through effective interpretation methods and media dissemination.
>
> **RDO 4:** Protect special status plant and wildlife habitats; conduct resource surveys and monitor use along roadways and near sensitive habitats; and implement resource management and protective measures to eliminate or mitigate human impacts on significant natural resources.
>
> **RDO 5:** Prepare site plan(s) to determine the location, size, and configuration of desired public use and park operations facilities, addressing public health and safety issues, resource sensitivities, accessibility requirements, aesthetics, interpretation, and management of visitor capacity.

The plan recommends the use of an adaptive management process that would help implement the general plan's vision and desired conditions for natural, cultural, and recreational resources and visitor experiences in the park. Samples of these desired outcomes, indicators, and potential management actions are listed in **Table 4-1**. This process would provide an ongoing method to evaluate and avoid or reduce impacts associated with recreational uses, visitor experiences, and park resources. Using the adaptive management process, any potentially significant impacts will be minimized to ensure protection of the park's important resource values and visitor opportunities as expressed in the General Plan.

The plan's proposals may increase the use of regional parks, open space, and public recreation facilities by encouraging regional trail connections and interpretation of the natural, cultural, aesthetic, and recreational resources in the Santa Cruz Mountains region (see guidelines **Recreation 4 and Recreation 5**). However, this increased use would be minor and would not cause or accelerate significant physical deterioration of the facilities.

> **Recreation 4:** Create diversified recreation opportunities across the region's state parks to disperse recreation, reduce resource impacts, and provide facilities and recreational opportunities that respond to unique site characteristics. Coordinate with federal, state and county agencies and open space and community-based organizations to plan a regional network of recreation opportunities.
>
> **Recreation 5:** Provide information and facilities to encourage visitation to nearby state parks and regional open space. Methods to encourage this cross-connection include information describing regional resources and the area's historic connections, location maps and park and open space access information, trail connections, and mass transit opportunities

PROJECT ALTERNATIVES

The guiding principles for the analysis of alternatives in this EIR are provided by the State CEQA Guidelines Section 15126.6, which indicates that the alternatives analysis must: (1) describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project; (2) consider alternatives that could reduce or eliminate any significant environmental impacts of the proposed project, including alternatives that may be more costly or could otherwise impede the project's objectives; and (3) evaluate the comparative merits of the alternatives. The State CEQA Guidelines Section 15126.6(d) permits the evaluation of alternatives to be conducted in less detail than is done for the proposed project. A description of the project alternatives, including the No Project Alternative, is provided in this EIR to allow for a meaningful evaluation, analysis, and comparison of these alternatives with the Preferred Alternative, which is the General Plan as described in Chapter 4.

ALTERNATIVE 1: FACILITIES REMOVAL AND INCREASED RESOURCE PROTECTION

Alternative 1 would focus on the protection, sustainability, and biodiversity of the plants and animals within the old growth redwood forest. Measures to ensure this protection would include: removing some or all of the existing campgrounds and picnic areas within the old growth redwood forest; relocating the food service concessionaire, administrative and maintenance offices to Saddle Mountain and to Little Basin; adapting the Headquarters historic buildings for interpretive and educational purposes; removing long-term parking from the Headquarters area; and establishing a visitor shuttle system to park destinations. Traffic flow would be redesigned in order to accommodate vehicles while reducing congestion and minimizing resource impacts. Parking, trails, and trailheads would be established outside of the Headquarters area away from the most sensitive habitats.

Modification or removal of existing facilities would occur in the Headquarters area to protect and restore native habitats and natural processes. This action would reduce the overall amount and variety of visitor facilities in the park. The campgrounds would be removed or reduced in size, or closed on a seasonal and rotational basis to aid the recovery of forest habitat.

Removing, or reducing in size, recreational facilities within the old growth redwood forest would minimize the negative impacts to the forest understory, and minimize soil compaction around the redwood trees. This would also help restore the health of associated plant and wildlife habitats, with special attention to the federally protected marbled murrelet. This action would reduce the overall amount and variety of visitor facilities in the park. Removing food sources to jays, ravens, and raccoons would also help protect murrelets and other nesting birds.

Vehicular traffic and associate noise and air quality effects would be reduced in the day use and overnight use areas. Visitor and non-visitor traffic would still traverse through the park on Highway 236.

Visitor surveys indicate a strong interest to maintain the opportunities to enjoy the traditional camping, hiking and picnicking experiences at Big Basin, which is part of its legacy for family traditions in past, present, and future generations. With the few areas suitable for development outside the old growth forest and within current state park ownership, this alternative was not selected because it would result in the loss of recreational facilities currently serving visitors to the Santa Cruz Mountains region, and would not address the increasing recreational demands for visitor camping, group picnic areas, and tent-cabin facilities.

ALTERNATIVE 2: WILDERNESS EXPANSION

Alternative 2 would convert the backcountry to an expanded wilderness (potential addition of 4,000 acres) within Big Basin Redwoods SP. This would encourage greater use of the park for more primitive visitor experiences and low-impact type of recreational use. Because a state wilderness area, by definition, should have “no permanent road within any wilderness” (Wilderness Act of 1964), this alternative would require the closure and/or removal of all roads, or roads converted to trails. This action would also prohibit bicycle use and use of mechanized equipment within the designated wilderness areas. This alternative would also include the removal of developed trail camps, with opportunities remaining for informal primitive camping.

