

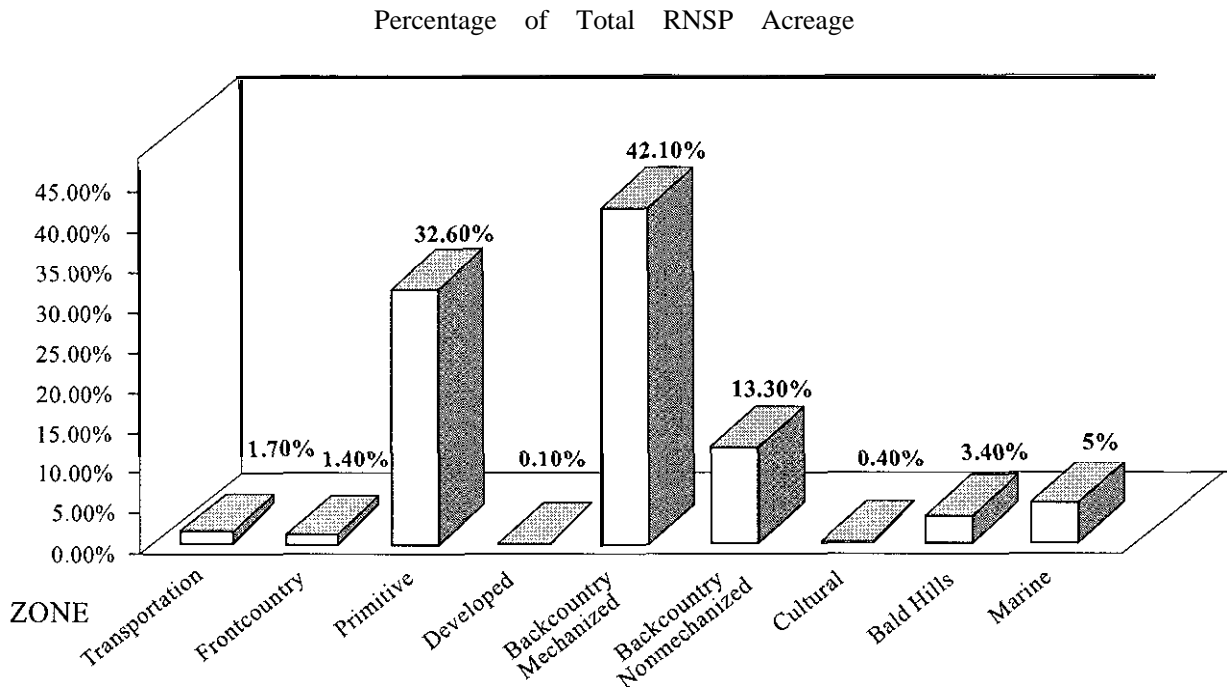
**THE PLAN**

Reflecting the plan's goal of similar emphasis on both resource protection and visitor use, acreages of the developed, frontcountry, backcountry, and primitive zones in table 1 show the percentage of the parks within each management zone. About 13.6 miles of trails in the primitive zone will remain and will be maintained (and if seriously damaged, sections will be rerouted), and existing uses of those trails will continue unless shown to adversely affect resources, create significant

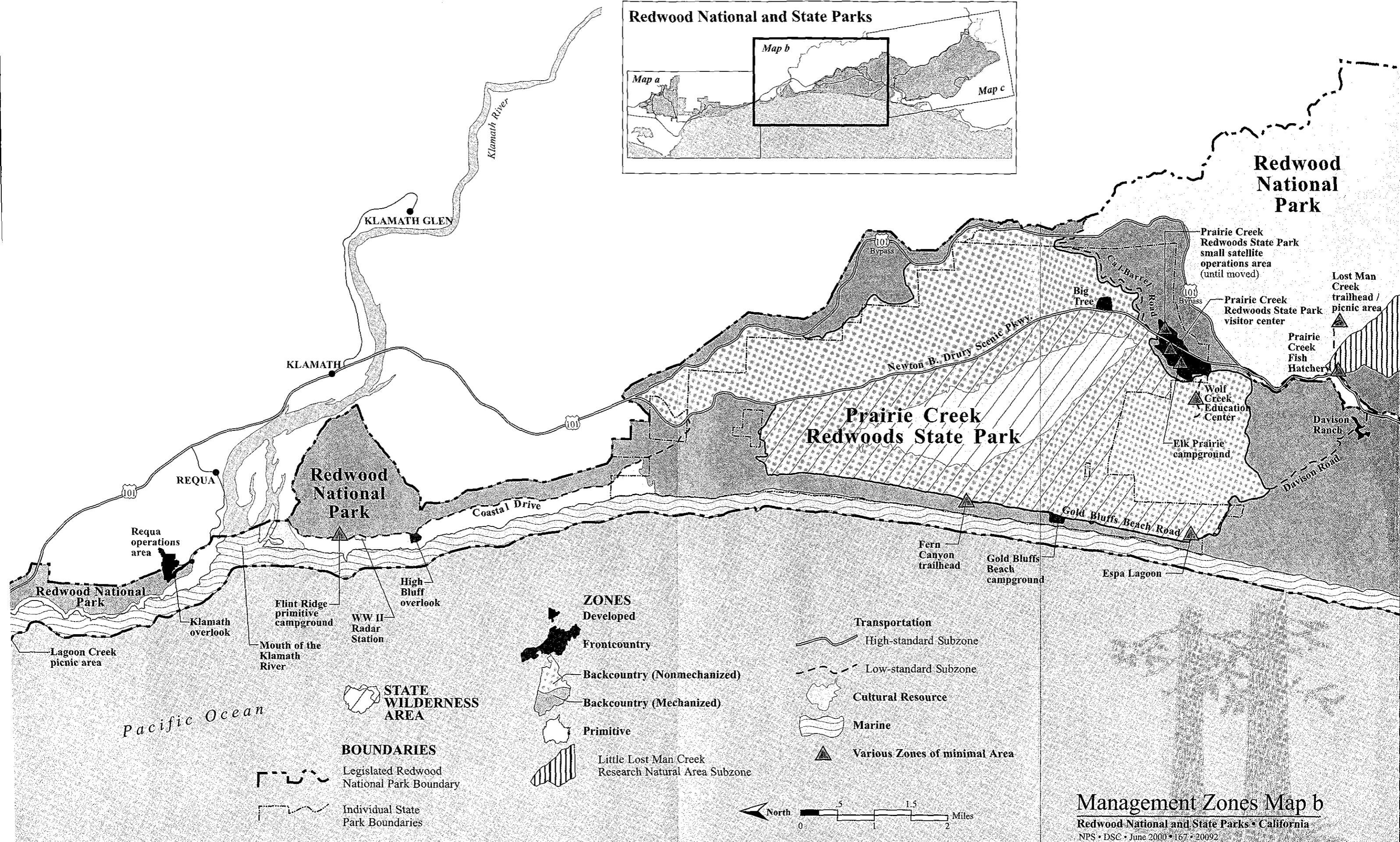
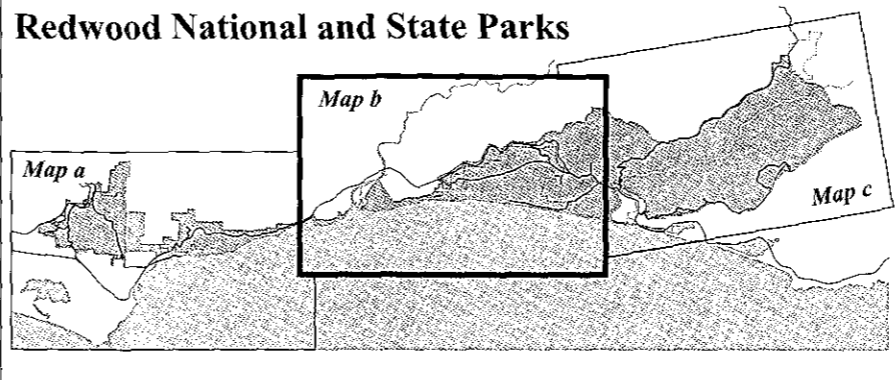
public use conflicts, or endanger public safety, No new trails will be constructed in the primitive zone, including the 28 miles of trails that have been proposed in previous planning documents.

