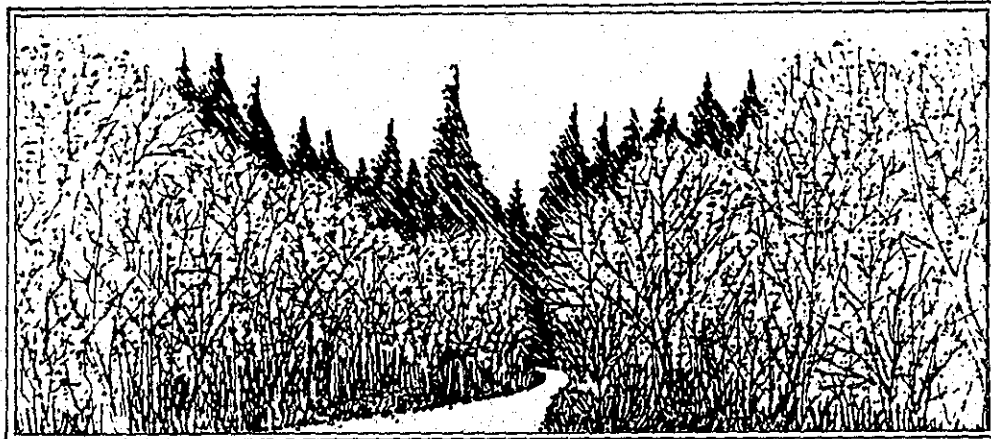




DAVISON RANCH

HUMBOLDT COUNTY CALIFORNIA

FINAL

DEVELOPMENT CONCEPT PLAN
ENVIRONMENTAL ASSESSMENT

*with FONSI 10/28/96 and
Statement of Findings 10/28/96*

ON MICROFILM

REDWOOD NATIONAL AND STATE PARKS

FINAL
DEVELOPMENT CONCEPT PLAN
ENVIRONMENTAL ASSESSMENT

DAVISON RANCH

REDWOOD NATIONAL AND STATE PARKS
HUMBOLDT COUNTY
CALIFORNIA

AUGUST 1996

SUMMARY

The National Park Service and the California Department of Parks and Recreation propose to construct facilities at Davison Ranch for visitor use and park administration. Davison Ranch, three miles north of Orick, California, was acquired by Redwood National Park in 1991. In 1996, the park acquired the B-Mill deck, an adjacent parcel formerly used as a logging mill and log storage deck. Neither property was included in general management planning of the park completed in 1980. Both properties have been extensively disturbed through industrial, residential, and agricultural uses. Development of needed visitor facilities on the sites could occur with few new impacts and many opportunities for restoration. The properties are located close to important visitor use areas in both the national park (Freshwater Lagoon, Redwood Creek, Bald Hills, Lost Man Creek) and Prairie Creek Redwoods State Park (road access to Gold Bluffs Beach, Fern Canyon, the state parks trail system, Elk Prairie campground and visitor center).

This *Final Development Concept Plan and Environmental Assessment* describes and analyzes a proposed action (alternative 1) and four alternatives for future management and development of visitor facilities on the B-Mill deck and Davison Ranch, and the surrounding parklands. All the alternatives were fully examined in the May 1995 *Draft Davison Ranch Development Concept Plan and Environmental Assessment*, which was distributed for public review in July 1995. Based on comments received during the review of the draft plan, the proposed action has been amended since the draft, and the text of this *Final Development Concept Plan and Environmental Assessment* revised to clarify certain sections. The final plan also reflects changes due to the upcoming revision of the Redwood National and State Parks general plans.

Under alternative 1 (the proposal), 22 miles of hiking, biking, and equestrian trails will be developed in the Davison Ranch and Skunk Cabbage areas. The centerpiece of the trail system will be a trail along Prairie Creek for hikers and bicyclists from the south end of Prairie Creek Redwoods State Park to Davison Ranch. The B-Mill deck will be used as a bike-hike trailhead, picnic and parking area. The hay barn will serve as a park stable and one of the houses will be converted for park administrative uses. Other ranch buildings will be removed. An equestrian trailhead will be built near the stable. All actions under this alternative would also occur under alternatives 3, 4 and 5.

Alternative 2 (the No Action alternative) would allow existing uses of the Davison and B-Mill areas to continue but with minimal improvements. A trail through the Skunk Cabbage Memorial Groves begun by the park in 1993 would be completed but no formal trailhead would be constructed. The barn would remain as the park stable. Other Davison Ranch structures would be allowed to deteriorate and removed as funding allows. Visitors would use the shoulders of Davison Road to view elk in the pastures.

Alternatives 3, 4, and 5 would use the B-Mill deck for different types of visitor facilities. Alternative 3 features a multipurpose visitor activity center. Interpretation of the redwood forests and stream ecosystem resources for which Redwood National and State Parks were designated as an International Biosphere Reserve and a World Heritage Site would be the major function of the center. In addition to interpretive functions, the center would provide meeting space for groups of up to 150 persons and serve to attract researchers and other participants to work in partnership to develop a sustainable ecosystem-based approach to management of the natural resources of the Pacific Northwest. Alternative 4 provides a group camp, a facility not found in any of the three adjacent state parks or in the national park. Alternative 5 features a Redwood Institute that would function as an adult environmental education center that would be operated in partnership with a university or other research entity.

TABLE OF CONTENTS

SUMMARY iii

INTRODUCTION 1

Redwood National and State Parks Cooperative Management and Planning 1

Planning for Davison Ranch 1

PURPOSE OF AND NEED FOR ACTION 5

The Need for Action 5

Project Scope and Objectives 6

Davison Ranch Planning Area 7

PUBLIC PARTICIPATION 8

Planning Issues Raised During Scoping 8

RELATIONSHIP TO OTHER PLANNING 11

Revision of National and State Park General Plans 11

Amendments to the Redwood National Park General Management Plan 12

State Redwood Parks General Plan 13

Davison Riparian Mitigation 14

Backcountry Trail Plan, Redwood and Skunk Cabbage Creeks 14

Ecotourism Development 15

Other Planning 15

REQUIRED COMPLIANCE 16

MANAGEMENT ZONING 19

ALTERNATIVES INCLUDING THE PROPOSED ACTION 20

Alternative 1, Trails (The Proposed Action) 20

Alternative 2, No Action 37

Alternative 3, Activity Center 38

Alternative 4, Group Camp 42

Alternative 5, Redwood Institute 46

AFFECTED ENVIRONMENT 51

Location and Access 51

Climate and Air Quality 52

Topography, Geology, and Soils 52

Water Resources 53

Floodplains and Wetlands 54

Vegetation 55

Wildlife and Fisheries 55

Threatened and Endangered Species 57

Cultural Resources 59
Park Operations 61
Visitor Use and Experience 62

ENVIRONMENTAL CONSEQUENCES 64

General Impacts of Construction 64

Air Quality Impacts 64

All Action Alternatives, Including the Proposed Action 64

Alternative 2, No Action 64

Soil and Vegetation Impacts 65

Alternative 1, Trails (The Proposed Action) 66

Alternative 2, No Action 67

Alternative 3, Activity Center 67

Alternative 4, Group Camp 68

Alternative 5, Redwood Institute 68

Water Resource Impacts 68

Alternative 1, Trails (The Proposed Action) 69

Alternative 2, No Action 70

Alternative 3, Activity Center 70

Alternative 4, Group Camp 71

Alternative 5, Redwood Institute 71

Floodplain and Wetland Impacts 71

Alternative 1, Trails (The Proposed Action) 73

Alternative 2, No Action 74

Alternative 3, Activity Center 74

Alternative 4, Group Camp 74

Alternative 5, Redwood Institute 75

Wildlife and Fisheries Impacts 75

Alternative 1, Trails (The Proposed Action) 77

Alternative 2, No Action 77

Alternative 3, Activity Center 78

Alternative 4, Group Camp 78

Alternative 5, Redwood Institute 78

Threatened and Endangered Species Impacts 79

Alternative 1, Trails (The Proposed Action) 79

Alternative 2, No Action 80

Alternative 3, Activity Center 80

Alternative 4, Group Camp 81

Alternative 5, Redwood Institute 81

Cultural Resources Impacts 81

Alternative 1, Trails (The Proposed Action) 81

Alternative 2, No Action 82

Alternative 3, Activity Center 82

Alternative 4, Group Camp 82

Alternative 5, Redwood Institute 82

Park Operation Impacts 82

Alternative 1, Trails (The Proposed Action) 83

Alternative 2, No Action	83
Alternative 3, Activity Center	83
Alternative 4, Group Camp	83
Alternative 5, Redwood Institute	83
Visitor Use and Experience, and Local Community Impacts	83
Alternative 1, Trails (The Proposed Action)	84
Alternative 2, No Action	85
Alternative 3, Activity Center	86
Alternative 4, Group Camp	86
Alternative 5, Redwood Institute	87

PREPARERS AND CONSULTANTS 88

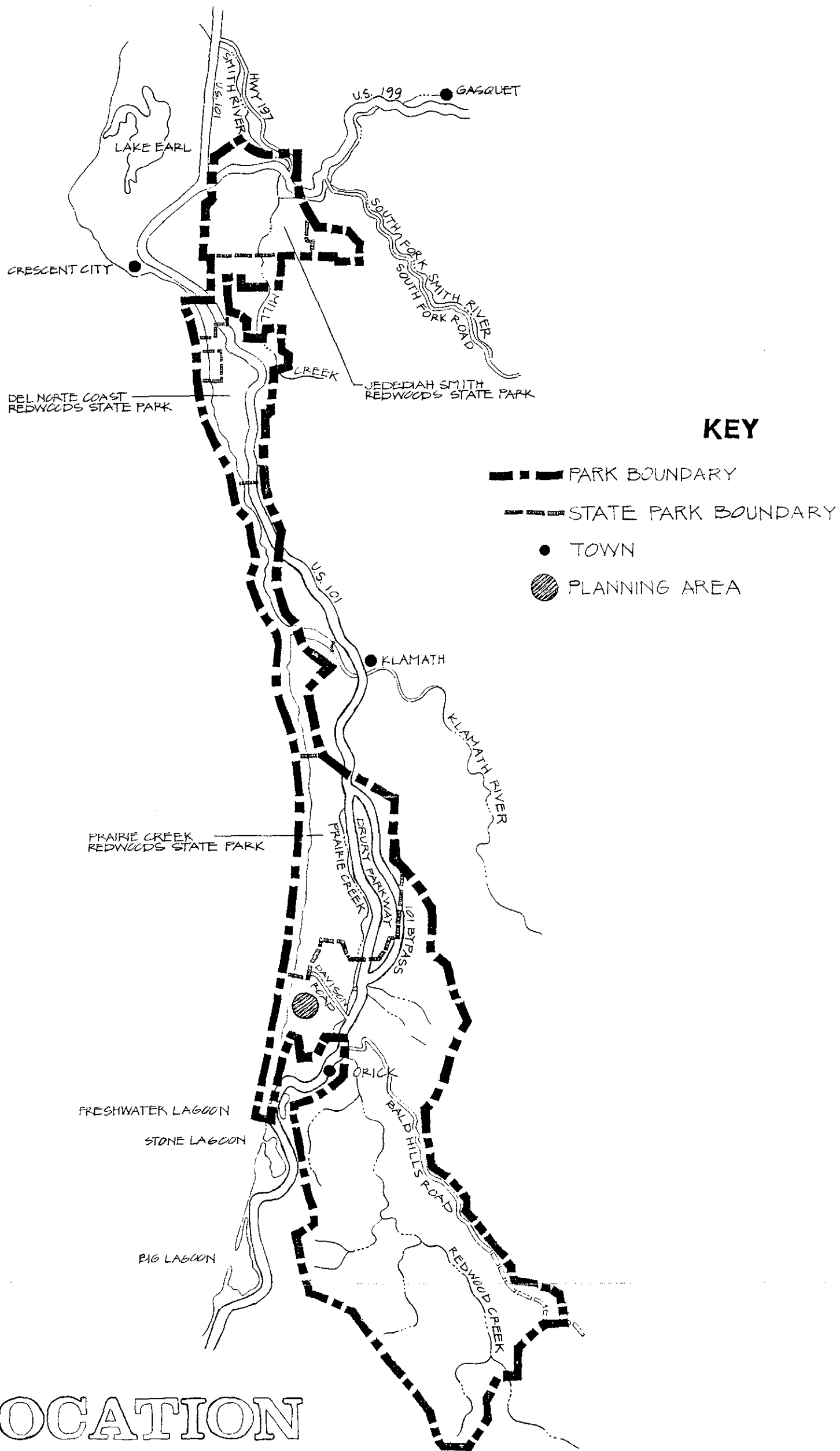
REFERENCES 89

APPENDICES 93

Appendix A: Wildlife Species in Davison Ranch Planning Area	93
Appendix B: Special Status Species in Davison Ranch Planning Area	98
Appendix C: Consultation with California State Historic Preservation Officer	100
Appendix D: Summary of Impacts	101
Appendix E: Cost Estimates	109
Appendix F: Finding of No Significant Impact	117
Appendix G: Statement of Findings - Wetlands and Floodplains	124

MAPS AND GRAPHICS

Location	vii
Planning Area	3
Existing Conditions	9
Development Plan	17
Alternative 1: Trails (The Proposed Action)	21
Alternative 1: B-Mill Trailhead (The Proposed Action)	23
Alternative 1: Equestrian Trailhead (The Proposed Action)	33
Alternative 3: Activity Center	39
Alternative 4: Group Camp	43
Alternative 5: Redwood Institute	47



LOCATION

DAVISON RANCH

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 61009-A
REPW JULY 96

2 0 2 4 MILES



ON MICROFILM

INTRODUCTION

Redwood National Park was established in 1968 to protect the coastal redwood forests, and associated streams and the nearby seashores. The park was expanded in 1978. The park boundaries established by Congress included three existing California State Parks: Prairie Creek Redwoods, Del Norte Coast Redwoods, and Jedediah Smith Redwoods.

In recognition of the significance of their resources, the parks have been designated collectively as a World Heritage Site by the United Nations Education, Scientific and Cultural Organization (UNESCO) and as a unit of the California Coastal Ranges International Biosphere Reserve. Redwood National and State Parks are one of only five sites in the United States with both World Heritage Site and International Biosphere Reserve designations.

Redwood National and State Parks Cooperative Management and Planning

During the development of this Development Concept Plan for Davison Ranch, a significant change was made regarding the relationship between Redwood National Park and the three redwood state parks included within the Congressionally-authorized national park boundary. It was assumed during previous planning for Redwood National Park that management responsibilities for the state parks would be transferred to the National Park Service (NPS). In 1994, the NPS and the California Department of Parks and Recreation (CDPR) signed a Memorandum of Understanding that paved the way for cooperative management of the parks. The NPS and the CDPR are presently engaged in developing ways to implement cooperative management of the parks.

The Memorandum of Understanding provides that the lands within the national park boundary authorized by Congress be referred to as "Redwood National and State Parks." For convenience, this plan differentiates between lands, facilities, and plans belonging to either the national or state park.

The Memorandum of Understanding also directs the parks to cooperate on planning projects such as this Davison Ranch plan and modify any ongoing planning to accommodate participation of both agencies. As the draft development concept plan went to press in May 1995, Redwood National and State Parks received confirmation that general management planning for the parks would begin later that year. This development concept plan meets both the requirement of interagency cooperation as well as having been modified to account for upcoming general planning.

A general plan revision will allow the parks to broaden the scope of planning to include issues and concerns that were beyond the scope of the Davison Ranch Development Concept Plan. General management planning has begun as a joint effort of the NPS and the CDPR. General planning will address the future of the parks in their entirety and their relationship to the gateway communities and the north coast region. A single unified plan for Redwood National and State Parks will result.

Planning for Davison Ranch

The legislation that established Redwood National Park (Section 3(d) of Public Law 90-545) designated the road corridor of U.S. Highway 101 north of Orick as a "scenic corridor." The legislation authorized acquisition of lands on both sides of U.S. 101 from the south end of Prairie Creek Redwoods State Park to a point on Redwood Creek north of Orick for the purpose of maintaining or restoring a screen of trees to mask the timber harvest activities then taking place behind the screen.

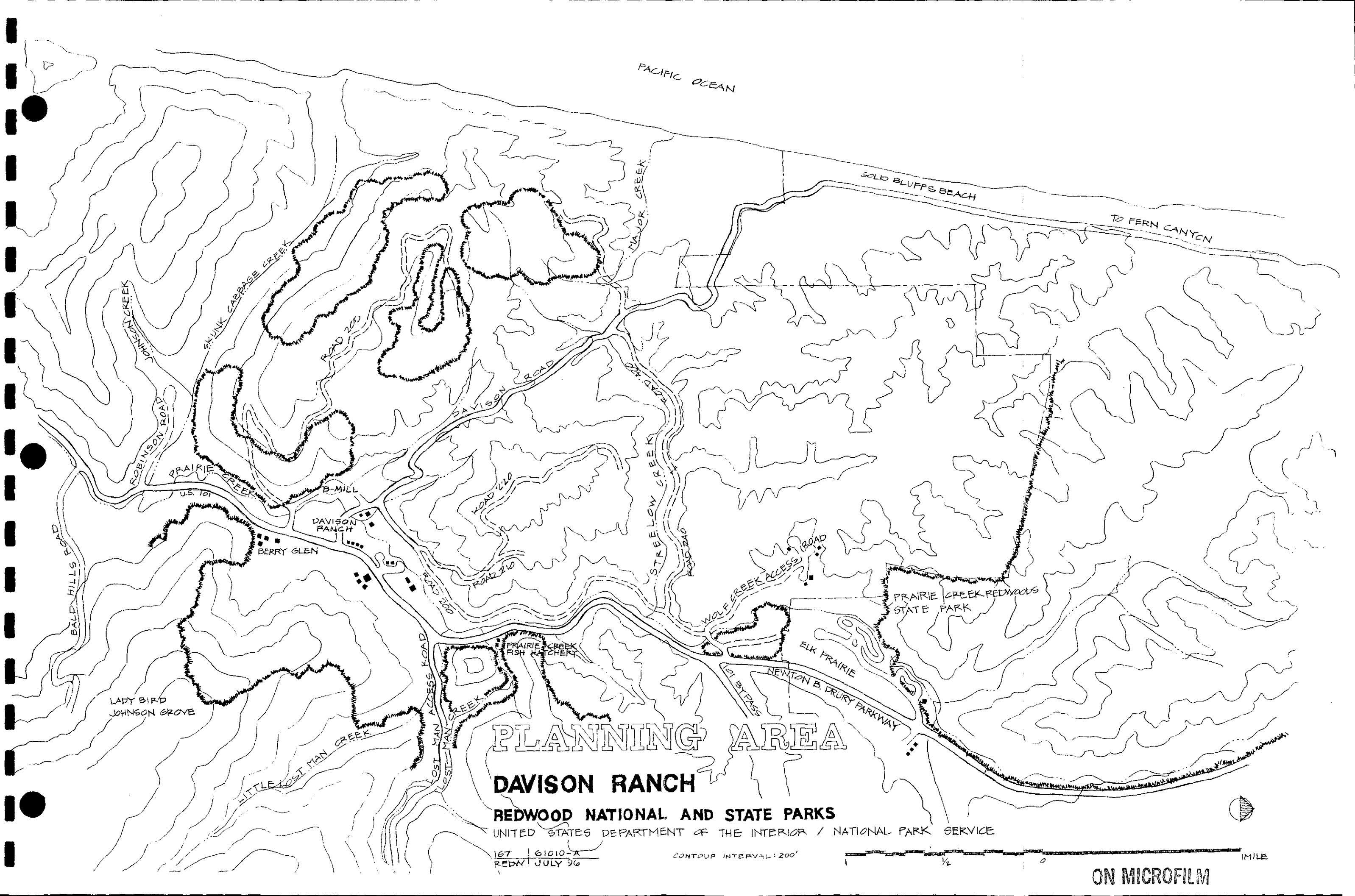
Congress expanded on the concept of a scenic corridor in 1978, emphasizing the need for the NPS to restore or maintain land uses compatible and appropriate with the park values beyond or behind the corridor. The emphasis has shifted from screening clearcut logging operations to maintaining a proper setting for the park from major road networks.

Redwood National Park has responded to the Congressional mandate by acquiring properties in the scenic corridor as the opportunity arises to purchase from willing sellers. Two recent acquisitions, the Davison Ranch and the B-Mill Deck, offer opportunities to convert lands formerly used for industry and agriculture to uses that serve park visitors and to provide a southern gateway into the redwood forests of Redwood National and State Parks.

In October 1991, Redwood National Park acquired the 100-acre Davison Ranch, a former dairy ranch (see Planning Area and Existing Conditions maps). The park completed the acquisition of the B-Mill Deck in January 1996. The deck consists of 15 acres lying west of Prairie Creek and southwest of the cluster of Davison Ranch buildings. The B-Mill was one of several logging mills used in large-scale timber harvest operations conducted in the Prairie Creek valley. Because the ranch is the larger of the two properties, and the B-Mill deck is adjacent to the ranch, both pieces are sometimes referred to as Davison Ranch.

Neither Davison Ranch nor the B-Mill deck were included in the national park's 1980 *General Management Plan*. To protect the resources on the newly acquired lands and to provide for orderly development to serve visitors and park needs, Redwood National Park began a development concept plan in 1992 for Davison Ranch, the B-Mill Deck, and surrounding parklands.

This Final Development Concept Plan and Environmental Assessment identifies Redwood National and State Parks' proposed action for Davison Ranch and the B-Mill Deck, four alternatives to the proposed action, and the environmental consequences of implementing the alternatives. The proposed action and four alternatives were included in the Davison Ranch Draft Development Concept Plan and Environmental Assessment, which was distributed for public review in July 1995. Based on the public comments received on the draft plan, and taking into account the beginning of general planning, the proposed action has been amended and the text of this Final Development Concept Plan and Environmental Assessment revised to clarify actions, decisions, and proposals that may have changed since the draft plan was released.



PLANNING AREA

DAVISON RANCH

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 61010-A
REDN JULY 96

CONTOUR INTERVAL: 200'

1 1/2 0 1 MILE

ON MICROFILM

PURPOSE OF AND NEED FOR ACTION

The purpose of the proposed action is to protect the resources of Davison Ranch and the surrounding parklands, to interpret those resources for visitors, to restore areas affected by past land uses, and to provide facilities that will serve visitor and park needs. The plan presents alternative ways to meet those needs. The environmental assessment describes the impacts on resources and visitors from development of facilities.

The Need for Action

Davison Ranch and the surrounding parklands include significant park resources such as old-growth redwood forests, Prairie Creek, and associated riparian areas. The park needs a plan that would guide visitor use at Davison Ranch in a manner that will protect resources and allow interpretation of those resources for visitors.

Davison Ranch was operated as a dairy ranch by the Davison family for almost 100 years. The Davisons cleared the original riparian bottomlands to create pastures for their dairy herd. When the ranching operation stopped and the cows and fences were removed, Roosevelt elk moved into the pastures. Park visitors and other travelers on Highway 101 stop to view the elk, creating a hazard by parking on the narrow highway shoulders or within the roadway along Davison Road. A safe viewing area is needed.

Davison Ranch is located near several popular visitor use areas in the national park and Prairie Creek Redwoods State Park, including Lady Bird Johnson Grove, Gold Bluffs Beach, and Fern Canyon. The Big Tree Wayside and Lady Bird Johnson Grove trails are heavily used by visitors seeking a short loop trail through old-growth redwood forest. Parking at Lady Bird Johnson Grove is inadequate to meet visitor demand during the summer. Access to Lady Bird Johnson Grove via the Bald Hills Road is not recommended for large vehicles or trailers because of the steep grades and curves. Prairie Creek Redwood State Park is interested in providing more trails for diverse user groups.

Because Redwood National Park is only 25 years old, the process of developing facilities to serve visitors is ongoing. The 1992 *Statement for Management* identifies lack of adequate visitor facilities as a major issue to be resolved. The location of the Davison Ranch close to the redwood forest, Prairie Creek, and the Pacific coastline at Gold Bluffs Beach, and the easy access from Highway 101 make the site ideal for visitor use. Less elaborate facilities are proposed in the final development concept plan than in the draft plan to allow a fuller range of options parkwide in the upcoming general management plan revision. The needs of park visitors described in the following sections will be addressed on a larger scale in the general plan revision.

Southbound visitors arriving at the Redwood Information Center located on the beach near the mouth of Redwood Creek south of the town of Orick may have only experienced a redwood tree from a car window even if they drove through Jedediah Smith Redwoods or Del Norte Coast Redwoods state parks. Visitors who drive on the Redwood Park Bypass would miss the Big Tree wayside and the Elk Prairie Visitor Center in Prairie Creek Redwoods State Park. Northbound visitors who do not stop at the Redwood Information Center may take the Highway 101 Bypass and likewise miss the interpretive opportunities offered by Prairie Creek Redwoods State Park.

Neither the state or national park has a large modern visitor center devoted to interpretation of the redwood forest ecosystem. Prairie Creek Redwoods State Park is adjacent to Davison Ranch on the north and west. Since the state park was established in the 1920s, it has become one of the most popular units in the state park system. The visitor center at Elk Prairie, two miles north of Davison Ranch, is too small to accommodate large groups. Bus tours that would like to stop for formal interpretive programs must be turned away because of the lack of space.

The Elk Prairie Visitor Center is small. Its parking area is congested and the traffic pattern mixes day-users with campground traffic. Visitors may have bypassed the entire state park if they did not take the Newton B. Drury Scenic Parkway exit off Highway 101. The Redwood Information Center does not have the facilities to provide in-depth interpretation of all significant park resources. On busy days, the staff often are completely occupied with dispensing information about how to see the parks but never have time to give interested visitors an in-depth view of the redwood ecosystem. Although visitors to the Redwood Information Center can experience the ocean and estuarine environments firsthand, visitors must travel several miles to the redwood forest that is the parks' primary focus.

Both the state and national parks lack meeting facilities that can comfortably accommodate more than 20 people. The state parks would like a facility with the flexibility to accommodate several busloads of visitors seeking interpretive information as well as providing meeting space for both large and small groups.

In addition to visitor facilities, Redwood National Park needs administrative facilities. Housing for park employees and volunteers, and a stable for the park horses are needed.

The communities near the park would like to attract and hold visitors in the area. Community leaders hope that tourism can increase the economic base of the area lost when timber operations became considerably reduced following park establishment and expansion. While the parks offer visitors the opportunity to appreciate and learn about the natural environment, the adjacent communities can provide lodging, restaurants, and other services not directly related to enjoyment of the parks' resources.

Project Scope and Objectives

The Davison Ranch Development Concept Plan enlarges on the ideas presented in the 1980 Redwood National Park *General Management Plan* by describing site-specific land uses for the Davison Ranch and surrounding parklands to the west toward the ocean. Some of the area was covered in the *General Management Plan* but since neither the ranch nor the B-Mill deck were included in the park when the plan was written, there is no specific guidance for appropriate uses of these two properties.

A General Management Plan outlines strategies for natural and cultural resource management, broad descriptions of visitor use and facilities development, and general direction of park management for ten to twenty years. A development concept plan is an intermediate step between the general plan and comprehensive design drawings, which lead directly to construction plans.

This development concept plan will not substitute for natural and cultural resource management plans. These plans require more study and detail beyond the scope of this plan.

The objectives of the plan are based on the goals and ideas of the Redwood National Park 1980 *General Management Plan* and comments from public participation sought on this development concept plan. Although a new general plan is being developed, the parks are confident that the broad goals and specific objectives for the Davison Ranch area remain valid. The comments from public review of the draft plan reinforce the validity of the objectives. The objectives of the *Davison Ranch Development Concept Plan* are:

- To provide a visitor destination in Redwood National Park that focuses on interpretation of natural and cultural resources that make the national and state redwood parks a World Heritage Site and an International Biosphere Reserve.
- To provide facilities of the highest quality that allow visitors to learn about and appreciate the resources through interaction with the resources.
- To provide additional recreational opportunities for park visitors in areas easily accessible from Highway 101.

Davison Ranch Planning Area

The planning area includes about 5800 acres of national and state park lands bounded by the Highway 101 corridor on the east, the Pacific Ocean on the west, and on the south by the Robinson Road access to the Skunk Cabbage section of the Coastal Trail. The northern boundary of the planning area is not well-defined geographically but generally runs west to the ocean from Elk Prairie in Prairie Creek Redwoods State Park. The northern part of the planning area provides opportunities for trail corridors but no other developments are proposed on lands currently managed by the CDPR (see Planning Area map).

The heart of the planning area is the Davison Ranch and the B-Mill deck. The major development proposals are centered on the deck and the area containing the Davison Ranch buildings (see Existing Conditions and Development Plan maps).

Two trails originating in Redwood National Park's scenic corridor are proposed east of Highway 101. These trails would connect the Lost Man Creek and Bald Hills areas of Redwood National Park with the Davison Ranch trail system. These trails are the only developments proposed east of Highway 101.

Davison Road bisects the planning area and leads to Gold Bluffs Beach. Prairie Creek Redwoods State Park operates a campground at Gold Bluffs Beach. The road along Gold Bluffs Beach leads to Fern Canyon, a very popular day-use area with visitor parking, a trailhead, and several picnic sites. Facilities at Elk Prairie in Prairie Creek Redwoods State Park include a campground, trailhead, visitor center, and park offices, housing, and maintenance areas.

National park facilities at Wolf Creek include ranger housing, a maintenance and storage facility, and the Wolf Creek Outdoor School. The outdoor school is available to educational groups by reservation.

National park visitor facilities that serve the general public in the planning area are the Skunk Cabbage and Coastal trails and the Robinson Road trailhead. Prairie Creek Redwoods State Parks has a jogging and bicycle trail that begins near the Elk Prairie Campground, passes near the Wolf Creek facilities, and ends at Davison Road. The 2.8-mile-long jogging trail follows former logging roads (Road 240 and Road 400).

The planning area includes several privately owned properties along Highway 101 in the immediate vicinity of Davison Ranch. The most prominent private developments are Rolf's Restaurant and Motel, the Arcata Redwood Company office, and properties owned by Pacific Affiliates, a consulting engineering firm in Eureka. Blankenship Trucking leases a parcel north of Davison Ranch from Pacific Affiliates for its shop operations. Tall Trees Outfitters, a Redwood National Park concessioner that offers horseback riding, also leases a portion of Pacific Affiliates property. The Pacific Affiliates property includes two small residential subdivisions.

PUBLIC PARTICIPATION

The park held several meetings between August 1992 and October 1993 to inform interested groups and community members about Davison Ranch planning and to obtain input for the plan. These meetings included presentations to the Orick Economic Development Council in August 1992; to leadership and members of the Sierra Club and the Save-The-Redwoods League in October 1992; to Orick residents in November 1992; and to local conservation groups in October 1993. The park held workshops in Arcata and Orick in December 1992.

Prior to public distribution of the draft plan in July 1995, the park held a public meeting in Orick in June 1995 to explain that the park was changing its preferred alternative in the draft plan from Alternative 3 (Activity Center) to Alternative 2 (Trails) to avoid possible conflicts with proposals in the upcoming general plan revision. In July 1995, the park mailed 114 copies of the draft development concept plan to local, state, and federal agencies and elected officials, organized groups, and private individuals. Copies were also available at local libraries and park offices. Approximately 30 people attended public meetings in Orick, Arcata, and Crescent City in August 1995 to make comments and offer suggestions on the draft plan. The park also met with officials of the Yurok Tribe to discuss the plan and obtain comments. Members of the Orick Native American Heritage Committee were informed of the plan. The plan was modified in response to written and oral comments. This final development concept plan includes those modifications, which are summarized in the Finding of No Significant Impact (Appendix F).

Planning Issues Raised During Scoping

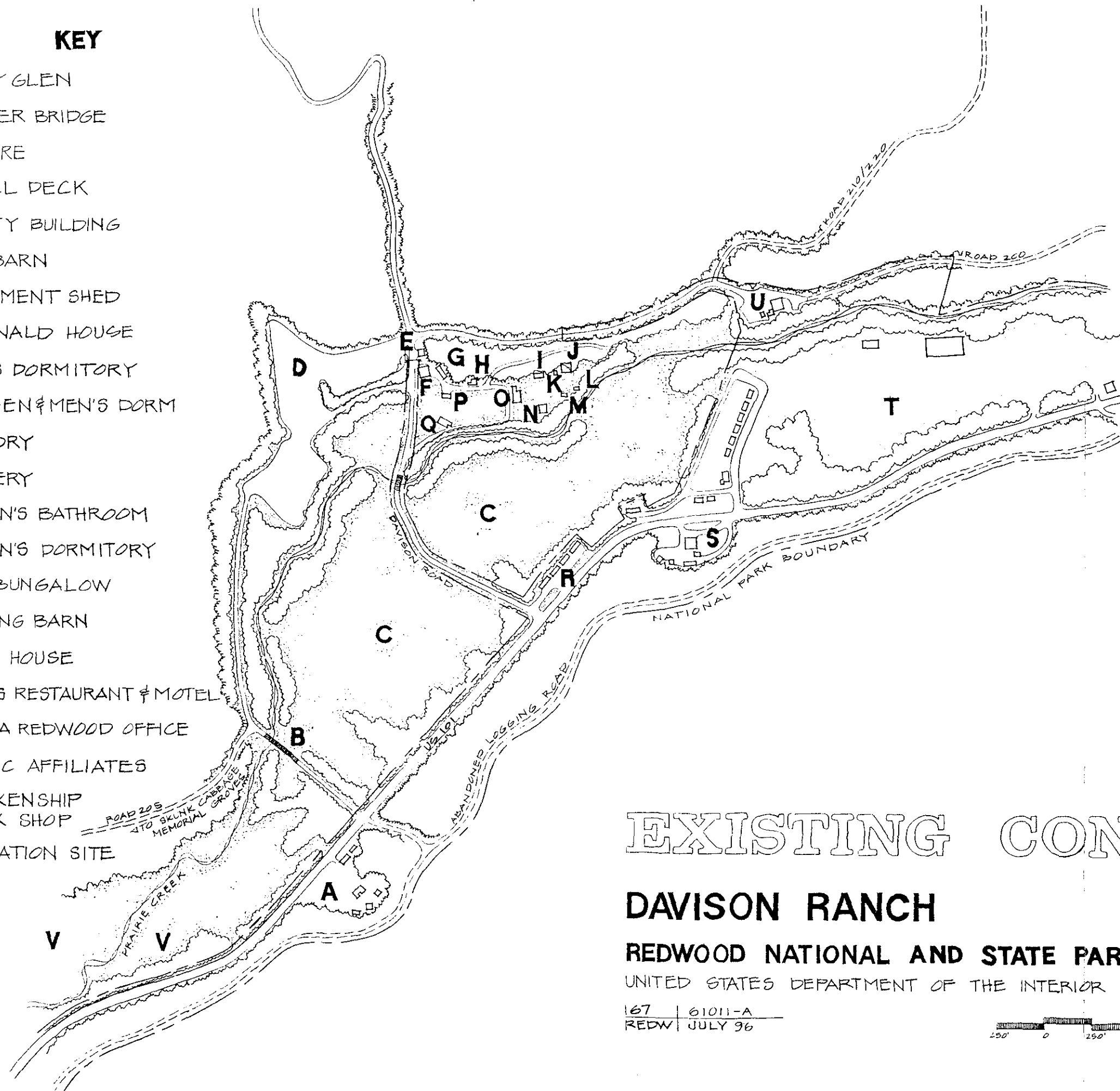
Interested individuals and groups raised the following issues as the plan was being developed.

Trails:

- need short loop trails accessible by older persons and children
- need a trailhead accessible to large vehicles that avoids the narrow, winding Bald Hills Road to Lady Bird Johnson Grove
- need easy access between trails and parking
- create trails of varying lengths
- avoid mixing user groups (hikers, bikers, horses) on trails

KEY

- A BERRY GLEN
- B TIMBER BRIDGE
- C PASTURE
- D B-MILL DECK
- E UTILITY BUILDING
- F HAY BARN
- G EQUIPMENT SHED
- H McDONALD HOUSE
- I MEN'S DORMITORY
- J KITCHEN & MEN'S DORM
- K LAUNDRY
- L NURSERY
- M WOMEN'S BATHROOM
- N WOMEN'S DORMITORY
- O 1926 BUNGALOW
- P MILKING BARN
- Q 1960'S HOUSE
- R ROLF'S RESTAURANT & MOTEL
- S ARCATA REDWOOD OFFICE
- T PACIFIC AFFILIATES
- U BLANKENSHIP TRUCK SHOP
- V MITIGATION SITE



EXISTING CONDITIONS

DAVISON RANCH

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 61011-A
REDW JULY 96

1" = 250'-0" APPROX

ON MICROFILM

Resource Protection, Enhancement, and Interpretation:

- protect, enhance, and restore floodplains, wetlands, riparian zones and instream habitat of Prairie Creek
- establish riparian buffer zones
- avoid creating bear problems
- provide full mitigation for wetland losses
- restore and maintain Roosevelt elk habitat
- use prescribed burning on the meadow to improve elk habitat
- restore Douglas-fir and redwood trees
- interpret dairy ranching history
- retain historic buildings for interpretation
- remove buildings
- remove lateral non-administrative roads
- retain the Davison apple orchard until the trees die of old age

Visitor Use and Facilities:

- need a destination that says Redwood National Park
- need an interpretive center to educate the public about redwoods
- provide blinds for wildlife viewing
- provide more camping
- provide a group camp
- provide picnic areas
- no horses at Davison

RELATIONSHIP TO OTHER PLANNING

The Davison Ranch Development Concept Plan describes actions that will occur in one area of Redwood National and State Parks. Just as the parks are not isolated from activities outside their boundaries, the Davison Ranch plan must mesh with planning that has been completed or is contemplated for the future. The relationship among these plans is discussed in this section.

Revision of National and State Park General Plans

In recognition of the coordinated management of Redwood National and State Parks, the NPS and the CDPR are revising the general plans for the parks. Because of the time involved in revising a general plan, planning for the Davison Ranch area continued in the direction established through the public involvement process rather than postpone Davison Ranch planning until general management planning is completed. Neither the national or state parks anticipate that the proposed actions for Davison Ranch will be so inconsistent with revised general planning proposals that this Davison Ranch plan will be outdated before it can be implemented. Some proposals in this development concept plan differ from proposals in the existing national and state park general plans. The differences are outlined in the following sections.

Amendments to the Redwood National Park General Management Plan

This development concept plan amends the 1980 *General Management Plan*. The *General Management Plan* was intended to be a flexible guideline that allowed actions to be modified to meet changing conditions. The majority of the proposals in this plan are in concert with the proposals of the *General Management Plan*. The proposed action contains several elements that differ from the direction established in the 1980 plan. These differences result from conditions that have changed since the original plan was completed or from assumptions that are no longer valid.

The most significant change since the *General Management Plan* was approved is that management of Prairie Creek Redwoods State Park will not be transferred to Redwood National Park. The two agencies will manage the parks cooperatively and develop a new integrated general plan, as described above.

The Davison Ranch Development Concept Plan amends the *General Management Plan* by proposing construction of facilities on federal lands rather than state park lands. For example, campsites would not be removed from Prairie Creek Redwoods State Park as proposed in the *General Management Plan*. The southern activity center is proposed for construction on federal land rather than state park land.