In addition, this alternative would establish a threshold for visitor carrying capacity and reduce the overall use intensity within the Headquarters area during the peak use periods, through a reduction of long-term parking and overnight camping. Administrative and maintenance functions and concession services would be relocated, as feasible, to transform the Headquarters area into a pedestrian oriented low intensity use area with greater emphasis on natural resource protection goals and management objectives. Visitor access would rely on short-term parking and a shuttle system to reduce traffic and congestion. The remaining backcountry would accommodate multi-use trails and trail camps for individuals and group use.

This alternative would increase opportunities for visitors seeking a more primitive wilderness experience. With imposed restrictions on development and use within a state wilderness, other benefits would include greater protection of the old growth forest and reduced impacts on watersheds, streams and associated native plant and wildlife habitats. However, with more areas set aside as wilderness, more active forms of recreation, such as mountain bikes, would be displaced and concentrated in surrounding park areas and in adjacent public and private properties in the Santa Cruz Mountains.

An expanded wilderness could potentially increase fire danger and public safety because of a longer response time to get to these remote roadless areas. Park enforcement could also be compromised for similar reasons.

ALTERNATIVE 3: NO PROJECT

The California Environmental Quality Act requires an evaluation of the "No Project" Alternative and its impact (CEQA Guidelines §15126.6[e][1]). The No Project Alternative represents perpetuation of existing management actions, and its analysis is based on the physical conditions that are likely to occur in the future if the project (the proposed general plan) is not approved and implemented. The purpose of describing and analyzing the no project alternative is to allow decision-makers to compare the impacts of approving the proposed general plan with the expected impacts of not approving the general plan. Without a general plan for Big Basin Redwoods SP, it is assumed that the existing patterns of operation and management would continue and no new major recreational or operational facilities would occur. Visitation and park use would be expected to increase as the state-wide and regional populations grow. Many of the management actions that would protect, preserve, and restore natural and cultural resources beyond the requirements of laws and regulations may not occur under the No Project Alternative.

The existing conditions, deterioration of historic facilities, traffic and parking congestion, and impacts on the park's resources would continue if the General Plan was not adopted.

Without the improvements to accommodate and manage the existing visitor demands, as well as a projected increase in visitor use, sensitive natural and cultural resources may be expected to degrade over time due to overuse. There would also be fewer facilities to accommodate the needs for mountain bikers and equestrians, resulting in increased impacts in existing use areas.

Under the No Project Alternative, the park's natural and cultural resources may not receive an increased level of protection. Resource management plans and policies for natural and cultural resources may not be developed.

Demand for recreation facilities and programs are increasing along with population increases in the San Francisco Bay Area and Central Valley. However, without a general plan, CSP would not have the authority to develop or enhance facilities to respond to this demand, especially for day and overnight use. Recreational and interpretive improvements that could enhance the visitor experience at the park's current level of use or anticipated future needs would not be developed.

Under the No Project Alternative, a comprehensive evaluation of park, regional, and statewide trail systems may not be accomplished. Opportunities would be missed to create a higher quality visitor experience through trail linkages to the California Coastal Trail, to regional state parks and recreation and open space areas, and to local or regional community destinations.

Also, under the No Project Alternative, land use management may not be evaluated on a parkwide basis, and the park's potential for planned and integrated land use, recreational facility development, and possible future acquisitions may not occur. Without organized land use or management plans and development guidelines, incremental cumulative impacts may adversely impact the park in the future.

Traffic and circulation improvements at Headquarters area will not be accomplished with the No Project Alternative. With expected increased visitor and non-visitor traffic on highways 236 and 1, impacts in the Headquarters area and Waddell Beach would continue or worsen.

With the absence of a general plan and additional guidance for cultural resource management, deterioration of historic buildings and impacts on cultural sites and features are likely to continue if the No Project Alternative is selected.

Improvements to informational and directional signage may not occur. The existing visual and aesthetic character of the park may not be improved under the No Project Alternative and existing scenic and other aesthetic resources may be affected.

Existing interim facilities, programs and uses at Saddle Mountain would likely continue under an agreement with a nonprofit or concessionaire. Aging facilities (buildings and infrastructure) would support similar uses, but limit the opportunity to replace these facilities for other important functions and use.

Existing facilities, programs, and uses at RDO would continue at current levels, preventing new visitor facilities or site improvements desirable to support increasing visitation and on-going demands for coastal recreation activities or implement new measures to protect resources.

Little Basin would continue to operate for group recreation and educational program activities under the current or similar agreement. Opportunities for new recreation, infrastructure, and operational facilities and more sustainable systems would not be possible under the No Project Alternative.

APPENDIX P

ADDENDUM

On May 17, 2013, the California State Park and Recreation Commission approved the Big Basin Redwoods SP General Plan, certified a final EIR, and adopted a Statement of Overriding Considerations for the Project.

The Center for Biological Diversity (CBD), a nonprofit public interest corporation, challenged the EIR and General Plan approval under the California Environmental Quality Act (CEQA) and the California Endangered Species Act (CESA) as it relates to marbled murrelet protection.

State Parks disputed the allegations and contentions raised in the Center's CEQA Lawsuit. The two parties resolved their disputes over the General Plan and entered into a Settlement and Release Agreement, dated January 28, 2014.

This Agreement stipulates specific actions to be taken by State Parks to further efforts to protect the marbled murrelet in three state parks (Big Basin Redwoods SP, Portola Redwoods SP, and Butano SP), which are situated in the Santa Cruz Mountains Region. This Agreement, however, does not change or alter the General Plan and Final EIR approved by the Commission. Required actions are summarized below and described in detail in the Settlement Agreement located on the following pages.