Zoning maps a, b, and c show the location, size and shape of management zones as they overlay on the parks. The boundaries on these zoning maps are approximate.

**TABLE 1: MANAGEMENT ZONES-PERCENTAGES OF THE PARKS**







**Redwood National Park**

**Prairie Creek Redwoods State Park**

**Redwood National Park**

**ZONES**

- Developed
- Frontcountry
- Backcountry (Nonmechanized)
- Backcountry (Mechanized)
- Primitive
- Little Lost Man Creek Research Natural Area Subzone

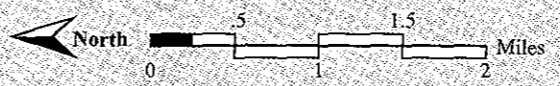
**Transportation**

- High-standard Subzone
- Low-standard Subzone
- Cultural Resource
- Marine
- Various Zones of minimal Area

**STATE WILDERNESS AREA**

**BOUNDARIES**









- Legislated Redwood National Park Boundary
- Individual State Park Boundaries

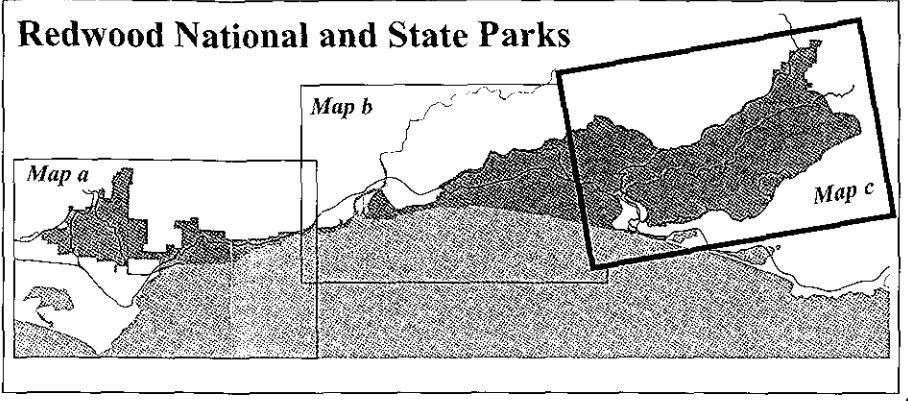




**Management Zones Map b**

Redwood National and State Parks • California  
NPS • DSC • June 2000 • 167 • 20092

**ZONES**

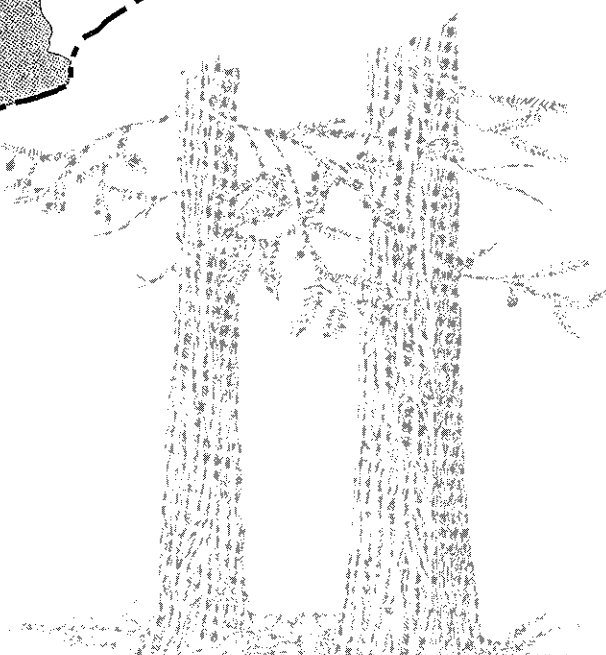
-  Frontcountry
-  Backcountry (Mechanized)
-  Bald Hills
-  Marine
-  Primitive
  - Little Lost Man Creek
  - Research Natural Area Subzone
-  Transportation
  - High-standard Subzone
  - Low-standard Subzone
-  Cultural Resource
-  Various Zones of Minimal Area



- BOUNDARIES**
-  Legislated Redwood National Park Boundary
  -  Boundary of National Park Land Acquired after Legislated Expansion of 1978

**Management Zones Map c**

Redwood National and State Parks • California  
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**VARIOUS ZONES  
OF MINIMAL AREA**

Some relatively small areas of the parks (shown as triangles on the previous management zone maps) have been zoned differently than their surrounding areas. To clearly identify these areas and make it easy to know what zone these small areas are in, the following list has been developed.

**AREA**

**ZONE**

|                                                                     |                           |
|---------------------------------------------------------------------|---------------------------|
| Hiouchi visitor center                                              | Developed                 |
| Jedediah Smith small satellite operations area                      | Developed                 |
| Stout Grove                                                         | Frontcountry              |
| Mill Creek trail and Nickerson Ranch trail                          | Backcountry mechanized    |
| Boy Scout Tree trail                                                | Backcountry nonmechanized |
| Camp Lincoln                                                        | Frontcountry              |
| Aubell Ranch                                                        | Developed                 |
| Howland Hill Outdoor School                                         | Developed                 |
| Crescent Beach Education Center                                     | Developed                 |
| Nickel Creek primitive campground and historic Coastal Trail        | Backcountry mechanized    |
| Del Norte Coast Redwoods State Park small satellite operations area | Developed                 |
| Damnation Creek                                                     | Cultural                  |
| DeMartin primitive campground                                       | Backcountry mechanized    |
| Redwood Hostel                                                      | Developed                 |
| Wilson Creek                                                        | Frontcountry              |
| Lagoon Creek picnic area                                            | Frontcountry              |
| Flint Ridge primitive campground                                    | Backcountry mechanized    |
| Fern Canyon trailhead                                               | Frontcountry              |
| Espa Lagoon                                                         | Developed                 |
| Prairie Creek Redwoods State Park visitor center                    | Developed                 |
| Prairie Creek small satellite operations area (until moved)         | Developed                 |
| Elk Prairie campground                                              | Frontcountry              |
| Wolf Creek Education Center                                         | Developed                 |
| Prairie Creek Fish Hatchery                                         | Cultural                  |
| Lost Man Creek t&head/picnic area                                   | Frontcountry              |
| Lost Man Creek/Holter Ridge bike trail                              | Backcountry mechanized    |
| Redwood Creek trailhead                                             | Frontcountry              |
| South Operations Center                                             | Developed                 |
| Redwood Information Center                                          | Developed                 |
| Redwood Creek overlook                                              | Frontcountry              |
| Gans Prairie                                                        | Cultural                  |
| Dolason trailhead                                                   | Frontcountry              |
| Tall Trees Grove parking                                            | Frontcountry              |
| Tall Trees Grove trailhead                                          | Frontcountry              |
| Radio repeater                                                      | Developed                 |
| Lyons Ranch trailhead                                               | Frontcountry              |
| Schoolhouse Peak                                                    | Developed                 |

## NATURAL RESOURCE MANAGEMENT AND PROTECTION

### Management Strategies

- Ensure that all resource management efforts are consistent with and supportive of the perpetuation of the redwood forest ecosystem as the prime resource of the parks.
- Restore and maintain the RNSP ecosystems as they would have evolved without human influences since 1850 and perpetuate ongoing natural processes.
- Actively participate in land use decisions for activities such as logging, mining, and the development of highways and subdivisions adjacent to the parks to minimize impacts on RNSP resources and values.
- Cooperate with the timber industry, private landowners, and other government agencies to accomplish long-range resource management planning and reduce threats to the RNSP resources.
- Acquire and analyze baseline inventory data to determine the nature and status of the natural resources under RNSP stewardship.
- Monitor selected resources and environmental factors to detect change and to distinguish natural variation from local and bioregional human-induced resource threats.
- Aggressively pursue strategies to prevent theft and commercial exploitation of RNSP resources.

### Issues and Actions

#### ***Watershed Management and Restoration in the Redwood Creek Basin, in and upstream of the Park***

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Issues within the National Park. Erosion and sedimentation threaten the aquatic and riparian resources of certain streams within the parks, primarily Redwood Creek and its tributaries. Recent major storms and the resulting severe erosion and damage to the parks' resources have underscored the need to accelerate significantly the current rate of watershed restoration efforts within and upstream of the parks to prevent cata-

strophic resource degradation within the parks. Features of the landscape in the Redwood Creek basin that are most susceptible to erosion are a result of intense land use that preceded establishment and expansion of the national park and promulgation of California's *Forest Practice Rules*. Naturally high erosion rates were greatly accelerated by the combination of timber harvest, logging, road construction, and major storms.