The historic Prairie Creek Redwoods State Park visitor center at Elk Prairie would remain a small interpretive and information center that would provide information primarily about recreational opportunities in the state park. The state parks *General Plan* supported retaining the Prairie Creek visitor center; the national park *General Management Plan* proposed that the state park visitor center and headquarters be converted to a trail information center. This development concept plan amends the *General Management Plan* by proposing a new trailhead at the B-Mill deck and no change in function for the Elk Prairie Visitor Center.

The following elements differ between this plan and the *General Management Plan* with respect to facilities on federal lands. Some of these elements will be re-examined during the general plan revision.

- This plan reintroduces the concept of a southern activity center in the Prairie Creek area of the parks. (This area was called the Prairie Creek planning unit in the *General Management Plan*.) Because of potential adverse impacts to elk, the activity center was not constructed near May Creek as originally planned. Instead, the Redwood Information Center was constructed south of the mouth of Redwood Creek on the site of the California-Pacific Mill. While the *General Management Plan* recognized the Cal-Pac Mill location as a strategic site for visitor use, it proposed an activity site in the Skunk Cabbage Hill area, *in addition to* the May Creek activity center proposal. The rationale for an activity center at Davison Ranch is presented under the description of the alternatives and the impacts on visitor experience. The environmental assessment for the May Creek Activity Center mentioned that the B-Mill and A-Mill decks were considered as possible activity center locations. Both sites were rejected at the time because the land was privately owned. The assessment noted that redwood trees would be less accessible to visitors with limited mobility at the B-Mill site than at May Creek because of the moderate to gently sloping ground surface and that construction impacts to vegetation and soils would be greatly reduced at the B-Mill site.
- Realignment of Davison Road is not proposed. Realignment was intended to create a more direct access to the beach from the May Creek Activity Center. Because the activity center was not constructed at May Creek, the rationale for realignment no longer exists.

- Horse use would be allowed on designated trails in the Skunk Cabbage, Davison, and Gold Bluffs Beach areas. The *General Management Plan* provided for horse use in the national park only in the west side of the Redwood Creek basin.
- Rather than a large campground (50 walk-in and 50 vehicle campsites) in the Skunk Cabbage Hill area, a group campground to accommodate up to 50 campers is proposed for the B-Mill deck under Alternative 4.

State Redwood Parks General Plan

The 1985 *State Redwoods Parks General Plan* recommended that facility development be concentrated on the federal park lands that had been previously affected by human use. The proposals in this development concept plan are consistent with that approach because proposed development (trailhead, activity center, group camp, institute) is centered on the B-Mill deck. State park general plan proposals and major differences between the state and the national park general plans are discussed below.

The state parks *General Plan* identified inadequate trailhead development relative to parking, orientation, and interpretation. This plan proposes a trailhead with parking and interpretation at the B-Mill deck. Trails in Prairie Creek Redwoods State Park would be part of the trailhead orientation since the trails would connect via the Prairie Creek bike-hike trail.

The state parks plan refers to developing a new entry road and sanitation station between May Creek and Davison Road. A new entry road is no longer necessary because an activity center at May Creek will not be constructed. The state parks plan proposes that Davison Road continue to serve as the prime beach access route in its present alignment, or as realigned, without inconveniencing the public. This plan is consistent with that proposal. Alternative 3 proposes widening Davison Road between Highway 101 and the activity center access road. The NPS proposed that Davison Road west of the ranch be paved, straightened, and widened to two lanes to increase the safety of the narrow winding road. This action would undoubtedly increase visitor use of Gold Bluffs Beach and Fern Canyon. Such a proposal would require additional planning that is beyond the scope of this development concept plan but will likely be addressed in the upcoming general planning. Substantial improvements to Davison Road in the vicinity of Gold Bluffs Beach would also require an amendment to the state parks *General Plan*. The state parks plan notes that Davison Road could either be paved or treated for dust control.

This development concept plan proposes a comfort station at the B-Mill trailhead. The state parks plan proposes development in the Wolf Creek area of trailhead, sanitary, and interpretive facilities. These functions would be served at the B-Mill trailhead which would be connected to Prairie Creek Redwoods State Park via the Prairie Creek bike-hike trail. Sanitation stations (dump stations) that would serve recreational vehicles (RVs) are not proposed in this plan because no RV facilities are proposed.

The state parks plan proposed to develop in cooperation with the NPS a trail for interpretation of cutover lands in the vicinity of Espa/East Creek trail. Interpretation of cutover lands could also occur along the trails proposed in Skunk Cabbage Creek area or the East Side trail connection to the Lady Bird Johnson grove.

This development concept plan proposes an equestrian trail to Gold Bluffs Beach via a trail in the Major Creek area. Equestrian use of Gold Bluffs Beach would require an amendment to the state parks *General Plan*. An equestrian trail is proposed in this plan to solicit public comment on the concept of equestrian use of the Gold Bluffs Beach.

Davison Riparian Mitigation

Under a 1988 Memorandum of Understanding with the California Department of Fish and Game (Fish & Game), the California Department of Transportation (Caltrans) agreed to purchase a portion of the Davison Ranch as a mitigation site for wetland and riparian habitat losses in Redwood National Park resulting from construction of the Highway 101 Prairie Creek bypass project. Fish & Game approved Caltrans' selection of 10.7 acres of the Davison property, which was privately owned at that time. However, Redwood National Park was interested in acquiring the entire property to preclude uncontrolled development and resolve longstanding elk depredation issues. A 1991 Memorandum of Agreement between Fish & Game, Caltrans, and Redwood National Park gave the park the responsibility for acquiring, establishing, and monitoring the mitigation site (see Existing Conditions map). In exchange for assistance from Caltrans in funding of a portion of the acquisition, Redwood National Park agreed to perform the required mitigation on a 6-acre riparian site on the property. The Save-The-Redwoods-League donated funds to complete the purchase of the entire property.

Backcountry Trail Plan, Redwood and Skunk Cabbage Creeks

A *Backcountry Trail Plan* completed in 1984 prescribes a program for construction of a trail system for the Redwood Creek basin and Skunk Cabbage Creek areas. The trail plan specifies trail routes in much greater detail than the corridors proposed in this plan.

This development concept plan proposes to expand the trail system in the Skunk Cabbage area by adding several new hiking trails. In addition, bicycle and horse trails on Skunk Cabbage Hill are proposed in this plan.

The trail plan recognizes that the Robinson Road access to the coastal trail was less than satisfactory because of the poor sight distance for turning off Highway 101. The trail plan recommended another access from land that was privately owned at the time. The Davison and B-Mill properties can be used to provide the recommended access and improve the safety of visitors seeking to use the Skunk Cabbage and Coastal trails.

The trail plan encourages the use of abandoned logging roads and tractor trails as the basis of a trail network that was relatively easy to establish and maintain. Old roads are particularly adaptable to equestrian trails because the roads have armored surfaces that resist metal-shod horse hooves and discourage vegetative encroachment. The trail plan noted that the roads generally follow the most desirable land contours at low to moderate grades and use the most direct routes through cutover areas.

The centerpiece of the trail plan is the East Side Trail, a 26-mile-long trail that will run from Copper Creek to the coast along the east side of the Redwood Creek basin. Trail planners acknowledged the complications of connecting this East Side Trail with the Coastal Trail. The trail plan did not establish a connection between the two trails. This plan proposes a new trail corridor on the hillslope west of Lady Bird Johnson Grove that would complete the East Side Trail link with the Skunk Cabbage and Coastal trails.

Ecotourism Development

Several private entities, as well as the Yurok Tribe, have expressed interest in developing lodging aimed at the expanding ecotourism market. The possibility of one or even a series of lodges in the vicinity of the redwood parks are being explored independently of this plan. Alternative 3 (Activity Center) and the Alternative 5 (Redwood Institute) would complement the ecotourism concept by providing an educational source that could attract ecotourists.

Ecotourism is based on the increasing awareness and sensitivity of travelers wishing to travel to areas of unspoiled natural beauty where their travel contributes financially to the preservation of the resource. It is generally assumed that ecotourists engage in nonconsumptive activities. By one definition, ecotourism is nature travel that actually contributes to conservation. Ecotourism usually refers to tourism that takes place in relatively natural settings or is directed at specific components of the setting such as rare or endangered species. A major objective of ecotourists is to experience natural areas or witness natural phenomena.

The concept of an ecotourism lodge is rooted in the Redwood Forest Lodge idea, which is discussed later in the document under "Other Alternatives Considered."

Other Planning

Additional visitor use planning will be done for the Redwood Creek basin and the areas around Davison Ranch as part of the general plan revision. The Bald Hills, Tall Trees Grove, Lost Man Creek, and the Prairie Creek Fish Hatchery areas will be included. Possible relationships between these areas and the Davison Ranch plan are discussed below.

Bald Hills

The proposed trail connection to the East Side Trail will tie Davison Ranch with the Bald Hills trail system. The proposed B-Mill trailhead could serve as a trailhead with adequate parking for visitors wishing to hike into the Bald Hills area. The trailhead could also function as a hub for a shuttle bus operation. The main advantages of the B-Mill trailhead would be adequate parking space and level terrain with excellent vehicle access, even for large vehicles.

Tall Trees Grove

The Tall Trees Grove features some of the world's tallest known trees. It is the premier resource of Redwood National Park. There is increasing pressure from visitors for more access to the grove. Geographically, the Tall Trees Grove is more closely related to the Bald Hills planning than to Davison Ranch planning.

Lost Man Creek

The Lost Man Creek area contains old-growth redwood groves and a stream system. The Lost Man Creek Picnic Area was the location of the ceremony dedicating the park as a World Heritage Site in 1982. Available development space is limited at Lost Man Creek area because of sensitive resources and the shape of the stream valley. Interpretation of redwood forests and streams, and World Heritage Site designation, could be done at the Davison Ranch, to minimize new disturbance at Lost Man Creek.

Lost Man Creek Picnic Area is reached by a gravel road east of Highway 101 one mile north of Davison Road. The picnic area also serves as a trailhead for the Holter Ridge Bike Trail to the Bald Hills.

An abandoned logging road east of Highway 101 connects the Lost Man Creek access road to Berry Glen. The proposed Prairie Creek bike-hike trail ends at Highway 101 across the road from Berry Glen. This plan proposes that the logging road be designated as a mountain bike trail.

Prairie Creek Fish Hatchery

The fish hatchery, located about a mile north of the Davison Ranch, was operated by Humboldt County until 1992. The state is transferring ownership of the hatchery lands to Redwood National Park. Private consultants and Humboldt State University researchers have expressed interest in using the hatchery as a base of operations or as a research center. Research done at the hatchery could be interpreted for park visitors to increase their understanding of redwood ecosystems.

The hatchery could function as the research facility, and the institute proposed in Alternative 5 of this development concept plan could provide the forum for discussion, presentations, and interpretation of research. The limited space for parking would be less than adequate if the hatchery was used for interpretation to the general public. Davison Ranch could provide adequate parking space and safe visitor access while use of the hatchery would be limited to researchers and those directly engaged in educational pursuits.

REQUIRED COMPLIANCE

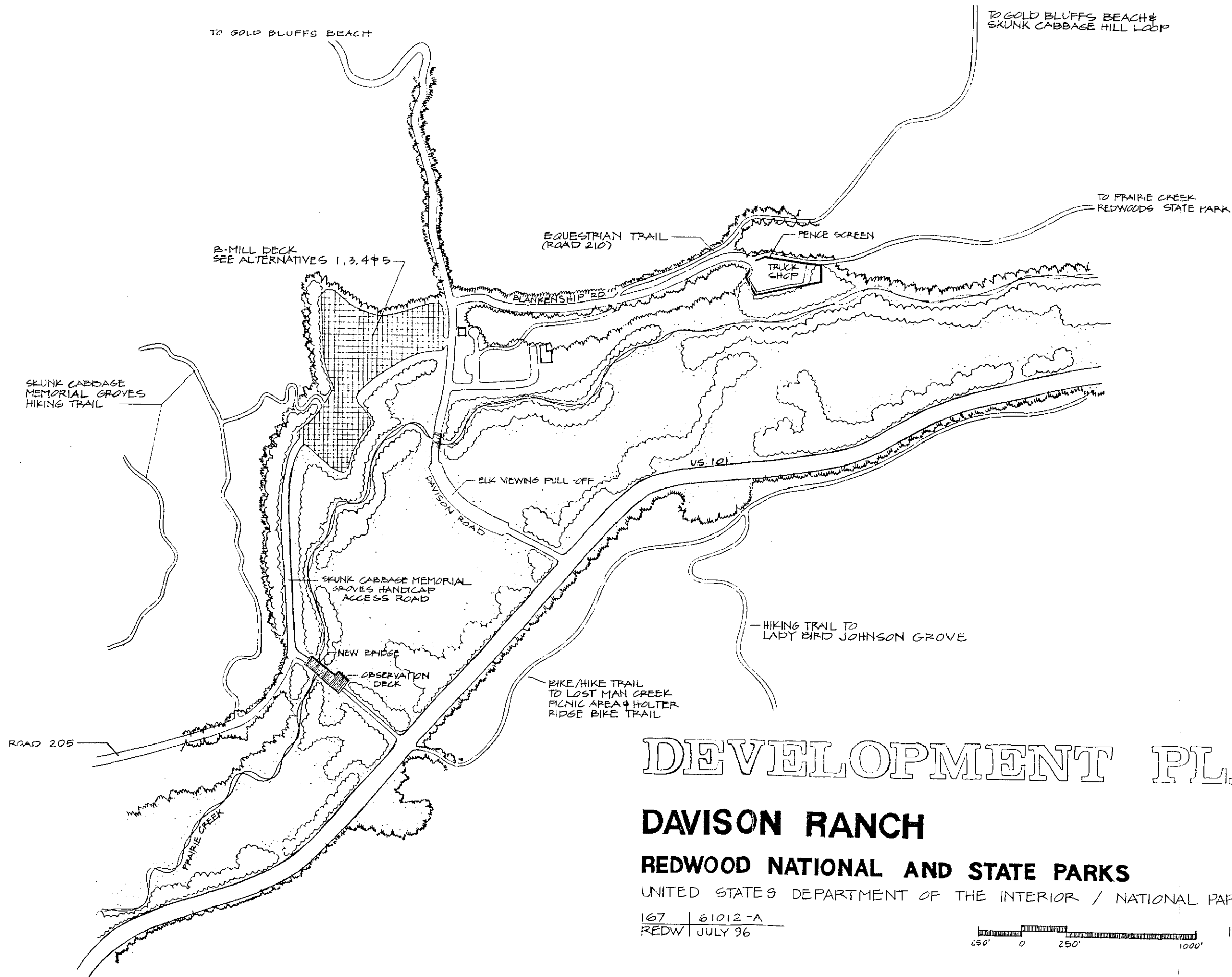
This plan complies with NPS policies and guidelines for meeting the requirements of the National Environmental Policy Act, the Endangered Species Act, the Clean Water Act, the Clean Air Act, and the National Historic Preservation Act, among others. Some proposed actions will require compliance with other statutes as described below.

Section 4(f) Compliance

Section 4(f) refers to a section of the Department of Transportation Act of 1966, as amended. This section requires that the secretary of transportation shall consult with the secretary of the interior and shall not approve any project requiring use of park lands unless two provisions are met: there is no feasible and prudent alternative; and all possible planning to minimize harm has been done.

The park has obtained funding through the Intermodal Surface Transportation Efficiency Act (ISTEA) to construct portions of the Prairie Creek bike-hike trail and trailhead. Use of park lands for such federally-funded transportation-enhancement projects requires that the projects meet the requirements of Section 4(f). These requirements are that the proposed project be acceptable and consistent with the designated use of the park lands, and that the project location and design be accomplished in a manner that will not cause harm to the property.

This plan describes all planning done in conjunction with the proposed bike-hike trail. The plan includes mitigative measures to minimize any adverse impacts that might result from the project. The dual purpose of the proposed bike-hike trail is to promote safety of both motorists and bicyclists who would otherwise ride on the narrow highway shoulder, and to provide an opportunity for bicyclists to ride through the park and enjoy the parks' resources. The use of park lands is appropriate because of the enhanced safety for park users who are driving or riding through the scenic corridor; because of the opportunity to promote



DEVELOPMENT PLAN

DAVISON RANCH

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 | 61012-A
REDW | JULY 96



1" = 250'-0"
APPROX



ON MICROFILM

a non-polluting recreational use of the park; and because there would not be any unmitigatable impacts to park lands or resources resulting from development of a bicycle trail on the planned route.

Consistency with California Coastal Management Program

Development of new trails within the coastal zone that were not proposed in the 1980 *General Management Plan* or 1984 *Backcountry Trail Plan* may require federal consistency review by the California Coastal Commission to determine whether the proposed actions are consistent with the California Coastal Management Program.

Portions of three trails, including a proposed trail on the north side of Skunk Cabbage Creek, are within the coastal zone. The term "coastal zone" means the coastal zone delineated in a state's management program. Federal lands are excluded from the coastal zone. If activities on excluded lands affect the coastal zone, the activities must be reviewed for consistency with the coastal management program.

If the NPS determines that the proposal may affect the coastal zone, the park will submit the proposal to the California Coastal Commission for consistency review at least 90 days before final approval of the proposed action. The park anticipates that a negative determination will be prepared because of the lack of impacts on the coastal zone.

MANAGEMENT ZONING

Management zones reflect authorizing legislation, NPS policies, the nature of the park resources, desired visitor experiences, and established uses. The zones described below are preliminary determinations. Management zoning will be finalized as part of the general management planning process.

The NPS uses several zoning categories that reflect the types of resources under its protection and the uses of park lands by visitors and staff. The zoning category applied is that which best reflects the primary management emphasis. The newly acquired Davison Ranch and B-Mill lands would likely be placed into two general zones: natural and development.

Most of the Davison Ranch planning area will probably be included in the natural zone. In this zone, natural resources and processes are conserved. Visitor and park uses do not adversely affect these resources and processes. Facilities in the natural zone are dispersed, have little effect on scenic quality and natural processes, and are essential for implementing the management strategy.

Those portions of the Davison Ranch that are being restored through the riparian mitigation program will be eligible for inclusion in the Outstanding Natural Features subzone once restoration is complete. The Outstanding Natural Features subzone is managed for public appreciation and interpretation of ecological features possessing unusual intrinsic value. Until then, because of the substantial modification that occurred to create pastures, the Davison Ranch pastures and Prairie Creek riparian corridor are likely to be in the Natural Environment subzone. Environmentally compatible recreational activities, such as the bike-hike trail and interpretive platform common to all alternatives, can be provided in this subzone. Where there is no recreational development, the land is left undeveloped and managed to conserve natural resources.

A new park development zone would be established at Davison Ranch proper and the B-Mill deck. Park development zones include the facilities themselves and all associated lands where the natural environment is directly and substantially modified as a result of their continuing management and use. The park development zone would include the visitor facilities at the B-Mill deck and Davison Ranch, and the administrative facilities at Davison Ranch.

Should ranger housing be provided at Davison Ranch, it would be in the Residential Development subzone, while the barn and paddock would be included in an Administrative Development subzone.

The Prairie Creek bike-hike trail would be included in the Access/Circulation Development subzone. This zone fits the use of the trail as a transportation facility regularly used by park management and the public. Because the primary function of the trail is a transportation corridor rather than an interpretive trail and because of the intensive maintenance required, the access development subzone is more appropriate than classifying the trail in a natural zone.

The small amount of land (approximately 20 acres) that might be devoted to park development at Davison Ranch would not significantly increase the amount of park land included in development zones.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

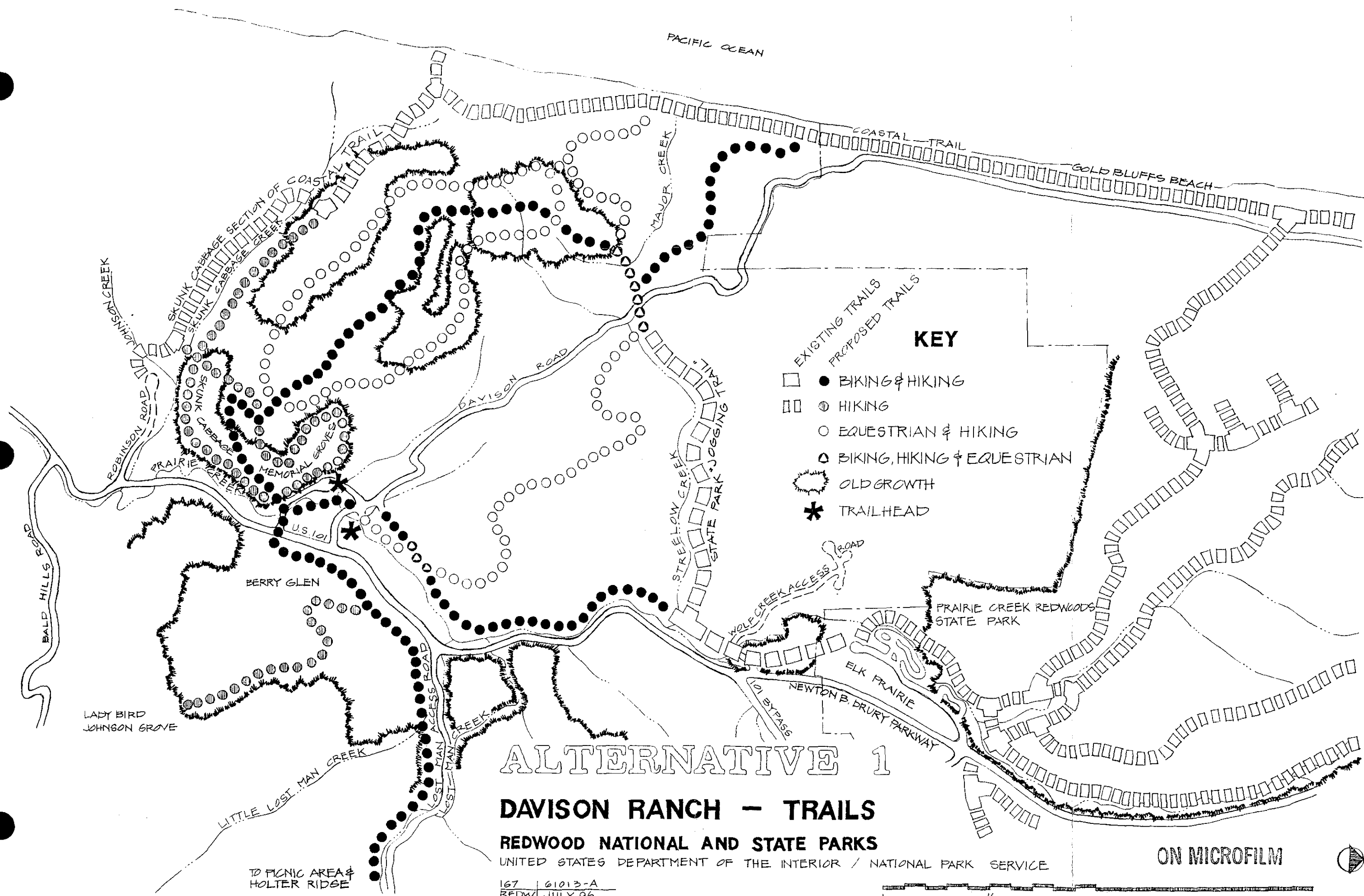
Davison Ranch is both easily accessible from Highway 101 and located amidst significant resources at the southern gateway of Redwood National and State Parks. This final Development Concept Plan for Davison Ranch describes four action alternatives and one No Action alternative. These alternatives are intended to create an experience for the visitor that emphasizes active recreation among these resources and interpretation of them. The alternatives attempt to create a focal point in the southern area of the parks to draw visitors close to the primary resources and proclaim their arrival in a park of national and international significance.

The proposal and the four alternatives were included in the May 1995 *Draft Development Concept Plan and Environmental Assessment*. Based on comments received during the public review period, the proposed action has been revised and the text of the plan has been changed to clarify these changes. The final plan also clarifies any changes as a result of the upcoming general management plan revision or cooperative management of the state and national parks.

The upcoming general plan revision may revisit the large-scale development proposals described under Alternative 3 (Activity Center), Alternative 4 (Group Camp), and Alternative 5 (Redwood Institute). In order to retain these concepts, all the alternatives and the associated environmental impacts of implementing them are included in this final plan.

Alternative 1, Trails (The Proposed Action)

This alternative features a trail system that links Davison Ranch and Prairie Creek Redwood State Park and allows diverse users to avoid conflicts on the trails. This alternative also provides for wildlife viewing and strengthens interpretive opportunities.



KEY

- EXISTING TRAILS
- PROPOSED TRAILS
- BIKING & HIKING
- HIKING
- EQUESTRIAN & HIKING
- △ BIKING, HIKING & EQUESTRIAN
- OLD GROWTH
- * TRAILHEAD

ALTERNATIVE 1

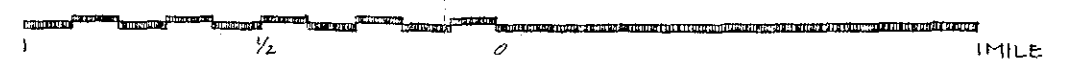
DAVISON RANCH - TRAILS

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

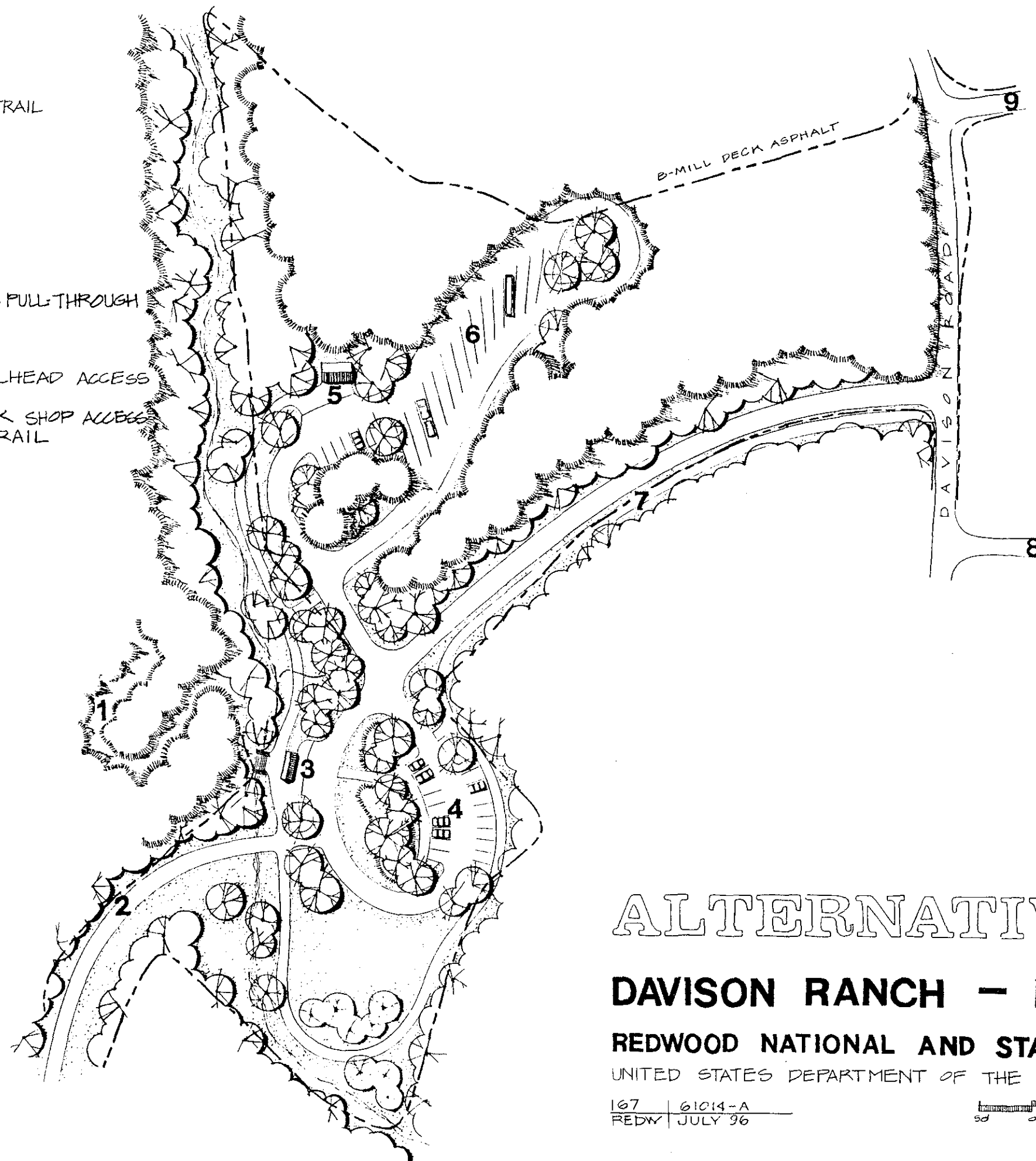
167 61013-A
REDW JULY 96

ON MICROFILM



KEY

- 1 MEMORIAL GROVES TRAIL
- 2 ROAD 205
- 3 KIOSK
- 4 PARKING 19 CARS
- 5 COMFORT STATION
- 6 PARKING 6 CARS, 15 PULL-THROUGH
- 7 BIKE/HIKE TRAIL
- 8 EQUESTRIAN TRAILHEAD ACCESS
- 9 BLANKENSHIP TRUCK SHOP ACCESS
ROAD/BIKE-HIKE TRAIL



ALTERNATIVE 1

DAVISON RANCH - B-MILL TRAILHEAD

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 61014-A
REDW JULY 96

50' 0 50' 150' 1" = 50'-0"



ON MICROFILM

Approximately 22 miles of new trails are proposed, including a trail for bicyclists and hikers between Prairie Creek Redwoods State Park and Davison Ranch; trails through the Skunk Cabbage memorial groves (3.4 miles); a trail link with the Skunk Cabbage section of the Coastal Trail (1.9 miles); and a 2.1-mile-long trail to the Lady Bird Johnson Grove that will connect with the East Side Trail described in the 1984 *Backcountry Trail Plan*.

Separate equestrian and mountain bike trails are proposed to reduce potential conflicts among trail users. Approximately 0.3 mile of one trail segment will be shared by hikers, mountain bikes, and equestrians. Signs will be posted on this and any other segments shared among different users to inform visitors that they are sharing trails. Trail brochures and trailhead kiosks will contain information on trail etiquette to reduce conflicts among users. Proposed trail segments use abandoned roads at least 8 feet wide. Sight distance is generally very good for low speed travel. Because of the adequate width and sight distance, no major safety problems or conflicts among users are anticipated.

New trails proposed for mountain bikes are the abandoned logging road from Berry Glen to the Lost Man Creek access road, and a loop trail across Skunk Cabbage Ridge. The Skunk Cabbage mountain bike loop will be approximately 3.7 miles long.

To forge a connection with the Holter Ridge bike trail from the Davison area, a mile-long section of the abandoned logging road that runs adjacent to the east side of Highway 101 will be designated as a mountain bike trail between Berry Glen and the Lost Man Creek Picnic Area. This section of trail is not included in the 22 miles of new trail mentioned above nor in the calculations for area disturbed by trail construction.

Two new trail segments for equestrian use totalling 8.4 miles are proposed. One originates from the equestrian trailhead at the hay barn and run westerly in the area north of Davison Road. The trail will cross Davison Road where the state park jogging and bike trail now crosses the road and will lead to Gold Bluffs Beach. A second trail will be a loop on Skunk Cabbage Hill south of Davison Road. The upcoming general plan revision will note that equestrian uses were added to these areas of the parks as a result of the public participation in the Davison Ranch planning process.

The B-Mill and equestrian trailheads, all restroom and picnic facilities, and the elk-viewing area will be handicap-accessible to the greatest extent possible. The general plan revision process will identify sites within the park that would safely accommodate handicap-accessible trails. The feasibility of developing a trail in the planning area that will accommodate mobility-impaired populations was explored, in accordance with NPS policy to provide the highest level of accessibility to individuals with physical or developmental impairment. Moderate grades midway along the route of the Prairie Creek bike-hike trail and moderately steep grades on Skunk Cabbage Hill preclude development of totally handicap-accessible trails without major modification of both topography and trail layouts. The bike-hike trail will meet accessibility standards from both the north and south ends, resulting in two accessible segments each about 1.7 miles in length.

Trail segments that are within the Coastal Zone will be designed and constructed in a manner that is consistent to the maximum extent practicable with the California Coastal Management Program.

Use of Rehabilitated Roads for Trails

Numerous roads left from previous logging operations occur in the planning area. Portions of these roads are suitable for use as trails. Trail corridors and routes have been identified that will maximize use of the old logging roads and thus minimize new disturbance.

Redwood National Park is well-known for its pioneering research and development of techniques for removing abandoned and unwanted roads and restoring the original appearance and function of a watershed. Wherever possible, trails will be constructed on restored roadbed. If roads are not restored prior to trail construction, the trail must be maintained as a road which requires heavy equipment and results in a much wider trail.

Typical Sections for Trails

A typical section is the term used to describe the width of a roadway, or in this case, a trail. A typical section is the designed cross-sectional width of the trail, including travel lanes, shoulders, and ditches or other drainage structures.

Designers strive for a consistent width throughout the length of a road or trail. However, typical sections may vary slightly after construction because of the need to taper or widen a roadway or trail to connect structures such as bridges or guardrails, or because drainage patterns need narrower or wider ditches. Where an existing road bench cannot accommodate a consistent typical section throughout the length of a project, the travel lanes are held constant, and the variance in width is accommodated in the shoulders and drainage structures.

Prairie Creek Bike-Hike Trail

The total length of the trail will be approximately 3.2 miles from its origin at the junction of the Newton B. Drury Scenic Parkway and Wolf Creek access road to its terminus at Highway 101 opposite Berry Glen.

The trail has been divided into segments that are identified by their general location. The trail segment names and lengths are 1) Newton B. Drury Scenic Parkway and Wolf Creek access road to the jogging trail-- 0.26 mile; 2) North section of Road 200 from jogging trail to Blankenship Trucking shop-- 1.78 miles; 3) Blankenship shop bypass to B-Mill deck-- 0.46 mile; 4) B-Mill deck to south section of Road 200-- 0.28 mile; 5) South section of Road 200 to Prairie Creek bridge-- 0.23 mile; and 6) Prairie Creek bridge to Highway 101-- 0.12 mile.

The park is working with a private landowner to obtain a permanent easement for the trail segment that bypasses the Blankenship Trucking shop on private land along Road 200. The easement will provide for the safety of park visitors while minimizing disruptions to the business conducted at the shop and ensuring the security it now enjoys.

Different trail segments may have different typical sections to minimize impacts to sensitive resources and because of design constraints to accommodate multiple uses. In general, the typical section of the Prairie Creek bike-hike trail will be two 4-foot-wide travel lanes and one-foot-wide shoulders on each side. The typical section will be widened to include drainage ditches where no drainage is presently provided. Ditches could add several feet to the width of the trail. Ditches are typically constructed at 3:1 or 4:1 slopes so that a 1-foot-deep ditch would be either 6 or 8 feet wide.

Most of the trail will be constructed on former logging roads. Some roads are now abandoned and some are still used by motor vehicles. The roadway is much wider along most of the length than is needed for the trail and already includes drainage culverts and ditches.

The bike/hike lanes on the trail will be paved to allow use by touring bicycles. Shoulders are required for support of the outside edge of the pavement because heavy equipment will be used for trail maintenance. Shoulders will be gravel to reduce the overall width of paved area and retain the character and feeling of a park experience.

The trail will connect with an existing trail that leads from the Elk Prairie Campground through the south end of Elk Prairie to the Wolf Creek access road. The existing trail is already signed as a bike or jogging trail.

This trail has a 9-foot-wide graveled surface that is suitable for touring bikes without additional surface hardening or widening. No drainage structures are needed. State park personnel have suggested that the shoulders now signed as elk viewing parking along the Newton B. Drury Scenic Parkway through Elk Prairie may be suitable for designation as a bike route. This will reduce day-use bike traffic through the Elk Prairie Campground.

Segment 1, Newton B. Drury Scenic Parkway and Wolf Creek access road to state park jogging trail



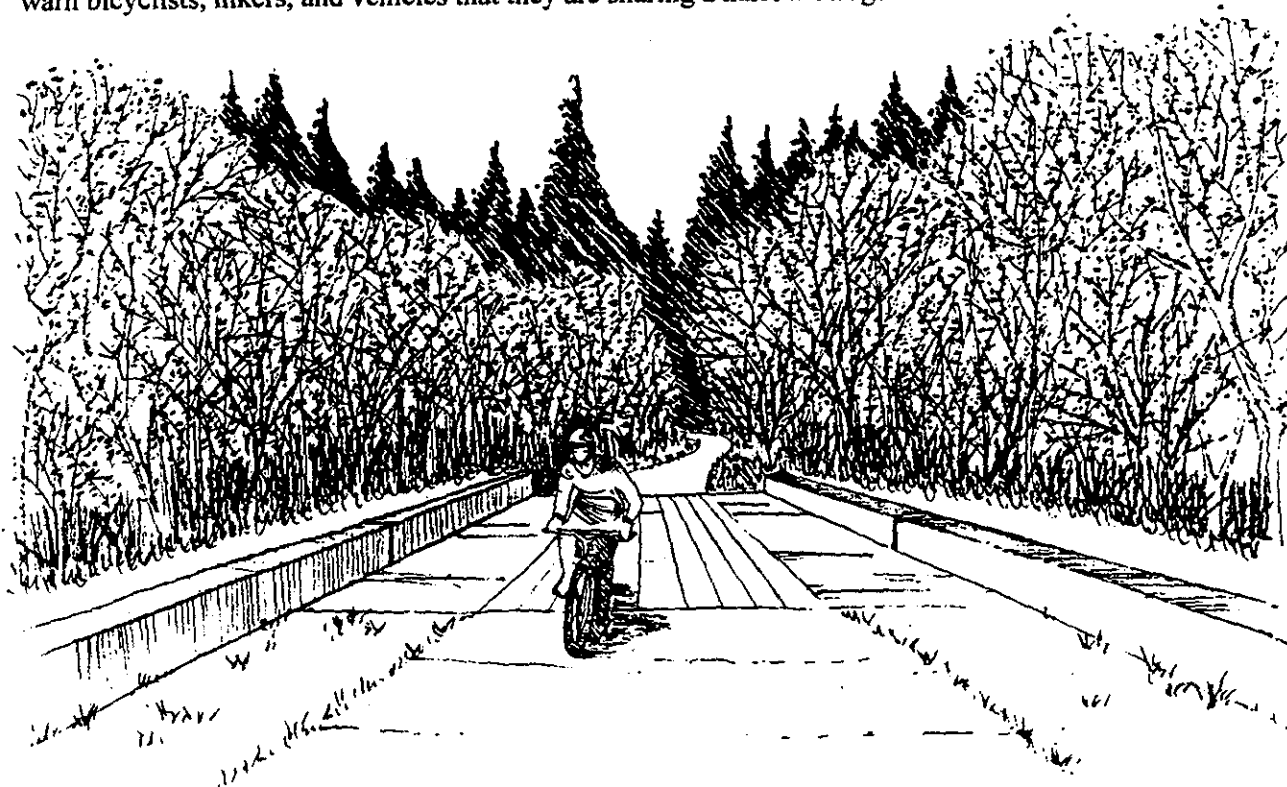
The first segment of the bike/hike trail runs from the intersection of the Wolf Creek access road and the Newton B. Drury Scenic Parkway to the point where the state park jogging trail begins to ascend the hill.