A. Trash Management Program

(A1) Frequently empty all dumpsters, to prevent trash overflow.
(A2) Ensure sufficient staff to monitor and empty animal-proof trash bins.
(A3) Install a sufficient number of animal-proof trash bins and dumpsters.
(A4) Install animal-proof food lockers in all campsites and cabin sites.
(A5) Post "no dishwashing" signs at all spigots.
(A5a) Install a dishwashing station at restroom buildings.
(A6) Create and post signs at all visitor facilities to educate visitors with the message "Keep it crumb clean." Similar signs should be posted in Spanish.

B. Public Education Measures

(B1) Make the marbled murrelet a focal point of a comprehensive, sustained public education campaign.
(B2) Incorporate marbled murrelet information into publications, events, etc.
(B3) Arrange for campers to receive with their reservation a digital link to an education video about the marbled murrelet.
(B4) Create marbled murrelet displays in high use areas of the park.
(B5) Approach Audubon or others to create and run a citizen science program focused on the marbled murrelet, nest predation, and trash.

(B6) Complete an education session for all park staff in Big Basin, Portola, and Butano

State Parks.

(B7) Continue the interpretive program on the marbled murrelet at the campfire center.

(B8) Continue to incorporate information on marbled murrelet conservation on guided hikes in the park.

(B9) Hire staff during the peak camping season to talk to visitors about not feeding wildlife, proper disposal and storage of food, and marbled murrelet conservation.

C. Monitoring and Adaptive Management

(C1) Compile and analyze survey data collected from the 2014, 2015, and 2016 seasons.

(C2) Based on the evaluation of this data, make a determination whether adaptive management measures need to be implemented.

(C3) Undertake outreach to wildlife agencies, and determine the need for adaptive measures every 3 years (Jan-March 2020, Jan-March 2023).

D. Coordination and Funding

(D1) Actions and commitments are subject to the availability of funding. Apply for funding activities through available sources.

(D2) Apply for funding to continue annual audio-visual studies and radar surveys.

(D3) Support a regional effort to protect the marbled murrelet.

E. Corvid Management Measures

(E1) Implement condition taste aversion experimental treatments in Big Basin Redwoods SP.

(E2) Continue with raven depredation efforts utilizing park staff.

(E3) Draft a plan that considers options for the human removal of Steller's jay juveniles from the campgrounds.

F. Other…

(F1) Make the current staff position "permanent" that is dedicated to overseeing marbled murrelet mitigation measures.

SETTLEMENT AND RELEASE AGREEMENT

This Settlement and Release Agreement ("Agreement") is made and entered into by and among, the California State Park and Recreation Commission ("Commission") and the California Department of Parks and Recreation ("Department") (collectively "State Parks"), on the one hand, and the Center for Biological Diversity ("the Center"), a nonprofit public interest corporation. State Parks and the Center are individually referred to in this Agreement as a "Party" and collectively as the "Parties." The Parties make this Agreement in light of the following recited facts (each a "Recital").

RECITALS

A. On May 17, 2013, the Commission approved the Department's Big Basin Redwoods State Park General Plan ("Project" or "General Plan"), certified a final environmental impact report ("EIR"), and adopted a Statement of Overriding Considerations for the Project. The Department filed the Notice of Determination on May 20, 2013, which was received by the State Clearing House on May 21, 2013, and was assigned State Clearing House Number 2001112104.

B. Challenging the EIR and General Plan approval under the California Environmental Quality Act ("CEQA") and the California Endangered Species Act ("CESA"), the Center timely filed a Petition for Writ of Mandate and Complaint for Declaratory Relief in the Superior Court of the State of California, Santa Cruz County, *Center for Biological Diversity v. California Department of Parks and Recreation, et al.*, Case No. CV 177159 ("CEQA Lawsuit").

C. State Parks disputes the allegations and contentions raised in the Center's CEQA Lawsuit.

D. The Parties recognize that continuing their dispute over the General Plan and the CEQA Lawsuit will result in significant costs to each Party, with an uncertain outcome to each Party. Through this Agreement, the Parties now wish to resolve their disputes over the General Plan and the Center's CEQA Lawsuit.

E. This Agreement's language binding principals, directors, officers, and agents is effective only to the extent that such entities or people can be legally bound by such agreements.

In consideration of the above recitals, which are incorporated herein, and the promises set further herein, the Parties agree as follows:

AGREEMENT

1. Marbled Murrelet Protection. The marbled murrelet is a federally threatened Pacific seabird that nests in the upper branches of old growth redwood and Douglas Fir trees in the Santa Cruz Mountains region, including in the following three state parks: (1) Big Basin Redwoods State Park ("Big Basin") (composed of the main part of the park ["Big Basin proper"] and a recently-acquired part of the park ["Little Basin"]). (2) Portola Redwoods State Park

("Portola"), and (3) Butano State Park ("Butano"). (See map attached as Exhibit A.) To further efforts to protect the marbled murrelet, Parks agrees to do the following:

A. Trash management program

Implement the following trash management measures by the specified dates in Big Basin Redwoods, Portola, and Butano State Parks, to improve upon existing measures:

(A1) Contract with a waste management provider to empty all of the dumpsters in Big Basin proper (not including Little Basin) on a frequent, regular schedule that will prevent trash overflow, particularly during peak visitation times. This would require emptying dumpsters on the weekends and holidays. Amend the contract with the waste management provider at Little Basin to address the issue of full dumpsters during peak use in the summer. New trash pick-up measures must be implemented by April 2014.