Since 1975, erosion control efforts within the parks have focused on the removal of former logging roads because poorly located and designed roads are major contributors of sediment to downstream and downslope resources. Within the Redwood Creek basin alone, there were approximately 415 miles of former logging roads included within the national park boundary, and currently there are an estimated 1,110 miles of logging roads upstream of the national park. In 1978 it was anticipated that watershed restoration efforts within the national park would be completed by 1993. However, due to a shortage of resources, only 190 miles of roads have been removed to date, and the current rate of road removal averages about 2.5 miles per year. Of the remaining 225 miles of road, 155 miles are targeted for removal; decisions on removing the final 70 miles are pending evaluation of administrative needs for those roads weighed against their erosion potential and long-term maintenance costs.

Issues upstream of the National Park. About 85% of the 1,110 miles of logging roads located in the Redwood Creek basin upstream of the national park were constructed before the 1983 amendments to the state *Forest Practice Rules* were in effect, and more than 50% of these roads are currently not maintained. Of the total estimated erosion potential from all roads within the Redwood Creek basin (5,185,000 cubic yards of sediment), 85% is associated with roads upstream of the national park on private timberlands. These poorly constructed and maintained roads represent a major threat to resources along the main stem of Redwood Creek in the national park. To date, RNSP staff working with private landowners and staff from the Bureau of Land Management have treated about 24 miles of

logging roads upstream of the national park to eliminate erosion potential. The ability of RNSP staff to participate in further cooperative erosion control efforts is limited by the lack of resources.

### **Introduction to Actions — Restoring**

**Disturbed Lands.** The plan presents two approaches for treating abandoned logging and ranch roads — the **landform restoration approach** and the **road decommissioning approach** (see glossary and table 2). In Redwood National and State Parks, most of the abandoned logging and ranch roads are within the Redwood Creek basin. However, more roads needing treatment are outside of park boundaries

1,110 miles of roads upstream of park boundaries compared to 155 miles slated for treatment within the park. There are two types of landform restoration -partial and complete.

**Partial landform restoration** is the complete removal of all major logging roads and limited removal of minor logging roads (skid roads) that are the biggest threat to the parks' resources. Some minor roads remain after partial landform restoration. **Complete landform restoration** includes the complete removal of all major and minor logging roads. A road or portion of a road must be completely removed to reshape the landform to its original configuration.

The road decommissioning approach focuses on reducing the potential for erosion at stream crossings and unstable road segments. In contrast, the landform restoration approach focuses on the obliteration of roads and reshaping them to the prelogging configuration of the landscape. Some roads that do not pose serious threats to RNSP resources may be decommissioned under the landform restoration approach.

Common to both approaches are constructing rolling dips at stream crossings and minimal road maintenance until the roads are treated through the restoration program. Erosion prevention techniques that would be considered would include constructing rolling dips at stream crossings, replacing deteriorating or undersized culverts, and reconstructing unstable road fills. As much as possible, road maintenance and

watershed restoration activities will be done before the rainy season or when areas have dried out.

Efforts to reduce erosion potential at stream crossings on national park lands are plan goals. The construction of rolling dips or drains at stream crossings will eliminate excess water from flowing down the road surfaces or inside drainage ditches and causing accelerated erosion, gulying, landslides, or road fill failure. These erosion control sites will be monitored and maintained, the road will remain drivable, and the treatment will not preclude more intensive restoration treatments in the future.

#### **Restoring Disturbed Lands outside the Redwood Creek Basin**

Throughout this document, the calculations, numbers, and miles of roads used *in* describing the watershed restoration program apply only to the Redwood Creek basin, the lower part of which is within the national park and the upper part of which is upstream (south) of the national park boundary. Because the most direct and extensive damage to what is now RNSP land occurred in the Redwood Creek basin, the inventory of needed restoration work has been done almost solely for this area.

Although the most substantial damage to RNSP resources from logging occurred in the Redwood Creek watershed, this is not the only watershed in or just outside the RNSP boundary that needs restoring or other treatment. For example, the Mill Creek basin in Jedediah Smith Redwoods State Park, the upper west branch of Mill Creek in Del Norte Coast Redwoods State Park, and those portions of the Prairie Creek watershed containing the headwaters of the east side tributaries in Prairie Creek Redwoods State Park have been impacted by past logging activities. These areas have not yet been inventoried to assess needed restoration.

Although the emphasis will continue to be on the Redwood Creek basin, RNSP staff will monitor the effects of activities in these other areas/watersheds, and RNSP watershed restoration staff will take appropriate steps if significant threats to resources are anticipated.

TABLE 2: COMPARISON OF METHODS OF TREATMENT FOR ABANDONED LOGGING ROADS

| Method of Treatment*                                    | Road Decommissioning<br>(primarily in the Redwood Creek Basin upstream of the National Park)                                                                                                                                                                                                                              | Landform Restoration<br>(primarily in the Redwood Creek Basin within the National Park)                                                                                                                                                                                                                   |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Summary</b>                                          | Reduces erosion potential at stream crossings, unstable road segments, and along steep, unstable hillslopes. Restores primary hydrologic patterns.                                                                                                                                                                        | Reduces erosion potential at stream crossings and along all intervening road segments. Restores prelogging landforms and hydrologic patterns by reconstructing natural topography.                                                                                                                        |
| Treatments                                              | Remove culverts, uncover buried stream channels, decompact road surfaces, and excavate only the unstable road fill. Configure the treated slopes for long-term drainage.                                                                                                                                                  | Remove culverts, uncover buried stream channels, pull back all road fill, and decompact road surfaces. Restore the shape of the original slope and original drainage patterns. Spread the original topsoil, forest duff, and organic matter on the finished surfaces.                                     |
| <b>Duration of Program</b>                              | Will require less time for treatment of each road segment compared to landform restoration.                                                                                                                                                                                                                               | Will require more time for treatment of each road segment compared to road decommissioning.                                                                                                                                                                                                               |
| <b>Miles of Logging Roads to be Treated</b>             | 911 miles upstream of the parks                                                                                                                                                                                                                                                                                           | 155 miles in the parks                                                                                                                                                                                                                                                                                    |
| <b>Benefits to Resources</b>                            | More quickly protects a greater amount of aquatic habitat against immediate erosional threats. Can provide better overall protection in the event of a large storm occurring relatively soon. Minimizes new impacts on forest vegetation. Short-term protection is provided by erosion prevention including rolling dips. | Provides better long-term protection to a shorter length of aquatic habitat within a given period of time. More long-term stability with fewer failures after end of program. Faster reestablishment of soil and vegetation. Short-term protection provided by erosion prevention including rolling dips. |
| <b>Threats to Resources during and after Treatments</b> | Hillslope failures can occur after completion of the program, especially along road segments that were not fully restored. Failures before and after program completion could damage downslope and downstream resources.                                                                                                  | Due to the slower treatment rate, more road mileage will be left untreated for a longer time and vulnerable to catastrophic erosion during a large storm. Failures from untreated roads, before completion of program, could damage downslope and downstream resources.                                   |
| <b>Cost per Mile Comparisons</b>                        | Less than landform restoration.                                                                                                                                                                                                                                                                                           | More than road decommissioning.                                                                                                                                                                                                                                                                           |

\*Methods vary by 25% to 40% per site in terms of cost and time required. Increased funding will speed the progress of either method of treatment and allow the RNSP staff to remove abandoned roads more quickly and completely.



## PAST WATERSHED RESTORATION PROJECT SITES

**BEFORE**  
Ah Pah Road  
Before restoration —  
road crosses a  
stream channel.



**DURING**  
Ah Pah Road  
During restoration —  
excavation of road fill  
down to original  
stream channel.

**AFTER**  
Ah Pah Road  
After restoration — one  
year after reconfiguration,  
stream channel appearance  
is similar to what would  
occur with natural processes.