The existing road cross-section is 16.5 feet wide. The existing bridge is 20.5 feet wide, constructed of wooden planks laid over crossplanking with massive timber sides that serve as guardrails. The bridge is

posted for a 10-ton weight limit. The bridge will not be paved. The planks are closely abutted so that there is no space for a narrow-tired bicycle wheel to fall between them.

The Wolf Creek access road is gated to prevent access by unauthorized vehicles. Traffic is restricted to park staff and scheduled groups using the Wolf Creek Outdoor School. Occasionally, park-authorized heavy equipment uses the road. To provide security for park facilities and outdoor school participants, the park is considering installing a second gate on the Wolf Creek access road to prevent trail users from wandering into the outdoor school.

Bicyclists and hikers will share the road with motor vehicles. Separate bicycle lanes are not needed because of the low vehicle use, slow speeds, and good sight distance. A possible design exception may be required by Caltrans for the reduced width of the trail across the bridge. Warning signs will be installed to warn bicyclists, hikers, and vehicles that they are sharing a narrow bridge.



Segment 2, North section of Road 200 from jogging trail to Blankenship Trucking shop

This segment between the point where the state park jogging trail ascends the hill and the Blankenship Trucking shop is the longest segment of the trail. It follows an abandoned logging road (Road 200) along the base of the hillslope. The road had a macadam surface at one time but most of that surface has deteriorated.

The width of the existing road varies but at least some sections are up to 34 feet wide. The typical section of the trail will include two 4-foot-wide lanes, two 1-foot-wide shoulders, a variable-width inboard ditch, and a variable-width fillslope on the outer edge. This typical section will easily fit on the existing roadbed. That portion of the roadway that remains after trail construction will be scarified and left to

revegetate naturally. Colonization by exotic plants is not expected to be a problem because the dense shade precludes establishment of most exotic plant species that are considered problems in Redwood National Park.

Streelow Creek joins Prairie Creek near the northern end of this segment. A bridge crossed Streelow Creek during the period of logging at Wolf Creek. The bridge was removed around 1972. The creek banks appear to have been altered for road and bridge construction. The park is investigating the possibility of restoring the creek banks to their original configuration during the bridge construction.

A new bridge across Streelow Creek will be constructed. The new bridge will be a stringer bridge with a clear span of 50 feet and concrete abutments. The bridge will be designed to support heavy equipment that will be used to maintain the trail.

The abandoned logging road on which the trail will be constructed has not been maintained regularly since 1972. Lack of maintenance has caused portions of the road to fail. Failures have resulted from collapse of some original "Humboldt crossings" (road built on soil placed on top of organic material and debris from original vegetation clearing), plugging of undersized culverts, and in-filling of ditches followed by stream capture on the road surface. Other portions of the road require less extensive repair and rehabilitation. Culverts will be replaced, ditches cleaned and repaired, and failed sections of the road rebuilt prior to the trail construction.

Road 200 was constructed with heavy equipment and was intended to be maintained with heavy equipment. The trail constructed on the original road bed will be wide enough to allow access by heavy equipment (grader, dump truck, backhoe) for future maintenance because the original road construction included deep inboard ditches that require extensive maintenance. The proposed typical section will accommodate heavy maintenance equipment.

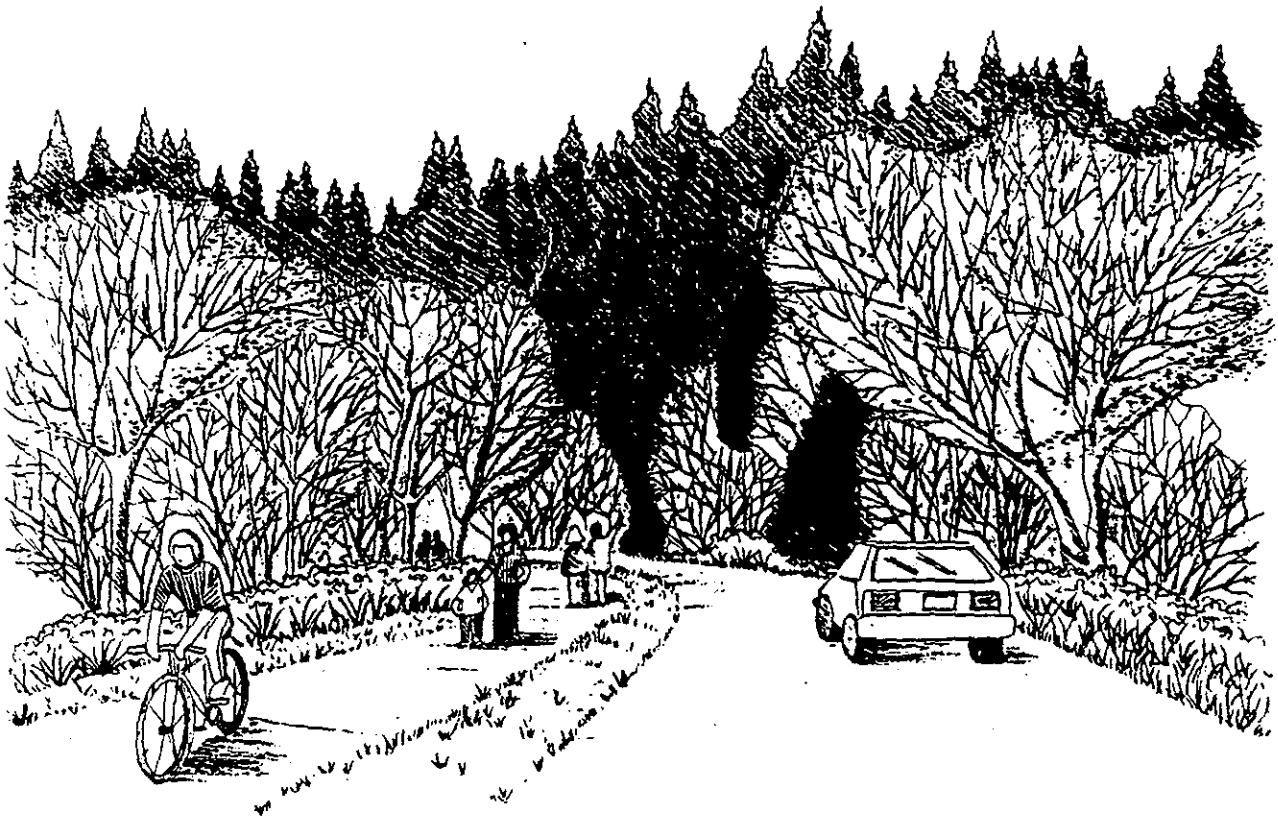
Four or five resting areas will be constructed along this segment of the trail; locations will depend on distance from other resting areas and grade of the trail. The park interpreters will assist in deciding the location of these resting areas to allow them to plan for guided walks along the trail.

Segment 3, Blankenship Trucking shop bypass

The trail would bypass the Blankenship Trucking shop on the west, following Road 200 through the Blankenship Trucking shop parking area and continuing across Davison Road to the B-Mill deck. The trail would be incorporated into paved shoulders on the shop access road. The entire access road would be widened to two lanes and would be paved.

Segment 4, B-Mill deck to south section of Road 200

The trail crosses the B-Mill deck and rejoins Road 200 on the south end of the deck. The trail will be integrated into the trailhead design in this segment.



Segment 5, South section of Road 200 to Prairie Creek timber bridge

The trail will be constructed on an existing 18-foot-wide road. Bicycles will share the road with park administrative traffic and occasional NPS-authorized traffic.

Segment 6, Prairie Creek timber bridge to Highway 101

The trail crosses Prairie Creek at the site of the timber bridge. The timber bridge will be removed and a new bridge constructed. The new bridge will incorporate interpretive platforms.

A causeway with a paved road 16 feet wide presently connects the timber bridge with Highway 101 opposite Berry Glen. This portion of the trail will be constructed on the existing roadway, which is raised approximately 8 feet above the surrounding pastureland. The typical section will be two 4-foot-wide paved lanes and two 1-foot-wide gravel shoulders and will fit on the existing bench. The park is presently considering whether the raised roadway should be removed to allow free passage of flood waters.

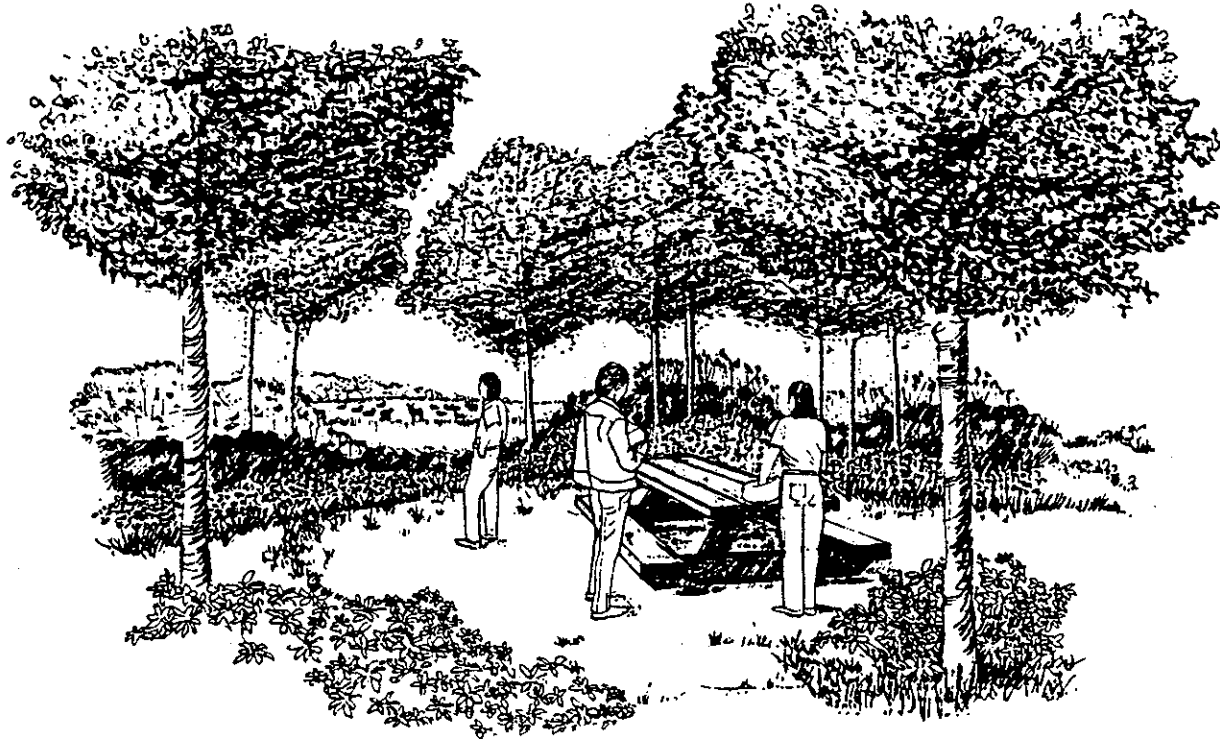
The bicycle trail ends at the junction with Highway 101; signs will warn motorists on Highway 101 and bicyclists. Some vegetation that lines the west side of Highway 101 may be cleared to increase the sight distance for bicyclists and motorists at this terminus of the trail.

This plan proposes that mountain bikes be allowed to continue across the highway to reach an abandoned logging road that would join the Lost Man Creek Picnic Area road and the Holter Ridge Bike Trail. The abandoned logging road will be maintained as a rough-surfaced trail rather than as a paved trail. Eventually, the trail could be paved to create a longer route available to touring bicycles.

This trail terminus will also serve as a connection point to the East Side Trail. A trail segment will ascend the hill below the Lady Bird Johnson Grove and connect with the East Side Trail at the grove.

B-Mill Parking and Trailhead

A parking lot will be constructed at the B-Mill deck to serve the trailhead and picnic area (see Alternative 2 - B Mill Trailhead graphic). The lot will accommodate 25 automobiles and pickups and 15 oversize vehicles. This is consistent with the 1980 *General Management Plan* which called for parking for 40 cars. There will be room for future expansion to accommodate an additional 25 vehicles.



The 7.8 acres of asphalt at B-Mill deck will be removed and recycled into a base to be used for trail and parking lot construction. Assuming the asphalt to be 4 inches thick, the volume of asphalt is about 3775 cubic yards. Hauling the asphalt out of the park in a 5-yard dump truck would require at least 756 trips. If there is excess asphalt after trail and other construction, the excess will be hauled out of the park and disposed in accordance with applicable federal and state regulations.

Skunk Cabbage Memorial Groves Trail

A trail begun in October 1992 for the ceremony dedicating memorial groves for the Sierra Club Centennial will be completed as a loop trail about 2.3 miles long.

Foot access to the memorial grove loop trail will begin at the B-Mill trailhead. Parking will be provided at the B-Mill trailhead. All roads on Skunk Cabbage Hill, except Road 205, would be removed as planned under the parks' watershed rehabilitation program. Road 205 will be retained for park administrative and maintenance access.

Less mobile visitors may have a difficult time negotiating the grade between the B-Mill trailhead and the rest of the memorial grove trail. Should these visitors wish to visit one of the Skunk Cabbage groves, the park will make reasonable provisions to accommodate them. Such provisions may include allowing these visitors to drive a private vehicle on the road used for NPS administrative access.

Skunk Cabbage Creek and Coastal Trails

Trail construction in the B-Mill area offers an opportunity to connect Davison area hiking trails with the Skunk Cabbage and Coastal trails, and provide a central trailhead from which visitors can explore several parts of the park.

The 1984 trail plan mentions safety concerns with the present Coastal Trail access at the 35 mph curve where Robinson Road meets the highway north of Orick. This proposal to construct a trailhead to B-Mill deck minimizes the safety hazard for visitors unfamiliar with the location of the trailhead. The Robinson Road access off Highway 101 to the Skunk Cabbage trailhead will be retained so that users familiar with the existing access are not inconvenienced. A new trail and trailhead will increase access to the Coastal Trail and to the coast.

The first part of the new trail along the north side of Skunk Cabbage Creek will be on Road 205. Where Road 205 turns to ascend the ridge to the upper level of the memorial groves, a second abandoned logging road that follows the north side of Skunk Cabbage Creek will become the trail. The total length of new trail along the north side of Skunk Cabbage Creek is estimated to be 1.9 miles. The new trail will connect with the existing trail wherever feasible, given constraints with trail grades and stream crossings.

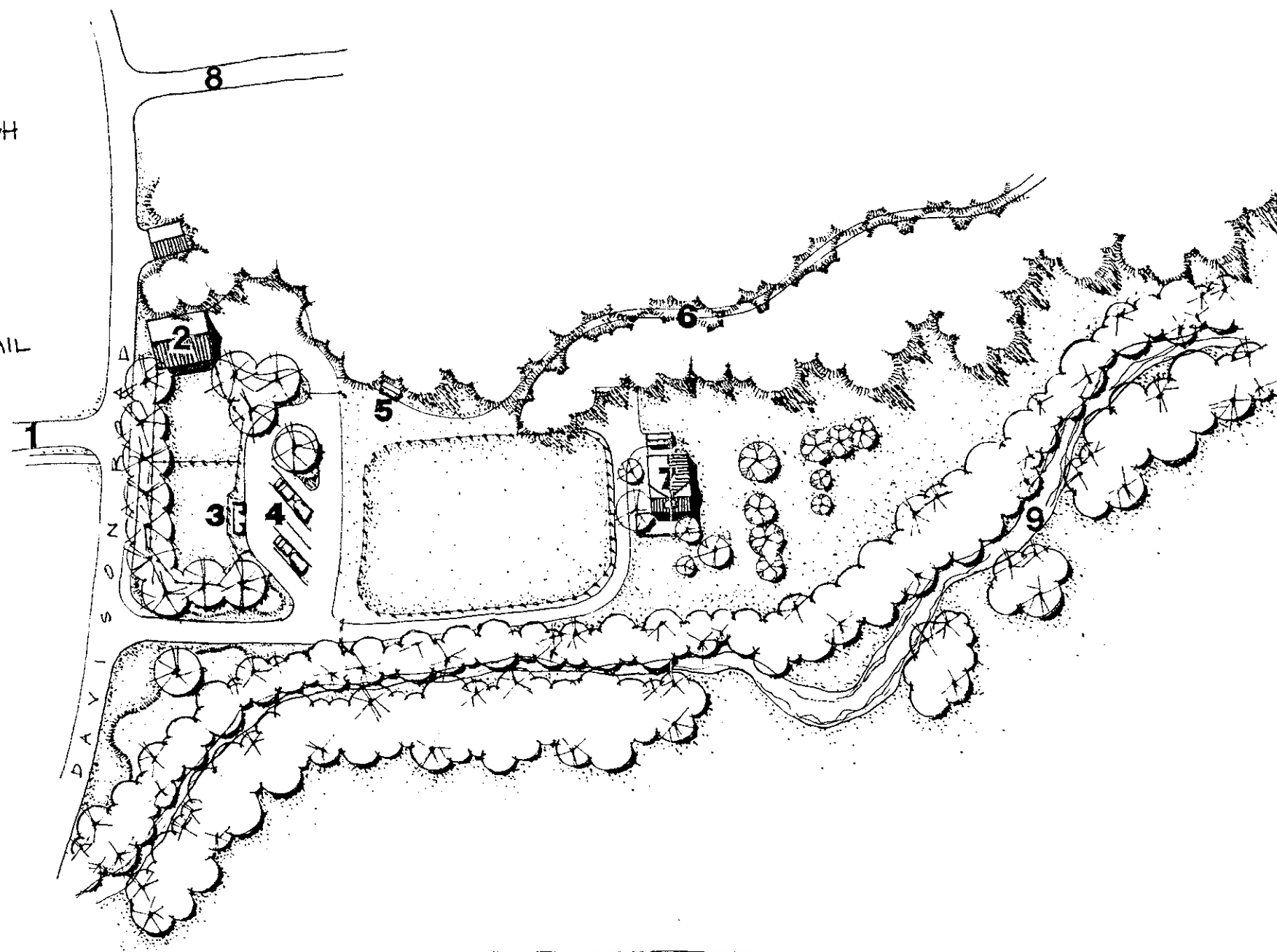
Equestrian Facilities

The Prairie Creek bike-hike trail will not be open to equestrians. Two separate equestrian trails, including one loop, are proposed to provide opportunities for equestrians in the Davison area while reducing potential conflicts among different user groups.

All action alternatives provide 5 horse trailer parking spaces near the hay barn (see Alternative 1 - Equestrian Trailhead graphic). The site offers sufficient space and is already being used to stable the park horses. Chemical toilets similar to those at other park trailheads and screened by a wooden fence will be provided. More elaborate comfort facilities will be available at the B-Mill deck trailhead. A watering trough and composting bins for horse manure will be provided at the horse trailer parking area.

KEY

- 1 B-MILL DECK ACCESS ROAD
- 2 BARN
- 3 TOILETS
- 4 PARKING — 5 FULL-THROUGH
- 5 KIOSK
- 6 EQUESTRIAN TRAIL
- 7 1926 BUNGALOW
- 8 BLANKENSHIP TRUCK SHOP
ACCESS ROAD / BIKE-HIKE TRAIL
- 9 PRAIRIE CREEK



ALTERNATIVE 1

DAVISON RANCH — EQUESTRIAN TRAILHEAD

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 | 61015-A
REDX | JULY 96

50 0 50 150 1" = 50' - 0"



ON MICROFILM

Skunk Cabbage Hill Equestrian Loop Two new equestrian trails totalling 8.4 miles will be constructed. One of the trails will be a loop leading off from the main trail. Equestrian trails will be constructed with a graveled surface approximately 4 feet wide, the same standard found in the Redwood Creek horse trail.

The main trail will begin at the equestrian trailhead at the hay barn. The trail will follow Roads 210 and 220 for approximately 1.7 miles. The remainder of the trail will use one or several of the numerous skid trails in the area. Road 210 will be included in the parks' watershed rehabilitation program. Road rehabilitation and trail construction will be coordinated so that sections of rehabilitated road are not disturbed again for trail construction.



The route from the trailhead to Road 210 must pass through privately-owned property near the Blankenship equipment shop. Horses will share the road with occasional large vehicles and other motorized equipment. There is little motor vehicle traffic and speeds are very low; no serious conflicts resulting from mixed use are anticipated. Signs will be placed to warn both equestrians and vehicles of the other uses.

The equestrian trail will cross Davison Road where the state park jogging trail joins Davison Road. After crossing Davison Road, the equestrian trail will lead to the beach. The trail will cross the headwaters of Major Creek to avoid the steeper slopes to the east. About 0.75 mile from the beach, a loop trail will break off from the main horse trail. The loop trail will run down the Skunk Cabbage drainage almost as far as the memorial groves before circling back to the main horse trail.

Mountain Bike Trails

No single-track mountain bike trails are proposed. Existing abandoned logging roads on Skunk Cabbage Hill will be converted to an unpaved trail for use by mountain bikes. The trail will originate from the Prairie Creek bike-hike trail between the B-Mill trailhead and the new Prairie Creek bridge. The trail will travel up Road 205 onto Skunk Cabbage Hill and then follow abandoned logging roads along the ridgetop for 3.7 miles. The mountain bike trail will join the existing state park jogging trail and bike trail at Davison Road.

Elk Viewing

The pull-offs at the elk viewing areas along each side of Davison Road will be hardened. A reinforced turf or porous pavement system will be used to promote the appearance of natural landscaping while providing load bearing support.

The park will construct one or two blinds from which visitors could view birds. The blinds will be located near Prairie Creek to take advantage of riparian habitat favored by birds and other wildlife. Blinds are not considered necessary for elk viewing, as the elk are adapted to human presence in the highway corridor between Davison Ranch and Elk Prairie.

Buildings

The 1926 bungalow will be retained and adaptively reused for a ranger residence, provided it can be made safe for use at a reasonable cost given its location in the 100-year floodplain. The hay barn will continue to be used to stable the park horses. All other buildings will be removed.

New Construction

Restrooms will be constructed to serve the B-Mill trailhead and picnic area. Five picnic tables will be placed around the trailhead to take advantage of the views of old-growth, pastures where elk graze, and Prairie Creek.

A portion of the B-Mill deck will be used as a construction staging area. New asphalt for the trail paving would be hauled in. There will not be a batch plant on site. The old asphalt from the B-Mill deck will be recycled into a base for the bike-hike trail, the parking lot and trailhead at the B-Mill deck.

The Prairie Creek timber bridge will be removed and the new bridge constructed on the site of the old bridge. Removal and construction will be conducted at low stream flows and during dry conditions to avoid damage to surrounding wetland and riparian areas.

Resource Restoration

The Davison pastures not presently included in the riparian mitigation program will be managed to maintain Roosevelt elk habitat. A separate plan for management of the vegetation in the Davison pastures and for restoration of the riparian, wetland, and grassland areas will be prepared by park staff. These restoration and vegetation management plan will contain a detailed inventory of the existing conditions of the areas to be restored; the specific steps for removing unwanted vegetation; the plant species to be used for revegetation; the monitoring program to be used to ensure that the goals are being met; and personnel and quantities of materials required to accomplish restoration and monitoring.

Drainages that might be restored as part of this plan include that portion of Berry Glen Creek west of Highway 101; a side channel of Prairie Creek that presently is channelized under the B-Mill deck; and

the stream next to the Davison Ranch equipment shed that joins Prairie Creek near the Davison Road bridge. Restoration may include excavating the stream channels to their original depth, regrading the streambanks to their original contours, and replanting the area with native riparian vegetation.

Alternative 2, No Action

This is a minimum requirements alternative, as required by NPS planning guidelines. A true No-Action alternative is not feasible because the park must manage visitor and administrative uses that have been allowed since the properties were acquired. The park presently provides minimal resource management, administrative, and visitor uses.

Under this alternative, the NPS would continue the uses and management of the Davison Ranch property as they occurred prior to 1996. Visitors would have use of a short loop trail through the Skunk Cabbage memorial groves, parking at the B-Mill deck, and elk-viewing areas along Davison Road. The park would continue to provide facilities for the park horses at Davison Ranch.

There would be no major on-site interpretive facilities at Davison Ranch. Visitors desiring interpretation of the natural resources and the history of the Davison Ranch area would ask questions at the Redwood Information Center. Minimal interpretation of the riparian mitigation site and the elk herd would be provided when funds and personnel are available. Interpretation of redwood ecology in the national park would be hampered by the location of the information center on a coastal estuary with no redwood trees in easy walking distance. There would be no place devoted to in-depth interpretation of World Heritage Site and International Biosphere Reserve designations of Redwood National and State Parks.

No visitor facilities would be provided at Davison Ranch. Visitors would be allowed to park on B-Mill deck, but there would be no restrooms nearby. The asphalt would be left in place on the B-Mill deck, with no restoration of wetlands or riparian areas there or elsewhere in the planning area. The timber bridge across Prairie Creek would remain in its present condition, with rotten and burned sections. It would eventually fail and fall into the creek.

No new trails would be planned or developed in the Davison vicinity although the loop trail through the Skunk Cabbage memorial groves would be completed. The Skunk Cabbage memorial groves loop would be the only additional trail to be constructed in the Skunk Cabbage area that is not already part of the 1984 trail plan. The loop trail would be accessed from the former log landing on the 205 Road or from the B-Mill deck. No formal trailhead or additional access to the memorial groves would be provided. Visitors would walk up the existing gravel road to the landing above the groves to reach the trail. The Robinson Road turnoff of Highway 101 would be the sole access to the Skunk Cabbage section of the Coastal Trail.

The only handicap-accessible feature at Davison Ranch would be the elk-viewing area along Davison Road. Access would be limited to a view from a vehicle because the viewing area would not be hard-surfaced. The B-Mill trailhead would remain hard-surfaced but there would be no accessible interpretive facilities or trails. There would be views of the old growth forest and Prairie Creek.

The 1926 bungalow would be used to house park employees, if it is determined to be cost-effective to rehabilitate the bungalow and provide for safety of residents during a 100-year flood. If the bungalow cannot be made to conform to NPS housing standards in compliance with floodplain management guidelines at a reasonable cost, it would be removed with other ranch buildings. The hay barn would continue to be

used to stable the park horses and for storage of feed and supplies. Other buildings would remain in place until they reach a condition where human health and safety are threatened, at which point the buildings would be removed as funding permits.

All ranch buildings would remain in the 100-year-floodplain of Prairie Creek until they have deteriorated to a point where they constitute a safety hazard. Work on the Davison Riparian Mitigation project would continue but no additional restoration of wetlands, riparian areas, or drainages would occur. The pastures would not be actively managed through mowing, burning, or any other technique.

Alternative 3, Activity Center

This alternative seeks to provide a destination where large numbers of visitors may learn about the redwood ecosystem firsthand and participate in the partnerships that Redwood National and State Parks are developing with other agencies and individuals for managing the old growth forest ecosystems.

We use the term "activity center" to convey the sense that visitors will find more than the exhibits and information usually found in a national park visitor center. The site layout and structure itself would be designed to encourage visitors to interact with the resources surrounding the center, and with other visitors who seek a greater understanding of the connections among the resources and people.

The primary function of the activity center would be to provide a place for interpretation of those resources that make Redwood National and State Parks eligible for international recognition as an International Biosphere Reserve and World Heritage site. Visitors would be educated through direct contact with park interpreters and exhibits. Exhibits would prepare visitors to go out into the park to experience the resources directly through touching, seeing, hearing, and smelling the redwood forest and streams.

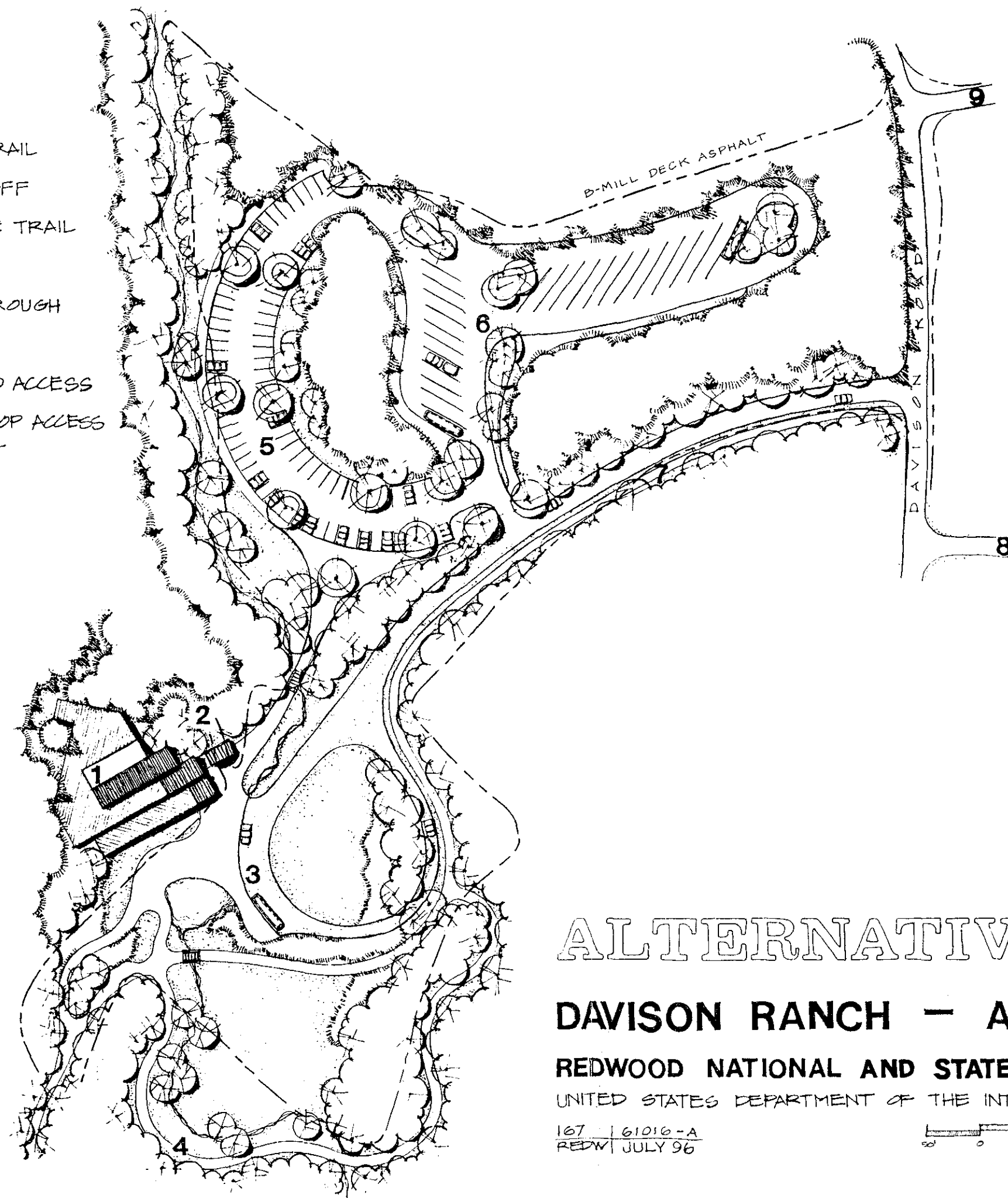
The activity center would be a multi-purpose interpretive facility that would offer educational opportunities to both individual visitors and those who arrive in large groups. Individual visitors could browse through the center's exhibits, ask interpretive rangers for information about a particular subject, or attend an interpretive program. Large groups could learn about park resources in an auditorium that would feature audiovisual presentations or interpretive programs. The auditorium would be large enough to comfortably accommodate several bus tours simultaneously and would be designed with the flexibility to meet the demand for a facility suitable for smaller symposia and workshops.

An activity center at the B-Mill deck would serve as an access point for recreational opportunities available in the southern part of Redwood National and State Parks. The center would be designed to bring visitors close to trails, redwood trees, streams, wildlife, and other resources to help visitors feel that they have arrived in a park.

The parks are working toward developing alternative visitor transportation systems. Such a transportation system would require additional planning and coordination among park and transportation agencies, as well as the local communities that might serve as the staging areas. The upcoming revision of the park general plans will incorporate large-scale transportation planning such as shuttle service between park areas and facilities.

KEY

- 1 ACTIVITY CENTER
- 2 MEMORIAL GROVES TRAIL
- 3 PASSENGER DROP-OFF
- 4 RIPARIAN INTERPRETIVE TRAIL
- 5 PARKING 70 CARS
- 6 PARKING 30 PULL-THROUGH
- 7 BIKE/HIKE TRAIL
- 8 EQUESTRIAN TRAILHEAD ACCESS
- 9 BLANKENSHIP TRUCK SHOP ACCESS
ROAD/BIKE-HIKE TRAIL



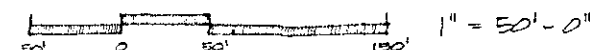
ALTERNATIVE 3

DAVISON RANCH - ACTIVITY CENTER

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167	61016-A
REDW	JULY 96



ON MICROFILM

The May Creek location for an activity center was discarded because of potential impacts to elk calving areas. The B-Mill deck site is adjacent to significant resource areas but because of its former industrial uses, the deck does not contain any significant resources that would be directly affected by construction.

New Construction

The activity center would be located on the southwestern part of the B-Mill deck. It would be designed and constructed in accordance with "Uniform Federal Accessibility Standards" to provide full accessibility to disabled persons. Interpretative displays would be designed to ensure that the information they impart is accessible to all persons, including those with visual, hearing, mobility, and mental impairments.

The activity center would incorporate the principles of sustainable design into the design, construction, and operation phases. Sustainable design is a process that builds harmonious relationships between people and their environment. Most visitors would be familiar with recycling but sustainable design also includes consideration of site microclimate for siting a building; energy-efficient and water-conserving appliances and fixtures; minimal use of toxic substances for construction and maintenance; use of durable natural, renewable, or recyclable materials for construction; and attempts to minimize generation of solid waste.

Desirable features in an activity center include a sales area, an exhibit area, restroom access outside the building to allow use when the center is closed, and an auditorium with audiovisual capabilities. A capacity of up to 250 persons has been suggested in order to accommodate several bus loads of visitors simultaneously and to provide sufficient room for meetings held in the national and state parks. Storage space and a lunch room would be provided. Some space is needed for a library and for interpreters to prepare programs.

Parking

A parking lot to accommodate 100 vehicles (25 RVs, 5 buses, 70 cars) would be constructed. The parking lot would be designed and located so that future expansion to accommodate an additional 100 vehicles is possible. This would allow the activity center to serve as a shuttle point for trips to the Bald Hills and other parts of the park.

Roads

Davison Road would need to be improved between Highway 101 and the turnoff to the activity center to accommodate an anticipated increase in traffic to the activity center. The existing road is about 18 feet wide. It lacks adequate drainage control in several areas so that large puddles form during rainy periods. The road presently belongs to Humboldt County. The park would need to lease the road from the county or secure title to the road prior to road improvements.

Approximately 0.25 mile of Davison Road would be realigned to straighten out the curves. The average daily traffic (ADT) to the activity center is anticipated to be between 400 and 1000 vehicles over the life of this plan. According to NPS road standards, 10-foot-wide paved lanes and 3-foot-wide shoulders are necessary to accommodate the anticipated traffic volume. The reconstructed road would be at least 8 feet wider than the existing road.

Picnic Area

Twenty picnic sites would be provided, with an attempt made to maximize views from each site. Some of the sites may have grills for cooking, although visitors would not be allowed to gather wood for fires but would be required to bring in charcoal or firewood.

Trails

Trails would be developed as under the proposal. The bike-hike trail would pass along the edge of the B-Mill deck and be incorporated into the circulation pattern for the activity center. The trail and trailhead would be located so that trail users could pass through the area without having to stop at the activity center. The trailhead for the bike-hike trail, the Skunk Cabbage memorial groves loop trail, and other parts of the proposed Davison Ranch trail system would be integrated into the activity center circulation system.

Buildings

Davison Ranch buildings would be treated as under the proposal. The 1926 bungalow would be retained for ranger housing if it was economically feasible to bring the house up to code. The hay barn would continue to be used to stable the park horses and store equipment and feed. Other buildings would be removed. To limit the area used by horses and to separate horses from the main activity center and picnic area, parking to accommodate 5 horse trailers would be provided at the equestrian trailhead near the hay barn.

Resource Restoration

Restoration of wetlands, riparian areas, and drainages would occur, and the pastures would be managed for elk habitat as under the proposal.

Alternative 4, Group Camp

Camping in a park is often one of the most memorable experiences a visitor takes home. Campgrounds can provide a total immersion in the resources of a park and offer a chance to see a park for more than a snapshot of time. The state park campgrounds in the region are filled by midafternoon most of the summer. Reservations are required for the most popular areas as much as eight weeks in advance to guarantee an available campsite, especially on weekends.

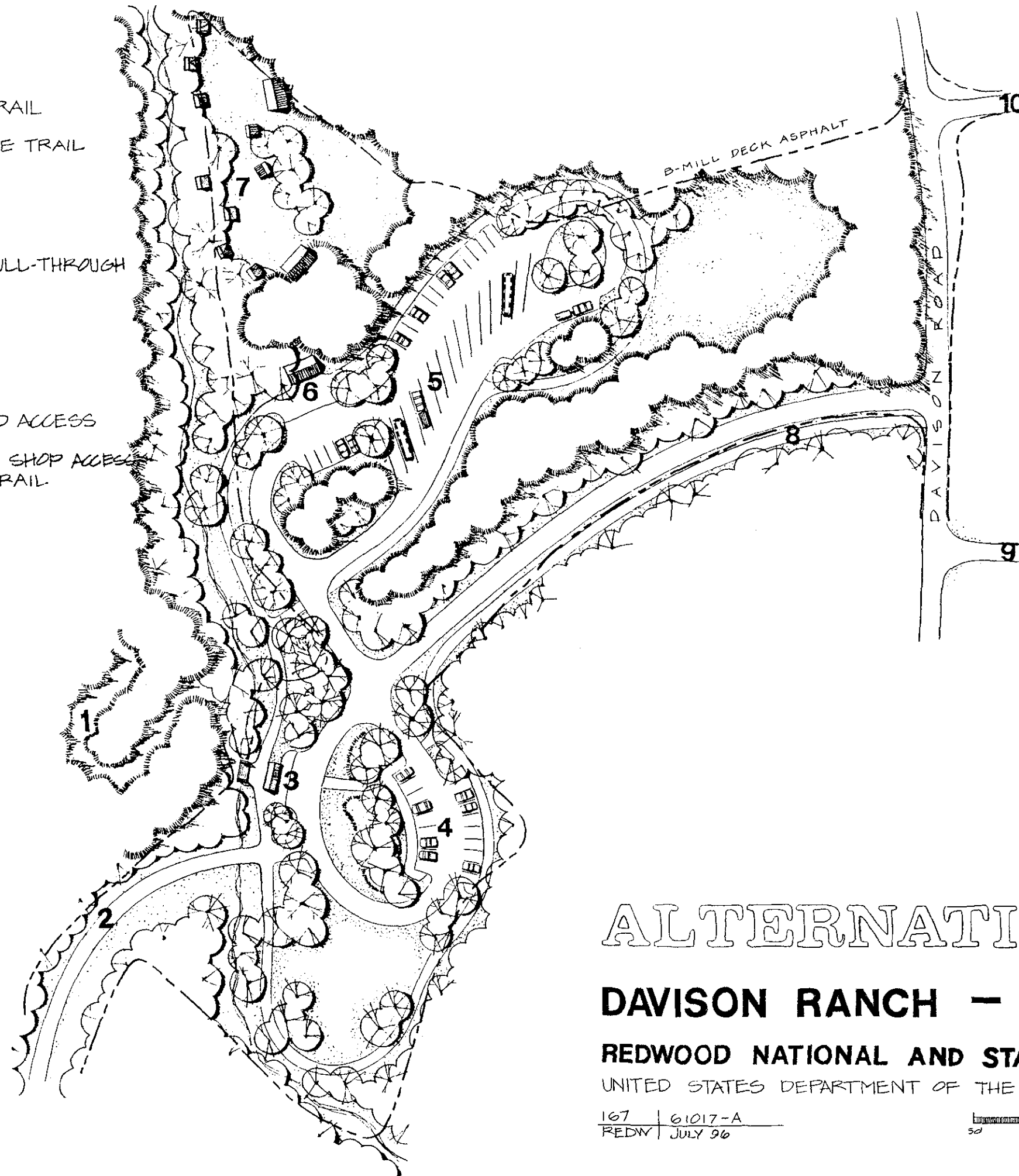
This alternative would provide a group camping area on the B-Mill deck. The camp would be available to groups during the high visitor use season by reservation only. Depending on the demand from groups, the camp may be open to individual camping without reservations.