(A2) By April 2014, ensure sufficient permanent and seasonal maintenance staff to monitor and empty the animal-proof trash bins throughout the Parks to prevent trash overflow. Provide a mechanism for park visitors to notify staff if trash bins or dumpsters are overflowing and a plan for park staff to clean up any overflow within two hours of being notified.

(A3) Animal proof trash containers are already installed in human-use areas of Big Basin proper and at Portola and Butano State Parks. By April 2014, install a sufficient number of animal-proof, user-friendly trash bins and dumpsters in all human-use areas in Little Basin, making sure that bins are large enough and numerous enough to prevent spill-over during peak visitation.

(A4) By April 2014, install animal-proof food lockers in all campsites and cabin sites in the Parks, including the Little Basin campground.

(A5) By April 2014, post "no dishwashing" signs at all spigots. Several studies are underway in other parks to test the efficacy of different types of drain grates to prevent birds and other animals from eating food scraps left under the spigots. When the data are available and if drain grates are effective, Parks will install grates under the spigots in the campgrounds. In addition, Parks will retrofit the existing campground restroom buildings with dishwashing facilities as follows.

(a) There are fourteen restroom buildings with running water and flush toilets in Big Basin campgrounds. By May 31, 2015, Parks will install a dishwashing station at seven or more of these restroom buildings, distributed across the campgrounds to reflect visitor use to the extent possible.

(b) There are two restroom buildings with running water and flush toilets at the main Portola campground. By May 31, 2015, Parks will install a dishwashing station at one or both of these restroom buildings.

(c) Sky Meadows campground in Big Basin has running water and vault toilets. By June 30, 2016, Parks will install at least one dishwashing station.

(d) Unlike the restroom buildings in (a), (b), and (c), the following have not yet been retrofitted to be compliant with the Americans with Disabilities Act ("ADA"): (1) the restroom building in Butano and (2) the restroom building at the Portola group campground. When these restroom facilities are retrofitted to be ADA compliant, Parks will install a dishwashing station at each.

(A6) Parks, together with other local, state, and federal agencies, has created highly visible, user-friendly, and durable weather-resistant signs to educate visitors to discard trash in animal-proof bins, to clean up crumbs, and to refrain from feeding birds and other wildlife. New signs to educate visitors with the message "Keep it crumb clean: never leave food unattended, use food lockers where available, never feed wildlife, your crumbs attract jays and ravens who eat eggs and babies of endangered marbled murrelets", have already been posted in some areas. By April 2014, these or similar signs should be posted at all visitor facilities in the Parks including all campsites, campground information kiosks, food storage lockers at campsites and cabin sites, visitor centers, nature centers, stores, picnic areas, picnic tables, bathrooms, dumpsters, trailheads, and at the parking lot information kiosks for Berry Creek Falls and Sunset Trail Camp. The same or similar signs should be posted in Spanish in at least one-third of the locations.

B. Public education measures

(B1) Make the marbled murrelet a focal point of a comprehensive, sustained public education campaign within Big Basin Redwoods State Park to encourage park visitors to participate in saving the Santa Cruz Mountains marbled murrelet by not feeding wildlife and by properly storing and throwing away all trash.

(B2) By April 2014, at Big Basin, Portola, and Butano State Parks, incorporate into publications including park event schedules, natural history literature, and a brochure to be made available in the Sempervirens room (or similar location), information that: (i) identifies the marbled murrelet as a focal point of the Park, (ii) highlights its precarious status in the Santa Cruz Mountains and provides natural history highlights about the marbled murrelet, (iii) discusses the threat that visitor trash poses to the marbled murrelet by attracting jays and ravens, (iv) discusses the importance of not feeding jays, ravens, and other wildlife, and keeping areas free of trash and crumbs and (v) educates Park visitors regarding appropriate dish-washing techniques.

(B3) As soon as feasible and at the latest at the time a new reservation contract is in place, Parks will arrange for campers to receive with their reservation a digital link to a short, educational video about the marbled murrelet. The link will be sent to campers with all correspondence regarding their reservation. The video will include information that: (i) identifies the marbled murrelet as a focal point of the Park, (ii) highlights its precarious status in the Santa Cruz Mountains and provides interesting natural history highlights about the marbled murrelet, (iii)

discusses the threat that visitor trash poses to the marbled murrelet by attracting jays and ravens, (iv) discusses the importance of not feeding jays, ravens, and other wildlife, and keeping areas free of trash and crumbs and (v) educates Park visitors regarding appropriate dish-washing techniques and the new dishwashing stations. The video should be provided in English and Spanish.

(B4) By April 2014, create marbled murrelet displays in high use areas of the Park. Display areas will include but are not limited to the Sempervirens Room (or similar location) in the Headquarters Building, the Nature Lodge, and the future visitor contact center at Saddle Mountain. At the Nature Lodge, the existing marbled murrelet video should be made visible by creating an accompanying sign alerting the visitor to the video; the Spanish language option for the video should be operational.

(B5) By April 2014, approach Audubon or another potentially interested partner with citizen science experience to create and run a citizen science program focused on the marbled murrelet, nest predation, and trash. For example, this program and a website could allow visitors to record (a) sightings of marbled murrelets; (b) sightings of Steller's jays, common ravens, and other wildlife; (c) where animals are seen eating human food; (d) overflowing trash bins and dumpsters; (e) where they see trash on the ground. If Parks, after making a good faith effort, is unsuccessful in finding an interested partner to create and run a citizen science program, Parks shall have no obligation to initiate a citizen science program of its own.