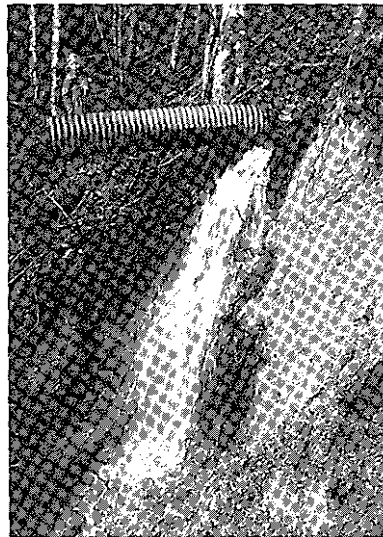
## EXAMPLES OF ROAD FAILURES AND PROBLEMS

### West Side Access Road

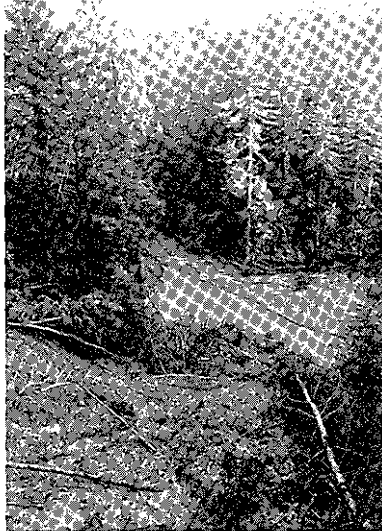
January 1997, the capacity of the drainage ditch on the side of the road next to the hillslope (the inboard ditch) was exceeded, resulting in flooding across the road and causing erosion of the outer edge of the road.



January 1997, road erosion caused by culvert failure from age-related problems.



M-S/M-Line Junction  
Landslide January 1997, lower view  
of slide into Redwood Creek.



M-S/M-Line Junction  
Landslide January 1997,  
top view of slide above Redwood Creek.



**Actions within (specific to) the National Park.**

Watershed restoration efforts will be increased so that an average of 9.5 miles of roads will be treated per year within the park. Partial landform restoration will be emphasized, with complete removal of all major logging roads and limited removal of minor logging roads that pose the greatest threat to the park's resources.

Landform restoration will be most comprehensive near high visitor use areas. In these areas, major roads and minor roads will be removed, restoring the natural shapes of hillslopes. Rolling dips will be constructed on all remaining roads *as necessary to* address short-term erosion hazards on roads until they are removed. This approach will require about 17 years to treat 155 miles of road. Accomplishing this will require a significant increase in funding, estimated to be about \$640,000 annually for watershed restoration contracts.

At the discretion of RNSP managers and in consideration of available resources, the level of *erosion* control and restoration work within the national park might vary from the preferred technique of partial landform restoration to road decommissioning and erosion prevention. However, the preferred technique(s) will be implemented whenever possible given adequate fiscal and personnel resources. Similarly emphasis for specific projects might be directed at any time from erosion control work within the national park to erosion control or related efforts in the upper basin.

In the absence of increased funding, managers will retain and exercise the flexibility necessary to achieve the highest priority projects. A future erosion control and disturbed lands restoration plan will explore more detailed site-specific implementation priorities for watershed restoration activities.

**Actions upstream of the National Park.** The National Park Service will work cooperatively with upstream landowners and other agencies to address conditions that contribute to erosion potential. These cooperative activities may include, but will not be limited to, review of

proposed timber harvest plans and activities: erosion prevention and road removal in cooperation with landowners; improvements in the location, design, and maintenance of active roads; and database development for cooperative basinwide resource management. Depending on opportunities offered by property owners and the availability of resources, up to 40 miles of roads will be treated per year upstream of the national park in the Redwood Creek basin. Road decommissioning (see table 2 and glossary) and erosion prevention will be emphasized. Erosion prevention techniques that would be considered would include constructing rolling dips at stream crossings, replacing deteriorating or undersized culverts, and reconstructing unstable road fills. Some road segments in the upper basin will be decommissioned, when agreed upon by the landowners. This work in the upper basin will protect downstream alluvial redwood groves and aquatic habitat in the main stem of Redwood Creek, including the reach within the national park. Assuming that approximately 85% of the 1,100 miles of roads in the upper Redwood Creek basin require treatment, and that 24 miles have been treated by 1998, this approach will require 17 years to treat the existing 911 miles of logging roads. Accomplishing this will also require a significant increase in funding, estimated to be about \$536,000 annually for watershed restoration contracts in the upper Redwood Creek basin.

As directed by the 1978 legislation, RNSP staff will continue to monitor and study "erosion and sedimentation originating within the hydro-graphic basin of Redwood Creek with particular effort to identify sources and causes including differentiation between natural and man-aggravated conditions" (PL 95-250).

**Watershed Management and Restoration in Redwood Creek Estuary**

Issues. The Redwood Creek federal flood control project levees, which extend for 3.4 miles from just upstream from the town of Orick westward to about 1,000 feet from the Pacific Ocean, have altered the physical and biological functioning of

the Redwood Creek estuary. This has resulted in major adverse impacts such as decreased water circulation in the estuary and sloughs, fewer deepwater pools, decreased extent of wetlands and riparian habitat, deteriorated water quality, degraded juvenile rearing and adult holding habitat for fish, and reduced wildlife and invertebrate abundance and diversity in the lower Redwood Creek valley and estuary. The natural functioning of the Redwood Creek estuary is critical to the survival of anadromous fish such as salmon and steelhead.

The north and south slough channels to the embayment have become filled with sediment, and the sloughs are now isolated from the embayment except where the mouth closes and the water level rises and during extreme high tides. This has resulted in decreased dissolved oxygen and increased algal blooms and aquatic vegetation in the sloughs. Repeated uncontrolled artificial breaching of the natural sandbar to protect private and public property has adversely affected the biological and physical functioning of the estuary.

A way to ensure the natural ecological functioning of the Redwood Creek estuary needs to be determined. Because of the complex nature of the problem, it will require a collaborative effort among the National Park Service, other federal, state, and local agencies, conservation organizations, and affected landowners to address it.

Actions. The National Park Service will play a leadership role in organizing a multijurisdictional, multidisciplinary approach to addressing the restoration of the estuary while seeking to retain the current land uses in the lower Redwood Creek valley. Efforts will involve private landowners, the Fish and Wildlife Service, the National Marine Fisheries Service, the California Department of Fish and Game, the Army Corps of Engineers, Humboldt County, the citizens of Orick, the Yurok Tribe, and other interested parties to develop a plan for restoring the estuary and associated fish and wildlife values. Strategies involving a combination of land acquisition, conservation easements, partial levee removal, and restructuring affected roads and drainage

structures will be considered for restoring the estuary (see table 24 and the Expanded Floodplain/Levee Removal map in the *Final General Management Plan /General Plan / Environmental Impact Statement / Environmental Report*). The acquisition of land will be limited to willing sellers. A recommendation will be made as to how much of the federal flood control levees west of Orick will need to be removed to restore the estuary. Water level management (e.g., controlled breaching and channel manipulation) to conserve salmonid habitat by preventing the negative effects of an uncontrolled natural breach and to protect the Redwood Information Center will continue.

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### *Wetlands*

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Areas in the parks that will be affected by soil or vegetation disturbance will be surveyed for the presence of wetlands as part of project planning. If areas are present that might be classified as wetlands under either the Army Corps of Engineers or NPS definitions, a more detailed wetland delineation (mapping) will be performed. The California Department of Parks and Recreation will use the broader NPS wetland definition and guidelines for protecting wetlands.

Wetlands that have been damaged or degraded by previous land use will be considered for restoration, either to mitigate adverse impacts or to meet the goals and intent of the NPS wetland protection guidelines. Original functions and values of each wetland will be restored to the greatest extent practicable.

Adverse impacts on wetlands from activities set forth in this plan will be avoided to the greatest extent possible. Any adverse impacts on wetlands for which mitigation is prescribed will be mitigated on at least a 1:1 ratio in the same drainage and as close as possible to the impacted area.

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### *Threatened and Endangered Species*

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If any state or federally listed or proposed threatened or endangered species are found (see

appendix F), or if designated critical habitat exists in areas that will be affected by construction, visitor use, or restoration activities set forth in this plan, RNSP staff will first consult informally with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and/or the California Department of Fish and Game. RNSP staff will attempt to avoid, minimize, rectify, reduce, compensate, or otherwise mitigate any potential adverse impacts on state or federally listed or proposed or candidate threatened or endangered species. Ongoing staff actions and RNSP operations will also be included in consultations. Should it be determined through informal consultation that an action or proposed project might adversely affect a listed or proposed species, RNSP staff will initiate formal consultation under section 7 of the Endangered Species Act or as required under the *California Fish and Game Code* and/or the California Endangered Species Act.