Of the three redwood state parks within the national park boundary, only Jedediah Smith Redwoods State Park has a group facility. The next closest group camp is at Patricks Point State Park, about 15 miles south of the Redwood National and State Park boundary and about 18 miles from the nearest large stands of old growth redwood forest.

Jedediah Smith Redwoods State Park converted several of its individual campsites into a group camping area in 1993. If a group has not reserved the camp through the computerized reservation system, the individual sites are allotted to visitors on a first-come, first-served basis. The group site is generally full through the summer season. When the site is not reserved by a group, the individual sites making up the group site are filled by individuals.

KEY

- 1 MEMORIAL GROVES TRAIL
- 2 ROAD 205 / BIKE-HIKE TRAIL
- 3 KIOSK
- 4 PARKING 19 CARS
- 5 PARKING 21 CARS, 15 PULL-THROUGH
- 6 COMFORT STATION
- 7 GROUP CAMP
- 8 BIKE/HIKE TRAIL
- 9 EQUESTRIAN TRAILHEAD ACCESS
- 10 BLANKENSHIP TRUCK SHOP ACCESS
ROAD / BIKE-HIKE TRAIL



ALTERNATIVE 4

DAVISON RANCH — GROUP CAMP

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 | 61017-A
REDW | JULY 96

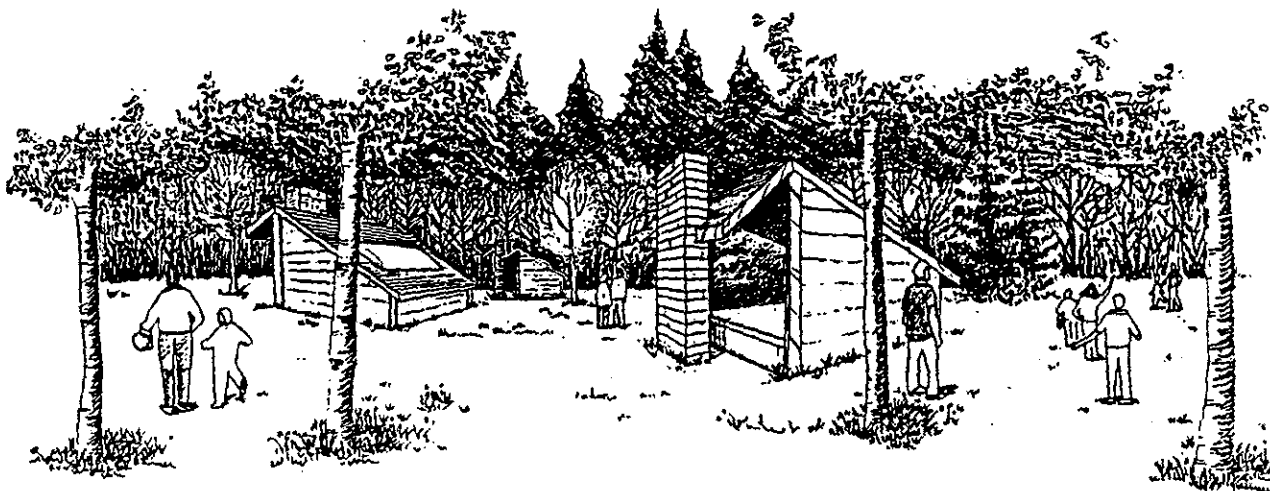
50 0 50 100' 1" = 50' - 0"



ON MICROFILM

The group camp envisioned for the Davison Ranch area would offer a more developed facility than provided at Jedediah Smith. To make the camp attractive year-round, sleeping and eating areas would be covered. Visitors could plan trips during the rainy winter months knowing that they have a place that would be dry should inclement weather interrupt their excursion.

Camping in RVs in the parking area would not be allowed, although campers who travel to the site in RVs would be allowed to park and use the camp.



New Construction

A group camp to accommodate 50 campers would be constructed on the B-Mill deck above the 100-year floodplain of Prairie Creek and its tributaries. The camp facilities would be designed and constructed in accordance with "Uniform Federal Accessibility Standards" to provide full accessibility to disabled persons.

To make the camp useful year-round, ten covered sleeping platforms of about 150 square feet, each to accommodate 5 persons, would be constructed. Two central covered cooking areas would be built; each cooking area would contain two large grills and would also have seating areas. Two clusters of sleeping platforms would be provided to allow at least two large groups to use the camp at one time.

Picnic Area

A picnic area would be established on the B-Mill deck. Picnic sites would be located away from the group camp.

Parking

Parking for the group camp would be developed in conjunction with trailhead parking. Spaces would be provided for 40 cars and 20 oversize vehicles.

Trails

Trails would be developed as under the proposal. The trailhead on the B-Mill deck would be designed to account for the group camp in the general vicinity, and to reduce the impacts of the trail on the privacy of the group camp.

Buildings

Davison Ranch buildings would be treated as under the proposal. The 1926 bungalow would be retained for ranger housing and the hay barn would continue to be used to stable the park horses and store equipment and feed. Other buildings would be removed and the area restored.

Resource Restoration

Restoration of wetlands, riparian areas, and drainages would occur as under the proposal. The pastures would be managed for elk habitat as under the proposal.

Alternative 5, Redwood Institute

This alternative would provide a place in the park where researchers and scientists could interact with the public and park visitors to share knowledge, apply their research skills to park-related topics, and discuss and exchange ideas about park ecosystems and ecosystem management, resource preservation and management, ecotourism and human ecology, sustainable design and innovative technology, site- and user-responsive environmental design, and ecosystem restoration.

The institute embraces the partnership concept that is rapidly becoming the model of how government must respond to the knowledge contained in other institutions and private groups and individuals. The institute would function as an adult environmental education center to complement the parks' two outdoor schools for children by providing a place for more rigorous scientific study than is provided in the outdoor schools. Organized groups such as ElderHostel, government or private training courses, or small conferences are examples of potential institute participants.

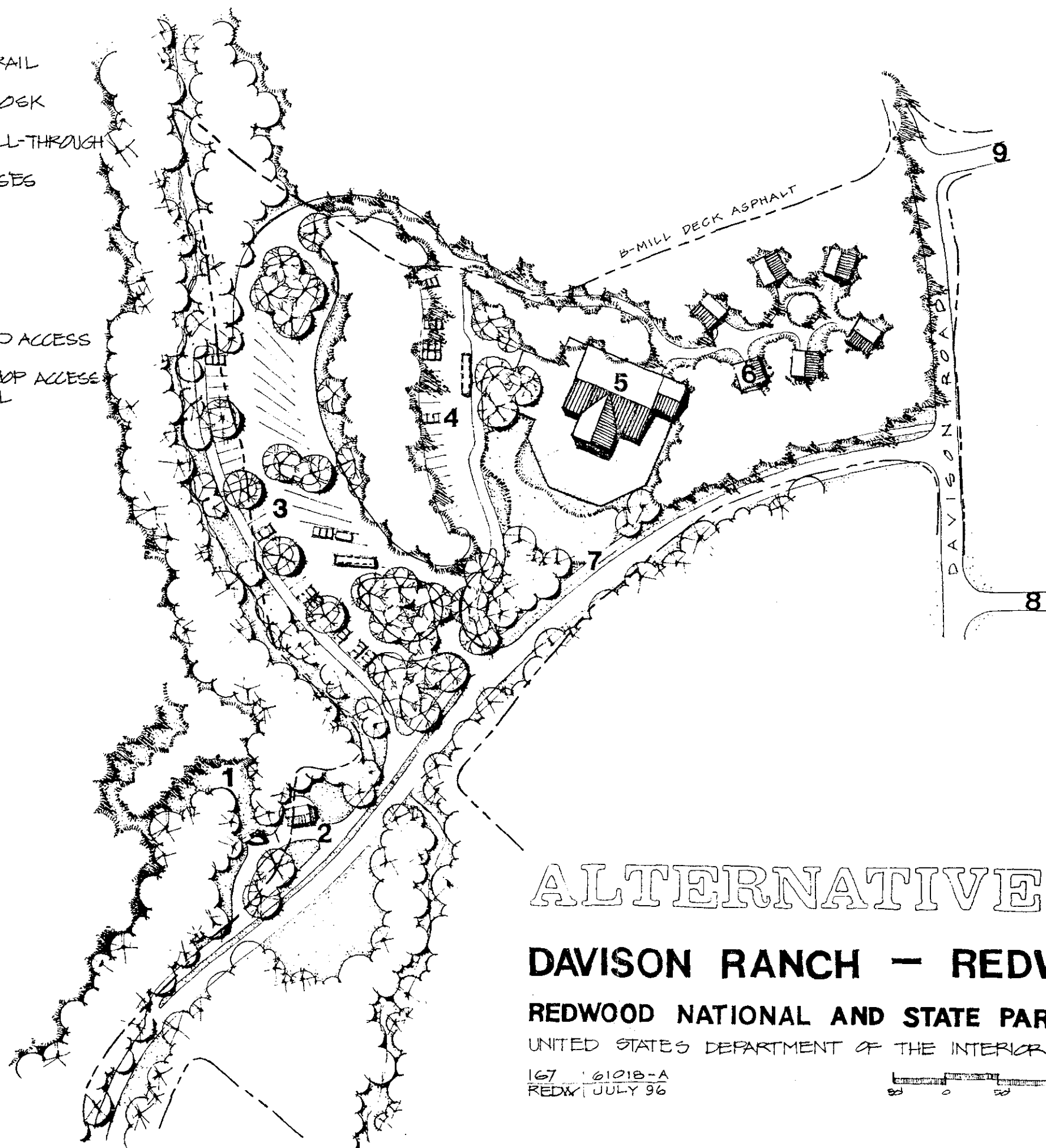
The institute would embody principles of sustainable design to an even greater extent than the activity center. Consideration of site microclimate for siting a building; energy-efficient and water-conserving appliances and fixtures; minimal use of toxic substances for construction and maintenance; use of durable natural, renewable, or recyclable materials for construction; and attempts to minimize generation of solid waste would be integral to design and operation of the institute. The emphasis on sustainability at the institute would attract participants to institute programs that would focus on contemporary concepts of sustainability.

This alternative resembles the activity center alternative in its emphasis on resource education but differs in how much information would be available to park visitors on a daily basis. The institute would focus on more in-depth education and more rigorous treatment of technical topics than would be explored in the interpretive programs offered at the activity center. Park visitors would be welcome at some institute functions but could not expect to find exhibits or regularly scheduled interpretive programs at the institute. The level of visitor services aimed at typical park visitors would be much lower than at an activity center.

In anticipation of stays of several days to two weeks, overnight accommodations and living facilities would be provided for institute staff and participants. Guest accommodations would be simply furnished, with the intention of guests spending the majority of their time outdoors exploring the park or in common facilities that would serve as indoor classrooms.

KEY

- 1 MEMORIAL GROVES TRAIL
- 2 COMFORT STATION/KIOSK
- 3 PARKING 25 CARS, 15 PULL-THROUGH
- 4 PARKING 25 CARS, 2 BUSES
- 5 INSTITUTE
- 6 CABINS
- 7 BIKE/HIKE TRAIL
- 8 EQUESTRIAN TRAILHEAD ACCESS
- 9 BLANKENSHIP TRUCK SHOP ACCESS ROAD/BIKE-HIKE TRAIL



ALTERNATIVE 5

DAVISON RANCH — REDWOOD INSTITUTE

REDWOOD NATIONAL AND STATE PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

167 61018-A
REDX JULY 96

Scale bar: 0 50 100 feet. 1" = 50'-0"



ON MICROFILM

The mechanism for institute funding and operation remains to be determined. Because this alternative focuses on establishing an educational partnership, government funding of the entire operation is not desirable. Private funding or an association with a university are two possible funding mechanisms. Both local university and private researchers have expressed interest in using the Prairie Creek Fish Hatchery several miles south of Davison Ranch. The institute would complement the hatchery by providing a facility designed for discussion and presentation of research to interested institute guests and park visitors. Locating the institute on the B-Mill deck would allow ample space for parking and would not create traffic problems that might occur from heavy visitor use at the fish hatchery. New construction would allow for facilities that are designed for the desired uses rather than having to adapt existing buildings for uses that were not originally envisioned.

New Construction

The institute and accommodations would be located in the northwest corner of the B-Mill deck out of the 100-year floodplain. Facilities would be designed and constructed in accordance with "Uniform Federal Accessibility Standards" to provide full accessibility to disabled persons. The institute building would contain offices; employee housing; cooking, dining, and shower facilities for institute participants and employees; and lecture space for 150 persons. A central meeting area would be constructed to accommodate the institute participants plus an additional 100 persons who might be interested in attending classes or presentations on a day-use basis. The institute would be designed to house 48 overnight guests in six cabins of 625 square feet, each intended for up to eight guests. Cabins would have electricity but not running water.

Picnic Area

A small picnic area would be established as under the proposal, with an attempt made to maximize views. Three tables would be located near the parking area to allow easy access for physically handicapped persons.

Parking

Parking for the institute would be developed in conjunction with trailhead parking on the B-Mill deck. In addition to the 40 spaces for the trailhead, 40 more spaces for the institute would be added, a total of 80 parking spaces. This number of spaces would accommodate any persons who may attend open programs at the institute.

Trails

Trails would be developed as under the proposal. The bike-hike trail and trailhead would be located away from the institute to reduce the disturbance to institute staff and participants. A walkway would connect the institute to the trail so that participants can have full access to the trail.

Buildings

Davison Ranch buildings would be treated as under the proposal. The 1926 bungalow would be retained for ranger housing, if economically feasible, and the hay barn would continue to be used to stable the park horses and store equipment and feed. Other buildings would be removed and the site restored. To limit the area devoted to horses and to separate horse users from the main activity center and picnic area, parking to accommodate 5 horse trailers would be provided near the barn.

Resource Restoration

Restoration of wetlands, riparian areas, and drainages would occur as under the proposal. The pastures would be managed for elk habitat as under the proposal.

OTHER ALTERNATIVES CONSIDERED

Redwood Forest Lodge

The concept of a lodge associated with Redwood National Park has suggested by numerous groups and individuals for several years. The Redwood Regional Economic Development Commission (RREDC) in Eureka contracted with a local consulting firm in 1987 to assess the suitability of the B-Mill deck site for a Redwood Forest Lodge. The B-Mill deck was adjacent to park lands on only one side when the RREDC study was commissioned. The study did not consider the possibility of the park ownership of either the B-Mill deck or the Davison property.

The NPS's former Western Region Division of Concession Program Management issued a "Prospectus/Solicitation of Interest in a Business Opportunity" in January 1993 designed to measure the level of potential business interest in development of a lodge at the B-Mill deck. The park received 13 responses to over 150 copies of the prospectus sent out. Respondents generally supported the lodge concept and requested additional information on the financial viability of the project.

Preliminary engineering investigations done in conjunction with the 1987 study of the proposed lodge site showed that there were significant constraints in using an on-site, subsurface system to treat the volume of wastewater anticipated from a lodge because of poorly drained soils, frequent flooding, and high water tables. As analysis of the lodge site proceeded, the park recognized the need to consider other sites for an undertaking of this magnitude, especially given the constraints on sewage treatment in the area.

The Redwood National Park 1980 *General Management Plan* did not consider establishment of lodging in the park. The plan suggested that lodging would be developed by private industry outside the park. In keeping with NPS policy, the park is working with adjacent communities to encourage development of commercial facilities outside park boundaries. The suitability and feasibility for a lodge of sites throughout the park and the surrounding communities will be considered during the revision of the general management plan.

Other Bicycle Routes

During initial planning for the bicycle trail between Prairie Creek Redwoods State Park and Orick, the use of what is presently an Arcata Redwood Company logging road east of Highway 101 between Berry Glen to A-Mill to Orick was suggested as a continuation of the bicycle trail route. Arcata Redwood expressed concerns about conflicts between bicycles and logging trucks on that road, so the suggestion was discarded.

Equestrian Use of Prairie Creek Bike-Hike Trail

Equestrian use of the Prairie Creek bike-hike trail was considered during the initial stages of trail planning. Equestrian use of the trail was rejected for several reasons.

The visitor experience derived from riding on a paved trail was not considered to be as desirable as an unpaved trail would offer. An alternative to paving the entire trail was to provide a 4-foot-wide gravel shoulder for horses. While some portions of Road 200 along Prairie Creek (Trail Segment 2) will accommodate the width of the shoulder, the total width of the trail would approach 16-18 feet. This trail did not offer the visitor experience the park seeks to provide to all users.

The bike-hike trail will not be a loop trail. The section open to horses would have provided a 4-mile round-trip on pavement. The part available for equestrian use would be about 2 miles between Davison Ranch and Wolf Creek. Equestrians would need to retrace their steps when they reached the northern terminus of the trail at Elk Prairie in Prairie Creek Redwoods State Park. This would be confusing and frustrating to some equestrians, and would increase the chance that equestrians might unwittingly enter Prairie Creek Redwoods State Park in violation of park rules. Visitors would have to trailer their horses for a relatively short trip. The Redwood Creek horse trail offers a great variety of riding experiences, as well as developed campsites.

The combination of bicycles, hikers, and equestrians on the same trail may create conflicts among different user groups and reduce the enjoyment of the trail for all users. The separate equestrian trail described under the proposal will reduce potential conflicts among users and increase the chance for a positive experience in the park.

Davison Road Realignment

The national park's 1980 *General Management Plan* proposed to remove the eastern two miles of Davison Road within the Congressionally-legislated boundary of Redwood National Park. This two-mile segment did not include the quarter-mile-long section that provides access between Highway 101 and the ranch, the B-Mill deck, and the Blankenship Trucking shop. To maintain vehicle access to Gold Bluffs Beach, the *General Management Plan* proposed upgrading abandoned logging roads (Road 240 and Road 400) to a two-lane road. One of the abandoned logging roads begins at the southern end of Elk Prairie and is now the state park jogging and bike trail. The realignment of Davison Road was based on the proposal for the May Creek Activity Center. The new alignment would have connected the May Creek center to the beach without having to pass through the Davison Ranch.

The situation that existed when the realignment was proposed has changed. The May Creek activity center was not constructed and there are no plans for large-scale development in that location. The Davison and B-Mill lands are owned by the national park. Davison Road in its present alignment provides necessary access to visitor use areas proposed in this plan.

The 1980 *General Management Plan* proposal to upgrade several miles of Davison Road to two lanes and realign short segments to straighten out curves has been questioned by the state parks concerned about the potential increase in visitor use of Gold Bluffs Beach and Fern Canyon that could result. The proposal will be re-examined in the upcoming general plan revision.

AFFECTED ENVIRONMENT

Location and Access

Davison Ranch is located adjacent to and west of U.S. Highway 101, approximately two miles north of Orick. The parcel is linear in shape, with approximately 0.8 mile of Highway 101 making up the eastern boundary of the property. Private property borders the ranch to the north, and includes the Blankenship Trucking equipment repair shop. A small portion of the Davison Ranch property (less than 2 acres) is located just east of Highway 101 across from the northern portion of the ranch. The B-Mill deck is located south of Davison Ranch to the west of Prairie Creek.

The main vehicle access to the planning area is via Davison Road. The road is owned by Humboldt County. The section west of the Blankenship access road is maintained by the NPS under a March 1992 Memorandum of Understanding with the county. Davison Road continues past the ranch about 4 miles to Gold Bluffs Beach and then about 3 miles along the beach to Fern Canyon, popular visitor attractions located northwest of the ranch in Prairie Creek Redwoods State Park.

Climate and Air Quality

The climate of the study area is characterized by mild, wet winters and cool summers with frequent coastal fog. Based on Prairie Creek Redwoods State Park records from 1950-1990, annual rainfall averages 69 inches, which mostly falls between September and May. A rainfall of more than 2 inches per hour occurs every two years. Mean temperatures are 47°F in January and 59°F in June.

The study area is within the North Coast Air Basin as delineated by the California Air Resources Board. Redwood National Park is designated as a Class I air quality area under the Clean Air Act (P.L. 88-206, 1963, amended by P.L. 95-95, 1977). The air quality class refers to the requirements under the Clean Air Act for protection of air-quality related values from adverse impacts. The most stringent regulations for protection of air quality are applied to Class I areas, indicating the lowest allowable increments of degradation.

Air quality is excellent throughout the study area because of the low population, the scarcity of pollutant sources, and the prevailing westerly ocean winds. Particulate matter, mainly from broadcast and industrial burning, is the most significant air pollutant. Vehicle emissions and photochemical air pollutants are not a serious problem.

Topography, Geology, and Soils

Davison Ranch is situated in the Prairie Creek valley. To the east, slopes rise to 2000 feet above sea level at Holter Ridge. Hills to the west rise to 600 feet in elevation before dropping steeply to the Pacific Ocean at Gold Bluffs Beach. The ranch itself is generally level, ranging in elevation from 40 feet above sea level at Prairie Creek to 80 feet above sea level where the property begins to slope up Skunk Cabbage Hill. The Prairie Creek floodplain has produced the level topography.

The Grogan Fault passes through the Davison area before heading offshore. The fault divides the underlying Franciscan sandstone and siltstone north of the fault from the Redwood Creek schist to the south.

Davison Ranch soils are formed from undifferentiated river deposits resulting from recent channel and overbank deposition. Soils of the Weott, Arlynda, and Ferndale series, as classified by the U.S. Natural Resource Conservation Service (formerly the Soil Conservation Service), are present. All three soil types are somewhat to very poorly drained and show mottling typical of hydric soils, a wetland indicator. These Grade I agricultural soils constitute prime agricultural lands.

Pockets of fine-grained sediment deposited by overbank flows indicate former oxbows where Prairie Creek meandered through the valley in its floodplain. Oxbows provide evidence that Prairie Creek has migrated across the floodplain. These oxbows have filled with fine-grained sediment deposited by overbank flows and are visible only as subtle, curved depressions, but are important because they constitute many of the existing wetland areas on the property.

The park has studied geological processes in the Skunk Cabbage and Prairie Creek drainages in preparation for watershed rehabilitation and removal of abandoned logging roads. Two types of erosion, gully and mass wasting, are found along abandoned roads throughout this area, but are most common in the steeper, upland areas. These roads probably contributed a significant amount of sediment to Prairie Creek during large floods in 1955, 1964, 1972, and 1975, but much of the eroded material was trapped in tributary streams by large organic debris and remains as valley fill. Stored sediment is remobilized during winter storms and slowly transported to Prairie Creek; recently deposited alluvium in the downstream tributary reaches is evidence of this remobilization.

Two major sources of erodible sediment contribute to the high sedimentation potential as abandoned roads continue to degrade. Streamside landslides occur from stream diversions when road culverts and inboard ditches fail. Landslides also occur as fills at stream crossings are eroded by stream flow passing through a Humboldt crossing or as the sill slides into the stream valley. Sediment from this area contains primarily sand-silt-clay sized particles. Landslide potential exists at a few locations along the proposed bike-hike trail. These slides would be in the form of cutbank failures.

Water Resources

Prairie Creek, a perennial stream, flows from north to south through the western portion of the Davison property. Prairie Creek has a drainage area of 28 square miles.

Park staff surveyed the Davison property in September 1991 to determine relationships between land surface elevation and groundwater levels. Based on U.S. Geological Survey and NPS gaging records, surface water elevations are at a minimum during September. Groundwater levels were probably extremely low during the survey because it was preceded by seven years of drought. The surveyors assumed the water surface elevation of Berry Glen Creek represented the minimum water table depth on the east side of the property and the water surface elevation in Prairie Creek represented the minimum water table depth on the west side of the property. The groundwater gradient was assumed to drop smoothly from east to west. Without groundwater wells to contribute additional data, this approach seemed to be a reasonable approximation of the minimum groundwater surface elevation found on the property. The maximum depth of the groundwater surface elevation was estimated to be 8 to 11 feet below the surface.

The water quality of Prairie Creek is good, according to Caltrans which monitors water quality in conjunction with operation of the Highway 101 Prairie Creek Bypass. Blankenship Trucking also monitors Prairie Creek water quality and reports no contamination from upstream industrial uses. The water is soft, with a low pH and low conductivity. Turbidity increases after storm events and is highest in winter.

A 114-foot-deep well drilled by the park in 1992 produces 200 gallons per minute. The water quality of the well meets or exceeds all standards of the North Coast Regional Water Quality Control Board.

The park does not have information about the exact location or even the number and capacity of septic tanks and leach fields on the Davison property. The septic system for the 1926 bungalow was replaced in May 1994. It is reasonable to assume that the other residence has its own septic system and that the two Convention Complex bathroom facilities also have separate septic systems. These systems are probably located in the open area west of Prairie Creek, north of the bungalow, and east of the hillslope. No water quality problems due to these facilities have been reported.

In 1983, the Redwood Community Action Agency performed some stream restoration along Prairie Creek through the Davison Ranch to reduce sedimentation and bank erosion and to increase riparian habitat.

Water rights have not been identified as a critical issue in Redwood National Park. Water rights were addressed in the 1985 *Water Resources Management Plan*. Because of the abundance of rain in the area, a shortage of water that might trigger a water rights problem is not anticipated. The major existing land uses in the Prairie Creek basin are timber production and recreational park use, neither of which is anticipated to begin large water storage or diversion activities. There are some diversions from Prairie Creek but none of these are within the planning area.

Floodplains and Wetlands

The Prairie Creek floodplain receives water from four routes: bank overflow during floods from Prairie Creek; seeps or springs; rainfall (either direct on saturated soils, or on soils with low infiltration rates); and the seasonal rising of the groundwater table, which can eventually intersect the floodplain surface in swales and low spots.

The 100-year flood event on Prairie Creek is estimated to be approximately 14,000 cubic feet per second at Davison Ranch, based on 13 years of records from U.S. Geological Survey gages on Prairie Creek at Little Lost Man Creek and on an unnamed tributary 9 miles to the north. According to park geomorphologists, the height of the Prairie Creek floodplain in relation to channel area and water elevation suggests that the floodplain surface will be inundated on a 25-50 year recurrence interval. There is no potential for dangerous flash-flooding at Davison.

The 100-year floodplain of Prairie Creek at Davison Ranch includes the ranch buildings and the pastures but excludes most of the B-Mill deck. The park hydrologist applied the most current hydraulic model to calculate flood heights after there appeared to be discrepancies between the floodplain as mapped in the 1985 Orick Community Plan, anecdotal information from ranch residents, and a visual assessment following storm events. The 100-year floodplain is depicted in the community plan as the berm along the west bank of the creek and extending into the pasture east of the creek. The Davisons, lifelong residents of the ranch, told researchers that they occasionally needed a boat to travel between the houses and the ranch buildings. The 3-foot-high berm on the west bank of Prairie Creek was constructed to protect ranch buildings from flooding.

Prairie Creek overflowed its eastern bank into the Davison pastures and over Davison Road at least twice since 1980 and most recently in late December 1995. The storm event of December 1995 resulted in water about 3 feet deep over Davison Road. High water just barely overtopped the berm in several locations. The peak discharge was estimated to be 5,680 cubic feet per second and to be a 10-year event.

Surveys of the Davison Ranch by park staff show that some areas feature the hydrology, soils, and vegetation typical of jurisdictional wetlands, as defined by the US Army Corps of Engineers. Park staff surveyed the pasture areas east of Prairie Creek for wetland characteristics, but did not survey the developed area with the ranch buildings west of the creek and north of Davison Road. Some soils that have been surveyed show wetland characteristics. Based on close proximity and similarity of conditions of the surveyed area with the ranch area, wetland soils are probably present at the ranch also.

Three soil types have been mapped at Davison Ranch by the Natural Resource Conservation Service. Weott soils (110 *Weott loam*) are poorly drained and have water-related mottles at a depth of 10 inches. Arlynda (119 *Arlynda silt loam*) soils are very poorly drained and have water-related mottles from the surface down. Both Weott and Arlynda soils are hydric soils that can support hydrophytic plants. The soils of the Ferndale series (221 *Ferndale silt loam*) are moderately well drained. Some of the Ferndale soils lack water-related mottles within 5 inches of the surface but many others are mottled at 22 inches. The Ferndale map unit contains small areas of other soils, including Weott loams and Arlynda silt loams in small depressions.

Vegetation

The planning area contains three major vegetation types: riparian areas and wetlands, open grasslands, and coniferous forests. A list of plant species present at Davison Ranch appears in the 1992 riparian mitigation plan.

Historically, the Davison Ranch area was dominated by a mixed Sitka spruce-conifer forest, which was cleared over the past 100 years for ranching. Presently, the Davison property is mostly pastures dominated by non-native grasses and forbs such as clover, dock, plantain, thistles, and orchard grass. Riparian vegetation such as alder and willow occurs along Prairie Creek. Patches of wetland vegetation are scattered in the low spots in the pastures. The slopes on the western perimeter of the property are dominated by old-growth and second-growth redwood forests, with understory species such as rhododendron, huckleberry, redwood sorrel, and ferns.

Old-growth and second-growth redwood forests blanket the hillslopes surrounding the Davison Ranch. Coniferous trees include coastal redwood, Douglas-fir, western hemlock, Sitka spruce, and Port-Orford cedar. Common shrubs, ferns, and herbaceous plants associated with the coniferous forest include azalea, rhododendron, California huckleberry, oxalis, wild ginger, deer fern, sword fern, and salal.

A survey is needed to determine if Pacific yew is located in the planning area. Pacific yew is of concern because its potential use as an anti-cancer agent has increased the harvest rate. Yew typically occurs in moist forests along streams; such habitat is present in the planning area. No yew was found along Prairie Creek between the Blankenship Trucking shop and the Prairie Creek timber bridge during the 1991 vegetation surveys of the Davison Ranch.

Wildlife and Fisheries

Wildlife surveys have been conducted in the Davison pastures as part of the riparian mitigation project but the surveys did not cover all areas proposed for development under this plan. Bird surveys are continuing as part of the riparian mitigation project. Amphibian surveys were conducted in 1993 as part of a larger inventory project.

Reports in the Redwood National Park wildlife observation database and information based on habitat associations have been used to determine which species might occur in the planning area. A list of wildlife species and habitat associations appears in Appendix A.

Amphibians frequenting the old-growth and second-growth coniferous forest habitat around the property include Pacific giant salamanders, rough-skinned newts, northern red-legged frogs, and western toads. These species also occur in the Davison pastures and the riparian areas along Prairie Creek. Reptile

species diversity in the coastal lowlands is low because of the cool climate. Garter snakes are probably the most common reptile in the Davison pastures.

Birds that use the open grassland habitat of the Davison Ranch include white-tailed kites, northern harriers, red-shouldered hawks, red-tailed hawks, American kestrels, short-eared owls, northern flickers, common ravens, and a variety of sparrows. Wintering and migrating waterfowl and shorebirds use the puddles and ponds that appear during the fall, winter, and spring.

Typical mammals expected in the planning area are shrews, moles, bats, pocket gophers, voles, porcupines, coyotes, black bears, raccoons, striped skunks, bobcats, black-tailed deer, and Roosevelt elk.

Roosevelt elk inhabit the Skunk Cabbage Creek watershed and forested areas south and west of the property. The elk herd centered at Elk Prairie in Prairie Creek Redwood State park uses the creek as a corridor to the southern part of their range, which extends to just north of the property. The elk herd at Davison Ranch is a different herd than the Elk Prairie herd. In the past, the Davison's dairy operation precluded heavy use of the property by elk, although elk were observed on the southern pastures at night. Elk moved into the pastures almost immediately following removal of the dairy herd in 1991, .

Between 20 and 40 elk are easily visible from Highway 101 as they forage and rest in the pastures. Caltrans has installed signs announcing a wildlife viewing opportunity along Highway 101 near the Davison Road turnoff. The signs are meant to encourage visitors to leave the highway and observe the elk from safer vantage points along Davison Road instead of from the highway shoulders.

Prairie Creek supports a diverse benthic invertebrate community and large numbers of anadromous fish. Anadromous fishes are those that spend part of their life in freshwater before migrating to the ocean, where they live for one to several years before returning to freshwater to spawn.

Four species of the salmon family reproduce in Prairie Creek: chinook salmon (also called king salmon), coho salmon (silver salmon), steelhead trout, and coastal cutthroat trout. The Pacific salmonids occurring in Prairie Creek are anadromous. Pacific salmon die after spawning, although steelhead trout can survive for several years after spawning.

Chinook salmon spawn primarily in the mainstem of Prairie Creek, whereas coho salmon and steelhead trout spawn both in the mainstem and the tributaries of the creek. Cutthroat trout are often found in the summer in Redwood Creek estuary, before their upstream migration into the Prairie Creek tributaries to spawn. Park fisheries biologists suspect that a few resident, non-migratory populations of cutthroat trout inhabit the tributaries.

Chinook salmon typically return from the ocean to Prairie Creek to spawn between November and early January. In spring, chinook salmon fry migrate downstream to rear in the Redwood Creek estuary before entering the ocean in the fall. Chinook salmon usually return to freshwater after three to four years in the ocean, although two-year-old male spawners are commonly observed.

Coho salmon return to freshwater between November and early February. Coho salmon typically remain in the streams for one year before a spring migration downstream to the ocean. Steelhead trout are the last of the salmonid species to return to freshwater in the annual cycle, generally between January and April. Steelhead juveniles rear in the streams for one to four years before their downstream migration to the

ocean. The majority of coho salmon return to freshwater after three years in the ocean, and most steelhead return to spawn after four years in the ocean.

Nonsalmonid anadromous species occurring in Prairie Creek include Pacific lamprey and threespine stickleback. Prickly, ruffle, and coastrange sculpin are also found in Prairie Creek.

Threatened and Endangered Species

It is NPS policy to identify and promote the conservation of all federally listed threatened, endangered, and candidate species within park boundaries and their critical habitat. Federally and state listed threatened, endangered, rare, sensitive, and candidate species that are native to the park have been identified and considered during project planning, in accordance with NPS policy.

Should any federally listed threatened or endangered species be found to occur in areas that will be affected by construction or visitor use, the park will consult informally with the U.S. Fish and Wildlife Service (USFWS). The park will attempt to avoid, minimize, rectify, reduce, compensate or otherwise mitigate for any potential adverse impacts to listed or proposed threatened or endangered species that may result from any of the proposals in this plan. Should it be determined through informal consultation that the proposed project may adversely affect a listed or proposed species, the park will initiate formal consultation under Section 7 of the Endangered Species Act, as amended. The park initiated informal consultation with the USFWS in January 1996 regarding potential impacts of the proposal on marbled murrelets.

The planning area is known to be occupied by several animal species that are listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or the State of California. Several other species known to occur in the planning area, or suspected to occur based on the presence of suitable habitat, are considered to be species of special concern by the California Department of Fish and Game. Appendix B lists threatened, endangered, and other special status animal species known or suspected to occur within the planning area.

The planning area contains suitable habitat for both the northern spotted owl and the marbled murrelet, both federally listed as threatened. California Department of Fish and Game lists the murrelet as endangered but classifies the owl as a species of special concern.

The USFWS is in the process of proposing to designate critical habitat for the murrelet on Federal lands. Redwood National and State Parks lands are not included in the proposal because the management goals for these lands are generally adequate to conserve the species. There is no designated critical habitat for the northern spotted owl in the planning area.

The Davison Ranch pastures and riparian areas, and the B-Mill deck, do not contain suitable nesting habitat for either northern spotted owls or marbled murrelets, but the planning area does contain such habitat. Potential habitat for northern spotted owls is defined as old-growth forest or second-growth older than 45 years. Dense forest stands with associated snags and large down log habitat components provide the primary nesting and foraging habitat requirements to ensure reproductively successful spotted owl pairs. Forest stands of as little as 1 acre may be considered northern spotted owl habitat.

No surveys for northern spotted owls have been completed in the planning area according to the protocol required by the USFWS. No anecdotal observations of northern spotted owls in the Skunk Cabbage or Davison Ranch areas are recorded in the parks' wildlife database. Park wildlife biologists anticipate that

future surveys are likely to locate northern spotted owls within suitable habitat in the planning area, based on surveys in other similar habitats in the park.

Suitable marbled murrelet nesting habitat occurs in mixed stands of mature and old-growth coniferous forest within 50 miles of ocean waters. Forest stands containing trees greater than 11 inches in diameter may be considered suitable nesting habitat. Based on current information, Douglas-fir, coastal redwood, western hemlock, or Sitka spruce are the trees most likely to provide suitable nesting structure. Nesting habitat includes the forest stand in which the nest trees are contained. Nest stands are defined as contiguous mature and old-growth forest with no separations greater than 100 meters (330 feet) wide.

The Redwood Sciences Laboratory, a branch of the USDA Forest Service Pacific Southwest Research Station, conducted surveys for marbled murrelets in old-growth stands on Skunk Cabbage Hill in 1993. Two observations of murrelets exhibiting "occupied behavior" were made. "Occupied behavior" is a specific pattern of flight that is considered by the USFWS to indicate the use of a stand of trees by marbled murrelets. Murrelets are difficult to census because of their small size, nocturnal habits, and preference for nests high in trees. Observed "occupied behavior" is used as a substitute for direct observations of murrelet nesting.

The park initiated informal consultation with the USFWS in January 1996 regarding the potential impacts of the proposal on the marbled murrelet. The primary action in the proposal that may affect marbled murrelets is the development of trails through old growth in the Skunk Cabbage memorial groves. Human presence on the trails could cause noise that may disturb nesting murrelets. Humans may also bring in food or litter that attracts corvid bird species such as ravens and crows. Corvids are thought to prey on nestlings and eggs, and are known to use human-made corridors such as roads and trails for access into dense forests. The park staff are gathering data to determine whether corvids are found in higher numbers along trails and other areas of human disturbance.

Bald eagles are classified as endangered by the state and as threatened by the USFWS. Bald eagles have been observed flying over Redwood Creek and perched on Sitka spruce trees at Freshwater Lagoon. These areas are within easy flight distance of the Davison planning area. There are no reports of bald eagles nesting or roosting in the planning area.

The steep coastal bluffs are potential nesting habitat for southern peregrine falcons, listed as endangered federally and by the state. No formal surveys for falcons have been conducted along the bluffs in the vicinity of the trails proposed in this plan, but no falcons have been observed nesting in that area.