(B6) By April 2014, complete an education session for all Park staff in Big Basin, Portola, and Butano State Parks on the new marbled murrelet conservation measures with guidance on how to talk with Park visitors and enforce the measures.

(B7) Continue the interpretive program on the marbled murrelet that is presented by Parks staff at interpretive and educational programs at the Campfire Center. The program will include information that: (i) identifies the marbled murrelet as a focal point of the Park, (ii) highlights its precarious status in the Santa Cruz Mountains and provides natural history highlights about the marbled murrelet, (iii) discusses the threat that visitor trash poses to the marbled murrelet by attracting jays and ravens, (iv) discusses the importance of not feeding jays, ravens, and other wildlife, and keeping areas free of trash and crumbs, and (v) educates Park visitors regarding appropriate dish-washing techniques and the new dishwashing stations.

(B8) Continue to incorporate information on marbled murrelet conservation on guided hikes in the Park. For example, the Redwood Loop Trail passes by a giant tree where marbled murrelets have nested, providing an opportunity for visitor education.

(B9) During the peak camping season (from April to September), continue to hire staff dedicated to talking to visitors in the Headquarters area and all campgrounds about not feeding wildlife, proper disposal and storage of food, and marbled murrelet conservation. It is especially important to talk to campers at mealtimes (breakfast, lunch, dinner).

C. Monitoring and Adaptive Management

To implement Parks' commitment to undertaking adaptive management activities on State Park properties as part of a larger regional effort to conserve and protect the marbled murrelet, Parks will take the following steps:

(C1) On or before January 31, 2017, Parks will compile and analyze all survey data collected as a result of activities described in (D2) and other relevant information from the 2014, 2015, and 2016 seasons, including the analysis of long-term trends through and including the 2016 season using the long-term survey data, and make this data, analysis, and information available to the public on its website. Parks will take steps to seek input from U.S. Fish and Wildlife Service, California Department of Fish & Game, and other experts on marbled murrelets and seabirds in evaluating the data and information.

(C2) Based on the evaluation of the data and information and input from members of the public, agencies, and experts (if any), Parks will make a determination on or before March 31, 2017, whether adaptive management measures need to be implemented in the Parks to provide additional protection for the marbled murrelet in Big Basin, Portola, and Butano State Parks. Additional measures considered will include potential closures of human-use areas. Parks' determination of whether or not any adaptive management measures are needed, and the basis for the determination, will be memorialized in writing and made available to the public on its website within 5 business days.

(C3) Parks will undertake the same compilation and analysis of data and information, public notice, outreach to wildlife agencies and experts, and a determination regarding any needed adaptive management every 3 years (January 31/March 31, 2020, January 31/March 31, 2023) until and unless a new general plan is adopted for Big Basin Redwood State Park.

D. Coordination and Funding

(D1) A number of the actions to protect the marbled murrelet will require funding, and these commitments are made subject to availability of funding. Parks commits to apply for funding these activities through available sources such as state funding, federal funding including the Fish and Wildlife Service's Section 6 funds, Oil Spill Natural Resource Damage Assessment (NRDA) Restoration Funding when applicable, California Coastal Conservancy, and others.

(D2) Funding is already established though the year 2020 for (1) at-sea surveys to determine overall regional marbled murrelet numbers and locations; and (2) corvid studies to determine predator numbers. Funding will also be sought for other types of studies. State Parks will apply for funding to continue (1) annual audio-visual studies to evaluate marbled murrelet nesting activity in Big Basin, Portola, and Butano State Parks, and will seek funding for (2) radar surveys at the mouth of Waddell, Butano, and Pescadero Creek several times a year to provide another index of inland marbled murrelet activity.

(D3) Working towards the recovery of the marbled murrelet will require a regional effort that includes State Parks was well as other agencies and organizations and dedicated funding. Parks will take an active role to support a regional effort to protect the marbled murrelet. Parks will continue to support regional and Park specific monitoring and research efforts by providing access, complimentary camping, and assistance with permits.

E. Corvid management measures

(E1) Beginning in 2014, contingent on approval and funding from the Luckenbach Oil Spill Trustee Council, implement conditioned taste aversion experimental treatments in Big Basin Redwoods State Park. Implementation is planned to occur within 1.5 kilometers of facilities including the campgrounds. The treatments should have well-defined measures to evaluate effectiveness. If the taste aversion treatments in Big Basin, Portola, and Butano, State Parks prove successful in reducing nest depredation, State Parks will continue to seek funding for these measures and implement these measures (contingent on funding being secured).

(E2) Continue with raven depredation efforts utilizing park staff. Evaluate the current program in fall 2014. Following that evaluation, alternative approaches may be deployed as needed, including but not limited to hiring outside experts to remove ravens from the Park for two seasons. If an alternative approach is undertaken, it will be evaluated in fall 2016 to determine whether to continue or whether a different program for raven management is needed.

(E3) Steller's jay adults in Park campgrounds produce large numbers of juveniles, many of which remain in the Park or disperse back into the Park. By April 2014, the Park should draft a plan that considers options for the humane removal of Steller's jay juveniles from the campground areas of the Park at the end of each jay breeding season. Scientists are currently conducting research on jays. This research will assist Parks in making decisions regarding the removal of jays.

F. Other

(F1) Parks currently has a staff position dedicated to overseeing and implementing marbled murrelet mitigation measures. In the next fiscal year, Parks will seek to make that position permanent.