In 1999 a federally and state listed endangered plant was discovered at Freshwater Lagoon Spit. Staff botanists will continue to conduct surveys for this and other rare or sensitive species incidental to other projects. If sensitive plants are located, more intensive surveys of similar habitats will be conducted to determine the extent of rare plant populations in the project area. Management emphasis of sensitive plant species will be on the population level to ensure their survival within the parks. Should any sensitive plants be discovered in project areas, the plants will be protected from human-caused disturbance, and the project will be redesigned to avoid direct impacts on the plants and their specific habitat if possible.

#### Marine and Coastal Resources

RNSP *managers* will inventory marine plants and animals and tidepool and other intertidal communities and monitor their condition. If additional protection is necessary to preserve marine communities, RNSP staff will work with the California Department of Fish and Game to modify existing regulations that apply to offshore waters within RNSP boundaries and the

overlapping area of special biological significance (see explanation in the "Water Resources/Surface Water" section of the "Affected Environment" in the *Final General Management Plan/General Plan /Environmental Impact Statement /Environmental Report*

Federal and state legislation and regulations and also RNSP policies dictate complete protection of marine mammals and of seabirds and their nesting sites within the parks through cooperation *with* state and federal agencies. RNSP staff will cooperate with state and other agencies where marine interests might be related to RNSP lands and waters including reintroducing extirpated native species and protecting state and federally listed threatened or endangered species.

The National Park Service and the California Department of Parks and Recreation are concerned with the potential impact from offshore ship traffic. A major oil or hazardous material discharge from this activity poses a serious threat to RNSP resources. To ensure that marine and coastal resources are protected from this type of event, RNSP staff actively participated in the development of the *North Coast Area Contingency Plan* pursuant to the Oil Spill Act of 1990. The plan identifies sensitive coastal areas and habitats and delineates a protection and cleanup strategy should a major discharge of oil or a hazardous substance occur. RNSP staff will continue to participate on the North Coast Area Planning Committee to help ensure continued protection of resources from offshore shipping traffic.

#### Vegetation Management

Issues. Old-growth redwood forests are the primary resource and the purpose for establishment of these parks. The youngest second-growth forests are still recovering from timber harvest before the establishment of the parks. These forests are beginning to provide some watershed protection, but they still lack the old-growth qualities. Second-growth forests have been seeded with exotic tree species and are

regrowing in a manner in which they are not expected to achieve old-growth conditions or species composition for hundreds of years.

Managing second-growth forests, including restoring old-growth conditions in the shortest time period possible, reducing a potential fire hazard, and restoring habitat for threatened and endangered species and other wildlife could be achieved by using a variety of methods and techniques.

The prairies and oak woodlands exhibit both natural and cultural values. The current program of conifer removal and burning emphasizes restoring and preserving prairies and oak woodlands in the Bald Hills. The program needs to integrate other natural and cultural values into a more ambitious restoration approach that addresses historic natural and cultural processes and practices, and effects on wildlife, cultural landscapes, and traditional American Indian uses in prairies throughout the parks.

The extent to which fire will be managed both for safety and to ensure the perpetuation of RNSP *ecosystems* needs to be determined. A history of fire suppression, along with the development of effective fire suppression techniques, has interrupted the fire regimes that developed in the different RNSP vegetation types and ecosystems for many centuries. A better understanding of these fire regimes is needed to determine the extent to which fire should be restored in RNSP ecosystems and how this will be accomplished. Fire might also be needed as a tool to reduce fuels that have the potential to threaten developments, resources, or public safety.

Actions. Action items are as follows.

*Second-Growth Forest Management.*— Silvicultural methods such as thinning, replanting, and burning will be used in second-growth forests to reduce the time in which the forests regain characteristics and processes found in mature, naturally occurring forests. Managing those second-growth stands that are critical to ecosystem restoration will be emphasized. Managing second growth that will contribute to



visitor use and enjoyment of the parks will also be considered. A plan for managing second-growth forests will be prepared and accompanied by appropriate environmental compliance documents.

*Prairie Restoration.*—After evaluation, selected naturally occurring prairies, as well as prairies and oak woodlands maintained by American Indians through burning, will be restored; they will be maintained by reestablishing a historic fire regime. Certain forest openings will be restored and/or maintained where appropriate for the resource values present (e.g., wildlife habitat, cultural landscapes, or aesthetics).

*Fire Management.*— A fire management program will be established to support resource management strategies, including the restoration of fire in old-growth forests, prairies, oak woodlands, and coastal shrub communities as a natural process. The program will be based on sound

risk management, economic feasibility, the best science available, cooperation with other agencies and tribes, and consideration for public health and environmental quality. The program will allow for wildland fire suppression, prescribed fire, and, potentially, wildland fire use (allowing natural ignitions to achieve resource management strategies).

Techniques other than fire may also be used to reduce fuel hazards in second-growth and old-growth forests and around developments and structures to reduce the risks of damage from wildland fires. All prescribed fire and wildland fire use will be conducted under the approved *Fire Management Plan* (see appendix D) for the parks that will articulate management strategies and techniques and describe contingency plans should suppression action be needed. A wildland fire implementation plan that supplements the *Fire Management Plan* will be prepared as needed to identify specific actions and describe operational requirements for this type of fire.

Prescribed fire plans will be prepared for individual burns that will provide burn objectives, prescriptions, and contingency plans in case the prescription is exceeded or suppression action is needed. An interpretive program will be established to explain the benefits of the fire management program.

### ***Artificial Impoundments***

**Issue.** Under NPS and CDPR policies and directives, artificial impoundments should be removed from parks unless they are contributing elements to cultural landscapes. There are numerous artificial dams, ponds, and lagoons throughout the parks that have safety and resource management implications. Some artificial impoundments also have resource and recreational values.

**Actions.** Dams will be retained and maintained only where public safety or significant resources are at risk, otherwise, they will be removed. Recreational uses will continue until an impoundment was removed.

## **CULTURAL RESOURCE MANAGEMENT AND PROTECTION**

### **Management Strategies**

- Recognize the past and present existence of peoples in the region and the traces of their use as an important part of the environment to be preserved and interpreted.
- Expand the cultural resource program from one that is project and compliance based to one that includes comprehensive study.
- Integrate more closely the NPS and CDPR cultural resources management programs for the parks.
- Provide for more active integration of the cultural resources and interpretation functions. For example, explain the interplay through time between human activity and the environment and the effects of changes in technology on this interplay.
- Emphasize the development of publications for visitors that present the results of cultural resource studies.
- Actively pursue opportunities for the adaptive rehabilitation of the historic Prairie Creek Fish Hatchery.

Note: See also the following “Relationships with American Indians” section for additional related material.

The National Park Service, as caretaker of many of the nation’s most significant cultural resources, is mandated by a variety of historic preservation laws, e.g., the National Historic Preservation Act (1966 and as amended, most recently, in 1992) and the Archeological Resources Protection Act (1979) to preserve, protect, and manage cultural resources under its jurisdiction for the enjoyment and enlightenment of present and future generations. According to the National Park Service’s *Cultural Resource Management Guideline* (1997),

[c]ultural resource management involves research -to identify, evaluate, document, register, and establish other basic information about cultural resources;

planning—to ensure that this information is well integrated into management processes for making decisions and setting priorities; and stewardship — under which planning decisions are carried out and resources are preserved, protected, and interpreted to the public.

## Research

RNSP staff conducts research to support planning for and management of RNSP resources. Much research regarding these cultural resources has already been undertaken, including archeological surveys and excavations, historical studies, artifact analysis, and consultations with American Indians. To further the identification, evaluation, and documentation of cultural resources, the agencies propose to accomplish the following efforts.

- Continue to prepare archeological surveys and assessments of RNSP lands.
- Prepare cultural landscape inventories and/or cultural landscape reports for all landscapes potentially eligible for listing on the National Register of Historic Places.
- Initiate ethnographic overviews/traditional use studies of the parks.
- Prepare historic structure reports for buildings and structures, as necessary.
- Prepare an administrative history of Redwood National and State Parks.
- Continue to develop the parks' museum curatorial program.
- Maintain the List of Classified Structures, updating it to reflect changes in condition or management and to include new structures as they are placed on or become eligible for listing on the National Register of Historic Places.