The sandy beaches and coastal dunes at the base of Major Creek and along Gold Bluffs Beach are potential nesting habitat for snowy plovers, federally listed as threatened. No nesting plovers have been found to date.

No formal vegetation surveys of the entire planning area have been done. Based on the similarity of the planning area to other old growth and second growth forest habitats, no federally or state listed, proposed, or candidate threatened or endangered plants species are expected to occur.

Park botanists surveyed the vegetation of the Davison Ranch pastures and riparian areas in 1991. No federally or state listed, proposed, or candidate threatened or endangered plant species were observed on the Davison Ranch grasslands, wetlands, or riparian areas.

The coniferous forests of the planning area have not been surveyed but no threatened or endangered plant species are known to occur in other similar habitats within the park. Pacific yew, a species of concern because of its potential value for production of an anti-cancer drug, may occur in the riparian areas of the coniferous forests that border the Davison Ranch. No surveys for yew have been conducted but if it is present, it will not be affected by this proposal because trails could easily be designed to avoid yew.

Cultural Resources

Some portions of the planning area have been systematically inventoried for cultural resources. The cultural resources of the immediate Davison Ranch area, including the B-Mill deck, have been thoroughly recorded and evaluated, as described below. The heavily logged portions of Skunk Cabbage Hill and the Skunk Cabbage Creek watershed were surveyed for cultural resources by Salzman and Bickel (1979). No prehistoric or historic cultural resources were found. Elsewhere in the planning area outside of the Davison Ranch, no archeological survey has been conducted. In addition, there has been no specific historic research conducted and no specific consultations for the inventory of ethnographic resources on these lands. Based on the documented prehistoric, ethnographic and historic use of the area, and on extensive Native American consultations, it is predicted that the cultural resources sensitivity of the planning area, outside of the Davison Ranch, is low (Bearss 1969; Bickel 1979; Eidsness 1988; Moratto 1973; Shoup 1983).

Prehistoric Resources of Davison Ranch

The Davison property is part of the ethnographic Yurok territory which extended along the coast from Trinidad, 15 miles south of the park, north to Wilson Creek, and inland, especially along the Klamath River from the mouth to above Weitchpec. Villages were primarily located along the coast and the Klamath River. Inland areas contained trails and more temporary settlements and were used for seasonal hunting, fishing, gathering and traveling. Waterman (1920), the primary ethnographic source for the Yurok, did not include any specific references to the Davison property. He noted major villages along the coast to the northwest and southwest of the property, a campsite at the confluence of Prairie and Redwood Creeks to the south, and to the north, trails between the coast and the Klamath River.

Several archeological surveys have been conducted in the vicinity of the Davison property. Ritter (1969) recorded two archeological sites, CA-HUM-133 and CA-HUM-220 at Elk Prairie to the north. Moratto (1973), Bickel (1979) and Salzman and Bickel (1979) reported on archeological surveys in portions of Redwood National Park, not too far from the property. Caltrans also has conducted archeological field checks for road projects near the Davison property (Douglas 1984; Parker 1977). Smith (1985) surveyed a portion of the Davison property and also lands adjacent to the south, as part of a Highway 101 Bypass wetlands and riparian habitat restoration project. Most recently, Haversat and Breschini (1986, 1987) surveyed corridors adjacent to Highway 101 in conjunction with a proposed power line. Other than Ritter's 1969 report, none of the archeological surveys resulted in the recording of cultural resources near the Davison property.

The Davison property was surveyed for cultural resources on September 17, 1991 by Ann K. Smith, Richard Fitzgerald, James Martin and Douglas Smith, and on March 5 and 17, 1992 by Ann K. Smith. No surface evidence of prehistoric cultural resources was noted during the archeological survey of the property; however, there is a remote possibility that buried archeological resources may exist on the property.

Ethnographic Resources

In 1991, park archaeologist Ann King Smith contacted Margaret Lara and Francis "Beeb" White of the Orick Native American Heritage Advisory Committee. Both consultants are local Yurok with traditional ties to the project area and knowledge of its ethnographic uses; Mrs. Lara is since deceased. Neither specific ethnographic sites nor contemporary ethnographic uses of the Davison property were mentioned, although Margaret Lara said the area was used both for hunting, gathering, fishing, and as a "pass through" area when a person was traveling between the coast and inland locations. Beeb White reaffirmed Margaret Lara's information and also added that the south end of the property used to be referred to as the Palmgreen place. There have been other undocumented reports of a small cabin on the southwest corner of the property (Douglas, personal communication 1991).

Historic Resources

Beginning in the late 1800s and continuing for about 100 years, the Davison property was used for dairy ranching. A detailed history of the ranch and an evaluation of the significance of the more than 17 structures was completed in 1992 (Van Kirk 1992). The structures were recorded as two districts, the Davison Ranch, associated with the dairy, and the Convention Complex, associated with the non-denominational church meeting which has been held annually on the site since 1937.

The Ranch district, located in the southern portion of the structure complex, has a variety of buildings including a settlement period residence constructed in the 1890s and originally located at the north end of the property (the McDonald house); a 1926 Craftsman bungalow occupied until 1991 by Alma Davison; a 1930s cabin to which additions were made in the 1950s and 1960s and occupied by Dick and Winnie Davison at the time the property was sold; a 1939 milking barn; a World War II-era equipment shed that was relocated from Oregon; and a hay barn built in 1965.

The convention complex, contiguous to the ranch district to the north, contains a number of structures constructed over the years by members of the church. Men's and women's dormitories, a nursery, a wash house, a shop, and a kitchen are clustered around a central area where the eating tent was raised. A second tent for meetings was set up on the northern portion of the complex. Also located in the convention complex is the dairy house, built in 1932 and later moved to its present location.

Davison Ranch and the convention complex were evaluated using National Register of Historic Places significance criteria, with regard to Criterion C (properties that embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction) and Criterion A (properties that are associated with events that have made a significant contribution to the broad patterns of our history). The conclusion of the National Register evaluation report was that neither the Davison Ranch nor the convention complex are eligible for listing on the National Register of Historic Places. The NPS Western Region Division of Park Historic Preservation and the State of California Office of Historic Preservation concurred (see Appendix C).

The history of the dairy and some associated structures are of local interest and have been considered during the planning process to determine whether the historic value warrants the economic cost of retaining and repairing them for interpretation or other uses. The structures singled out for special consideration are those which retain integrity and were associated with the operation of the ranch including the 1926 craftsman bungalow, the McDonald House, the milking barn, the dairy house, the hay barn and the equipment shed. The hay barn will be retained and adapted for park uses. The bungalow will be retained if it is economically feasible to adapt it for housing or other administrative uses.

Cultural Landscape Values

The cultural landscape values of the Davison Ranch were described by Smith (1994), using the National Register of Historic Places guidelines for the documentation and evaluation of rural historic landscapes. According to these guidelines, a rural historic landscape is "a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possess a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features" (Bulletin 30, no date). The Davison property, typical of rural landscapes, is characterized by fairly large acreage and a proportionately small number of buildings and structures.

Smith (1994) described the cultural landscape associated with the Davison Ranch using the National Register of Historic Places categories, which include land uses and activities; patterns of spatial organization; responses to natural environment; cultural traditions; circulation networks; boundary demarcations; vegetation related to land use; buildings, structures and objects; clusters; archeological sites and small-scale elements. Based on these descriptions, the NPS concluded that the Davison Ranch cultural landscape is not a significant component of the property because none of the structures are eligible for listing on the National Register of Historic Places; because the cultural landscape is neither an example of a cultural tradition nor distinctive in its own right; and because the setting of the ranch lacks integrity due to the history of the ranch and to recent logging and developments. Because the state historic preservation officer offered no comments regarding the Davison Ranch cultural landscape, it is presumed that the state agreed with the NPS's conclusion.

Park Operations

Park horses are stabled at the hay barn. The barn and equipment shed are used for storage of horse supplies and food, and other equipment needed for the parks' visitor and resource protection program. Two fenced paddocks are adjacent to the barn and the 1926 bungalow.

Six acres of the Davison pastures south of the Prairie Creek timber bridge and east of the creek are being restored with native riparian vegetation as mitigation for impacts resulting from construction of the Highway 101 Prairie Creek bypass. This project will be completed in 5-8 years after the vegetation becomes established. The area is fenced to prevent elk and deer from foraging on the newly planted vegetation. Once the vegetation can withstand herbivore depredation, the fences will be removed.

Park staff perform custodial and maintenance services for the Davison Ranch buildings and utilities, and for the park roads and trails in the vicinity. Redwood National Park is responsible for maintenance of that portion of Davison Road within the park boundary, under a 1992 Memorandum of Understanding, and for providing access to Gold Bluffs Beach. Presently the park boundary is near the foot of the hill west of Prairie Creek. Humboldt County maintains the road from Highway 101 to the national park boundary.

Visitor Use and Experience

Most park visitors pass through Davison Ranch and the middle of the planning area on their way to Gold Bluffs Beach and Fern Canyon, popular visitor use areas in Prairie Creek Redwoods State Park. Davison Road is the only public motor vehicle access route to Gold Bluffs Beach and Fern Canyon. Daily traffic counts on Davison Road are not current. The latest available average daily traffic count (ADT) for Davison Road was 515 in July 1977.

Prairie Creek Redwoods State Park reported a total of 67,327 visits (paid day-use vehicles and camping) at Gold Bluffs Beach for the period from July 1, 1991 to June 30, 1992. The reported total for the period for July 1, 1992 to June 30, 1993 was 45,965. The 1993-1994 visitation was 68,541.

Based on observations by national park staff, visitor use of the Davison planning area is presently low relative to other sites in the park. Visitors who notice elk in the pastures pull over to the side of Highway 101 or turn onto Davison Road and park along the grassy shoulders. Visitors are often observed to park partly in the roadway, perhaps because there are no signs or other indications that the grassy shoulders are safe and that parking is allowed. During wet periods, puddles in the grassy shoulders deter parking there.

The landscape setting of Davison Ranch is dominated by a perennial creek and steep ridges covered with second- and old growth redwood forests. The deep green redwoods thrust skyward on Skunk Cabbage Hill, contrasting with the lighter greens and rusty patches of the pastures and the leafy willows and alders lining Prairie Creek.

Davison Ranch offers an experience unusual in Redwood National Park--an open view of a stream with a backdrop of old growth redwood forest. From the Davison pastures, a visitor can see the trees drawn up to their full height and appreciate the majestic size of the coastal redwoods in contrast to the shorter trees along the highway and stream. To an observer in the forest, the true height of the trees is obscured because there is nothing to compare them to on a human scale. The tops of the trees are often lost in the dense canopy from the view of an observer on the ground.

The forested ridges provide a backdrop for the farm buildings, pastures, fences, roads, and a motel, evidence of a century of human occupation of the area. Several acres of asphalt at the base of Skunk Cabbage Hill interrupt the visual integrity of the natural setting more than the ranch buildings. Noise from vehicles on Highway 101 is noticeable from all points of the proposed bike-hike trail, at Davison Ranch, and in the Skunk Cabbage memorial groves. As one proceeds farther west into the forest and up the ridge, the highway noise becomes less intrusive.

The present visitor experience offered at Davison Ranch is a view of the landscape on the way to Gold Bluffs Beach and Fern Canyon. No signs or facilities inform visitors that they have entered a national park nor do attractive facilities invite visitors to seek information or explore the park. The existing structures do not present the image of a park area. Davison Road is unpaved past the ranch and B-Mill deck access. Dust on the unpaved part of Davison Road coats roadside vegetation with a brown layer in the dry months and remains until the first heavy rains wash it off and expose the shiny greenery expected in a lush coastal forest.

Visitors who notice the elk foraging or resting in the Davison pastures usually stop for better viewing. Hopefully, they turn off the highway and pull over to the shoulders of Davison Road. The park erected split rail fences and signs to warn visitors that wild elk should not be approached closely.

Save-The-Redwoods League has established memorial groves on Skunk Cabbage Hill. Presently, public access to these groves is poor. Road 205 climbs the hill but is open only to park administrative traffic. A short trail into the memorial groves was developed in 1992 for the Sierra Club Centennial celebration which included the dedication of the memorial groves but there is no trailhead or signing that a trail exists.

The existing Skunk Cabbage section of the Coastal Trail is the only established national park visitor use area in the planning area. The Skunk Cabbage trailhead is a landing on the east side of Johnson Creek; the area was harvested within the last 20 years. Large trees felled to create the landing are piled on the edge of the gravel parking area. The parking area does not present the experience or image desired in a national park.

The Skunk Cabbage trail begins as a logging road through a regenerating clear-cut but quickly becomes a foot trail passing through an advanced second-growth Sitka spruce and alder forest. Parts of the trail pass through the Skunk Cabbage Creek swamp and parallel Skunk Cabbage Creek. Visitors are afforded the opportunity to follow a watershed from nearly the mouth to the source. Wooden steps and small foot bridges provide a rustic touch along the trail.

ENVIRONMENTAL CONSEQUENCES

This section analyzes the environmental consequences of the proposal and the alternatives, and discusses mitigation measures that would be used to reduce potentially adverse environmental effects. All estimates of areas of soils and vegetation disturbed by construction are broad approximations based on the conceptual designs in the draft plan, which are reprinted here. It is not possible to make a more accurate determination of impacts without preliminary designs. The area of wetlands disturbed by construction will be calculated more accurately from preliminary designs in order to obtain required permits and prescribe mitigation. Major impacts are summarized in Appendix D. Cost estimates of each action alternative appear in Appendix E. Mitigating measures are found in Appendices F (Finding of No Significant Impact) and G (Statement of Findings - Floodplain and Wetlands).

General Impacts of Construction

Construction required under the proposal will result in short-term localized dust and fumes from equipment. Construction impacts will be limited to as small an area as possible. Construction limits will be established and fenced to reduce incidental impacts to soils and vegetation from trampling by construction personnel and equipment. Construction staging areas and equipment storage areas will be located on the B-Mill deck and other areas most able to withstand these impacts. Construction personnel would be informed that wild elk should not be approached and will be required to comply with the national park bear management plan. We anticipate that the construction season will be limited by the rainy season and endangered species protection measures. Temporary closures of roads and other areas may be required to ensure safety of visitors and construction personnel. The asphalt presently covering the B-Mill deck will be recycled into road and trail base. Excess asphalt will be disposed outside the park in compliance with federal and state regulations.

Air Quality Impacts

Vehicles driving on the unpaved sections of Davison Road will continue to raise dust during the dry season. This is a localized temporary minor adverse impact to air quality.

All Action Alternatives, Including the Proposed Action

There will be no significant long-term adverse impacts to air quality under any action alternative. There will be temporary minor localized decreases in air quality resulting from construction. Dust from soil disturbance and fumes from construction equipment will temporarily result in decreased air quality. If fugitive dust becomes a problem, the contractor will be required to sprinkle water over the construction site to reduce dust. There will be long-term minor localized decreases in air quality from fumes from vehicles at parking lots during periods of high visitor use.

Alternative 2, No Action

There would be no significant short- or long-term adverse impacts on air quality under this alternative. Vehicles on the unpaved portions of Davison Road would continue to generate dust.

Soil and Vegetation Impacts

The majority of impacts to soils will be concentrated on the B-Mill deck and will result primarily from asphalt removal and construction of facilities on the site. Other soils will be cleared of vegetation or asphalt, and graded. The B-Mill deck is relatively level so the topography will not be noticeably altered after grading, with the exception of the restored stream channel. Topography will not be significantly altered elsewhere under any alternative, although road rehabilitation projects in the planning area will restore original topography wherever possible.

Construction in riparian and wetland areas will occur only during the dry season to avoid additional impacts to wetland soils from the presence of construction personnel and equipment. Should soils become saturated at any time during the construction period, work will cease until soils dry out sufficiently to avoid rutting.

No old growth trees or large snags will be removed under any alternative, including the no action alternative. Some alders and young conifers may be removed for trail construction but trails are sited to avoid this to the greatest extent possible. Downed trees that are small enough will be moved off proposed trail alignments. Very large downed trees will have a cut the width of the trail made through them to allow trail passage.

Clearing and grubbing of vegetation will be very limited under the proposal and other action alternatives because most construction will occur on the B-Mill deck which has little vegetation, and on abandoned roads which are already cleared of most vegetation. Trail construction is the action anticipated to have the greatest impact on vegetation. The estimated area of soil and vegetation affected trail construction is described under impacts from the proposed action.

Some portions of abandoned logging roads will be rehabilitated prior to or as part of trail construction. Soils that were disturbed as part of road construction will again be disturbed in the rehabilitation process. Rehabilitation will be prescribed according to the needs of each specific road, using the techniques developed since 1978 by the park and other watershed rehabilitation groups. Rehabilitation of abandoned logging roads and skid trails attempts to restore the original topography of the area. Rehabilitation uses heavy equipment for pulling sidecast soils from fills, excavating fills, outsloping the road bed, recontouring the area to match original contours, and spreading sidecast topsoil to encourage revegetation from the seed source endemic to each rehabilitation site.

Most of the trails have been planned to incorporate abandoned roads. Portions of the roads have drainage problems stemming from construction techniques; the intended short lifespan of the roads; and lack of maintenance. Stabilization or rehabilitation of portions of abandoned roads is necessary prior to trail construction. Rehabilitation is necessary in order to avoid future roadbed failure and subsequent loss of the trail. Complete rehabilitation involves removal of the road down to original surface contours. Trails will be constructed with a narrower cross-section than the original road. Trail width depends on topography, soil conditions, and how the road that serves as a trail base was originally constructed.

Trail maintenance on segments constructed on abandoned roads is likely to require the use of heavy equipment unless the road is completely rehabilitated. The park is presently coordinating the need for watershed rehabilitation based on threats to downstream resources with other needs such as fire access and visitor use to determine which existing roads that are intended for use as trails should be retained as roads and therefore will require maintenance by heavy equipment. Rehabilitation prescription differ where proposed trails can be adequately maintained with handtools.

Under the proposal, it is anticipated that visitors will create "social trails" from taking shortcuts near the parking and picnic areas, and other visitor facilities. Soils and vegetation on social trails will be trampled and compacted. The designers will attempt to reduce adverse affects from social trails, particularly on streambanks, with attractive, well-marked trails to direct visitor use away from the sensitive areas. Some fencing or other barrier around the perimeter of parking areas and trailheads may be used to direct visitors to the trail and ensure protection of sensitive vegetation.

Vegetation surrounding equestrian trails will be subject to introduction of exotic plants carried in horse manure. Exotic plant invasion has not been identified as a serious problem on the Redwood Creek horse trails up to this time.

Areas disturbed by construction will be revegetated. Disturbed areas include actual construction disturbance as well as indirect disturbance caused by trampling and presence of heavy equipment. Construction fencing will be used where necessary to protect sensitive areas such as wetlands and old growth trees and to limit the area of indirect impacts, particularly in riparian areas. The amount of revegetation required cannot be calculated accurately until a final design is approved. Revegetation acreages given here are minimum estimates.

Revegetation activities will be directed by the parks' landscape architect and vegetation management staff. Some vegetation removed during construction will be salvaged for use in restoring areas disturbed by construction. To protect the genetic integrity of park stocks, species used in revegetation will be endemic to the park, preferably to the Davison area. Seed sources and species used will be approved by the park. Revegetation activities will proceed as quickly as possible to minimize erosion of disturbed soils and time available for colonization by exotic species. Temporary erosion control measures such as weed-free straw, natural fiber matting, or redwood bark mulch may be used until natural or assisted revegetation occurs.

Alternative 1, Trails (The Proposed Action)

Most of the trails proposed in this plan will be constructed on abandoned logging roads or skid trails that will be rehabilitated under the parks' watershed rehabilitation program. These soils were previously disturbed for road construction or by heavy equipment. Approximately 31.5 acres of soils will be disturbed for development of approximately 22 miles of new trails. Of that amount, approximately 26.5 acres are previously disturbed because the trails will be constructed on old roads.

About 5 miles of trail will be constructed in old growth forest, which will affect approximately 4.8 acres of understory vegetation. About 16.6 miles of trail will be constructed in second growth forest on abandoned logging roads, resulting in the removal of downed trees, small conifers, alder, and brush.

The variety of trails proposed include hiking-only trails; multiple use trails for hiking and both narrow- (touring) and wide-tired (mountain) bicycles; trails for use by mountain bikes; and equestrian trails. Hiking-only trails include the Skunk Cabbage memorial groves trail (2.3 miles, 1.2 acres of disturbance, all of which is new disturbance); the East Side trail connection between Berry Glen and Lady Bird Johnson Grove (2.1 miles, 1 acre of total disturbance, 0.99 acre of which was previously disturbed by timber harvest activities); and a trail on the north side of Skunk Cabbage Creek (1.9 miles, 0.94 acre of total disturbance, 0.7 acre of which was previously disturbed) that connects to the existing Coastal Trail.

Construction of the 3.2-mile Prairie Creek bike-hike trail will result in 11 acres of total disturbance to soils, all of which are previously disturbed by logging activities. The new 3.7-mile-long mountain bike/hiking loop trail on Skunk Cabbage Hill will disturb 7.2 acres, 5.7 acres of which are already disturbed from use as a logging road. The 8.4 miles of Skunk Cabbage equestrian trails will affect 10.2 acres of soils, 8.1 acres of which are previously disturbed from use as a logging road.

The 7.8 acres of asphalt on the B-Mill deck will be removed, and the area used for new construction or restored. New construction for the trailhead and parking area at the B-Mill deck will affect 5.7 acres of previously disturbed soils. Roads and structures will occupy 2.2 acres, and 3.5 acres will be restored and landscaped. The remaining 2.1 acres that are covered with asphalt will be regraded to original contours and restored with native vegetation. The total area of restoration, revegetation and landscaping in the B-Mill area will be 5.6 acres.

An equestrian trailhead and parking for 5 horse trailers at the Davison hay barn will affect 1.3 acres that are previously disturbed from the dairy ranching operation.

Alternative 2, No Action

There would be no significant construction-related impacts to soils or vegetation under this alternative. Wetland soils and vegetation would be compacted by vehicle and foot traffic at the elk-viewing areas along Davison Road. This would not be a significant adverse impact to wetland vegetation because the vegetation in the elk-viewing area consists of mostly alien plant species that the park would otherwise seek to eradicate.

The Davison pastures would not be actively managed. The elk herd may not be large enough to exert grazing pressure sufficient to maintain the present plant species composition of the pastures. Blackberry vines and other unwanted exotic plants may invade the area, as has happened across the highway at Berry Glen. Without any human intervention, native species such as alder and willow would probably regrow. Park scientists postulate that the area would return to a Sitka spruce-big leaf maple riparian bottomland. Time estimates for such a succession are on the order of several hundred years.

Alternative 3, Activity Center

Impacts to soils and vegetation resulting from trail construction would be the same as under the proposed action. Approximately 8.5 acres of previously disturbed soils on the B-Mill deck would be affected for construction of the activity center, trailhead, and parking, and by restoration and landscaping. The 7.8 acres of existing asphalt would be removed. New construction for the activity center, roads, trails, and parking would affect 3.7 acres. Restoration and landscaping after construction would affect 4.8 acres. Stream restoration would affect an additional 0.5 acre. The total area to be restored to natural conditions, revegetated and landscaped would be 5.3 acres.

Realignment and widening of Davison Road up to the activity center turnoff would affect 0.8 acres of some wetland soils and mostly alien vegetation. These soils have been previously disturbed through ranching activities and during the original road construction.

Alternative 4, Group Camp

Impacts to soils and vegetation resulting from trail construction would be the same as under the proposed action. The 7.8 acres of asphalt covering the B-Mill deck would be removed and the area restored or used for new construction. Approximately 7.3 acres of previously disturbed soils would be affected for construction of the group camp, trailhead, and parking; and restoration and landscaping after construction. New construction would occur on 2.5 acres, and 4.8 acres would be restored and landscaped. An additional 0.5 acre that is presently covered with asphalt would be restored to natural conditions. Stream restoration would affect another 0.5 acre. The total area of restoration, revegetation and landscaping would be 5.8 acres.

Alternative 5, Redwood Institute

The 7.8 acres of asphalt on the B-Mill deck would be removed and the area restored or used for new construction. New construction of the institute, trailhead, and parking, and restoration and landscaping after construction would affect 6.7 acres. About 3.0 acres would be used for new construction and 3.7 acres would be restored and landscaped after construction. Stream restoration is included in the 3.7 acres. The remaining 1.1 acres that are presently covered with asphalt would be regraded to original contours and the area restored with native vegetation. The total area of restoration, revegetation and landscaping would be 4.8 acres. Impacts to soils and vegetation resulting from trail construction would be the same as under the proposed action.

Water Resource Impacts

The 200 gallons of water per minute available from underground sources at Davison Ranch is expected to be sufficient to accommodate all proposed uses. Water quantity needed to supply facilities proposed under each alternative is based on estimates of wastewater generated.

Runoff from soils disturbed by construction will increase turbidity of Prairie Creek on a short-term basis. The short-term increase in turbidity will not significantly increase the turbidity over base levels that result from storm events.

Erosion and subsequent runoff from disturbed soils will be minimized by using standard erosion-control methods, such as erosion-control matting or mulching with redwood bark. Soil disturbance near Prairie, Skunk Cabbage, and Stree-low creeks would be monitored and erosion-control methods used to avoid any significant deterioration of water quality from uncontrolled runoff. Construction near those creeks would be limited to low-flow periods and those times least likely to result in significant runoff into the streams. Construction near streams may be limited entirely to drier periods to avoid the possibility of major storm events resulting in runoff.

Instream work will occur during low flow periods, usually between June 1 and October 15, to minimize the amount of sedimentation resulting from construction. Instream sedimentation control methods include straw-bale dams, silt fences, use of filter cloth, and settling ponds.

Disturbed soils will be susceptible to erosion and runoff until revegetation occurs. Natural revegetation of disturbed soils occurs more quickly in the redwood region than in colder or drier environments. The parks' vegetation management staff will assist the landscape architect and the designers

to determine which areas will be allowed to revegetate naturally and which areas will require seeding and planting. For those areas allowed to revegetate naturally, erosion control will be part of the revegetation prescription.

Rehabilitation of abandoned logging roads prior to or as part of trail construction will reduce the possibility of road failure and subsequent sedimentation of surface waters. There will be minor increases in sedimentation and turbidity of streams near road rehabilitation sites in the first rainy season following rehabilitation.

No long-term adverse impacts on water quality are anticipated from construction under the proposal or any of the other alternatives. Petroleum products and other contaminants from parking lots will be channeled into drains to avoid direct runoff into Prairie Creek; petroleum products will enter the soils. The amount of contaminants that enters the soils is not anticipated to be great enough to migrate through the soil into the creek.

New sewage treatment will comply with all applicable federal and state water quality and health standards. State standards require that all septic tanks and leach fields be at least 100 feet from the banks of perennial streams at 10-year flood stage; that minimum depth to groundwater is 5 feet below leach line trenches; and that soils pass percolation tests. According to a 1992 survey by the park soil scientist, there are approximately 14.4 acres of soils in the Davison pastures that may be suitable for sewage disposal and meet all state regional water quality control board standards.

All alternatives, including the proposed action and the no action alternative, include a horse barn and ranger housing at Davison Ranch, provided the housing can be made to comply with NPS floodplain guidelines at a reasonable cost. Adverse impacts to water quality of Prairie Creek and local ground water will be avoided by use of an adequately-sized septic and leach field system at the 1926 bungalow, should it be retained and adaptively reused.

The proposed action and all other action alternatives include 5 parking spaces for visitors' horse trailers at the Davison barn. Horse manure from the park stable at the barn will be shoveled into composting bins to avoid runoff and contamination of Prairie Creek. Equestrians would be required to use the composting bins.

Alternative 1, Trails (The Proposed Action)

There will be minor short-term construction-related impacts to water quality from trail construction near surface waters. Adverse impacts to water quality will be avoided by use of the mitigating measures mentioned above.

The proposal and all other action alternatives include construction of the Prairie Creek bike-hike trail. Removal of the timber bridge over Prairie Creek will proceed in as short a time as possible to minimize channel disturbance from removal of the instream piers and abutments. Work will occur during the low flow period, usually between June 1 to October 15. Silt fences or other appropriate erosion-control techniques will be used to minimize the amount of sediment discharged downstream.

The picnic area that could accommodate up to 100 persons daily (5 tables with 4 persons per table with 5 times turnover) is estimated to generate up to 800 gallons of wastewater per day (8 gallons per person per day x 100 persons). This estimate is considered to be a maximum estimate that would be reached only occasionally on sunny summer weekends.

Alternative 2, No Action

There would be no short-term adverse impacts to water quality from runoff of soils disturbed by construction. The existing septic system would continue to serve the ranger residence. Horse manure would be piled and left to decompose on-site. During rainy periods, runoff from the manure pile would enter Prairie Creek and increase the nutrient load of the creek, resulting in an unnatural growth flush.

The Prairie Creek timber bridge would remain in place. Eventually the bridge would collapse, blocking the stream channel and disrupting dynamic stream processes. The causeway would continue to impede clear passage of floodwaters.

Alternative 3, Activity Center

The amount of wastewater that would be generated by an activity center is estimated to be 5000-6000 gallons per day (1000 persons x 5 or 6 gallons per person per day) for heavy use periods such as sunny summer weekends.

The picnic sites would generate an estimated additional 1000 gallons per day. This figure is used rather than 3200 gallons per day from a 20-site picnic area (20 tables with 4 persons per table with 5 times turnover; 8 gallons per person per day x 400 persons) based on the assumption that most picnickers would also be included in the activity center estimate of wastewater generated..

The volume of wastewater generated under this alternative may be greater than a standard septic system and leach field can handle, given the soil capacity for wastewater treatment. Approximately 14.4 acres of soils in the Davison Ranch area may be suitable for sewage disposal and meet all state regional water quality control board standards.

Alternatives to the use of standard underground septic tank/leach field systems are composting toilets; storing sewage in vaults that would be pumped and disposed out of the park in a licensed disposal area; construction of sand mound leach systems; construction of a water treatment plant; and pumping sewage to an area on Skunk Cabbage Hill where soils are suitable for leaching. A water treatment plant is not desirable because of the visibility and intrusion into the scene, as well as the cost. Pumping sewage uphill is also expensive and would enlarge the area of disturbance from this project. The uphill sites are presently second-growth redwood forest. As the second growth becomes old growth, the park would find itself with a major maintenance facility in old growth.

A sand mound leach system such as that used at the Redwood Information Center is the most probable method of sewage treatment for large-scale development in or near the Prairie Creek floodplain. The system at the information center adequately treats the sewage generated by up to 800 daily visitors. The size and location of the sand mound would be determined by engineers during the design phase of the project. Other impacts to water resources and mitigating measures are the same as those described previously.

Alternative 4, Group Camp

The amount of wastewater generated by a group camp that would accommodate 50 persons is estimated to be 1500 gallons per day (30 gallons per person per day x 50). Other impacts to water resources and mitigating measures are the same as those described above.

Alternative 5, Redwood Institute

The institute is estimated to generate up to 3000 gallons of wastewater per day (48 persons + 5 staff = 53 persons x 50 gallons per person per day). Other impacts to water resources and mitigating measures are the same as those described above.

Floodplain and Wetland Impacts

A Statement of Findings (Appendix G) described compliance with Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands).

New buildings will be located out of the 100-year floodplain to the greatest extent possible, in compliance with the NPS Floodplain Management Guideline. Picnic areas, trails and daytime parking areas may be located in the floodplain.

The timber bridge across Prairie Creek will be replaced with a new bridge that will connect with the existing road on the causeway between Prairie Creek and Highway 101. The causeway road will be converted into the Prairie Creek bike-hike trail. The causeway is elevated about 6 feet above the level of the pastures and acts as a barrier to free movement of floodwaters. During a 100-year flood event, the causeway, timber bridge, and Highway 101 constrict the effective floodplain to about one-fifth of its natural width at this location. The timber bridge spans about one-third of the floodplain. Together, the three structures obstruct flood flows and create a backwater with a water surface elevation about 7-8 feet higher than would exist in an unobstructed floodplain.

Wetland delineations performed by park staff in the pastures adjacent to Davison Road indicate that portions of the pastures meet the criteria for jurisdictional wetlands established by the U.S. Army Corps of Engineers. Although the specific determinations have not been made, it is assumed that the area of Davison Ranch occupied by buildings also meets the wetland criteria.

Adverse impacts to wetlands will be minimized by locating and designing structures to avoid wetlands to the greatest extent possible. When wetlands cannot be avoided through planning or design, the park will obtain a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act prior to dredge and fill work in areas that meet the criteria of jurisdictional wetlands. Construction that may need to be permitted includes the trail bridge across Streelow Creek, removal of the Prairie Creek timber bridge and replacement with a trail bridge, the roadside parking area for elk-viewing, and the boardwalk or bridge for the new Skunk Cabbage trail from Road 205 across Skunk Cabbage Creek to the existing Skunk Cabbage trail. The USFWS and the California Department of Fish and Game will also be consulted prior to disturbance of wetlands.

Appropriate mitigation for any losses of wetlands will be developed as part of the permitting process. The wetland values of the affected wetlands vary widely and will be considered on a case-by-case basis. Portions of the Davison property and the B-Mill deck are candidates for restoration of wetland and riparian values to offset any new impacts to wetlands. Based on the presence of wetlands in the surrounding area

and on the presence of a stream channel through the deck, as indicated by the topography and the presence of drainage structures, some of the deck is likely to meet wetland criteria after restoration.

Indirect impacts to wetlands from construction will be minimized by fencing sensitive areas to prevent trampling by construction personnel and equipment. Construction supplies and equipment will not be stored in sensitive riparian and wetland areas.

Under the proposal and all other action alternatives, the roadside elk viewing area in the pastures on both sides of Davison Road will be hardened. Approximately 0.25 acre of previously disturbed wetlands will be affected. The wetland values of this area are extremely minimal, given the long history of agricultural use and the presence of a road through the area. The vegetation is predominantly alien species, and the native species are abundant throughout the northcoast region. There are no wildlife habitat values. The area will be graded and leveled. Some fill may be necessary to raise the area up from the puddles that form during rainy periods. The area will be hardened with concrete landscaping blocks that allow vegetation to grow up through openings, gravel, or a more impermeable surface of asphalt. The landscape block option results in a more harmonious blending of artificial and natural components, and allows water to filter back into the soils.

About 1000 feet of new trail incorporating a bridge or boardwalk will be needed to connect the existing Skunk Cabbage section of the Coastal Trail with a new trail on the north side of Skunk Cabbage trail. Approximately 0.1 acre of wetland will be affected. This proposal will be re-evaluated when funding for the new trail on the north side of the creek is obtained. A bridge or boardwalk will be constructed only if the cost of construction is reasonable, given wetland and floodplain constraints. This area probably possesses significant wildlife habitat and other wetland values.

All action alternatives, including the proposal, call for bridges across Streeflow and Prairie creeks as part of the bike-hike trail. The trail bridge across Streeflow Creek is estimated to affect 200 square feet of riparian area. The Prairie Creek timber bridge will be removed and replaced with a new bridge and interpretive platforms. About 100 wooden piers in the existing timber bridge will be removed with an excavator. There are at least 24 piers in Prairie Creek; the rest of the piers are in the pasture east of the creek. There do not appear to be any concrete bridge abutments. The stream banks will be restored to the original contours around the new bridge abutments.

The new bridge will completely span Prairie Creek without abutments or piers in the channel to reduce adverse impacts to the stream caused by abutments and piers impinging on the stream channel. The preliminary estimate of the amount of disturbance to wetlands and riparian areas for Prairie Creek bike-hike trail bridge removal and replacement is 800 square feet of impacted area. The wetlands that would be affected by bridge replacement do not possess any significant wetland values, due to previous disturbance from agricultural and industrial use. The park will obtain any permits necessary under Section 404 of the Clean Water Act for bridge removal and replacement.

Streams are inviting to visitors, who may trample stream banks and riparian vegetation trying to get close to the stream. Excessive trampling of the soils and vegetation can result directly in permanent loss of vegetation. Trampled soils become too hard for vegetation to take root, leading to soil loss and bank erosion. Continued bank erosion can alter channel dynamics, which can result in undesirable migration of the stream channel. Bank erosion also alters the stream morphology and may affect fish populations if the stream no

longer contains deep pools and other preferred shelter sites. Most of the creek is bordered by heavy vegetation and is not be easily accessible to visitors. The park will attempt to reduce undesirable access to Prairie Creek by designing the trail with rails or other barriers in those parts of the creek where visitor access is not compatible with stream preservation.

Portions of the B-Mill deck will be restored following removal of the asphalt. Acreage of restored wetlands and riparian areas varies under each action alternative. Following removal of asphalt, park staff will investigate soil types and hydrological conditions to determine the original conditions and prepare a plan to guide restoration. Natural wetland values that will be restored include flood control, ground water recharge, wildlife habitat, pollution control, and water filtering. Wetland values of the B-Mill deck are presently non-existent because of the covering of asphalt.

Alternative 1, Trails (The Proposed Action)

At least 14 buildings will be removed at Davison Ranch. Removal of buildings from the floodplain will restore the area for natural movement of floodwater through the floodplain and allow restoration of natural and beneficial floodplain values such as groundwater recharge, riparian wildlife habitat, and dissipation of flood energy.

The hay barn will remain in the 100-year floodplain. The 1926 bungalow will remain in the floodplain if the NPS can rehabilitate the building according to NPS housing guidelines and provide for the safety of residents at a reasonable cost. It is not likely that the building could be floodproofed according to the criteria and standards of the National Flood Insurance Program. Instead, the park will prepare a flood contingency plan that includes meteorological criteria to determine when a flood is likely; establish safe evacuation routes; determine warning time necessary for evacuation; and specify a mechanism for reliable and timely notification of impending flood hazard. If the bungalow cannot be rehabilitated for housing at a reasonable cost, the park will consider administrative uses for the building or removal.

Septic tanks associated with some of the buildings will be pumped, and either removed or filled with gravels and allowed to remain in place. Pumping of tanks would remove a possible source of water contamination during floods.

Impacts to wetlands are preliminary estimates. Actual amounts will be determined when a design is prepared prior to obtaining permits. The roadside elk viewing parking is estimated to affect 0.25 acre of wetland that has been previously degraded through road construction and ranching operations. Construction of the StreeLOW Creek bridge may affect about 200 square feet of wetland. The Prairie Creek timber bridge removal and replacement is estimated to affect about 800 square feet. The Skunk Cabbage Creek trail crossing is estimated to affect about 0.1 acre of wetlands. Total impacts to wetlands are estimated at 0.38 acre, 0.28 acre of which is previously disturbed by placement of roads and building, or ranching and industrial uses.

Approximately 3.5 acres of the B-Mill deck, including the buried stream channel, will be restored under this alternative. The restored area includes landscaping. It is not possible to estimate how much of the 3.5 acres may be classified as wetland until the hydrologic regime is restored and the soils are examined to determine their hydric character.

The riparian corridor east of Prairie Creek will be reserved from development, with the exception of the bike-hike trail bridge. The bridge will cross at right angles to the creek and will affect approximately

50 feet of the corridor. Visitors will not have access to the riparian area from the bridge. The value of riparian and wetland habitats will be interpreted with a wayside exhibit, probably near the trail bridge.

Alternative 2, No Action

No riparian or wetland restoration at the B-Mill deck and around the Davison Ranch buildings would occur under this alternative. The wetland area at the elk viewing fence would be trampled by visitors parking cars and walking.