(F2) Park Rangers have full peace officer powers to enforce laws within the parks, including laws pertaining food storage (14 CCR § 4323), feeding wildlife (14 CCR § 4305; 36 CFR § 2.2) and littering (California Penal Code § 374.4; 14 CCR § 4310). Officer discretion is an important part of their authority and they use their discretion to warn, cite, or arrest violators as the situation requires. Park Rangers will continue to talk with visitors one-on-one when issuing warning tickets or citations to explain the importance of following the rules to protect marbled murrelets.

(F3) Parks will comply with the CEQA before proceeding with any site-specific proposals to build new infrastructure in and adjacent to old-growth habitat in Big Basin Redwoods State Park.

2. ADA Compliance. In carrying out the activities described in 1.B5 (above), State Parks shall comply with the Americans with Disabilities Act to the extent such compliance is required by law.

3. Effective Date. The effective date of this Agreement ("Effective Date") shall be the date the Agreement becomes signed by all of the Parties. Accordingly, each Party shall include the date it executes the Agreement next to its respective signature, and the Effective Date shall be the latest of these dates. The Agreement may be executed in counterparts.

4. Free and Voluntary Agreement. Each Party represents and warrants that its execution of this agreement and release is free and voluntary and acknowledges its independent right, absent this agreement, to litigate the CEQA Lawsuit.

5. Attorneys' Fees and Costs. Parks agrees to pay the Center's attorneys' fees and costs in connection with the CEQA Lawsuit and the negotiation of this Agreement in the amount of $33,795.57. Payment shall be made in the form of a check made payable to the Center for Biological Diversity and shall be sent to Lisa Belenky, Senior Attorney, Center for Biological Diversity, 351 California Street, Suite 600, San Francisco, CA 94104.

6. Continuing Jurisdiction. The Parties agree that consistent with California Code of Civil Procedure Section 664.6, the Santa Cruz County Superior Court shall retain continuing jurisdiction over the Parties to enforce the terms of this Agreement for ten years after the Effective Date.

7. Stipulated Judgment. It is hereby stipulated by and between the parties that Santa Cruz Superior Court action number CV 177159 is settled and judgment shall be entered pursuant to the terms and conditions of this Agreement, which are and shall be binding on the parties hereto.

8. Notice. All notices under this Agreement shall be in writing. All notices shall be effective when personally delivered, or e-mailed, or 48 hours after deposit in the United States mail, as registered or certified mail, postage prepaid, return receipt requested, to the following representatives of the parties at the addresses indicated below:

If to California Department of Parks and Recreation:

Kathryn J. Tobias
Senior Staff Counsel
California State Parks
1416 9th Street, P.O. Box 942896
Sacramento, CA 94296-0001
kathryn.tobias@parks.ca.gov

With a copy to:

Susan A. Austin
Deputy Attorney General
California Attorney General's Office
1515 Clay Street, 20th Floor
Oakland, CA 94612
susan.austin@doj.ca.gov

If to the Center for Biological Diversity:

Lisa T. Belenky, Senior Attorney
Center for Biological Diversity
351 California St., Suite 600
San Francisco, CA 94104
(415) 632-5307
lbelenky@biologicaldiversity.org

With a copy to:

Shaye Wolf, Climate Science Director
Center for Biological Diversity
351 California St., Suite 600
San Francisco, CA 94104
(415) 632-5301
swolf@biologicaldiversity.org

9. Modification. This Agreement may not be altered, amended, modified or otherwise changed except by writing duly executed by authorized representatives of the Parties. A Party seeking to modify the Agreement shall make a request for modification according to the

notice provisions of paragraph 8. The other Party shall respond to the request within 15 calendar days, and acceptance of the request shall not be unreasonably withheld.

10. Informal Negotiations. In the event a Party believes that the other Party is in default of any provision or provisions of this Agreement, that Party shall provide the other Party with written notice of the alleged default pursuant to the notice procedures identified in paragraph 8.

10.1. Notice of Default or Notice of Claim. The written notice shall identify the provision of the Agreement that the Party believes has been breached and/or circumstances have arisen that require immediate injunctive relief, a general summary of the facts supporting the alleged default or circumstances and, where appropriate, the manner in which the default or circumstances may be satisfactorily cured. Failure or delay in giving notice of any default shall not constitute a waiver of any default, nor shall it change the time to cure the default.

10.2. Informal Dispute Resolution. After notice of default is given, the Parties shall commence good faith negotiations to resolve the dispute no later than 15 days from the date of the written notice.

10.3. Cure Period. The Party who is alleged to be in default shall have 30 days from the date of the written notice to cure the alleged default, or, if the default cannot be fully cured in the 30-day period, make reasonable efforts to commence to cure the default within the period and, thereafter, diligently prosecute such cure to completion.

10.4. Judicial Action. The Parties agree that in the event of any dispute over the terms of this Agreement, including any default issues, they will first undertake the Informal Dispute Resolution process outlined above in paragraph 10.2. Any dispute not resolved through such informal dispute resolution may be submitted to the Superior Court of Santa Cruz. The Parties further agree that in any such proceeding they will not reinstate any claims otherwise compromised by this Agreement. Nothing in this provision, however, relinquishes or waives the right of any party to seek immediate injunctive relief.

10.5. Timing. The Parties agree that they have a strong, mutual interest in having any judicial dispute resolved as quickly as possible. Accordingly, within ten days of the filing of any judicial action pursuant to paragraph 10.4, the Parties agree to meet and confer in good faith to discuss and attempt to agree upon procedural methods for achieving an early resolution of the claim through motions or other procedures.