## Planning

General management planning for cultural resources is not only guided by research but also by the National Park Service's *Management Policies* (1988) and the Secretary *of the*

*Interim's Standards for the Treatment of Historic Properties* (1995). These policies and standards provide guidelines for preservation planning. The *Secretary's Standards* also provide guidelines for the treatment (preservation, rehabilitation, restoration, or reconstruction) of historic resources that are either listed on or eligible for listing on the National Register of Historic Places.

In addition, because political, social, and economic trends outside of a park's boundaries can profoundly affect managers' abilities to protect its cultural resources, RNSP staff seek to work with surrounding landowners and to actively participate in the planning processes of neighboring jurisdictions to help ensure that actions outside of the parks do not impair RNSP resources and values. Throughout the planning process, opportunities were also provided for other federal and state agencies, such as the U.S. Forest Service and the California Department of Parks and Recreation, Office of Historic Preservation, as well as American Indian tribes and the public at national, regional, and local levels, to voice their concerns about the management of the parks' cultural resources. Thus, this plan reflects an interdisciplinary effort that includes a cross section of national and state park personnel, including planners and resource specialists; representatives of state and local governments, agencies, and organizations; and other interested parties and members of the community-at-large.

In addition, further consultation with the California Department of Parks and Recreation, Office of Historic Preservation, the Yurok Heritage Preservation Officer, and the Advisory Council on Historic Preservation, as necessary, will be conducted for all actions described in the plan that might affect cultural resources, once plans for these actions become more specific (see appendix G).



## Stewardship

Stewardship is the integration of research and planning to avoid or minimize adverse effects on cultural resources and to identify both the most appropriate uses of and treatment of cultural resources. The following is a list of strategies for managing the cultural resources of Redwood National and State Parks:

. Any action that affects cultural resources will be undertaken only if it is consistent with the parks' purposes and applicable NPS and CDPR policies, guidelines, and standards. Any preservation, rehabilitation, restoration, and reconstruction efforts, as well as the daily, cyclical, and seasonal maintenance of cultural resources, will be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and any applicable state regulations.

- The emphasis in actions involving both cultural and natural resources will be weighted toward the protection and preservation of the resource(s) that will be most easily damaged.
- The parks' archeological, historic, and ethnographic resources will continue to be identified, evaluated, and nominated, as appropriate, for listing on the National Register of Historic Places.
- Options for the parks' historic structures will include adaptive rehabilitation, the historic property leasing program, preservation, interpretation, and discovery sites. Nonhistoric noncontributing features will be removed from the parks' cultural landscapes.
- RNSP staff will continue to work in partnership with representatives of American Indian tribes and preservation interest groups to achieve an emphasis on the management of cultural resources similar to that for interpretation, education, and visitor use. Expertise available from sources outside the parks will be recruited on a cooperative, collaborative basis to expand RNSP staff capabilities and share information. In addition to the tribes, these sources

could include professional and avocational organizations and societies, academic institutions, and qualified volunteers.

- The nature and extent of visitation and use will be managed in a manner that minimizes impacts on the parks' cultural resources.
- RNSP staff will work with neighboring landowners and jurisdictions to ensure that adjacent land management practices will not impair the parks' cultural resources, viewsheds, or distant vistas.
- RNSP staff will develop solutions to accessibility requirements that minimize impacts on cultural resources.

## Issues and Actions

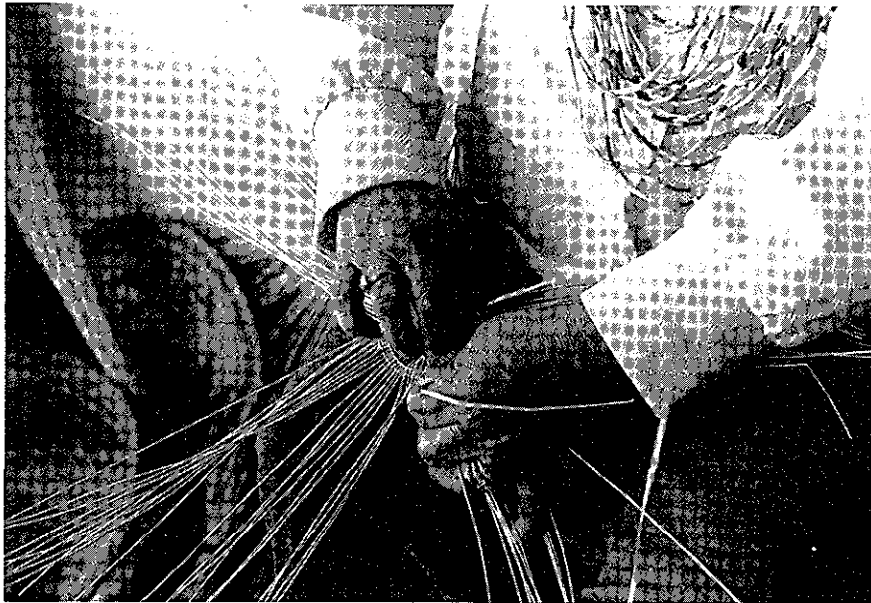
### Historic Resources — Structures

Issues. Some of the parks' historic structures are inadequately preserved and protected. It is a challenge for RNSP staff to preserve and protect these historic resources while providing for their use and/or interpretation.

**Actions.** Historic structures will be stabilized, protected, and preserved as appropriate. Opportunities will be sought for adaptively rehabilitating the Prairie Creek Fish Hatchery, the complex of historic structures that is most suitable for the historic property leasing program. Options for the parks' other historic structures will include their preservation, maintenance, and active interpretation or use as discovery sites, with minimal or no onsite interpretation.

### Historic Resources — Cultural Landscapes

Issues. The inventory, evaluation, and documentation of the parks' cultural landscapes are incomplete. The management of certain cultural landscapes, e.g., the Bald Hills, which encompasses the Lyons Ranches Rural Historic District



Demonstration of basket weaving using traditional materials. NPS photo.

and the Bald Hills Archeological District, is complex due primarily to the interrelationship between landform restoration, vegetation management programs, and the concerns of American Indians. In addition, the parks' cultural landscapes are not interpreted for and appreciated by visitors.

**Actions.** Seven cultural landscapes potentially eligible for listing on the National Register of Historic Places have been identified to date in Redwood National and State Parks, as follows:

Redwood National Park —

- Lyons Ranches Rural Historic District
- Bald Hills Archeological District
- the site of Radar Station B-71
- Prairie Creek Fish Hatchery