Buildings that are presently in the 100-year floodplain would remain in the floodplain. Buildings remaining in the floodplain impede the natural movement of flood waters. Septic tanks and leach fields associated with the buildings may contribute to contamination of floodwater. The causeway connecting the timber bridge and Highway 101, the bridge abutments, and bridge pilings would remain in the floodplain. These structures would continue to impede the flow of high flows and floodwater, altering the natural stream processes and creating a backwater with a water surface elevation about 8 feet higher than if the structures were not in place.

Alternative 3, Activity Center

It appears that there is sufficient space on the B-Mill deck to locate the activity center out of the 100-year floodplain with the exception of some of the parking. The park would develop a flood contingency plan as described under the proposed action for evacuation of visitors because the Davison Road access is within the 100-year floodplain. Impacts to the floodplain from removal of ranch buildings and retention of the hay barn and 1926 bungalow would be the same as under the proposal.

A total of 1.18 acres of wetlands may be affected under this alternative (0.38 acre as for the proposal plus 0.8 acre for improvement of the Davison Road access), all but 0.1 acre of which is previously disturbed.

Approximately 5.3 acres of the B-Mill deck, including the buried stream channel, would be restored under this alternative. Stream restoration would add 0.5 acre of riparian area. It is not possible to estimate how much of the 5.3 acres may be classified as wetland until the hydrologic regime is restored and the soils are examined to determine their hydric character. Landscaping following construction may incorporate wetland plant species. The park would consult with the designers to determine if incorporation of wetlands into a heavy visitor use area is feasible.

Riparian and wetland environments would be a primary interpretive theme of the developed area. The functions and values of these environments would be emphasized in the interpretive program of the activity center.

Alternative 4, Group Camp

The group camp would be located out of the floodplain. Impacts to the floodplain from removal of ranch buildings and retention of the hay barn and 1926 bungalow are as described under the proposal.

A total of 0.38 acre of wetlands may be affected under this alternative, the same as for the proposal. Approximately 5.3 acres of the B-Mill deck, including the buried stream channel, would be restored under this alternative. The restored area includes landscaping. It is not possible to estimate how much of the 5.3 acres may be classified as wetland until the hydrologic regime is restored and the soils are examined to determine their hydric character.

Alternative 5, Redwood Institute

The institute would be located out of the floodplain. If there is not sufficient space available out of the floodplain, new construction would be floodproofed according to the standards and criteria of the National Flood Insurance Program or elevated above the base floodplain. If there is no reasonable alternative to locating the institute out of the floodplain, the park would develop a flood contingency plan as described for the proposal. Impacts to the floodplain from removal of ranch buildings and retention of the hay barn and 1926 bungalow would be as described for the proposal.

A total of 0.38 acre of wetlands may be affected under this alternative, the same as for the proposal. Approximately 3.7 acres of the B-Mill deck, including the buried stream channel, would be restored under this alternative. The restored area includes landscaping. It is not possible to estimate how much of the 3.7 acres may be classified as wetland until the hydrologic regime is restored and the soils are examined to determine their hydric character.

Wildlife and Fisheries Impacts

Under the proposed action and all other action alternatives, construction noise and the presence of equipment and workers during daylight hours will disturb wildlife in the area. Wildlife species that are tolerant of human disturbance such as ravens, jays, and Roosevelt elk will be less affected by construction than more easily disturbed species such as nesting hawks and small carnivores such as fishers. The major construction sites are highly modified by over 100 years of human occupation and experience a high degree of ongoing disturbance in the area from transportation, industrial, recreational, and residential uses. The temporary disturbance from construction is not anticipated to have a significant adverse impact on any wildlife population although individual animals may be forced to move out of territories or home ranges, which may result in mortality.

Human presence at the ranch will increase over the levels that have existed since 1992, when the Davisons ceased their ranching operation and residential use, including the use of the ranch for the summer church camp. Alternatives 3, 4 and 5 (activity center, group camp, and institute, respectively) would increase use of the B-Mill deck significantly over present levels. The activity center would result in the greatest level of noise and disturbance of any action alternative, with the proposal and alternatives 4 and 5 (group camp and institute), respectively, resulting in progressively less disturbance. The cumulative impacts of an increased number of people on wildlife are anticipated to be a general decrease in populations of animals less tolerant of human disturbance. The effect is difficult to measure because of the lack of baseline information on the present distribution and abundance of wildlife species.

Increased human presence in developed areas will increase the attractiveness of the areas to corvid birds such as ravens, crows, and jays. Corvids are known to prey on smaller birds, particularly on nestlings. Mortality of nestlings is likely to increase around the picnic areas in particular but the amount of increase is not anticipated to adversely affect any wildlife population as a whole.

The proposal will result in increased traffic on Davison Road. There will be an increase in the mortality rate of amphibians such as rough-skinned newts and red-legged frogs which move out from damp vegetation and cross roads during rainy weather. Park visitation is lower during rainy periods and at night when amphibians generally move, so the overall loss of these animals from vehicles is not anticipated to be a significant adverse impact on the populations.

Vegetation will be removed under all alternatives for trail construction, resulting in a slight decrease in available wildlife habitat. The majority of sites proposed for development already have very little vegetation so wildlife habitat loss would be minimal. If possible, vegetation removal will occur in mid- to late summer to avoid disturbance to nesting birds.

Visitors will be attracted to Prairie Creek. Unrestricted human access to the creek will result in trampled understory and riparian vegetation used for nesting by some bird species. The NPS will attempt to manage access by channeling access to less sensitive parts of the stream and by designing barriers along those portions of the trail where it appears visitors might adversely affect sensitive riparian vegetation in an attempt to reach the streambanks. Restoration of natural streamside vegetation will deter most visitors from pushing through a barrier of dense vegetation to reach the stream.

Portions of the B-Mill deck, including a small stream, will be restored under all action alternatives, resulting in an increase of at least 0.5 acre of riparian wildlife habitat. Removal of buildings from Davison Ranch and restoration of those areas will increase available riparian habitat in the area by about 0.5 acre.

Under all alternatives, including no action, the park will attempt to provide visitors with safe opportunities to watch the elk while maximizing the area where elk move freely without human disturbance. Signing and fencing are in place along Davison Road to deter visitors from walking into the pastures and approaching the elk too closely. Fencing and other barriers, and well-defined trail systems will be used to reduce easy access by visitors to all parts of the site to ensure elk have large areas of favored habitat free from human disturbance.

Under all action alternatives, restoration of natural vegetation and landscaping of the B-Mill deck are expected to increase elk use of that area, thus increasing the probability of close encounters between elk and visitors. The interaction between elk and visitors is anticipated to be similar to what exists in the Elk Prairie Campground in Prairie Creek Redwoods State Park. Serious injury to either visitors or elk is extremely infrequent. Elk become accustomed to slow-moving vehicle traffic and visitors who do not attempt to approach them. Alternatives 3, 4 and 5 (activity center, group camp, and institute) would increase visitor use of the site more than under the proposal. Alternatives 3 and 5 (activity center and institute), but not Alternative 4 (group camp), would have park staff on site to remind visitors to keep a safe distance from elk.

All alternatives, including no action, increase human presence in the area and therefore may affect black bear populations in the area. Bears are attracted by human food and garbage, potentially increasing human-bear interactions. It is park policy and practice to reduce human-bear interactions that might result in injury to bears and humans through education, provision of bear-proof garbage containers, and bear-proofing structures according to the guidelines in the 1991 *Bear Management Plan*. The parks are experimenting with a variety of techniques to remove blossoms from the Davison apple trees to reduce the attractiveness of the area to bears. All park construction contracts specify education for workers to avoid creating bear problems.

The proposal and all action alternatives include replacement of the timber bridge over Prairie Creek with a new bridge. Removal of the Prairie Creek timber bridge and construction of a new bridge will be coordinated among the park maintenance, wildlife, fisheries, vegetation management, and geological services staff, and the California Department of Fish and Game, USFWS, and the US Army Corps of Engineers to minimize adverse impacts to fish and riparian areas. The stream reach of Prairie Creek in the vicinity of the

timber bridge is not spawning habitat for any salmonid species but is rearing habitat for some species. No construction equipment will be allowed in the stream channel. Instream work will occur during low flow periods, usually between June 1 and October 15, to avoid impacts to any spawning runs up Prairie Creek. If the winter rains begin early and spawning fish are identified, the work period will be shortened to protect the fish. Sediment control measures such as silt fences, straw bale dams, and sediment ponds may be required to minimize sedimentation of Prairie Creek. A small amount of sediment release associated with the instream work is unavoidable, with the sediment remaining downstream of the project until the rainy season flushes the channel. A device to allow fish passage through a sediment fence may be required.

Alternative 1, Trails (The Proposed Action)

The proposed action is not anticipated to have a significant adverse impact on any wildlife population. New trails will attract visitors to relatively undisturbed areas in the park. The cumulative impact of increased human visitation will be a general decrease in the number of individuals of wildlife species that are not tolerant of human disturbance. Cumulative adverse impacts from visitor use of the trails are not anticipated to be significant because the increase in visitor use will be spread over a large area.

The heaviest visitor use will occur close to areas that are already disturbed by proximity to the highway, residential, and industrial developments. Because of the previous uses of the Davison Ranch and the B-Mill deck, and because of on-going noise generated by vehicle traffic using Highway 101 and Davison Road, wildlife in the area is likely accustomed to human presence and disturbance.

Approximately 4.8 acres of understory vegetation will be removed in old growth and second growth forests for construction of a trail network on Skunk Cabbage Hill. Removal of that amount of vegetation is not anticipated to be a significant adverse affect on wildlife populations from loss or alteration of habitat.

Wildlife blinds will reduce disturbance to nesting and foraging birds along Prairie Creek, and to other wildlife that may be using the riparian corridor.

Some sections of the bike-hike trail will bring visitors close to areas heavily used by elk. The trail section nearest to the Davison pastures will bring visitors close to elk. The Wolf Creek access road section at the south end of Elk Prairie in Prairie Creek Redwood State Park is of particular concern during the fall rutting season. Visitor use of the trail is anticipated to increase after construction so that the potential for interaction will increase.

If a trail connection is established to the Elk Prairie jogging/biking trail, it may be necessary to close that section of trail during rutting or calving season or to fence the trail to prevent visitors from approaching elk. There have been no reported incidents of people-elk conflicts on the existing trail. Negative interactions between visitors and elk in Elk Prairie have been reported but such incidents are rare.

Visitor use of the other proposed trails in the Skunk Cabbage area is not anticipated to significantly affect elk or to pose a danger to visitors. Should either visitors or elk pose a danger to each other at critical times such as rutting or calving seasons, the trail will be closed temporarily for mutual protection of people and elk.

Alternative 2, No Action

There would be no significant adverse impacts on wildlife populations from visitor use under this alternative. This alternative would result in the least disturbance to elk of any alternative because there

would be fewer visitor facilities to attract visitors than under any action alternative. The elk viewing area along Davison Road would remain unpaved but visitors would continue to park along the side of the road to view the elk. The B-Mill deck would remain covered with asphalt; riparian and wetland wildlife habitat would not be restored. The timber bridge would remain across Prairie Creek. Eventually, the bridge would collapse into the creek. The channel could be blocked, disrupting fish spawning runs.

Alternative 3, Activity Center

This alternative is not anticipated to have any significant adverse impacts on any wildlife population. Because of the previous uses of the Davison Ranch and the B-Mill deck, and because of on-going noise generated by vehicle traffic using Highway 101 and Davison Road, wildlife in the area is likely accustomed to human presence and disturbance.

This alternative would have the greatest cumulative impact on wildlife because visitor use is expected to increase over time. The greatest impact would be the increased number of visitors using the trails and spreading out into relatively undisturbed areas of the park. This impact is anticipated to have more effects on park wildlife in the vicinity than the direct impact of construction and occupation of the B-Mill deck. Cumulative adverse impacts from visitor use of the trails are not anticipated to be significant because the visitor use would be spread over a large area.

The activity center would be closed during the night but the roads, parking areas, and trails would be open. Human use would be greatest when the activity center is open but a small amount of use may be expected when the center is closed. Human disturbance to wildlife would be greatest when the center is open.

This alternative would result in the greatest potential for visitors to come into contact with elk in the B-Mill area. The alternative also would provide the highest degree of ranger presence during hours when visitors are most likely to be present, so that rangers may inform visitors of the potential dangers of approaching elk.

Alternative 4, Group Camp

Under this alternative, visitors could be on-site 24 hours a day in the high visitor use season, resulting in disturbance to wildlife. This is not expected to be a significant adverse impact because of the ongoing disturbance due to highway, industrial, and residential uses in the vicinity.

Negative interactions between elk and visitors would be reduced by informing visitors when they receive their campsite reservations about potentially dangerous behavior such as approaching elk.

The park would conduct a vigorous program to inform and educate campers about bears to reduce potential problems. Bear-proof food lockers would be provided at each camp.

Alternative 5, Redwood Institute

Under this alternative, the number of people on site would increase but not to the extent under the activity center alternative. Visitors would be on-site in a more controlled situation than Alternatives 3 and 4 so that institute personnel would be available to inform visitors about reducing elk and bear conflicts.

Visitors would be on-site at all hours, as under Alternative 4, increasing the extent of disturbance to wildlife. This is not anticipated to be a significant adverse impact because of the ongoing disturbance due to highway, industrial, and residential uses in the vicinity.

Threatened and Endangered Species Impacts

No listed or proposed threatened or endangered plant species are known to exist within the planning area. Should any plant species that occurs in the planning area be listed or proposed for listing as threatened or endangered in the future, the NPS will take all necessary steps to protect that species, in accordance with NPS policies. Any Pacific yew discovered during vegetation surveys for trail construction will be protected. Trails will be routed to avoid removal of yew.

The old growth redwood forests surrounding the Davison Ranch contain habitat for northern spotted owls and marbled murrelets. The majority of construction under the proposal will occur at the margin of the forest. The proposal will result in very slight incremental increase over existing noise levels, which are relatively high because Highway 101 is within one-quarter mile. In addition to highway noise, residential and industrial uses on private property in the Prairie Creek valley contribute to high noise levels. The B-Mill deck adjacent to the Skunk Cabbage old growth groves was used regularly for firearm target practice until the park purchased the property in January 1996. The construction activities at Davison Ranch and the B-Mill deck that occur from implementation of the proposal will not disturb owls or murrelets because any birds occupying the forest margin are already accustomed to high noise levels.

The NPS will consult informally with the USFWS prior to construction within one-quarter mile of old growth forest or other potential habitat for marbled murrelets or northern spotted owls. To protect breeding birds, the USFWS has established a noise restriction period of February 1 to July 31 for spotted owls and April 1 to September 15 for murrelets. Construction and other noise-generating activities will be scheduled outside the noise restriction periods. Should construction need to occur during the restriction period, areas within one-quarter mile of potential habitat will be surveyed according to protocols established by the USFWS to determine if birds are nesting nearby. If nesting birds are present, the park will consult with the USFWS to determine the conditions under which construction may be allowed.

Alternative 1, Trails (The Proposed Action)

At least half of the 22 miles of the proposed new trails are within one-quarter mile of suitable northern spotted owl or marbled murrelet habitat. Much of this habitat is already impacted by recurring noise from nearby traffic, residential, and industrial sources. The park will consult informally with the USFWS prior to construction in these areas. Through consultation with the USFWS, the park will determine what methods must be used to avoid potential impacts to northern spotted owls and marbled murrelets. If construction during the nesting season cannot be avoided, each proposed trail segment will be surveyed prior to construction according to the protocol established by the USFWS for nesting owls and murrelets. Should nesting birds be observed along the proposed route, the trail will be relocated to protect the birds or construction postponed until after the nesting season.

Approximately 4.8 acres of understory vegetation in old growth redwood forest will be disturbed by construction of 5 miles of trail. Another 16.6 miles of trail will be constructed in second growth forest using abandoned logging roads as the trail alignment. No mature trees will be removed for any construction. No other direct habitat modification in suitable spotted owl or marbled murrelet habitat is anticipated.

Should nesting owls or murrelets be discovered along trails after construction, the trails may be closed until the end of the nesting season to avoid disturbing nesting birds. Another method of protecting nesting birds is to post signs requesting that visitors refrain from excessive noise while using a trail. The park is presently consulting informally with the USFWS to determine whether visitor use in general should be considered an adverse impact on murrelets and how such an impact may be avoided or mitigated.

Trail maintenance requiring tractors and power tools such as weed whips and chain saws will occur outside of the noise restriction period in potential owl and murrelet habitat. Emergency maintenance will be performed during the noise restriction period with hand tools only, or under conditions set by the USFWS.

Other construction included in this alternative will occur on the B-Mill deck and the Davison Ranch. These areas are subject to high noise levels from highway, industrial, and residential uses. Any birds that occur in the areas are presumed to be accustomed to high noise levels and will not be adversely affected by noise from construction or visitor use.

Coastal areas that might be affected by trail construction will be surveyed for the presence of peregrine falcons and snowy plovers. The trail will be routed to avoid potential impacts to either of these species. Trail construction in coastal areas will be scheduled to occur outside of the breeding and nesting seasons for both falcons and plovers. The high degree of human use at Gold Bluffs Beach may reduce the suitability of the cliffs for falcon nesting.

Alternative 2, No Action

There would be no adverse impacts to listed or proposed threatened or endangered animal species under this alternative. No impacts to northern spotted owls or marbled murrelets are anticipated from visitor use of the loop trail through the Skunk Cabbage memorial groves. The groves are subject to recurring and ongoing noise levels from Highway 101 and any birds occupying the groves are accustomed to noise. Should the park determine that disturbance to threatened species is likely, the trail may either be closed until danger of disturbance is past or signs posted requesting that noise be kept to a minimum to avoid disturbance to nesting birds.

Alternative 3, Activity Center

Visitor use under this alternative would occur primarily during daylight hours when the activity center is open. Heavy visitor use during this time is not anticipated to adversely affect any listed or proposed threatened or endangered species.

This alternative would result in a large increase in human use and disturbance at the B-Mill deck. While the deck itself is not sensitive wildlife habitat, it is adjacent to old growth forest used by marbled murrelets. Cumulative impacts to marbled murrelets may result from increased use of the nearby Skunk Cabbage memorial groves trail. Use under this alternative is anticipated to be greater than under the proposal because an activity center will attract more visitors than a trailhead. The park is presently consulting informally with the USFWS to determine whether visitor use in general should be considered an adverse impact on murrelets and how such an impact may be avoided or mitigated.

Alternative 4, Group Camp

Visitors would be present on-site for a longer period each day than under Alternative 3. However, the number of visitors would be significantly less than under the activity center alternative and less disturbance and noise would result. The visitor use generated by this alternative is not anticipated to adversely affect any listed or proposed threatened or endangered animal species.

Alternative 5, Redwood Institute

Impacts of this alternative on threatened and endangered animal species would be the same as those under Alternative 4.

Cultural Resources Impacts

There will be no impacts to any significant archeological, historic, or ethnographic resources listed, proposed for listing, or determined eligible for listing, on the National Register of Historic Places for any actions on the B-Mill deck or the Davison Ranch.

The park will develop an interpretive brochure describing the history of Davison Ranch and its role in settlement of the Prairie Creek valley. The history of the Davison Ranch will be interpreted through wayside exhibits near the equestrian trailhead and along the Prairie Creek bike-hike trail. Although none of the Davison Ranch structures are eligible for listing on the National Register of Historic Places, the hay barn will be retained under all alternatives and adaptively reused. The park will retain the 1926 bungalow if it is economically feasible. The barn and bungalow will be used to interpret the cultural history of the Davison Ranch.

Alternative 1, Trails (The Proposed Action)

The majority of lands in the planning area outside the immediate area of Davison Ranch have not been inventoried for cultural resources. Based on the similarity of the planning area with other areas in the park that have been surveyed, the likelihood of finding cultural resources is low. However, proposed actions will be implemented in compliance with Section 106 of the National Historic Preservation Act and the 1990 Programmatic Agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. Therefore, for all action alternatives that involve ground disturbance in these unsurveyed areas, cultural resources inventories will be completed prior to ground disturbance. If the action is determined to have no effects on cultural resources, a clearance will be obtained from the Western Archeological and Conservation Center.

If cultural resources are located during a cultural resource inventory, all efforts will be made to implement the proposed action without disturbing significant cultural properties. Should it not be possible to avoid a cultural resource through accommodation during the design phase, mitigative measures will be developed in consultation with the California State Historic Preservation Officer. Should previously unknown archeological resources be discovered during construction, work will stop in the discovery area and the site protected until an archeologist can examine the area.

For all action alternatives, the park will consult with the Orick Native American Heritage Advisory Committee and the Yurok Tribe in order to determine whether or not significant ethnographic resources are present within the area of project impacts. To the greatest extent possible, recommendations of the consultants regarding the management of park lands in the vicinity of these properties will be followed.

The hay barn will continue to be used as a horse stable. Whether the 1926 bungalow will be reused, and what the use will be, will depend on the cost associated with rehabilitation to current safety codes and NPS standards, and whether the building can be made safe in the event of a 100-year flood. Other buildings would be removed before their condition deteriorates and they pose a threat to human health and safety.

Alternative 2, No Action

There would be no impacts to archeological or ethnographic resources under this alternative. All structures at Davison Ranch would remain in place. The hay barn would continue to be used as a stable for the park horse. The 1926 bungalow would be reused if it can be made safe at a reasonable cost. Other structures would be removed when funding permits. There would be no interpretation of the ranching history associated with Davison Ranch.

Alternative 3, Activity Center

Impacts to cultural resources on lands outside of the B-Mill deck and Davison Ranch are described above under the proposed action.

Davison Ranch structures would be treated as under the proposed action. The history of the Davison Ranch and its role in settlement of the Prairie Creek valley would be interpreted more easily under this alternative than other action alternatives because the activity center nearby would bring visitors and interpreters together close to the ranch.

Alternative 4, Group Camp

Impacts to cultural resources on lands outside of the B-Mill deck and Davison Ranch are described under the proposed action.

Davison Ranch structures would be treated as under the proposed action. History of the Davison Ranch may be a theme for programs given at the group camp but fewer visitors would receive information about the ranch history than under Alternative 3.

Alternative 5, Redwood Institute

Impacts to cultural resources on lands outside of the B-Mill deck and Davison Ranch are described above under the proposed action.

Davison Ranch structures would be treated as under the proposed action. Interpretation of Davison Ranch history would be primarily in the form of wayside exhibits and printed material.

Park Operation Impacts

All new construction will be energy-efficient, which will reduce utility costs to the park. Wildlife and vegetation will need to be actively managed. Restoration of the native vegetation will be required for areas disturbed by construction, and for wetlands and riparian areas that have been altered by previous industrial and ranching operations. The park wildlife biologists will need to devote time to bear management to educate visitors in proper food storage and disposal, and will occasionally be called upon to deal with conflicts between bear or elk and visitors. The park will provide bear-proof garbage cans for all visitor use areas. Park maintenance or resource management staff will need to remove apple blossoms from Davison apple trees annually and to maintain the rest of the grounds at Davison Ranch.

Alternative 1, Trails (The Proposed Action)

Park maintenance staff will perform custodial services at the trailheads, the B-Mill picnic area, and the elk viewing area. Staff time for custodial services at the Davison area will reduce the time available in other areas of the park. The trail crew will have to construct and maintain an additional 22 miles of trail. Additional ranger patrols will be needed at the barn and equestrian trailhead to ensure that the increased number of visitors on the bike-hike trail do not feed or annoy the park horses or private stock. The interpretive program will need to be expanded to provide programs and walks originating from the trailhead. Additional staff is likely to be required to provide necessary interpretive services.

Alternative 2, No Action

The structures at Davison Ranch would be removed as funding allows. Maintenance staff would be needed to remove the buildings, or the contracting officer would need to prepare and administer a contract for building removal. Prior to removal, some of the structures would create an attractive nuisance and would be subject to vandalism.

Alternative 3, Activity Center

The park maintenance staff would assume custodial and maintenance duties of a large facility. Maintenance requirements of the activity center would be low for the first 5-7 years, after which time cyclic maintenance costs would increase as the building ages. Trail construction and maintenance would be required as under the proposed action.

At least three additional full-time interpretive staff would be needed to run the activity center and provide interpretive services. Interpretive rangers and volunteers would be available for visitor assistance when the activity center is open, reducing calls on protection rangers for non-emergency visitor assistance.

Alternative 4, Group Camp

Park staff would have to devote time to developing and administering a camping reservation system. Requests for group camping may be low for several seasons until groups learn about the camping opportunity, after which park staff would need more time to answer questions and schedule groups at the camps. Based on the use of the group camp at Patricks Point State Park and requests for group camping at Prairie Creek Redwoods State Park, heavy use of a group camp during the summer season is anticipated.

Park staff would need to provide orientation to campers on how to avoid bear problems. Bear-proof garbage cans and food storage containers would be needed. The interpretive program may need to be expanded to provide programs and walks originating from the trailhead.

Alternative 5, Redwood Institute

The park would need to develop a cooperative agreement or Memorandum of Agreement for an outside group to operate the institute. Custodial services may be provided by the institute or the park. Institute staff would be available to answer visitor questions and call for ranger assistance. The interpretive program may need to be expanded to provide programs and walks originating from the trailhead.

Visitor Use and Experience, and Local Community Impacts

All new construction will be located and designed to blend into the natural scene and to complement the natural beauty of the redwood forest. Local materials will be used for construction so that structures reflect the colors of the surrounding natural environment to minimize their visual intrusiveness.

Signs will be constructed to be consistent with other park signs and to promote visitor familiarity with park boundaries, trail designations, and rules. National and state park personnel are preparing a coordinated sign program to orient visitors to the parks. To avoid visual intrusion from too many signs, they will be used only where needed to protect sensitive resources and to promote visitor safety. Orientation kiosks and trail signs will provide information about the trail networks, including trail names, lengths, difficulty, and designated user groups, to reduce confusion for visitors unfamiliar with the area. Kiosks and wayside exhibits will also educate visitors about the importance of confining their activities to the designated trails and remind them of trail etiquette.

Interpretive platforms will be integrated into the Prairie Creek trail bridge that will replace the timber bridge. These platforms provide a place for visitors to view the stream, riparian zone, wildlife, and forests. Kiosks will also contain information about the resources visible from the platform. Interpreters will occasionally be present in the area to provide more in-depth information than is available from a kiosk exhibit.

The visitor experience at the elk viewing area will be improved by hardening the parking area so visitors need not wade through puddles or mud to watch the elk.

Developing facilities at the B-Mill deck and Davison Ranch will create a visitor use area within two miles of the community of Orick. Some of these visitors will purchase food, supplies, gasoline, souvenirs, and gifts in Orick, resulting in economic benefits to Orick businesses.

Alternative 1, Trails (The Proposed Action)

Recreational opportunities for hikers, equestrians and bicyclists will increase. About 22 miles of new trails will be available to visitors. Of that total, there will be 8.4 miles of new equestrian trails, 3.7 miles of mountain bike trails, and 3.2 miles available to touring bicyclists.

The B-Mill trailhead will provide access to ancient forests, streams, and the beach from a single point. The Coastal Trail, the Skunk Cabbage trail, Prairie Creek Redwoods State Park, Lady Bird Johnson Grove and the Bald Hills, and the Lost Man Creek area will be within a 5-mile hike from the trailhead. A single trailhead will reduce the amount of driving for visitors who wish to hike several trails in one trip. The trailhead will offer a location in the southern part of the park that is more easily accessible by vehicle than Lady Bird Johnson Grove and with adequate parking. Beach access will be increased by construction of a new trail.

Separate trails for hikers, bicyclists (touring and trail bikes), and equestrians will reduce conflicts among users with different recreational preferences. Signs on the 0.3 mile of trail shared among hikers, bikers, and equestrians will remind visitors of trail etiquette to reduce potential conflicts.

Safety of touring bicyclists traveling on Highway 101 will be significantly increased for those cyclists who choose to travel the 3.2-mile length of the Prairie Creek bike-hike trail. The bike-hike trail provides a more leisurely park experience than travel on the highway shoulder and will increase the opportunities for bicyclists to enjoy portions of the park. A new Skunk Cabbage trail access will be safer than the access off Robinson Road and would be easier to locate because of the B-Mill trailhead.

Visitors using the bike/hike trail will occasionally encounter heavy equipment engaged in trail maintenance. This type of maintenance will occur for only a few days annually outside the main visitor use season. Some visitors will be disturbed at finding heavy equipment on a hiking trail.

Signing will be used to remind visitors to keep a safe distance from elk, to store and dispose of food properly to avoid bear problems, and to be aware that they are in mountain lion habitat.

Signing will be needed at the Wolf Creek Outdoor School access road to prevent trail users from wandering into the outdoor school. Nighttime security at the outdoor school will be provided by the adult chaperons staying with the students and by the park staff occupying the Wolf Creek quarters.

The B-Mill trailhead will provide a place where visitors could meet with rangers for interpretive programs and guided walks. Ranger programs will increase some visitors' satisfaction with the experience provided in the park. Trail wayside exhibits will increase visitor understanding about the resources visible from the trails and the interaction of resources and humans in the park ecosystems.

The B-Mill picnic area will be easily accessible from the highway but will be set back from the highway against a backdrop of old growth redwoods. The setting will provide a more park-like experience than those picnic areas adjacent to Highway 101 at Lagoon Creek, the Redwood Creek Picnic Area between Freshwater Lagoon and Redwood Information Center, or the Caltrans rest stop at Trinidad.

Visitors will be able to view streams and wildlife from facilities specifically designed for that purpose. Wildlife viewing will be enhanced by providing blinds along Prairie Creek. Visitors will be able to watch wildlife that act in a more natural manner. Wildlife that are less tolerant of human presence will remain in the area if humans are quiet in the blinds.

Alternative 2, No Action

Visitors would rarely find an interpretive ranger on-site to talk about the Prairie Creek ecosystem and the local history of Davison Ranch. Interpretation in the national park about the Davison Ranch area would be limited to information given out at the Redwood Information Center. Any interpretation of redwoods and redwood ecology provided at the Redwood Information Center would be verbal and not reinforced by visitors being able to touch or see a redwood tree up close. Because of the location of the information center on a highway and its use by travelers seeking general information, interpretation for visitors seeking detailed information would be hampered by the staff's need to orient visitors and answer questions about facilities and services.

Wall space suitable for interpretive displays at the Redwood Information Center is very limited, so it is unlikely that interpretive displays featuring the natural and cultural history of Davison Ranch would be available. Interpretive programs would continue to be available at the Elk Prairie Visitor Center and campground although visitors who bypass the state park may not get any information about the parks.

The Prairie Creek timber bridge would remain in place, creating an attractive nuisance to park visitors. Eventually the bridge would collapse, which may create a hazard for visitors exploring the area. Visitors would be exposed to potential health and safety threats from the structures at Davison Ranch until the structures are removed.

Visitors seeking the Skunk Cabbage section of the Coastal Trail would continue to have difficulty locating the Robinson Road turnoff. Trail users would continue to negotiate a highway intersection with poor sight distance.

Alternative 3, Activity Center

Interpretation would be maximized under this alternative. A wide range of interpretive techniques including programs, walks, films, interactive displays, exhibits, and waysides would be available. Interpretive programs and walks would draw from a larger potential audience because more visitors would be attracted to an activity center than to the facilities provided in the other alternatives. This alternative would heighten visitor awareness, understanding, and appreciation of the significance of resources that make the parks eligible for World Heritage and Biosphere Reserve status.

Interpretation would include a description of the principles of sustainable design that would be incorporated into the design, construction, and operation of the activity center. One of the guiding principles of sustainable design is to educate visitors about the natural and cultural environments and the support systems that sustain the development while bringing visitors into contact with the resources whenever possible.

The activity center would give visitors a sense of arrival at a redwood park that the Redwood Information Center lacks because of its location on the beach. The design of the center would provide visitors with numerous opportunities to learn about and interact with the resources. Interpreters would be available to answer questions and to give programs. Exhibits would provide written and pictorial information. Interactive exhibits and new technologies such as computers are other potential interpretive techniques. Views from the building of the surrounding forests, streams, and wildlife would contribute to the visitors' appreciation and understanding of these resources. Decking and walkways would lead visitors out to the forest and stream.

Permits for driving to the Tall Trees Grove would be available to southbound visitors before they arrive at the Redwood Information Center and must return northbound to reach the grove.

The center would have space for workshops and symposia. As word spreads about these facilities, we anticipate that some visitors who attend functions at the center would stay in lodging in Orick. Other impacts on the visitor experience are the same as under the proposed action.

Alternative 4, Group Camp

Interpretation would not reach as many visitors as under the activity center alternative. Guided walks and evening campfire programs would be possible because there is an audience who will be on-site in the evening. Programs would be open to all visitors, in addition to campers.

This alternative would increase the number of group camp sites available in the redwood region between Orick and the Oregon border. Groups of people tend to make more noise and be more noticeable than campers who would occupy an individual campsite. Groups would be able to enjoy their activities without disturbing other campers. Highway noise would be noticeable at the camp.

Some visitors who are familiar with the computerized camping reservation system used by state and some national park areas would be frustrated at not being able to obtain reservations through the computer system. Other visitors would appreciate the system not being computerized.

Campers would purchase food, supplies, and gasoline at Orick or other nearby communities, providing some economic benefit to those communities. The economic benefits would partially replace income to Orick lost since the annual church convention is no longer held at the Davison Ranch. The camp would not be an RV campground and would not compete with private RV campgrounds in Klamath. Other impacts on the visitor experience are the same as under the proposal.

Alternative 5, Redwood Institute

Interpretive services under this alternative would be similar to those under the proposal. Interpretive walks originating from the B-Mill trailhead would be possible. Exhibits on World Heritage and Biosphere Reserve would be limited to a few waysides. Evening programs would be conducted at the amphitheater or in the meeting area but the space for visitors who are not participating in an institute activity would be limited. Some programs by park researchers may be open to the general public but more commonly would be available only to institute participants. Visitors who participate in institute programs would receive more in-depth information about park resources than other visitors. Most programs would probably be limited to visitors who register in advance. Visitors who are unaware of the institute or who are passing through the area would not be able to participate in the programs.

Sustainable practices would be incorporated into the design, construction, and operation of the institute. These practices would be interpreted for institute visitors.

Visitors would remain in the area several days while participating in institute programs. Orick businesses would benefit economically from these visitors purchasing food, gas, and gifts. No benefit to the local motels is anticipated because the institute would have overnight accommodations. However, institute participants would gain knowledge of the park and the Orick area and may return on later trips.

PREPARERS AND CONSULTANTS

Preparers

Aida Parkinson, Supervisory Environmental Specialist (plan production, alternatives, impacts)
Linda Gelpman, former Office Automation Clerk (affected environment, computer graphics)
Kate Green, former volunteer Landscape Architect (sketches, graphics)
Joseph Winfield, former Landscape Architect (alternatives, graphics, cost estimates)

Redwood National Park Advisory Planning Team

Tauna Clausen, Personnel Clerk
Beth Koltun, former Biological Technician (vegetation)
Carol Leggat, Park Ranger (resource protection)
Roy Richey, Park Ranger (interpretation)
Ann King Smith, Archaeologist
Sabra Steinberg, former Wildlife Biologist
Chuck Stull, former Building and Utilities Foreman

Consultation and Coordination

National Park Service

Jeff Heywood, Landscape Architect, Denver Service Center
Roger Kelly, Archeologist, Pacific Great Basin System Support Office
Ray Murray, Lead, Planning Team, Pacific Great Basin System Support Office (formerly, Chief, Planning, Grants, and Environmental Quality)
Redwood National Park staff
Leslie Krueger, Water Resources Division, National Park Service

Other Consultants and Contributors

William Beat, former Northcoast Redwoods District Superintendent, California Department of Parks and Recreation, Eureka
Eric Behn, U.S. Army Corps of Engineers, San Francisco
Dick Davison, McKinleyville
Steve Frick, Blankenship Trucking, Orick
Deborah Harmon, California Department of Transportation, Eureka
Mark Moore, California Department of Transportation, Eureka
Ohio State University 1993 Landscape Architect Summer Intern Program
 Professor Jot Carpenter, ASLA
 Paul Coriell
 Gabe Hays
 Brent King
Herb Pierce, California Department of Fish and Game, Eureka
David Schneider, Pacific Affiliates, Eureka
Michael Stalder, ranger, Prairie Creek Redwoods State Park
Susie Van Kirk, Historian, Arcata
Alan Wilkinson, Interpretive Specialist, California Department of Parks and Recreation, Eureka

REFERENCES

- Bearss, E. C.
1969 History Basic Data, Redwood National Park, Del Norte and Humboldt Counties, California. (Reprinted 1982)
- Bickel, P. McW.
1979 A Study of Cultural Resources in Redwood National Park. File report, Redwood National Park, Arcata, California.
- California Resources Agency, Department of Fish and Game, Natural Diversity Data Base
1991 Special Animals. Sacramento, California
- California Resources Agency, Department of Parks and Recreation
1984 Draft State Redwoods Parks General Plan. Sacramento, California.
- 1985 State Redwoods Parks General Plan. Sacramento, California.
- Cowardin, L. M., V. carter, F. C. Golet, and E. T. LaRoe.
1979 Classification of Wetlands and Deepwater Habitats of the United States. Fish and Wildlife Service, U. S. Department of the Interior. Report FWS/OBS-79/31. Washington, D.C.
- Crotts, J. C.
1994 Taking the Hype Out of Ecotourism: Introduction. Trends, Vol. 31, No. 2: 2-3. National Park Service and National Recreation and Park Association. Washington, D.C.
- Douglas, B. K.
1984 Negative Archeological Survey Report. Replacement of Bridge No. 4-29, Prairie Creek Route 101. File report, Redwood National Park, Arcata, California.
- Eidsness, J. P.
1988 A Summary of Cultural Resources Projects, Redwood National Park. File report, Redwood National Park, Arcata, California.
- Harden, D. R., H. M. Kelsey, S. D. Morrison, and T. A. Stephens
1982 Geologic map of the Redwood Creek drainage basin, Humboldt County, California. U. S. Geological Survey Water Resources Investigations Open-File Report 81-496. Menlo Park, California.
- Haversat, T., and G.S. Breschini
1986 Preliminary Archaeological Reconnaissance for the Smith River Power Plant Power Line Installation, Del Norte and Humboldt Counties, California. File report, Redwood National Park, Arcata, California.
- 1987 Additional Archaeological Reconnaissance for the Smith River Power Plant Power Line Installation, Del Norte and Humboldt Counties, California. File report, Redwood National Park, Arcata, California.