11. Waiver of Right to Enforce. The failure of any Party to enforce any term, covenant, or condition of this Agreement on the date it is to be performed shall not be construed as a waiver of that Party's right to enforce such term, covenant or condition, or any other term, covenant, or condition of this Agreement. A waiver of any Party's right to enforce any provision of this Agreement shall not be effective unless such a waiver is made expressly in writing. An express waiver of any one breach shall not be deemed a waiver of any other breach of the same or any other provision of this Agreement.

12. Headings. The paragraph headings herein are for the convenience of the Parties and are not intended to be used as an aid to interpretation of the terms of this Agreement.

13. Mistake of Fact or Law. The Parties acknowledge that they are aware that they may hereafter discover facts or law different from or in addition to those they now know or believe to be true with respect to any claims, causes of action, rights, obligations, debts, liabilities, accounts, liens, damages, losses, and expenses arising from execution of this Agreement and each agrees that the Agreement shall remain in effect in all respects, notwithstanding any such mistake of fact or law.

14. No Third Party Beneficiaries. Except for the indemnity and release provisions of this Agreement the Parties do not intend to create any third party beneficiaries by this Agreement.

15. Severability. If any term, provision, covenant, or condition of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the rest of this Agreement shall remain in full force and effect and shall in no way be affected, impaired, or invalidated.

16. Stipulation of Non-Liability. Except as provided herein, this Agreement and compliance with this Agreement shall not constitute, nor be construed as an admission by any of the Parties of any wrongdoing or liability of any kind, or an admission by them of any violation of the rights of the Parties or any other person or entity, or violation of any order, law, statute, duty or contract on the part of the Parties and their respective officers, directors, employees and agents.

17. Authority. Each person signing this Agreement represents and warrantees that they are authorized to execute this Agreement on behalf of its respective Party.

18. Miscellaneous.

18.1. This Agreement shall be construed according to and governed by the laws of the State of California. The language of all parts of this Agreement shall, in all cases, but construed as a whole, affording to its fair meaning and not strictly for or against either of the Parties.

18.2. This Agreement constitutes the sole and only Agreement of the Parties regarding this subject matter. It correctly sets for the rights, duties and obligations of each to the other. Any prior agreements, promises, negotiations or representations concerning the Agreement, or any of its subject matter, not expressly set forth in this Agreement are of no force or effect.

18.3. This Agreement shall be binding upon the parties and their respective heirs, administrator, representatives, executors, successors and assigns and shall inure to the benefit of the parties and each of them and to their heirs, administrators, representatives, executors, successors and assigns.

18.4. Nothing in this Agreement is, or shall be, alleged, claimed or construed by any Party, their agents, counsel or representatives, to be a violation of any term or provision of any practice or policy; or a violation of any state law, federal law or any policy or regulation.

Date 2/26/2014

CALIFORNIA STATE PARK AND RECREATION COMMISSION; CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

By: Anthony L. Jackson

Major General Anthony L. Jackson, USMC (Ret.)
Director, California Department of Parks and Recreation

Date 1/24/14

CENTER FOR BIOLOGICAL DIVERSITY

By: Lisa T. Belenky

Lisa T. Belenky, Senior Attorney

Approved as to form:

Date 2/24/14

CALIFORNIA STATE PARK AND RECREATION COMMISSION; CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

By: Kathryn J. Tobias

Kathryn J. Tobias, Senior Staff Counsel

Date 1. 28. 2014

ATTORNEY GENERAL OF THE STATE OF CALIFORNIA

By: Susan A. Austin

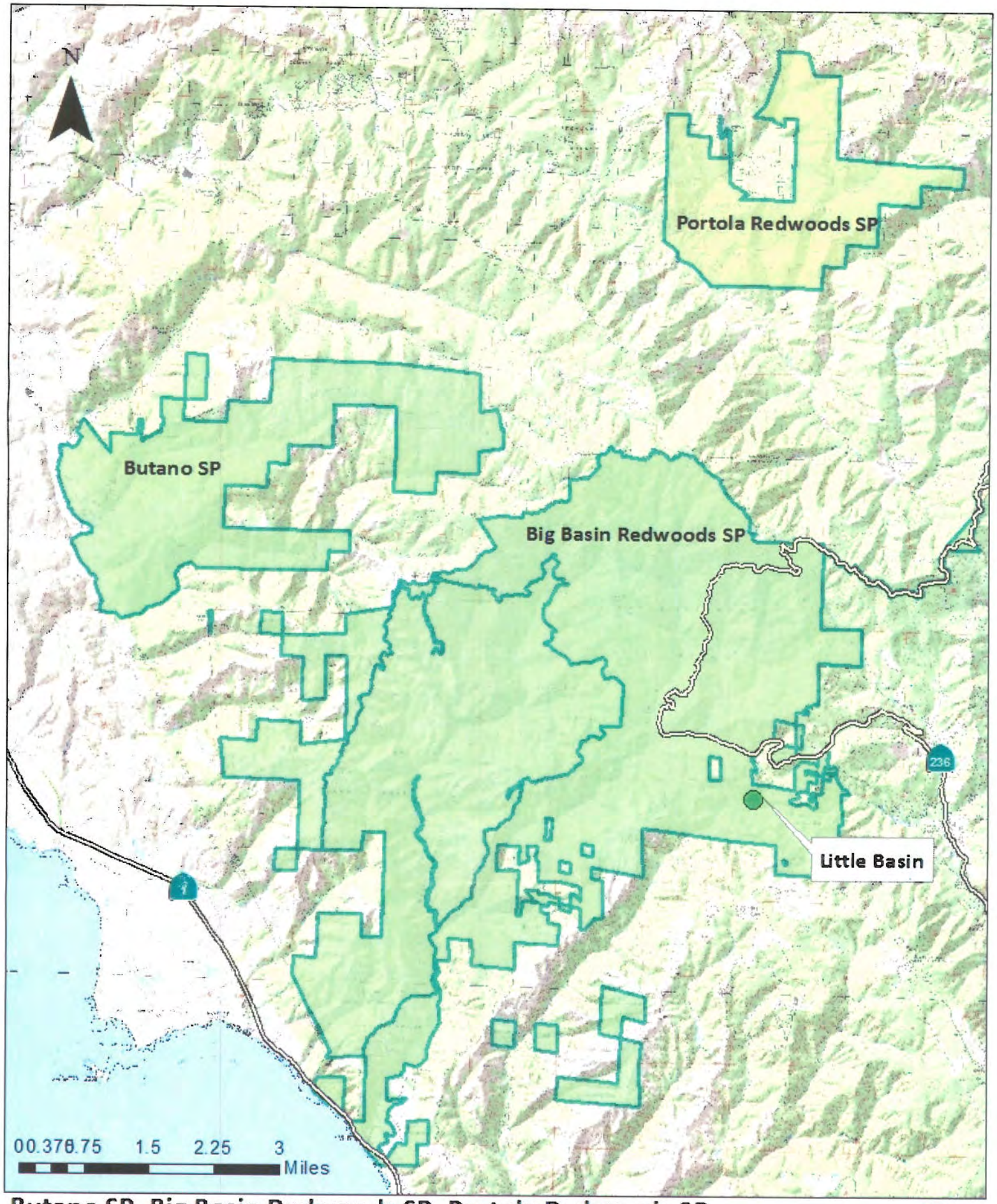
Susan A. Austin, Deputy Attorney General
Attorneys for the California State Park and Recreation Commission and the California Department of Parks and Recreation