Jedediah Smith Redwoods State Park —

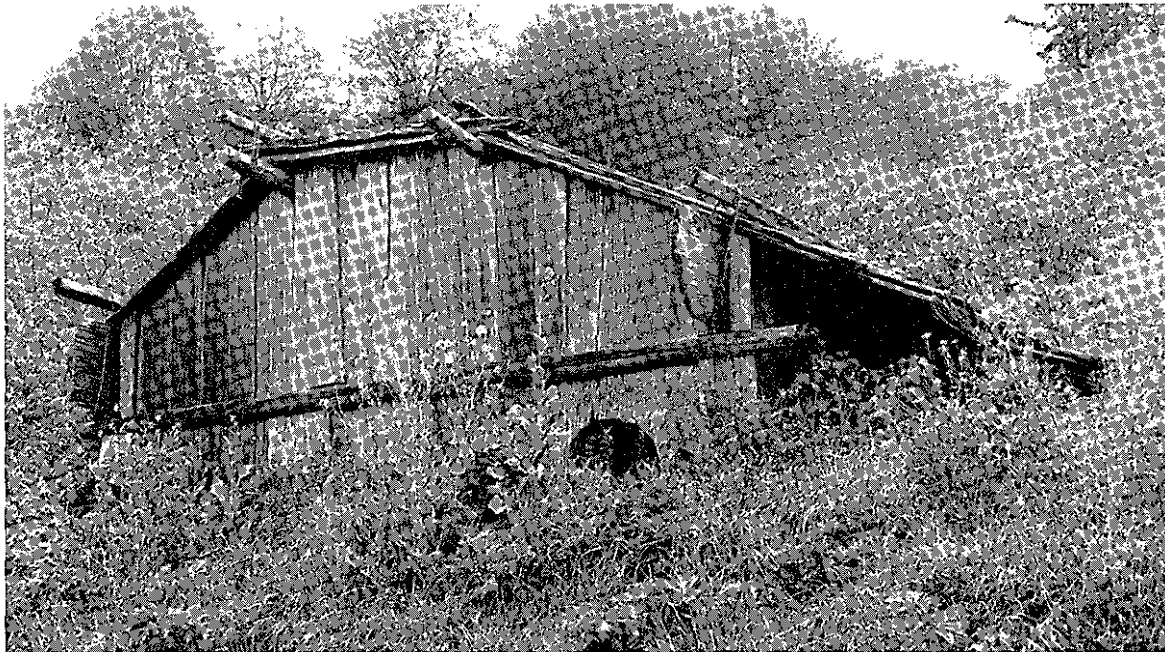
- Camp Lincoln
- Kelsey Trail

Prairie Creek Redwoods State Park —

- Prairie Creek Redwoods State Park headquarters complex

Cultural landscape inventories or cultural landscape reports will be prepared to document and evaluate the above landscapes, as well as to identify any other landscapes within the parks that will be eligible for listing on the national register. In addition, the inventories or reports will guide the preservation and management of the parks' cultural landscapes, and provide RNSP interpretive staff with the information necessary to interpret for visitors the effects over time of human actions upon the parks' natural landscapes. The cultural landscape inventories or reports will help RNSP managers decide whether or not to implement any of the actions in this plan that are in or near potential cultural landscapes.

Pending the completion of a cultural landscape report for the Bald Hills, this area will be managed in accordance with the NPS *Bald Hills Vegetation Management Plan* (1992), *Fire Management Plan* (1994), and the *Exotic Plant Management Plan* (1995a) (see appendix D); the monitoring of resource conditions in the Bald Hills area will continue. Watershed and prairie restoration activities in this area will be directed toward removing signs of recent human habitation and use, with the exception of those



Traditional Yurok dwelling made from split redwood logs. NPS photo.

resources that are either historically significant or required for RNSP operations.

A visitor use management plan will be developed for the Bald Hills. The primary emphasis of the plan will be to provide a quality visitor experience by interpreting the archeological sites, historic buildings and features, and associated landscapes and natural resources that collectively exhibit use by American Indians and Euro-Americans. The interpretive/educational component of the visitor use management plan, however, will achieve an emphasis on visitor use similar to that for the study, protection, and preservation of resources. Pedestrian access to selected sites will be encouraged, and some sites will be treated as discovery sites, with minimal or no onsite interpretation provided. The visitor use management plan will be periodically revised, as new information becomes available.

Many of the natural and cultural resources traditionally used by American Indians affiliated with the parks are contributing elements to the parks' historic and ethnographic cultural landscapes. The continued traditional use of these resources could be an integral component of the

parks' management of these landscapes. In consultation with the local American Indian tribes, these traditional uses will be actively interpreted.

### ***Ethnographic Resources***

**Issues.** The lands comprising Redwood National and State Parks are part of the ancestral territories of the Tolowa, Yurok, and Chilula. The Chilula, who no longer exist as a group, became part of the Hupa Tribe, who are located immediately east of the parks. The parks contain numerous ethnographic resources, but few of these have been evaluated for listing on the National Register of Historic Places.

**Actions.** The historical presence of American Indians in the region will be recognized as an important cultural element of Redwood National and State Parks. Ethnographic resources will be protected from desecration and managed with an emphasis on research, inventory, evaluation, and preservation of both the resources and the practices traditionally associated with them. Opportunities for visitors to observe, experience, and learn about the traditional practices of

American Indians will be encouraged, to allow visitors to develop a greater appreciation for American Indian culture, although attention will not be drawn to the most sensitive of the parks' ethnographic resources. Many of the cultural resource studies completed for Redwood National and State Parks include ethnographic information, and ethnographic information is included in consultation records; a formal ethnographic overview and traditional use study of the parks will be completed. Recommendations concerning the national register eligibility of ethnographic resources will also be included. To make the ethnographic overview and traditional use study more useful to RNSP staff, it will also include contemporary use information. In addition, the overview will provide an inventory of ethnographic place names for use in naming developments in the parks and for describing study results (for example, soil names).

Redwood National and State Parks will develop a common understanding with the Yurok people regarding the preservation, management, interpretation, and use of the Brush Dance site. RNSP staff will facilitate the Yurok Tribe's long-term management and use of the site. Although the Brush Dance site is subject to erosion by the Klamath River during floods, no actions will be undertaken to protect the site from flooding.

### **Collections**

Issue. Irreplaceable prehistoric and historic artifacts, natural history specimens, and archival materials, including NPS resource management field records and data, are threatened with loss because the parks lack specialized work/storage/study facilities critical to museum and archival resources preservation. Natural resource management data and specimens, collected since the establishment of Redwood National Park and only recently accessioned into the RNSP museum collection, require cataloging. Many RNSP resource-related collections, which have yet to be identified and properly researched, exist outside of the parks among nonprofit organizations or other government agencies.

Actions. Curatorial activities will be consolidated into an existing facility that provides adequate workspace, storage, and equipment for cultural and natural resource collections and archives. The location of the facility will be based on interpretive and research needs.

Collections will be aggressively developed. A survey of the external and internal collections associated with Redwood National and State Parks will be undertaken to develop a finding aid that lists the location and identity of park-related materials in outside collections.

A protocol for accessioning natural resource materials into the collection and an archival processing plan will be prepared to guide processing, maintenance, and access to archival materials in an orderly professional manner.

The parks' curatorial program will include the development of a process to provide access to museum collection research information related to RNSP ecosystems and natural and cultural resources, including computer-based access.

## **RELATIONSHIPS WITH AMERICAN INDIANS**

### **Management Strategies**

- Consult regularly and maintain government-to-government relations with American Indian tribes and groups who have traditional ties to resources within the parks to ensure productive, collaborative working relationships.
- Ensure the participation of American Indian tribes and groups in managing the parks' natural and cultural resources of interest and concern to them.
- Involve American Indian tribes and groups in the parks' interpretation program to promote the accuracy of information presented regarding American Indian cultural values and to enhance public appreciation of those values.
- Participate as partners with American Indian tribes and groups in planning and conducting projects and initiatives that have mutual benefit,

that enhance the quality of the experiences of visitors to the parks, or that enhance the levels of public appreciation of the parks' resources and values.

■ Support sustainable economic development and the availability of appropriate visitor services in American Indian communities adjacent to the parks.

■ Support the continuation of traditional American Indian activities on RNSP and aboriginal lands, to the extent allowed by applicable laws and regulations.

■ Collaborate with the Yurok Tribe to resolve jurisdictional, resource management, and public use issues on lands and waters that are within both the Yurok Reservation and the national park.

## **Issues and Actions**

### *Government-to-Government Relations/Consultations*

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Issue. American Indian tribes in general, and the Yurok Tribe in particular, are seeking more involvement in the planning and implementation of resource management actions on their ancestral lands. Federally recognized Indian tribes have unique legal relationships with the National Park Service and the California Department of Parks and Recreation, based on federal and state laws, regulations, and policies. These relationships are strengthened by the local American Indians' special geographic, economic, historical, and cultural ties to the lands and resources now within the parks. Federal and state legislation and NPS and CDPR policies all recognize these relationships and require consultations and government-to-government interactions. Other federal laws impose additional obligations on federal agencies and authorize additional activities that influence these relationships; they also provide opportunities to collaborate in managing and protecting the parks' resources and values. The 1996 memorandum of understanding for government-

to-government relations, signed by the National Park Service, the California Department of Parks and Recreation, and the Yurok Tribe, reflects both the legislation and policies cited above and the actions described below.

Action. RNSP staff will continue to consult and collaborate with American Indian tribes and groups concerning all issues and proposed actions that might affect American Indian cultural or economic activities. RNSP staff will continue to meet regularly with the Yurok Tribal Council and, if requested, will meet with additional tribal governments on a regular or periodic basis. In addition, RNSP staff will work with tribal representatives to fulfill the intent of the Tribal Self-Governance Act (PL 103-413) and other applicable legislation, as well as to pursue agreements for the purposes of carrying out programs, services, and activities in or near the parks that are of mutual interest and benefit.