Humboldt County

- 1985 Humboldt County General Plan. Volume 2. Orick Community Plan. Eureka, California.
- Jameson, E. W., Jr., and H. J. Peeters
1988 California Mammals. University of California Press. Berkeley, California.
- Janda, R. J., K. M. Nolan, D. R. Harden, and S. M. Colman
1975 Watershed conditions in the drainage basin of Redwood Creek, Humboldt County, California, as of 1973. U.S. Geological Survey Open-File Report. Menlo Park, California.
- Larson, O. and Associates
1987 Pre-development Study for Redwood Forest Lodge near Orick, California. Prepared for Redwood Regional Economic Development Commission. Eureka, California.
- Mandel, R. D., and D. W. Kitchen
1979 The ecology of Roosevelt elk in and around Redwood National Park. Report under contract PX 8480-8-0045. Arcata, California.
- McClelland, L. F., J. T. Keller, G. P. Keller, and R. Z. Melnick.
n.d. Guidelines for Evaluating and Documenting Rural Historic Landscapes. National Register Bulletin 30. National Park Service, Washington, D.C.
- Moratto, M. J.
1973 A Survey of Cultural Resources in and near Redwood National Park. File report, Redwood National Park, Arcata, California.
- Northwest Indian Cemetery Protective Association
1979 A Consultation with Yurok Indians in Regards to the Proposed Redwood National Park Bypass. File report, Redwood National Park, Arcata, California.
- Parker, J. W.
1977 Archaeological Evaluation of a Proposed Road Widening, Channelization Project on State Route 101 (P.M. 123.7/123.9), Humboldt County, California. File report, Redwood National Park, Arcata, California.
- Pilling, A. R.
1978 Yurok. Handbook of North American Indians, Volume 8, California, R.F. Heizer, volume editor. Smithsonian Institution, Washington D.C.
- Ritter, E.
1969 Preliminary Record of Archaeological Resources Existing in the Three State Owned Sections of Redwood National Park. File report, Redwood National Park, Arcata, California.

Salzman, S. S. and P. McW. Bickel

- 1979 Archaeological Survey in Rehabilitation Units in Redwood National Park, California. File report, Redwood National Park, Arcata, California.

Shoup, L. H.

- 1983 An Interpretation and Assessment of the Significance of the Historic Cultural Properties of Redwood National Park. File report, Redwood National Park, Arcata, California.

Smith, A. K.

- 1985 Archaeological Impact Report, U.S. Highway 101 Bypass: Wetlands and Riparian Habitat Restoration, Fisheries Projects and Southern Interchange, Humboldt and Siskiyou Counties, California. File report, Redwood National Park, Arcata, California.

- 1991 A Cultural Resources Study of a Portion of the Davison Property, Redwood National Park, Humboldt County, California. File report, Redwood National Park, Arcata, California.

- 1994 Evaluation of Cultural Landscape Values, Davison Ranch, Redwood National Park, Humboldt County, California. File report, Redwood National Park, Arcata, California.

Tchobanoglous, G., and F. L. Burton

- 1991 Wastewater Engineering: Treatment, Disposal, and Reuse. Series editors. Metcalf and Eddy, Inc. New York. McGraw-Hill.

U.S. Department of Agriculture, Forest Service

- 1993 Draft Environmental Impact Statement. Six Rivers National Forest Plan. Humboldt, Del Norte, Siskiyou and Trinity Counties, California. Eureka, California.

U.S. Department of Interior, Fish and Wildlife Service

- 1991 Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register, 58804-58836, Thursday, November 21, 1991. Washington, D.C.

- 1992 Endangered and Threatened Wildlife and Plants. 50 CFR 17.11 and 17.12. August 29, 1992. Washington, D.C.

U.S. Department of Interior, National Park Service

- 1979 Draft Environmental Statement: General Management Plan: Redwood National Park; California. Denver, Colorado.

- 1980 General Management Plan: Redwood National Park: California. Denver, Colorado.

- 1988 Management Policies. Washington, D.C.

- 1993 Guiding Principles of Sustainable Design. Denver, Colorado.

- n.d. National Parks for the 21st Century: The Vail Agenda. Montpelier, Vermont.

U.S. Department of Interior, National Park Service, Redwood National Park

1984 Backcountry Trail Plan: Redwood and Skunk Cabbage Creeks. Arcata, California.

1985 Water Resources Management Plan. An Amendment to the Resources Management Plan. Orick, California.

1991 Bear Management Plan. Research and Resources Management, Fish and Wildlife Branch. Crescent City, California.

1992 Riparian Mitigation Plan for Disposal Site at Engineering Station 795 on Highway 101 Bypass. Orick, California.

1992 Statement for Management. San Francisco, California.

Van Kirk, S.

1992 Davison Property. History of the Davison Ranch. Evaluation of National Register Eligibility. Report under contract PX 8480-92-141. Redwood National Park. Arcata, California.

Waterman, T.T.

1920 Yurok Geography. University of California Publications in American Archaeology and Ethnology 16(5): 177-314.

Wall, G.

1994 Ecotourism: Old Wine in New Bottles? Trends, Vol.31, No. 2: 4-9. National Park Service and National Recreation and Park Association. Washington, D.C.

APPENDICES

Appendix A: Wildlife Species in Davison Ranch Planning Area

The following list is based on recorded observations by visitors and park staff that are in the Redwood National Park wildlife observation database as of December 1993 and on species which could be expected in habitats present in the planning area. The "habitat association" section includes habitats actually present in the planning area. "Presence" refers to general occurrence in coastal lowlands.

Habitat Association

g=grasslands and agricultural lands
r=riparian and deciduous forest
c=conifer forest
2=young second-growth and brush
l=stream
o=outcrop, rock rubble
w=wide habitat range

Presence

y=year-round
s=seasonal
B=breeds on/near Davison property

COMMON NAME	SCIENTIFIC NAME	HABITAT/PRESENCE
<u>Amphibians</u>		
Pacific giant salamander	<i>Dicamptodon ensatus</i>	crl/yB
Del Norte salamander	<i>Plethodon elongatus</i>	o/yB?
Southern seep salamander	<i>Rhyacotriton olympicus</i>	lr/yB?
Northwestern salamander	<i>Ambystoma gracile</i>	gcr/yB
Rough-skinned newt	<i>Taricha granulosa</i>	crlg/yB
Red-bellied newt	<i>Taricha rivularis</i>	lr/yB
Painted salamander	<i>Ensatina eschscholtzii</i>	cg2/yB
Clouded salamander	<i>Aneides ferreus</i>	c/yB
Black salamander	<i>Aneides flavipunctatus</i>	cg/yB
California slender salamander	<i>Batrachoseps attenuatus</i>	c2/yB
Western toad	<i>Bufo boreas</i>	rlgc/yB
Red-legged frog	<i>Rana aurora</i>	rlc/yB?
Tailed frog	<i>Ascaphus truei</i>	lr/yB?
Pacific tree frog	<i>Hyla regilla</i>	rlcg/yB
Bullfrog ^c	<i>Rana catesbeiana</i>	lrg/yB
<u>Reptiles</u>		
Common garter snake	<i>Thamnophis sirtalis</i>	w/yB
Western terrestrial garter snake	<i>Thamnophis elegans</i>	w/yB
Western aquatic garter snake	<i>Thamnophis couchii</i>	l/yB
Rubber boa	<i>Charina bottae</i>	w/yB
Racer	<i>Coluber constrictor</i>	g/yB
<u>Mammals</u>		
Bobcat	<i>Felis rufus</i>	g2/yB
Mountain lion	<i>Felis concolor</i>	w/yB
Coyote	<i>Canis latrans</i>	w/yB
Raccoon	<i>Procyon lotor</i>	r/yB
River otter	<i>Lutra canadensis</i>	l/yB
Shorttail weasel	<i>Mustela erminea</i>	r2c/yB
Longtail weasel	<i>Mustela frenata</i>	w/yB

Mink	<i>Mustela vison</i>	l/yB?
Striped skunk	<i>Mephitis mephitis</i>	g2/yB
Spotted skunk	<i>Spilogale putorius</i>	rg2/yB
Martin ^b	<i>Martes americana</i>	c/yB?
Fisher ^a	<i>Martes pennanti</i>	c/yB?
Gray fox	<i>Urocyon cinereoargenteus</i>	r2g/yB
Black bear	<i>Ursus americanus</i>	r2c/yB
Black-tailed deer	<i>Odocoileus hemionus</i>	w/yB
Roosevelt elk	<i>Cervus elaphus</i>	w/yB
Pacific shrew	<i>Sorex pacificus</i>	cr/yB
Vagrant shrew	<i>Sorex vagrans</i>	rc/yB
Trowbridge shrew	<i>Sorex trowbridgei</i>	c/yB
Shrew-mole	<i>Neurotrichus gibbsi</i>	r/yB
Pacific water shrew	<i>Sorex bendirei</i>	r/yB
Pacific mole	<i>Scapanus orarius</i>	rg/yB
Townsend mole	<i>Scapanus townsendi</i>	rgc/yB
Opossum	<i>Didelphis marsupialis</i>	gr/yB
Brush rabbit	<i>Sylvilagus bachmani</i>	2r/yB
Mountain beaver	<i>Aplodontia rufa</i>	rc/yB
Porcupine	<i>Erethizon dorsatum</i>	c/yB
Beaver	<i>Castor canadensis</i>	l/yB
Deer mouse	<i>Peromyscus maniculatus</i>	2g/yB
Western harvest mouse	<i>Reithrodontomys megalotis</i>	gr/yB
California redback vole	<i>Clethrionomys occidentalis</i>	c/yB
White-footed vole ^b	<i>Arborimus albipes</i>	r/yB
Red tree vole	<i>Arborimus pomo</i>	c/yB
California vole	<i>Microtus californicus</i>	g/yB
Townsend vole	<i>Microtus townsendi</i>	rg/yB
Longtail vole	<i>Microtus longicaudus</i>	gr/yB
Dusky footed woodrat	<i>Neotoma fuscipes</i>	2cr/yB
Pacific jumping mouse	<i>Zapus trinotatus</i>	rg/yB
Chickaree	<i>Tamiasciurus douglasi</i>	c/yB
Northern flying squirrel	<i>Glaucomys sabrinus</i>	c/yB
Townsend chipmunk	<i>Eutamias townsendi</i>	c/yB
California ground squirrel	<i>Spermophilus beecheyii</i>	g/yB
Valley pocket gopher	<i>Thomomys bottae</i>	g/yB
Big brown bat	<i>Eptesicus fuscus</i>	grc2/sB?
Silverhaired bat	<i>Lasionycteris noctivagans</i>	grc2/sB?
California myotis	<i>Myotis californicus</i>	grc2/sB?
Long-eared myotis	<i>Myotis evotis</i>	grc2/sB?
Little brown bat	<i>Myotis lucifugus</i>	grc2/sB?
Fringed myotis	<i>Myotis thysanodes</i>	grc2/sB?
Yuma myotis	<i>Myotis yumanensis</i>	grc2/sB?
Long-legged myotis	<i>Myotis volans</i>	grc2/sB?
Townsend's big-eared bat	<i>Plecotus townsendii</i>	grc2/sB?
Hoary bat	<i>Lasiurus cinereus</i>	grc2/sB?
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>	gr/sB?
<u>Birds</u>		
Varied thrush	<i>Ixoreus naevius</i>	crg/yB
American robin	<i>Turdus migratorius</i>	w/yB

Townsend's solitaire	<i>Myadestes townsendi</i>	rc/sN
Swainson's thrush	<i>Catharus ustulatus</i>	rc/B
Hermit thrush	<i>Catharus guttatus</i>	rc2/y
Nashville warbler	<i>Vermivora ruficapilla</i>	rc2/y
Orange-crowned warbler	<i>Vermivora celata</i>	rc2/yB
Macgillivray's warbler	<i>Oporornis tolmiei</i>	r2/s
Yellow warbler	<i>Dendroica petechia</i>	r/sB
Wilson's warbler	<i>Wilsonia pusilla</i>	rc/sB
Townsend's warbler	<i>Dendroica townsendi</i>	rc/sN
Hermit warbler	<i>Dendroica occidentalis</i>	c/sB
Yellow-rumped warbler	<i>Dendroica coronata</i>	rc/y
Common yellowthroat	<i>Geothlypis trichas</i>	r/sB
Yellow-breasted chat	<i>Icteria virens</i>	r/sB
Golden-crowned kinglet	<i>Regulus satrapa</i>	c/yB
Ruby-crowned kinglet	<i>Regulus calendula</i>	rc/sN
Warbling vireo	<i>Vireo gilvus</i>	rc/sB
Hutton's vireo	<i>Vireo huttoni</i>	rc2/yB
Solitary vireo	<i>Vireo solitarius</i>	c/s
Brown creeper	<i>Certhia americana</i>	rc/yB
Chestnut-backed chickadee	<i>Parus rufescens</i>	rc/yB
Black-capped chickadee	<i>Parus atricapillus</i>	r/yB
Red-breasted nuthatch	<i>Sitta canadensis</i>	c/s
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	rc/s
Evening grosbeak	<i>Coccothraustes verspertinus</i>	rc/s
Downy woodpecker	<i>Picoides pubescens</i>	rc/yB
Hairy woodpecker	<i>Picoides villosus</i>	rc/yB
Pileated woodpecker	<i>Dryocopus pileatus</i>	c/yB
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>	rc2/yB
Northern flicker	<i>Colaptes auratus</i>	w/yB
Pacific slope flycatcher	<i>Empidonax difficilis</i>	rc/sB
Willow flycatcher*	<i>Empidonax traillii</i>	r/s
Olive-sided flycatcher	<i>Contopus borealis</i>	c/sB
Western wood-pewee	<i>Contopus sordidulus</i>	rc/sB
Steller's jay	<i>Cyanocitta stelleri</i>	c/yB
Common raven	<i>Corvus corax</i>	w/yB
American crow	<i>Corvus brachyrhynchos</i>	rg/yB
Gray jay	<i>Perisoreus canadensis</i>	c/yB
Common merganser	<i>Mergus merganser</i>	l/yB
Hooded merganser	<i>Lophodytes cucullatus</i>	l/s
Marbled murrelet	<i>Brachyramphus marmoratus</i>	c/yB?
Turkey vulture	<i>Cathartes aura</i>	w/sB
Osprey	<i>Pandion haliaetus</i>	c/sB
Northern goshawk*	<i>Accipiter gentilis</i>	c/?
Sharp-shinned hawk	<i>Accipiter striatus</i>	rc/yB
Cooper's hawk	<i>Accipiter cooperii</i>	rc/yB
Northern harrier	<i>Circus cyaneus</i>	g/yB
Red-tailed hawk	<i>Buteo jamaicensis</i>	2g/yB
Red-shouldered hawk	<i>Buteo lineatus</i>	r/yB
Rough-legged hawk	<i>Buteo lagopus</i>	g/s
American kestrel	<i>Falco sparverius</i>	g2/yB
Merlin	<i>Falco columbarius</i>	rg2/s

White-tailed kite	<i>Elanus leucurus</i>	g/yB
Northern pygmy-owl	<i>Glaucidium gnoma</i>	?c/yB
Northern saw-whet	<i>Aegolius acadicus</i>	?c/yB
Common barn-owl	<i>Tyto alba</i>	g/yB
Great horned owl	<i>Bubo virginianus</i>	w/yB
Western screech owl	<i>Otus kennicottii</i>	rc/yB
Short-eared owl	<i>Asio flammeus</i>	g/s
Spotted owl ^b	<i>Strix occidentalis</i>	c/yB
Barred owl ^b	<i>Strix varia</i>	c/?
Band-tailed pigeon	<i>Columba fasciata</i>	rc/sB
Mourning dove	<i>Zenaida asiatica</i>	g2/yB?
Common nighthawk	<i>Chordeiles minor</i>	g/sB
Great blue heron	<i>Ardea herodias</i>	lrcg/yB?
Great egret	<i>Casmerodius albus</i>	lrg/yB?
Cattle egret	<i>Bubulcus ibis</i>	g/s
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	lrc/yB
Green-backed heron	<i>Butorides striatus</i>	lr/yB
California quail	<i>Callipepla californica</i>	r2c/yB
Ruffed grouse	<i>Bonasa umbellus</i>	rc/yB
Brown-headed cowbird	<i>Molothrus ater</i>	rg2/yB
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	r2/s
House sparrow ^c	<i>Passer domesticus</i>	g/yB
Red crossbill	<i>Loxia curvirostra</i>	c/yB?
Song sparrow	<i>Melospiza melodia</i>	wide/yB
Golden-crowned sparrow	<i>Zonotrichia atricapilla</i>	r2/s
White-throated sparrow	<i>Zonotrichia albicollis</i>	r2/s
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	gr2/yB
Dark-eyed junco	<i>Junco hyemalis</i>	rgc2/yB
Fox sparrow	<i>Passerella iliaca</i>	r2/s
Lincoln's sparrow	<i>Melospiza lincolni</i>	r2/s
Savannah sparrow	<i>Passerculus sandwichensis</i>	g/yB
Chipping sparrow ^b	<i>Spizella passerina</i>	2c/sB?
American goldfinch	<i>Carduelis tristis</i>	g2r/yB
Lesser goldfinch	<i>Carduelis psaltria</i>	g2r/yB
Pine siskin	<i>Carduelis pinus</i>	crg/yB
Lazuli bunting	<i>Passerina amoena</i>	2/sB
Western tanager	<i>Piranga ludoviciana</i>	c2/sB
Western bluebird	<i>Sialia mexicana</i>	rg2/s
House finch	<i>Carpodacus mexicanus</i>	g2/yB
Purple finch	<i>Carpodacus purpureus</i>	rc/yB
Allen's hummingbird	<i>Selasphorus sasin</i>	2r/sB
Anna's hummingbird	<i>Calypte anna</i>	2r/yB
Rufus hummingbird	<i>Selasphorus rufus</i>	2/s
Northern oriole	<i>Icterus galbula</i>	r/sB
Red-winged blackbird	<i>Agelaius phoeniceus</i>	rg/yB
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	g/yB
Cedar waxwing	<i>Bombycilla cedrorum</i>	cr/sB
American dipper	<i>Cinclus mexicanus</i>	l/yB?
European starling ^c	<i>Sturnus vulgaris</i>	wide/yB
Western meadowlark	<i>Sturnella neglecta</i>	g/yB
Barn swallow	<i>Hirundo rustica</i>	g/sB

Violet-green swallow	<i>Tachycineta thalassina</i>	grc/sB
Tree swallow	<i>Tachycineta bicolor</i>	glr/sB
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	lg/sB
Belted kingfisher	<i>Ceryle alcyon</i>	lr/yB
Black phoebe	<i>Sayornis nigricans</i>	glr/yB
American pipit	<i>Anthus rubescens</i>	g/s
Killdeer	<i>Charadrius vociferus</i>	gl/yB
Western sandpiper	<i>Calidris mauri</i>	gl/s
Least sandpiper	<i>Calidris minutilla</i>	gl/s
Pectoral sandpiper	<i>Calidris melanotos</i>	gl/s
Common snipe	<i>Gallinago gallinago</i>	gl/s
Spotted sandpiper	<i>Actitis macularia</i>	l/yB
Winter wren	<i>Troglodytes troglodytes</i>	cr/yB
House wren	<i>Troglodytes aedon</i>	2r/sB
Bewick's wren	<i>Thryomanes bewickii</i>	2r/yB
<u>Fish</u>		
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	1
Coho salmon	<i>Oncorhynchus kisutch</i>	1
Steelhead	<i>Oncorhynchus mykiss</i>	1
Coastal cutthroat trout	<i>Oncorhynchus clarki</i>	1
Chum salmon ^a	<i>Oncorhynchus keta</i>	1
Prickly sculpin	<i>Cottus asper</i>	1
Riffle sculpin	<i>Cottus gulosus</i>	1
Coastrange sculpin	<i>Cottus aleuticus</i>	1
Pacific lamprey	<i>Lampetra tridentata</i>	1
Threespine stickleback	<i>Gasterosteus aculeatus</i>	1

^a Unlikely

^b not reported, but likely

^c nonnative

Appendix B: Special Status Species in Davison Ranch Planning Area

SPECIES	STATUS ¹	LIKELY OCCURRENCE IN DAVISON PLANNING AREA ²
BIRDS		
<i>Accipiter cooperii</i> Cooper's hawk	CSC	Broken woodlands, canyons, river groves ^d
<i>Accipiter striatus</i> sharp-shinned hawk	CSC	Forest, thickets ^e
<i>Asio flammeus</i> short-eared owl	CSC	Prairies, marshes, dunes, irrigated lands ^e
<i>Athene cunicularia</i> burrowing owl (burrowing sites)	CSC	Prairies, seashore dunes ^b
<i>Brachyramphus marmoratus</i> marbled murrelet	FT, SE	Feeds offshore; nests in old-growth forests ^{d, f}
<i>Charadrius alexandrinus nivosus</i> western snowy plover (breeding)	FT, CSC	Beaches, coastal dunes ^b
<i>Circus cyaneus</i> northern harrier	CSC	Marshes, fields, and prairies ^e
<i>Elanus leucurus</i> white-tailed kite	SFP	Open foothills, grasslands, river valleys, marshes ^e
<i>Falco columbarius</i> merlin	CSC	Open areas, coniferous forests ^d
<i>Falco peregrinus anatum</i> American peregrine falcon	FE, SE, SFP	Coastline ^d
<i>Haliaeetus leucocephalus</i> bald eagle	SE, SFP, FT	Coast, lagoons, rivers, and associated mature old-growth forests ^e
<i>Parus atricapillus</i> black-capped chickadee	CSC	Mixed and deciduous woodlands, willow thickets ^d
<i>Progne subis</i> purple martin	CSC	Open or logged forests, towns, farms ^b
<i>Strix occidentalis caurina</i> northern spotted owl	FT, CSC	Old-growth, mature second-growth forests ^d

SPECIES	STATUS ¹	LIKELY OCCURRENCE IN DAVISON PLANNING AREA ²
MAMMALS		
<i>Arborimus albipes</i> white-footed vole	CSC	Dense forests near small streams ^b
<i>Arborimus longicaudus</i> red tree vole	CSC	Spruce, hemlock, fir forests ^b
<i>Martes pennanti pacifica</i> Pacific fisher	CSC	Mixed hardwood forests, cutover wilderness areas ^b
<i>Plecotus townsendii townsendii</i> Townsend's western big-eared bat	CSC	Caves, mine tunnels, old buildings, hollow trees ^c
HERPETOFAUNA		
<i>Clemmys marmorata</i> western pond turtle	CSC	Aquatic habitats and nearby forests, grasslands ^b
<i>Rana aurora aurora</i> northern red-legged frog	CSC	Humid forests, woodlands, grasslands, streamsides ^d
<i>Rana boylei</i> foothill yellow-legged frog	CSC	Woodland, chaparral, or forest streams ^a
FISH		
<i>Oncorhynchus clarki clarki</i> coastal cutthroat trout	FPT, CSC	Streams, rivers, ocean ^d
<i>Oncorhynchus kitsutch</i> coho salmon	FPT, CSC	Streams, rivers, ocean ^d
<i>Oncorhynchus mykiss gairdneri</i> summer steelhead trout	FPT, CSC	Streams, rivers ^b
<i>Oncorhynchus tshawytscha</i> chinook salmon (spring run)	FPT, CSC	Streams, rivers, ocean ^b

1 FE--Federally listed as endangered. Endangered species are those species in danger of extinction throughout all or a significant part of their range

FT--Federally listed as threatened. Threatened species are those that are likely to become endangered within the foreseeable future.

FP- Federally proposed for listing as threatened or endangered.

SE--State listed as endangered

ST--State listed as threatened

CSC--California species of special concern

SFP--Fully protected species

2 Likelihood of occurrence:

a - not likely

b - possible

c - likely

d - record in Redwood National Park wildlife observation database for planning area

e - flyover records

f - known to nest in planning area

Appendix C: Consultation with California State Historic Preservation Officer

CALIFORNIA — THE RESOURCES AGENCY
OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942806
SACRAMENTO 94298-0001
(916) 653-8824
FAX: (916) 653-8824

(916) 653-6624
FAX (916) 653-9824

September 8, 1992

Stanley T. Albright, Regional Director
Western Region
National Park Service
600 Harrison Street, Suite 600
SAN FRANCISCO CA 94107-1372

Re: Evaluation Determination for the Davison Ranch Complex,
Redwood National Park, Humboldt County

Dear Mr. Albright:

Thank you for submitting to our office your July 30, 1992 letter and property evaluation report regarding the possible eligibility of the Davison Ranch Complex for the National Register of Historic Places. We understand that the complex has been purchased by the Redwood National Forest, and that the property is being evaluated under National Register criteria as a step in planning for its future management by the National Park Service.

Based on our review of the submitted documentation, we concur in your finding that this complex does not meet the eligibility criteria for inclusion on the National Register of Historic Places.

Thank you again for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,


Steade R. Craig, A.I.A., Acting
State Historic Preservation Officer

RECEIVED 9/15
FBI
RETE WILSON Governor
NPS920803B

Appendix D: Summary of Impacts

SUMMARY OF MAJOR IMPACTS

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Air Quality	No significant long-term adverse impacts; temporary dust and fumes from construction	Dust from vehicles driving on unpaved sections of Davison Road; no significant long-term impacts	Same as the proposed action	Same as the proposed action	Same as the proposed action
Topography & Soils	Soils disturbed by clearing, grubbing, and grading; soils trampled near high use areas; abandoned roads removed and/or used as trails; 31.5 acres affected by trail construction, with 26.5 acres previously disturbed from use as logging roads; previously disturbed soils affected for B-Mill trailhead and parking (2.2 acres), B-Mill restoration and landscaping (5.6 acres), & equestrian trailhead (1.3 acres)	Abandoned roads removed and sites restored under park ongoing watershed rehabilitation program	New construction for activity center, trailhead, and parking affects 3.7 acres of previously disturbed soils; B-Mill restoration and landscaping affects 5.3 acres; improvement of Davison Road access affects 0.8 acre; other impacts as under the proposed action	New construction for group camp, trailhead, and parking affects 2.5 acres of previously disturbed soils; B-Mill restoration and landscaping affects 5.8 acres; other impacts as under the proposed action	New construction for institute, trailhead, and parking affects 3.0 acres of previously disturbed soils; B-Mill restoration and landscaping affects 4.8 acres; other impacts as under the proposed action

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Water Resources	Short-term increases in turbidity from runoff of disturbed soils prior to revegetation; construction timing and erosion control used to prevent significant adverse impacts; picnic area may generate up to 800 gals. wastewater per day; water quality maintained by adequately sized sewage treatment system and composting bins for horse manure at equestrian trailhead and park stable; timber bridge replaced; social trails adjacent to streams that result in loss of vegetation and streambank erosion prevented by well-marked trails and barriers in high use areas; stream ecology and restoration interpreted	No short-term impacts on water quality from runoff of soils disturbed by construction; runoff from horse manure from park stable may enter Prairie Creek; timber bridge would eventually collapse into Prairie Creek, altering stream dynamics	Visitors receive more in-depth education about stream ecology and restoration than under other alternatives; water use at activity center estimated at 5000 - 6000 gpd; other impacts same as under the proposed action	Water use at group camp estimated at 1500 gpd; other impacts same as under the proposed action	Some institute participants receive more in-depth education about stream ecology & restoration than under other alternatives; water use at institute estimated at up to 3000 gpd; other impacts same as the proposed action

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Floodplains & Wetlands	Barn and maybe bungalow to remain in 100-year floodplain; other structures removed from floodplain; timber bridge replaced by structure with minimal in-stream components; associated road remains a barrier to floodwaters; construction impacts minimized by fencing wetland areas and prohibiting storage of equipment in sensitive areas; construction to occur when soils are dry; wetland impacts total 0.38 acre, 0.28 acre of which is previously disturbed by placement of roads & buildings, or ranching & industrial uses	15 ranch buildings would remain in floodplain; timber bridge would restrict Prairie Creek at all flows; road east of timber bridge would restrict floodwater movement; wetland soils trampled at Davison Road elk viewing area; no wetland or riparian restoration beyond the present 6-acre riparian mitigation program	Floodplain impacts as under the proposed action; Davison Road improvements affect 0.8 acre of previously disturbed wetland soils; plus 0.38 acre of wetland affected as under the proposal; other impacts same as the proposed action	Floodplain impacts as under the proposed action; 0.38 acre of wetland affected as under the proposal; other impacts same as the proposed action	Floodplain impacts as under the proposed action; 0.38 acres of wetland affected as under the proposed action

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Vegetation	No old growth trees to be removed; 4.8 acres of old growth understory affected by construction of 5 miles of trail; remaining 17 miles of trail constructed on abandoned roads with little impact to second growth vegetation; horse trails and developed areas subject to invasion by exotic plants; areas disturbed by construction to be revegetated with native endemic species; approximately 5.6 acres of disturbed riparian and wetland area at the B-Mill deck would be restored or landscaped with native species	No significant construction or use-related impacts; Davison pastures would return to alder & willow & other riparian species without active management but time period is estimated at several hundred years; B-Mill deck asphalt would remain devoid of vegetation; no native plant restoration of Davison Ranch or B-Mill deck would occur beyond present 6-acre riparian mitigation program	Approximately 5.3 acres of disturbed area on the B-Mill deck would be restored or landscaped with native species; other impacts as under the proposed action	Approximately 5.8 acres of disturbed riparian and wetland areas on the B-Mill deck would be restored or landscaped with native species; other impacts as under the proposed action	Approximately 4.8 acres of disturbed riparian and wetland areas on the B-Mill deck would be restored or landscaped with native species; other impacts as under the proposed action

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Wildlife & Fisheries	Increase in disturbance from increased human presence along trails and Prairie Creek riparian zone; mobile human-intolerant wildlife avoid or leave area; some tolerant species such as corvid birds may increase; increased chance of bear-human interactions; amphibian mortality on roads increases; B-Mill restoration slightly increases wildlife habitat; 4.8 acres of old growth understory vegetation removed for trail construction; signs and fencing used to deter humans from approaching elk; instream work periods limited to protect spawning fish	On-going disturbance to wildlife from human presence near roads and buildings but less disturbance than under action alternatives because less people would be on-site; no benefit from restoration of riparian or wetlands habitat; timber bridge would eventually collapse into Prairie Creek, potentially blocking stream to migrating fish	Increase in disturbance from human presence greater than other alternatives during daytime hours; NPS staff present to remind visitors to keep a distance from elk and to educate visitors about bear problems; impacts to habitat from construction same as under the proposal; impacts from trail use greater than other alternatives because activity center expected to attract a greater number of visitors who may use the trails	Increase in disturbance from human presence 24 hours a day when camp is occupied; chance of bear-human interaction greater than other alternatives because human foods present 24 hours daily when camp is occupied; impacts to habitat from construction same as under the proposal	Increase in disturbance from human presence greater than the proposal but less than Alternative 4; NPS or institute staff present to remind visitors to keep a distance from elk and to educate visitors about bear problems; impacts to habitat from construction same as under the proposal

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Threatened & Endangered Species	Northern spotted owls & marbled murrelets primary species of concern; 4.8 acres of undergrowth vegetation in old growth forest disturbed for construction of 5 miles of trail; increased human presence & disturbance along 5 miles of new trails in old growth forests and 16.6 miles in second growth forest; human disturbance greatest in Skunk Cabbage memorial grove trail because of proximity to trailhead; noise disturbance reduced by timing trail construction to avoid USFWS-imposed noise restriction period; trails may be closed if nesting owls or murrelets are discovered near trail	No significant impacts to listed, proposed, or candidate species	Greatest degree of disturbance in Skunk Cabbage memorial groves because activity center expected to attract more visitors to trailhead than other alternatives; impacts on forest habitat from construction same as under the proposed action	Up to 50 visitors on-site next to old-growth forest 24 hours daily but total number of daily visitors less than under activity center alternative; other impacts same as under the proposed action, including impacts on forest habitat from construction	Visitors on-site next to old-growth forest 24 hours daily but would typically be under the guidance of institute or park staff; impacts on habitat from construction same as under the proposed action

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Park Operations	Park horse stable & maybe housing provided at Davison Ranch; trails crew needed to construct & maintain & ranger staff needed to patrol 22 miles of new trail; resource management staff to prepare restoration plan for B-Mill deck; bear management responsibilities of park staff increase with additional visitor use area; custodial services needed for new trailheads; interpreters needed to prepare material and provide programs at trailhead	Park horse stable & maybe housing provided at Davison Ranch; maintenance staff needed to remove deteriorated buildings; rangers needed to patrol trails & respond to requests for assistance	Minimum of 3 additional interpreters needed to staff activity center; custodial & maintenance services increase with addition of large facility; cyclic maintenance costs increase after 5-7 years; other impacts same as under the proposed action	Park staff must administer campground reservation system; ranger staff assume responsibility for protection of campers; bear management responsibilities of park staff increased because human food present 24 hours daily when camp is occupied; other impacts same as under the proposed action	Park staff must develop a Cooperative Agreement to operate institute; other impacts same as under the proposed action

Resource Affected	Alternative 1-Trails (Proposed Action)	Alternative 2- No Action	Alternative 3-Activity Center	Alternative 4-Group Camp	Alternative 5- Redwood Institute
Visitor Use & Experience, & Local Community	22 miles of new trails separate user groups to reduce conflicts; B-Mill trailhead provides single access point to significant park resources & ties in with other national & state park trails; 3.2-mile paved trail improves bicyclist safety & park experience; wildlife viewing blinds allow visitors to watch wildlife unobserved; offroad parking at elk viewing area useable even in wet weather; park staff not always present to remind visitors about elk & bear safety	Visitor facilities at Davison Ranch limited to elk viewing parking area adjacent to road and memorial grove loop trail; Robinson Road coastal trail access remains with poor sight distance; bicyclists share narrow highway with vehicles; no trailhead or restrooms provided; asphalt remains on B-Mill deck; no riparian or wetland restoration; elk viewing area becomes muddy after rain; timber bridge & ranch buildings allowed to deteriorate, posing a risk to human health & safety; interpretation of Davison Ranch resources limited to wayside at elk viewing area	Greatest variety of interpretive services under this alternative; major visitor facility with ample space & parking close to old growth & stream; sustainable practices incorporated into construction & operation of facility & interpreted for visitors; building designed to blend into & complement natural scene; other impacts on visitor experience same as the proposal; anticipated economic benefit to Orick greater than under the proposed action because visitors expected to remain in area slightly longer	Increases group camping facilities available on north coast; disturbance to individual campers lessened by providing separate group camp; sleeping shelters increase utility of camp in inclement weather; evening programs available under this alternative to all nearby campers, increasing the variety of programs; lack of computerized reservation system frustrating to some visitors; other impacts on visitor experience same as under the proposed action; economic benefit to Orick from campers purchasing supplies	Visitors who participate in institute programs receive more in-depth information about park resources than other park visitors; participation in most institute programs may be limited to visitors who preregister, so that visitors passing through may be unaware of & excluded from opportunity; other impacts same as under the proposed action; visitors purchase food, gas, & gifts from Orick businesses

Appendix E: Cost Estimates

CONSTRUCTION COSTS

DEVELOPMENT ITEM AND QUANTITY	GROSS CONSTRUCTION ESTIMATE ¹	CONSTRUCTION PLANNING	TOTAL CONSTRUCTION ESTIMATE ²
ALTERNATIVE 1 THE PROPOSED ACTION			\$4,426,300
Roads and Parking			
B-Mill Access Road (0.34 mi)	367,500	70,000	437,500
Truck Shop Access Road (0.46 mi)	497,100	94,500	591,600
Equestrian Trailhead Access Road (0.01 mi)	10,800	2,100	12,900
Wolf Creek Access Road (0.02 mi)	216,200	41,300	257,500
B-Mill Trailhead Parking (25 cars, 15 pull-through spaces)	186,700	35,600	222,300
Equestrian Trailhead Parking (5 pull-through spaces)	39,300	7,500	46,800
Trails			
Hiking (6.57 mi)	262,300	50,100	312,400
Biking and Hiking - unpaved (3.94 mi)	173,800	33,200	207,000
Biking and Hiking - paved (2.42 mi)	331,300	63,200	394,500
Equestrian and Hiking (8.52 mi)	417,100	79,600	496,700
Bridges (2)	204,400	39,000	243,400
Gates (5)	19,700	3,800	23,500

DEVELOPMENT ITEM AND QUANTITY	GROSS CONSTRUCTION ESTIMATE ¹	CONSTRUCTION PLANNING	TOTAL CONSTRUCTION ESTIMATE ²
Site Facilities and Amenities			
Comfort Station	144,100	27,500	171,600
Chemical Toilets	32,800	6,300	39,100
Wayside Exhibits	91,700	17,500	109,200
Site Furnishings (picnic tables, trash cans, etc.)	39,300	7,500	46,800
Kiosk	65,500	12,500	78,000
Equestrian Trail Appurtenances	65,500	12,500	78,000
Trail Gateway	19,700	3,800	23,500
Signs	78,600	15,000	93,600
Rehabilitated Structures 1926 Bungalow (2880 sf)	264,100	50,400	314,500
Landscape Restoration B-Mill Deck (5.6 ac)	58,700	11,200	69,900
Building Demolition	131,000	25,000	156,000
ALTERNATIVE 3			\$11,456,200
Roads and Parking			
B-Mill Access Road (0.34 mi)	367,000	70,000	437,500
Truck Shop Access Road (0.46 mi)	497,100	94,500	591,600
B-Mill Access Road Grasscrete (2000 sy)	157,200	30,000	187,200

DEVELOPMENT ITEM AND QUANTITY	GROSS CONSTRUCTION ESTIMATE ¹	CONSTRUCTION PLANNING	TOTAL CONSTRUCTION ESTIMATE ²
Equestrian Trailhead Access Road (0.01 mi)	10,800	2,100	12,900
Wolf Creek Access Road (0.02 mi)	216,200	41,300	257,500
B-Mill Trailhead Parking (70 car, 15 pull-through spaces)	379,900	72,500	452,400
Equestrian Trailhead Parking (5 pull-through spaces)	39,300	7,500	46,800
Trails			
Hiking (6.57 mi)	262,300	50,100	312,400
Biking and Hiking - unpaved (3.94 mi)	173,800	33,200	207,000
Biking and Hiking - paved (2.42 mi)	331,300	63,200	394,500
Equestrian and Hiking (8.52 mi)	417,100	79,600	496,700
Bridges (2)	204,400	39,000	243,400
Gates (5)	19,700	3,800	23,500
Site Facilities and Amenities			
Activity Center (12,000 sf)	3,458,400	660,000	4,118,400
Activity Center Furnishings (15% of net cost)	518,800	99,000	617,800
Activity Center Exhibits (50% of net cost)	1,729,200	330,000	2,059,200
Chemical Toilets	32,800	6,300	39,100
Wayside Exhibits	91,700	17,500	109,200
Site Furnishings	78,600	15,000	93,600
Equestrian Trail Appurtenances	65,500	12,500	78,000

DEVELOPMENT ITEM AND QUANTITY	GROSS CONSTRUCTION ESTIMATE ¹	CONSTRUCTION PLANNING	TOTAL CONSTRUCTION ESTIMATE ²
Trail Gateway	39,300	8,000	47,300
Signs	78,600	15,000	93,600
Rehabilitated Structures			
1926 Bungalow (2880 sf)	264,100	50,400	314,500
Landscape Restoration			
B-Mill Deck (5.3 ac)	55,500	10,600	66,100
Building Demolition	131,000	25,000	156,000
ALTERNATIVE 4			\$4,813,600
Roads and Parking			
B-Mill Access Road (0.34 mi)	367,500	70,000	437,500
Truck Shop Access Road (0.46 mi)	497,100	94,500	591,600
Equestrian Trail Access Road (0.01 mi)	10,800	2,100	12,900
Wolf Creek Access Road (0.02 mi)	216,200	41,300	257,500
B-Mill Trailhead Parking (40 cars, 15 pull-through spaces)	201,100	38,400	239,500
Equestrian Trailhead Parking (5 pull-through spaces)	39,300	7,500	46,800
Trails			
Hiking (6.57 mi)	262,300	50,100	312,400

DEVELOPMENT ITEM AND QUANTITY	GROSS CONSTRUCTION ESTIMATE ¹	CONSTRUCTION PLANNING	TOTAL CONSTRUCTION ESTIMATE ²
Biking and Hiking - unpaved (3.94 mi)	173,800	33,200	207,000
Biking and Hiking - paved (2.42 mi)	331,300	63,200	394,500
Equestrian and Hiking (8.52 mi)	417,100	79,600	496,700
Boardwalk on-grade (0.19 mi)	126,200	24,100	150,300
above-grade (0.27 mi)	523,000	99,800	622,800
Bridges (2)	204,400	39,000	243,400
Gates (5)	19,500	3,800	23,500
Site Facilities and Amenities			
Group Camps (2) (sheltered cooking and meeting areas)	99,600	19,000	118,600
Sleeping Shelters (10 @ 144 sf)	169,800	32,400	202,200
Comfort Station	144,100	27,500	171,600
Chemical Toilets	32,800	6,300	39,100
Wayside Exhibits	91,700	17,500	109,200
Site Furnishings	78,600	15,000	93,600
Kiosk	65,500	12,500	78,000
Trail Gateway	19,700	3,800	23,500
Signs	78,600	15,000	93,600
Rehabilitated Structures 1926 Bungalow (2880 sf)	264,100	50,400	314,500

DEVELOPMENT ITEM AND QUANTITY	GROSS CONSTRUCTION ESTIMATE ¹	CONSTRUCTION PLANNING	TOTAL CONSTRUCTION ESTIMATE ²
Landscape Restoration			
B-Mill Deck (5.8 ac)	60,800	11,600	72,400
Building Demolition	131,000	25,000	156,000
ALTERNATIVE 5			
			\$6,971,600
Roads and Parking			
B-Mill Access Road (0.34 mi)	367,500	70,000	437,500
Truck Shop Access Road (0.46 mi)	497,100	94,500	591,600
Equestrian Trailhead Access Road (0.01 mi)	10,800	2,100	12,900
Wolf Creek Access Road (0.02 mi)	216,000	41,300	257,500
B-Mill Trailhead Parking (50 cars, 17 pull-through spaces)	365,200	69,700	434,900
Equestrian Trailhead Parking (5 pull-through spaces)	39,300	7,500	46,800
Trails			
Hiking (6.57 mi)	262,300	50,100	312,400
Biking and Hiking - unpaved (3.94 mi)	173,800	33,200	207,000
Biking and Hiking - paved (2.42 mi)	331,300	63,200	394,500
Equestrian and Hiking (8.52 mi)	417,100	79,600	496,700
Bridges (2)	204,400	39,000	243,400
Gates (5)	19,700	3,800	23,500

DEVELOPMENT ITEM AND QUANTITY	GROSS CONSTRUCTION ESTIMATE ¹	CONSTRUCTION PLANNING	TOTAL CONSTRUCTION ESTIMATE ²
Redwood Institute (7000 sf)	1,238,000	236,300	1,474,300
Site Facilities and Amenities			
Redwood Institute Furnishings (15% of net cost)	222,700	42,500	265,200
Cabins (6 @ 625 sf)	466,800	89,100	555,900
Cabin Furnishings	39,300	8,000	47,300
Comfort Station	144,100	27,500	171,600
Chemical Toilets	32,800	6,300	39,100
Wayside Exhibits	91,700	17,500	109,200
Site Furnishings	39,300	7,500	46,800
Kiosk	65,500	12,500	78,000
Trail Gateway	19,700	3,800	23,500
Signs	78,600	15,000	93,600
Rehabilitated Structures 1926 Bungalow (2880 sf)	264,100	50,400	314,500
Landscape Restoration B-Mill Deck (4.8 ac)	50,300	9,600	59,900
Building Demolition	131,000	25,000	156,000

1 - Includes 31% contingency and construction supervision.