Date: January 23, 2014 CHATTEN-BROWN & CARSTENS

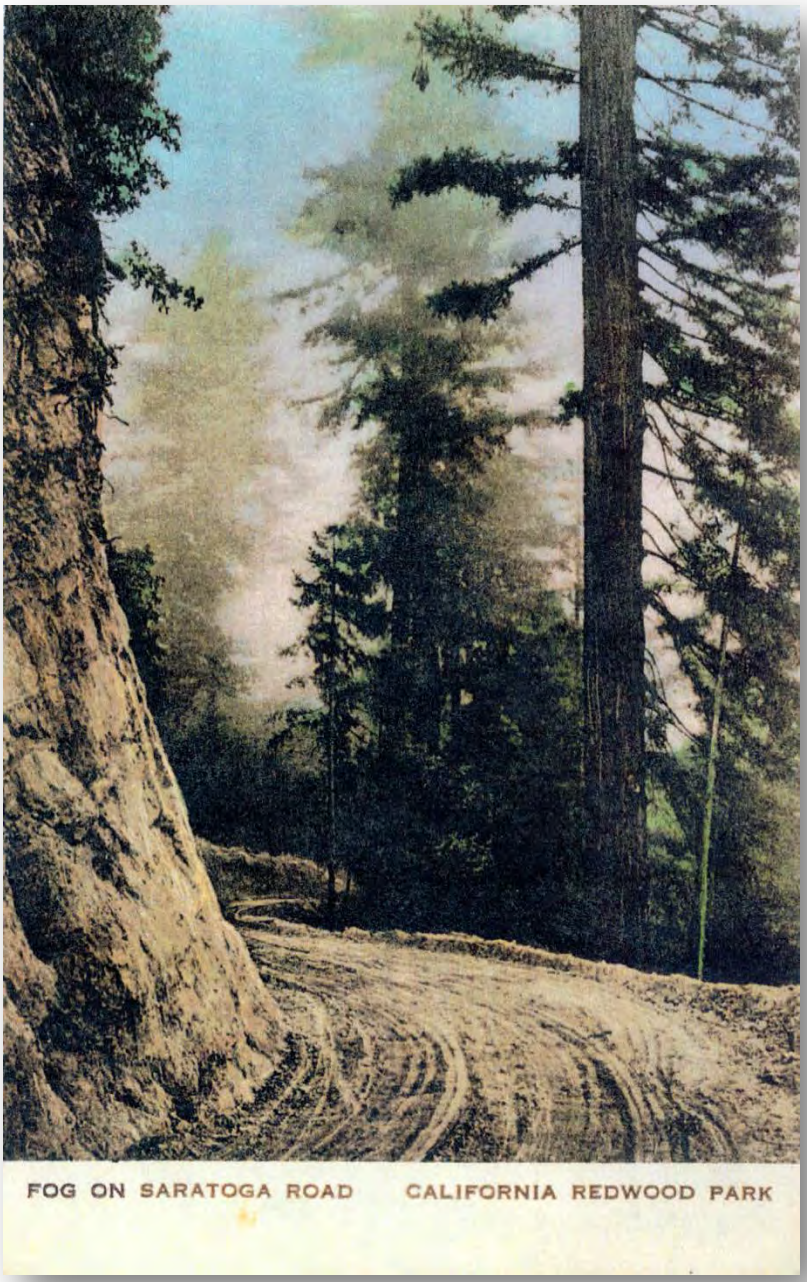
By: _____

Jan Chattan-Brown
Michelle Black
Attorneys for the Center for Biological Diversity

EXHIBIT A



Butano SP_Big Basin Redwoods SP_Portola Redwoods SP



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FIGURES

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Figure 8 Vegetation Communities

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