2 - Based on NPS Class "C" estimates projected through 1996.

ANNUAL OPERATING COSTS

COST ELEMENT		Alternative 1(The Proposal) - Trails	Alternative 3 - Activity Center	Alternative 4 - Group Camp	Alternative 5 - Redwood Institute
Personnel ¹		\$68,400	\$175,000	\$75,000	\$81,000
Vehicles ²		\$9,600	\$9,600	\$9,600	\$9,600
Building and Utilities Maintenance	Supplies and Materials	\$3,000	\$12,000	\$5,000	\$3,000
	Utility Costs	\$1,000	\$22,000	\$2,000	\$2,000
Custodial and Grounds Maintenance ³		\$2,500	\$5,000	\$3,400	\$3,400
Roads and Trails Maintenance ³		\$3,000	\$3,000	\$3,000	\$3,000
Wetland Monitoring ⁴		(\$7,900)	(\$7,900)	(\$7,900)	(\$7,900)
TOTAL COSTS		\$87,500	\$226,600	\$98,000	\$102,000

1 - Personnel costs calculated using 1995 salary schedule for GS 5/4, GS 9/4, and WG 7/4 full time equivalent (FTE). Costs include Administration (0.2 FTE for alternatives 2 & 4; 0.1 FTE for alternatives 1 & 3); Protection Ranger (0.1 FTE for alternatives 2, 4, & 5; 0.2 FTE for alternative 3); Wildlife Biologist (0.25 FTE for all alternatives); Botanist (0.25 FTE for all alternatives); Interpretive Ranger (0.2 FTE for alternative 2; 3.0 FTE for alternative 3; 0.1 FTE for alternatives 4 & 5); Maintenance Worker (1.6 FTE for alternative 2; 3.1 FTE for alternative 3; 1.85 FTE for alternative 4; 2.0 FTE for alternative 5).

2 - Includes GSA rental costs and mileage.

3 - Supplies and materials.

4 - Costs for vegetation and wildlife monitoring are shown here but are included in personnel costs.

FINDING OF NO SIGNIFICANT IMPACT

Davison Ranch Development Concept Plan

REDWOOD NATIONAL AND STATE PARKS Humboldt County, California

This Finding of No Significant Impact (FONSI) is an appendix to the August 1996 *Davison Ranch Final Development Concept Plan and Environmental Assessment*. If you do not have a copy of the final plan, the FONSI should be attached to the May 1995 *Davison Ranch Draft Development Concept Plan and Environmental Assessment*. This FONSI includes a description of changes made to the final plan based on public comments on the draft plan.

DESCRIPTION OF THE PROPOSAL

The National Park Service (NPS) proposes to construct facilities for visitor use and park administration, and undertake restoration of wetland and riparian areas in the vicinity of Davison Ranch in Redwood National and State Parks.

The purpose of this proposal is to protect the park values and resources of Davison Ranch and the surrounding parklands, to interpret those resources for visitors, to restore wetland and riparian areas affected by past land uses, and to provide facilities to serve visitor and park operational needs.

Five alternatives were evaluated in the May 1995 draft plan and environmental assessment:

- 1) No Action
- 2) Alternative 2 : Trails
- 3) Alternative 3 : Activity Center
- 4) Alternative 4 : Group Camp
- 5) Alternative 5 : Redwood Institute

Alternatives have been renumbered in the final plan: Alternative 1 (Trails) is the final proposal (the proposed action) and the No Action alternative is Alternative 2.

In the draft plan, the NPS proposed that development of most new facilities would occur three miles north of the town of Orick on the B-Mill Deck, the site of a former logging mill south of Davison Road and adjacent to Davison Ranch. The final proposed action (draft Alternative 2: Trails) includes the development of 22 miles of new hiking, bicycling, and equestrian trails primarily to the south and west of Davison Ranch; a trailhead for hikers and bicyclists on the B-Mill Deck; a separate equestrian trailhead near the hay barn at Davison Ranch; restrooms, picnicking, and interpretive facilities for visitors; adaptive reuse of the Davison Ranch hay barn, possible adaptive reuse of the non-historic 1926 bungalow if economically feasible, and removal of other buildings at Davison Ranch; and restoration and landscaping of 5.6 acres of riparian and wetland areas.

Under other alternatives, proposed uses of the B-Mill site included a large multipurpose visitor activity center (Alternative 3); a group camp that would accommodate 50 people (Alternative 4); or a "Redwood Institute" where scientists working on projects related to park resources would share their knowledge with institute guests who would be provided with overnight accommodations (Alternative 5).

While the draft plan was in press in May 1995, the NPS received confirmation that general management planning would begin in the fall of 1995. To prevent the recommendations in the draft plan from limiting possible options in the broader plan, while preserving possible non-park sources of funding for some aspects of the plan, the NPS changed the draft preferred alternative from Alternative 3 (Activity Center) to Alternative 2 (Trails). A new General Management Plan/General Plan (GMP/GP) for Redwood National and State Parks is expected to be completed by 1998.

Based on public comments on the Davison Ranch Draft Development Concept Plan, the NPS has modified the draft proposal in the following ways. The existing Skunk Cabbage Coastal Trail trailhead will be retained for public use, rather than closed as proposed in the draft plan. A new trail from the B-Mill trailhead along the north side of Skunk Cabbage Creek will be constructed as described in the draft plan but the NPS will construct a connection across the mouth of Skunk Cabbage Creek to the existing Skunk Cabbage trail only if such a connection can be developed without adverse impacts to floodplains and wetlands and at a reasonable cost. The connection between the Coastal Trail and the East Side Trail via the hillslope immediately east of Berry Glen through second growth forest to Lady Bird Johnson Grove will be considered in more detail in the GMP/GP in relation to acquisition of other lands in the highway corridor. Handicapped access to Skunk Cabbage Dedicated Groves will not be provided via the 205 Road. Increased opportunities for handicapped access to redwood groves and other significant park resources will be considered parkwide in the GMP/GP.

The NPS also modified the draft proposal based on the completion of the delineation of the 100-year floodplain of Prairie Creek. All buildings at Davison Ranch are within the 100-year floodplain. In the draft plan, the NPS proposed to adaptively reuse the 1926 bungalow as employee housing. Using the bungalow for park housing could potentially expose residents to a flood hazard. Therefore, the proposed action will include adaptive reuse of the bungalow as housing only if the flood hazard can be mitigated and safety of residents assured, at a reasonable cost, as described in the attached Statement of Findings. Before removing the bungalow, the NPS will investigate other uses for the bungalow that can be provided at a reasonable cost and contribute to a positive visitor experience at Davison Ranch.

The route of the Prairie Creek hike/bike trail segment that passes through private land at the truck shop as described in the draft plan was to the east of the shop and west of, and adjacent to, Prairie Creek. This route would have required almost 0.5 mile of boardwalk to reduce or eliminate impacts to wetlands. Under the final proposed action, this segment of trail will remain on the 200 Road and pass to the west of the shop, away from Prairie Creek. The truck shop access road will be paved from Davison Road to the shop, with the pavement continuing onto Road 200 as the pavement of the bike/hike trail. Either route around the shop requires that the landowner grant the park a trail easement. The landowner has agreed to grant an easement and is engaging in final discussions with the NPS for the conditions of the easement.

A complete description of the proposed action, along with all alternatives originally considered and the environmental consequences of the alternatives, may be found in the 1996 *Davison Ranch Final Development Concept Plan and Environmental Assessment*.

SUMMARY OF PUBLIC REVIEW AND AVAILABILITY

The environmental assessment was released July 11, 1995 for a 70-day public review period which ended September 18, 1995. A total of 114 copies were mailed to federal, state, and local agencies, elected officials, regional conservation groups, local business organizations, and private citizens. Copies were also available at local municipal and college libraries, and NPS offices in Crescent City, Orick, Arcata, and Eureka.

Written comments on the proposal were received from the U. S. Army Corps of Engineers, the U.S. Department of the Interior Fish and Wildlife Service (FWS), the California Governor's Office of Planning and Research (State Clearinghouse), the California Department of Transportation, the Resource Agency of California, the California State Office of Historic Preservation, the Sierra Club Redwood Chapter North Group, and 10 private citizens.

The State Clearinghouse acknowledged that compliance with the California Environmental Quality Act was complete. Neither the California Department of Transportation nor the Resources Agency offered comments.

The NPS has considered the other comments and offer the following responses.

The NPS concurs with the California State Office of Historic Preservation that any future actions undertaken as part of this plan will be in accord with the 1990 Programmatic Agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. Cultural resources will be inventoried during the design phase for trail development and for any other actions outside the immediate area of the Davison Ranch complex.

The U.S. Army Corps of Engineers commented that the goal of wetland and riparian restoration, including recreation of a stream and associated riparian and wetland areas on the B-Mill deck, is consistent with the Corps' regulatory mandate under the Clean Water Act and the Rivers and Harbors Act, and that construction of some portions of the Prairie Creek bike/hike trail, e.g., trail bridges, may require Department of the Army authorization. As recommended by the Corps, the NPS is consulting with the Corps' Eureka office prior to applying for any permits.

The FWS commented that the NPS should initiate consultation on the proposed action under Section 7 of the Endangered Species Act of 1973, as amended. The NPS acknowledges the need to consult on all site-specific actions that might affect listed species, specifically the marbled murrelet and the northern spotted owl. The NPS initiated informal consultation on the proposed action in January 1996. The NPS will continue consultation on a site-specific basis prior to, and during implementation of, all portions of the plan. The cumulative impacts of visitor use on areas inhabited by the murrelet and owl will be addressed for the parks as a whole during the upcoming revision of the GMP/GP. Tree removal and understory habitat disturbance will be minimal under the proposed action; no old growth trees will be removed. The NPS will avoid noise disturbance to murrelets and owls by using hand tools or scheduling work outside of the noise restriction periods established to protect breeding individuals of each species. The FWS also requested that the NPS consider the effects of the proposal on the endangered tidewater goby, which at one time inhabited the Redwood Creek estuary, three miles downstream of the planning area. Adverse impacts to water quality of Prairie Creek will be prevented by confining any instream work to periods of low flow, and by use of standard erosion control techniques to avoid introducing into the creek sediment that could move several miles downstream and affect gobies in the north slough of the Redwood Creek estuary. No gobies were found in recent surveys of the estuary. Because of the distance between the project site and other locations mentioned by the FWS, there would be no effects on

tidewater gobies in any of these locations. No other federally or state listed or proposed threatened or endangered species will be affected by the proposal.

The Sierra Club Redwood Chapter North Group commented that implementing proposals such as horse trails might limit options that would be better considered in the larger public forum available during the GMP/GP process. The group recommended that consideration of horse use in the parks outside the west side of the Redwood Creek basin be postponed for consideration during the GMP/GP process. The NPS is assigning the lowest trail construction priority to horse trails as proposed in the plan but feels that horse use is appropriate in the area and that the impacts to resources are minimal. The GMP/GP revision will address the issue of horse use in other areas of the parks outside the west side of the Redwood Creek basin.

The Sierra Club also requested that the NPS reconsider retaining ranch buildings that could be used to interpret ranching history, e.g., milking barn, dairy, and the McDonald house, and recommended that a cultural landscape study be prepared to determine the importance of these structures for interpretation. In addition to the Sierra Club, three private individuals suggested that selected ranch buildings be preserved and interpreted. Another individual supported interpretation of ranching history but did not specify preservation of ranch buildings as part of that interpretation. The NPS will examine ways to interpret early settlement of the area and its effect on the natural environment. However, other historic structures have greater significance, as evidenced by their eligibility for inclusion in the National Register of Historic Places, and as such, have a higher priority for preservation and interpretation. Fiscal constraints severely limit the ability of the NPS to operate and maintain structures that are not essential to the protection of resources or public enjoyment of the resources and values of the parks.

Mountain biking was opposed by one commenter, who was specifically opposed to mountain biking in old growth forests, but generally supported by the local Sierra Club, provided the trails utilize old logging roads through previously disturbed areas and are designed with sufficient corridor width and sight distance to avoid user conflicts. The NPS will assign a higher priority to construction of mountain bike trails than horse trails, but the highest priority is construction of hiking trails, including the completion of trails described in the 1984 Backcountry Trails Plan for Redwood and Skunk Cabbage Creeks.

Mr. Steve Lau provided extensive comments on trail locations and clarification of some elements of the 1984 trail plan, of which he was a primary author. Trail locations and connections, especially the connection between the Coastal Trail and the East Side Trail, will be considered in much greater detail as part of the GMP/GP process, in conjunction with acquisition of land and as funding for construction becomes available.

Six individuals supported the development of trails although three of the six were opposed to horse trails, and two of those opposed mountain bike trails as well. One individual opposed development of an activity center (Alternative 3) on the B-Mill deck, but two others supported that type of development. A group camp (Alternative 4) at Davison Ranch was favored by one individual to replace the former use of the site as a group camp by a church group and because such a facility could serve equestrian groups in conjunction with the trailhead and trails. Three individuals were opposed to a group camp or a Redwood Institute (Alternative 5) because these facilities would serve only a small number of visitors rather than

the general public. The NPS acknowledges these comments, and will take them into account as alternatives for the GMP/GP are developed.

IMPACTS AND MITIGATION

The mitigation matrix that follows this FONSI summarizes the mitigating measures identified and analyzed in the environmental assessment. The staff of Redwood National and State Parks is responsible for carrying out all the mitigation presently identified.

The environmental assessment and attached Statement of Findings indicate that the proposal will have no adverse impacts to significant cultural resources or new adverse impacts to floodplains. Removal of ranch buildings and bridge piers, and construction of a new bridge with a larger span, will be beneficial to the Prairie Creek floodplain. The NPS has consulted with the FWS under Section 7 of the Endangered Species Act to develop measures listed in the mitigation matrix to avoid or minimize impacts to northern spotted owls and marbled murrelets. No other listed or proposed threatened or endangered species would be affected by this proposal. As discussed in the Statement of Findings, about 0.28 acre of previously disturbed wetlands will be affected by the proposal. Mitigation for wetland impacts will be determined in consultation with the US Army Corps of Engineers and the FWS. About 5 acres of wetlands and riparian areas surrounding Davison Ranch and on the B-Mill Deck will be restored or landscaped with native plants.

CONCLUSION

Based on the environmental assessment and analyses of issues and alternatives, together with analyses of public response and the ability of the mitigation measures to reduce or eliminate adverse impacts, the NPS is implementing the proposed action as described in the 1996 *Davison Ranch Final Development Concept Plan*. It is the determination of the NPS that the proposed action is not a major federal action significantly affecting the quality of the human environment. Neither is the proposed action without precedent or similar to one that normally requires an environmental impact statement. Therefore, in compliance with the National Environmental Policy Act, an environmental impact statement will not be prepared.

Recommended:

Andrew T. Rissold 10/8/96
Superintendent, Redwood National and State Parks date

Approved:

Stanley T. Allright 10/28/96
Field Director, Pacific West Area, National Park Service date

MITIGATION MATRIX

All mitigation actions are the responsibility of the staff of Redwood National and State Parks. The amount and location of land that will be disturbed by construction and areas that will be restored, revegetated, and landscaped are estimates based on conceptual drawings.

Impact	Mitigation
Soils and Topography: Approximately 31.5 acres of soils would be affected by trail construction; 5 acres are new disturbance. Approximately 7.8 acres on B-Mill Deck will be re-disturbed during removal of asphalt.	New disturbance to soils for trail construction is unavoidable. Of 7.8 previously disturbed acres at the B-Mill Deck, about 5.6 acres will be restored and landscaped.
Water Quality: Short-term increases in turbidity in streams adjacent to disturbed soils are expected until revegetation occurs. Removal and replacement of the Prairie Creek timber bridge and construction of the Streelow Creek bridge will disturb stream banks and channels. Horse manure at Davison Ranch may be a source of pollution to Prairie Creek near Davison Road.	Use of erosion control techniques such as mulching or matting adjacent to sensitive streamside areas will reduce sedimentation and turbidity. In-stream work will be conducted at low-flow periods. Silt fencing or other instream sedimentation prevention techniques will be used. Revegetation and landscaping will proceed as quickly as possible to reduce the time soils are exposed to erosion. Composting bins at equestrian areas will be provided to avoid manure that may run off into Prairie Creek.
Wetlands: Approximately 0.28 acre (ac) of previously disturbed wetlands will be affected by construction of an elk viewing area adjacent to Davison Road (0.25 ac), bridge removal and replacement at Prairie and Streelow creeks (0.03 ac). If funding is available and construction is feasible, an additional 0.1 ac will be disturbed for a hiking trail boardwalk at the mouth of Skunk Cabbage Creek.	Impacts to wetlands will be mitigated as prescribed by the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Mitigation includes restoration and interpretation. Wetlands will be restored in the Davison Ranch pastures and re-created on the B-Mill deck.

Vegetation: No old growth trees will be affected. About 5 non-contiguous acres of understory in the old growth forest will be affected by trail construction. Trail maintenance will include brushing trails to keep a clear path.	Removal and brushing of understory vegetation for trail construction and future maintenance is unavoidable. Visitors will be able to follow trails more easily if they are maintained. Riparian and wetland vegetation will increase after restoration and revegetation of approximately 5 acres.
Wildlife and Fisheries: There will be a minor increase in disturbance to wildlife along trail corridors. Increased human presence will attract bears to an unnatural food source. Visitors may attempt to get close to elk in Davison pastures. Bridge construction will cause minor disturbance to stream banks and channels.	Bear-proof garbage cans will be provided at trailheads and picnic area. Visitors will be warned not to approach elk and to keep human food away from bears. Restoration of about 5 acres of wetlands and riparian areas will benefit terrestrial and aquatic wildlife. Instream work will be done at low flow periods and will incorporate erosion control techniques.
Threatened and Endangered Species: Noise and human activity may affect northern spotted owls and marbled murrelets during the breeding seasons. Visitor use may also result in noise and disturbance during the breeding seasons. Corvid predators on owls and murrelets may use trails as flight paths and be attracted to areas where humans leave garbage.	The NPS is consulting informally with the FWS. A work schedule will be established to avoid adverse effects on both species from noise. Trails may be closed during the breeding season to avoid noise disturbance or to reduce the possibility that corvids would be attracted. Interpretation of the redwood forest ecosystem will increase visitors' appreciation of old-growth dependent species and may result in more long-term protection.
Cultural Resources: The proposed project will have no effects on any properties listed on or eligible for listing in the National Register of Historic Places, the State Historical Landmarks, and Points of Historical Interest or the California Register of Historical Resources. The archeological sensitivity of old growth and logged forest is low and no significant cultural resources are expected to be encountered during trail construction.	If cultural resources are encountered during the implementation of the project, work would be suspended at the find until the national park archaeologist evaluates the materials and offers recommendations for further action. Crews working on construction projects will be oriented in artifact recognition.

Appendix G: Statement of Findings - Wetlands and Floodplains

STATEMENT OF FINDINGS WETLANDS AND FLOODPLAINS

Davison Ranch Development Concept Plan

REDWOOD NATIONAL AND STATE PARKS Humboldt County, California

In accordance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands) and National Park Service Guidelines for implementing the orders, the National Park Service (NPS) has reviewed alternatives for the management of resources and provision of visitor facilities at Davison Ranch and adjacent parklands. The course of action selected for implementation is the only practicable alternative in view of the possibilities for restoration of parklands affected by past land uses and disturbance, the need to provide facilities for visitor use and enjoyment of the parks, and the need for facilities to serve park administrative needs.

DESCRIPTION OF THE PROPOSAL

The NPS proposes to remove 7.8 acres of asphalt from the B-Mill deck, restore and landscape up to 5.6 acres of riparian and wetland habitat, and construct a trailhead with restrooms for visitors and parking for 40 vehicles on the remaining 2.2 acres; to remove a deteriorated vehicle bridge across Prairie Creek and replace it with a trail bridge; to construct a new trail bridge on the site of a former vehicle bridge across Steelow Creek, a tributary of Prairie Creek three miles upstream of the Prairie Creek bridge site; and to construct two hard-surfaced parking areas along the shoulders of Davison Road. A new trail from the B-Mill trailhead along the north side of Skunk Cabbage Creek will be constructed, but the NPS will construct a connection across the mouth of Skunk Cabbage Creek to the existing trail along the south side of the creek only if such a connection can be developed without adverse impacts to floodplains and wetlands, and at a reasonable cost. An existing house will be renovated for use as employee housing, provided it is cost-effective. These actions are part of a larger proposal described in the 1996 Davison Ranch Development Concept Plan to protect, restore, and interpret park resources, and provide facilities for visitor use at Davison Ranch and surrounding parklands in the southwestern part of Redwood National and State Parks.

The purposes of the project are to restore and re-create the wetland and riparian functions of disturbed lands on the B-Mill deck by removing asphalt, reconstructing a buried stream channel, and restoring adjacent riparian and wetland areas; to provide facilities for visitors to view elk safely along Davison Road; to provide trails and a trailhead for visitors from which they can explore and enjoy the parks; and to provide interpretation of wetland and riparian restoration projects to visitors.

ALTERNATIVES CONSIDERED IN THE DEVELOPMENT CONCEPT PLAN

A draft development concept plan and environmental assessment evaluated five alternatives:

- 1) No Action
- 2) Alternative 2 : Trails (Preferred Alternative)
- 3) Alternative 3 : Activity Center
- 4) Alternative 4 : Group Camp
- 5) Alternative 5 : Redwood Institute

Based on public review and comment, the NPS selected Alternative 2 of the draft plan as its proposed action. The proposed action presented in the final Development Concept Plan was slightly modified based on public comments on the draft plan. None of the modifications affects wetlands described in this Statement of Findings.

Under the proposed action, 22 miles of new hiking, biking, and equestrian trails will be constructed. A trailhead to serve hikers and bicyclists will be constructed on the B-Mill deck. An equestrian trailhead will be constructed near the barn at Davison Ranch.

FLOODPLAINS

The proposed action includes use of a 1926 bungalow as employee housing. On-site housing will improve the security for park facilities nearby and reduce the chances of vandalism to park resources. Adequate housing is scarce in the nearest community, but the community would like to see more park employees living nearby. The final decision for retaining or removing the bungalow will depend on the cost of remodeling required to meet all health and safety codes. The bungalow is within the 100-year floodplain. Should the bungalow be retained as housing, the NPS will define the set of conditions that indicate flood risk, develop an emergency evacuation system to warn occupants of the house about the impending risk, and establish procedures for evacuation.

The preliminary floodplain determination indicates that the house would be standing in approximately 2 feet of water during the 100-year flood. Flood velocities at this site are calculated to be between 1.2 and 1.5 feet per second. The calculated velocity is an average for an entire channel cross-section and may be lower at the margin where the house is located than at the center of the stream channel. The levee along the west bank of Prairie Creek and the riparian vegetation adjacent to the creek decrease the velocity of flood waters outside the center of the channel. The house has been subjected to numerous floods since its construction. The levees were constructed to reduce the incidence of flooding, and are effective for floods of less than a ten-year recurrence interval.

The proposed Prairie Creek bike/hike trail will be constructed on an abandoned logging road. The road crosses Prairie Creek on a timber bridge that will be removed and replaced with a new structure. The new bridge will be supported on three piers; the existing bridge is supported by 90 timber pilings. The new structure will reduce adverse impacts to the floodplain that result from restriction of floodwaters by the piers. The bike/hike trail will continue along the existing road, which is an earthen causeway about 6-8 feet above ground level, and join U.S. Highway 101 several hundred feet east of the bridge. The trail will be constructed on the causeway. An analysis of the 100-year flood indicates that the causeway probably restricts free flow of floodwaters through this area, and elevates floodwaters during a large flood. The causeway is constructed as fill in wetlands. Any alteration to the existing drainage system in this area could affect private property north of Davison Road and the adjacent highway. The NPS will investigate the possibility of removing the causeway and restoring a free flow of floodwaters, and will take into account the effects of causway removal on adjacent properties.

None of the other proposed actions are subject to the NPS Floodplain Management Guidelines.

WETLANDS AFFECTED BY THE PROPOSED ACTION

Three wetland areas will be affected by this project. The total area affected is 0.28 acre. An additional 0.1 acre of wetland will be affected if the NPS constructs a trail connection between the existing Skunk Cabbage trail on the south side of the creek and the proposed new trail on the north side of Skunk Cabbage Creek. This Statement

of Findings addresses the Skunk Cabbage trail connection on a conceptual level; additional site reconnaissance is needed to determine the feasibility of the conceptual design proposal. The connection would cross the mouth of the creek as a boardwalk about 1000 feet long. The NPS will construct the connection only if sufficient funding is available and if a boardwalk could be designed that would not adversely affect either the wetlands or the floodplain at the mouth of Skunk Cabbage Creek. Removal of the causeway and restoration of underlying wetlands between the Prairie Creek bridge and U.S. Highway 101 will also be investigated in the future if funding is available.

At this time, the NPS has begun preliminary design work for three proposed actions that will affect wetlands.

- 1) Prairie Creek (0.02 acre): The banks of Prairie Creek and adjacent wetlands will be affected by removal of a deteriorated vehicle bridge and replacement with a new trail bridge that is 210 feet long.
- 2) Streelow Creek (0.01 acre): The banks of Streelow Creek and some adjacent wetlands will be affected by installation of a new 65-foot-long trail bridge on the former site of a vehicle bridge.
- 3) Davison Road shoulders (0.25 acre): A portion of the shoulders along Davison Road will be hardened to provide a area from which visitors can safely view elk in the pastures.

Approximately 0.02 acre of wetland will be adversely affected by removal and replacement of the Prairie Creek bridge. The existing Prairie Creek bridge and 90 pilings will be removed. The pilings will be cut off at ground level with a chainsaw. Some wetland areas will be graded. All instream work will be accomplished at low flow periods, typically between September 15 and October 15. Silt fences or other erosion control structures will be used to prevent excessive sedimentation downstream.

Approximately 0.01 acre of wetland will be affected by construction of the Streelow Creek bridge. The stream bank will be excavated for bridge piers. Adjacent wetlands will be graded for bridge approaches. Any instream work required will be done during low flow periods, with appropriate erosion control techniques used to prevent unnecessary sedimentation downstream.

The Davison Road shoulders will be graded, leveled, and hardened. Total area of wetlands affected will be 0.25 acre. Open concrete blocking or other water-permeable material will be used for the hardened surface. Water will drain through the open blocking into the underlying soils and will allow the wetlands and floodplain to retain some of their natural functions. Vegetation will grow through the spaces between the blocks and will be more visually appealing than asphalt.

WETLAND CLASSIFICATION, FUNCTIONS, AND VALUES

The wetland classifications, functions and values affected by the project are described below.

- 1) Prairie Creek: The wetland areas are the streambed and banks of Prairie Creek and adjacent pastures. The streambed and banks of Prairie Creek are, respectively, riverine upper perennial unconsolidated bottom permanently flooded and riverine upper perennial unconsolidated bottom seasonally flooded. The adjacent pastures are palustrine emergent persistent seasonally flooded. These wetland types are common to abundant in Humboldt and Del Norte counties.

The primary wetland values are associated with the stream itself. The most significant wetland value of Prairie Creek is the high quality fish habitat, which in turn provides high quality recreational fishing and contributes to the economically significant commercial salmon industry of northwestern California. Wildlife habitat, water quality enhancement, and esthetics are secondary wetland values. The natural wetland values of the adjacent pastures have been severely altered because of the long history of disturbance for agricultural uses. The pastures were first cleared of native Sitka spruce and willows in the late 1890s, when the Davison family began to clear the land to create pastures for dairy ranching. Ground water recharge, water quality enhancement through retention of sediment and toxic materials, and floodwater attenuation are functions of the pasture areas adjacent to the creek.

The vegetation adjacent to Prairie Creek is dominated by red alder, cascara sagrada, salmonberry, and swordfern. Away from the creek banks to the east, the vegetation is mostly grazed pastureland dominated by pasture grasses and forbs, including perennial ryegrass (*Lolium perenne*), velvet grass (*Holcus lanatus*), creeping bent (*Agrostis stolonifera*), buttercup, (*Ranunculus repens*), water foxtail (*Alopecurus geniculatus*), reed canary grass (*Phalaris arundinacea*) and mannagrass (*Glyceria occidentalis*). To the west of and upslope from the creek lies old growth coastal redwood forest.

The most significant aquatic species inhabiting Prairie Creek are coho and chinook salmon, steelhead trout, and coastal cutthroat trout. Coho and steelhead are being proposed for Federal listing as threatened or endangered. The riparian corridor is inhabited by numerous bird species, some of which breed in the area. The most noticeable species of wildlife in the area is Roosevelt elk, which are commonly seen grazing and resting the pasturelands. Northern red-legged frogs are abundant in the surrounding pasturelands and adjacent uplands, particularly during favorable conditions during the rainy season.

2) Streelow Creek: The wetland areas are the stream channel, streambanks, and small isolated depressions and drainage structures associated with an abandoned logging road that is failing due to lack of maintenance. The stream channel and streambanks are classified, respectively, as riverine upper perennial unconsolidated bottom permanently flooded and riverine upper perennial unconsolidated bottom seasonally flooded. The isolated wetlands are palustrine emergent persistent seasonally flooded.

These wetland types are common to abundant in Humboldt and Del Norte counties. Palustrine emergent persistent seasonally flooded wetlands occur adjacent to all roads, trails, and structures that are on level ground or at a low enough gradient that rainfall does not run off immediately.

The abandoned road extends on either side of the creek, which will be spanned by a new bridge. The road was constructed by cabling large logs into the original stream banks and channel in order to raise the roadbed to the appropriate grade. The wetland functions and values of this area are extremely minimal due to the modification of the natural channel and adjacent riparian areas for road construction and logging; the minimal sizes of the wetland areas; and the seasonality of the wetlands compared to the permanent streams nearby.

The vegetation surrounding the site is typical of second growth coastal redwood forest and associated riparian zones, including coast redwood, red alder, big-leaf maple, swordfern, cascara sagrada, and salmonberry. Low-growing forbs include pennyroyal, redwood sorrel, and creeping buttercup.

Streelow Creek drains an area that was heavily logged in the 1950s. Logging had significant adverse impacts on the fishery in this and other small streams in the area. The stream appears to be recovering, based on comparison of fish surveys made over the last 20 years. Juvenile salmonids (coho salmon, steelhead trout,

coastal cutthroat trout) were captured by electrofishing in Streelow Creek in August 1994. Chinook salmon may use the creek but by August, when the stream was surveyed, would have already migrated into the Redwood Creek. At this time the stream contains limited aquatic wildlife habitat. Elk travel through this area regularly.

3) Davison Road shoulders: The wetlands are adjacent to the road. They are classified as palustrine emergent persistent seasonally flooded. This wetland type is abundant in the project area, and throughout Humboldt and Del Norte counties.

The entire area has been significantly altered from natural conditions through removal of native willows and Sitka spruce beginning in the 1890s; continued disturbance from trampling and grazing by dairy cattle between the late 1890s and 1991; and road construction. The wetland functions and values of this area that remain after over a hundred years of human disturbance are ground water recharge and floodwater attenuation.

Vegetation in this area of formerly grazed pastureland is dominated by nonnative pasture grasses and forbs, including perennial ryegrass, clover, dock, plantain, hairy cat's ear, thistles, and orchard grass. Meadow foxtail, creeping buttercup, and common plantain are obligate or facultative wetland plants present.

The primary wetland functions of the Davison pastures are floodwater attenuation and wildlife habitat, although the wildlife are not species typically associated with wetlands. The most noticeable wildlife in this area is the Roosevelt elk herd which grazes and rests in the pastures on either side of the road. Retention of sediment and toxic materials are secondary functions of these wetlands.

NON-WETLAND ALTERNATIVES TO THE PROPOSED ACTION

There are no practicable non-wetland alternatives for the bridges across Prairie and Streelow creeks.

The existing Prairie Creek bridge has 90 pilings driven into wetland areas. The new bridge will be supported by three piers and will completely span the creek, reducing the impacts to wetlands and the floodplain. The Streelow Creek bridge will completely span the creek channel so that there will be no new impacts to streambanks.

The trail that will cross Prairie and Streelow creeks will be constructed on an abandoned logging road that follows Prairie Creek. There are no practicable alternatives to using this road for a trail. Developing a new trail would involve considerable new impacts.

The segment of the Prairie Creek hike/bike trail that passes through private land at the truck shop as described in the draft plan was east of the shop, and west of and adjacent to, Prairie Creek. This route would have required almost 0.5 mile of boardwalk to reduce or eliminate impacts to wetlands. Under the final proposed action, this segment of trail remains on the same old logging road and passes to the west of the shop, avoiding all wetlands.

The parking areas along the shoulders of Davison Road are used by visitors to view the elk resting and grazing in the pastures on either side of the road. To avoid safety hazards from visitors parking either in the roadway or along the main highway to view and photograph the elk, the parking areas must be located off the main

highway and where the elk are visible. At present, some visitors are unaware that parking on grassy shoulders is allowed, so they park in the road. During the rainy season, there are large puddles that prevent most visitors from parking off the road. There are no safe practicable non-wetland alternatives to providing parking along the road shoulders. Removal of Davison Road is not practicable because the road is owned by Humboldt County and is the only public road to the Gold Bluffs Beach and Fern Canyon areas of Prairie Creek Redwoods State Park.

WETLAND MITIGATION AND COMPENSATION

The site chosen for mitigation of wetland impacts is the B-Mill deck, which is adjacent to both the Prairie Creek trail bridge site and the Davison Road elk viewing parking. The deck was constructed in the late 1940s by grubbing, grading and filling an area adjacent to Prairie Creek, including an unnamed intermittent stream that drains the adjacent hillslope. The intermittent stream is identified on the 1987 National Wetlands Inventory map for Orick, California as riverine upper perennial unconsolidated bottom permanently flooded. The stream, however, is also covered with asphalt. From the adjacent topography, the presence of a corrugated metal standpipe, and interviews with mill workers, NPS geologists infer that the stream channel was filled and buried to create the deck. Based on the general location adjacent to Prairie Creek, as well as the surrounding vegetation, hydrology, and soils, park hydrologists and geologists suspect that the original area contained both wetlands and riparian areas. The NPS proposes to restore the stream channel and a portion of the deck. Because the B-Mill deck is presently covered by asphalt, it is impossible to determine exactly how much of the deck was a wetland prior to disturbance. The deck is not presently a wetland under any definition.

The NPS is preparing a design for the trailhead. Until the design is finalized and the asphalt removed from the deck, it is not possible to determine exactly how much wetland and riparian area will be re-created, or what the proportions will be. The area of wetland that will be affected by construction of bridges and parking area is approximately 0.28 acre. The wetland to be re-created will be at least 3 acres, approximately a 10:1 mitigation-to-loss ratio.

Wetland functions and values that are expected to be recovered through the restoration include groundwater recharge, floodwater attenuation, hydrological functioning, wildlife and aquatic habitat, recreational opportunities, and esthetics.

The NPS has received monies under the Intermodal Surface Transportation Efficiency Act (ISTEA) for construction of the trail and trailhead. These and park base operating funds will be used for restoring the wetlands. It is anticipated that the project, including mitigation, will be completed over the next five years.

Redwood National and State Parks will apply for a Department of the Army permit for the removal and installation of the Prairie Creek and Streeelow Creek bridges, and for the construction of hardened parking areas adjacent to Davison Road, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344.) The parks anticipate receiving a waiver of water quality certification from the California Regional Water Quality Control Board under Section 401 of the Clean Water Act, which is necessary for authorization of the 404 permit.

Recommended:

Andrew T. Riggold
Superintendent, Redwood National and State Parks

10/8/96
Date

Concurred:

Dan B. Kuroki
Chief, Water Resources Division, National Park Service

10-11-96
Date

Approved:

Stanley P. Allright
Field Director, Pacific West Field Office, National Park Service

10/28/96
Date



This plan was produced by the Branch of Planning and Environmental Compliance, Division of Resource Management and Science, Redwood National and State Parks. November 1996