### *Interpretation*

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Issue. Visitors to the parks are generally unaware of the historical and contemporary connections that local American Indians have to the parks' lands and resources. Enhancing visitor understanding and appreciation of local American Indian cultures and their spiritual, cultural, and economic ties to the parks' lands and resources will promote a better public understanding of the parks' overall significance.

Action. Local tribes will assist in planning, and local American Indians will participate in and contribute to the parks' interpretation and education programs. Opportunities include providing training for RNSP staff, drafting and reviewing relevant exhibit and interpretive material, providing appropriate Indian-made items for sale or display in the parks' visitor centers, demonstrating American Indian traditional arts, and serving as presenters in special interpretive programs.

***Traditional Activities on Park and Aboriginal Lands***

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Issue. Among the local Yurok, Tolowa, and Hupa, many aspects of the traditional lifeways continue, on both RNSP and adjacent lands. The parks contain sites that are integral to the practice of traditional American Indian spirituality. Certain dances are held, and others are being revived, that entail the maintenance of dance sites with their traditional structures and the fabrication of dance regalia. Many of the arts, such as canoe making and basket weaving, also are practiced, which require certain natural resources — many of which are found within the parks. These arts are sources of economic as well as spiritual sustenance.

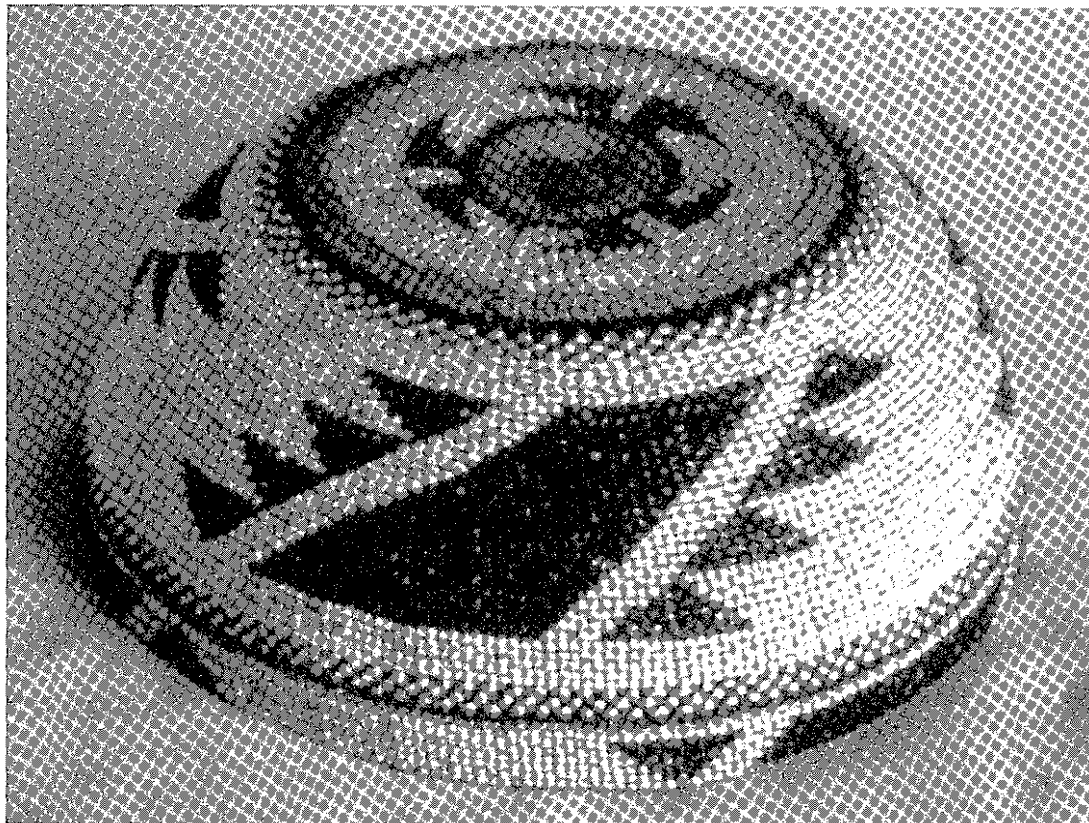
**Action.** The National Park Service and California Department of Parks and Recreation will continue to support American Indian traditional activities within and adjacent to the parks. Access and privacy for traditional ceremonial purposes will be ensured. RNSP staff

will notify tribal officials if downed old-growth redwood logs that are salvaged from administrative activities such as watershed rehabilitation or road repair projects are available to the tribes for cultural purposes such as constructing traditional structures and dugout canoes. Within the parks, the collection of certain natural materials by American Indians for traditional uses will be allowed in conjunction with the maintenance and interpretation of designated cultural and ethnographic landscapes and as otherwise authorized under applicable laws and regulations. Local tribes will be afforded the opportunity to participate in the identification, designation, and management of such cultural and ethnographic landscapes.

***Resources Management Collaboration***

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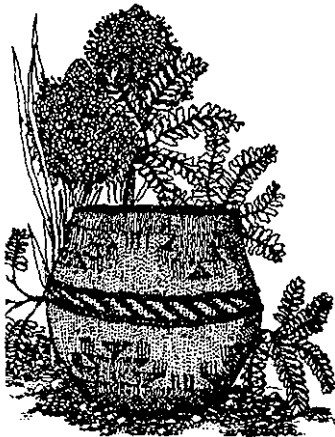
Issue. The National Park Service, California Department of Parks and Recreation, and local American Indian tribes and groups share *major* interests in managing and protecting resources



Demonstration of basket weaving using traditional materials. NPS photo.

within and adjacent to the parks, and the potential for productive collaboration is high. There has been a comprehensive resources management program in the parks since the early 1980s. Professional staff includes geologists, hydrologists, botanists, fire specialists, fish and wildlife specialists, and a geographic information system office. The Yurok Tribe has also established a resources management program that includes fisheries, forestry, and watershed restoration specialists and a geographic information system. Both the Yurok Tribe and the parks have cultural resources staff, and the Yurok tribal heritage preservation officer has jurisdiction over all lands within the boundaries of the Yurok Reservation, including those within the parks that overlap. Other tribes with interests *in* park lands also have resources management staff.

**Action.** RNSP staff and the Yurok Tribe will share relevant, nonproprietary information pertaining to the inventory and management of resources within the parks. Research, transfer of technology, and technical assistance are important components of this government-to-government relationship. Natural and cultural resources management staff from the parks and the Yurok Tribe will collaborate on projects or programs of mutual interest and will meet on a regular basis to discuss various aspects of their programs including future plans, project results, staffing, and research data, particularly in watershed rehabilitation and vegetation management. Similar relationships will be established if additional tribes or groups also request collaboration or technical assistance.



## EDUCATION AND INTERPRETATION

### Management Strategies

- Provide in-depth interpretation of the parks' primary themes both in facilities and onsite through appropriate exhibits, waysides, publications, and visitor activities.
- Coordinate orientation and information services with those of other federal, state, and local government agencies and private organizations to enhance service to visitors to the area and improve operational efficiency.
- Support a broad spectrum of diverse educational opportunities at the outdoor schools and in local communities for students and adults within the parks' regional setting.
- Develop educational materials based on the park's primary themes for use by national and international visitors.
- Develop new visitor services and facilities in the parks in locations that will expand visitors' awareness of the parks' diverse resources and enhance visitors' abilities to gain access to resource and activity sites.
- Develop opportunities for visitors to participate in a variety of interpretive programs and activities to learn more about the parks' resources and to gain a broad understanding of visitors' roles in preserving those resources.

### Issues and Actions

#### Orientation/Information

**Issue.** RNSP managers and staff need to assess, maintain, and improve how to meet visitor information and orientation requirements.

**Actions.** Interpretive waysides, directional signs, bulletin boards and orientation kiosks will be upgraded to improve visitor orientation to RNSP resources. Information services and facilities will be coordinated through partnerships with others inside and outside the parks. Where feasible, information services will be consolidated, and designated facilities will be expanded to provide

both area information and interpretation of natural and cultural resources.

### ***Interpretation***

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**Issue.** The scope of the personal and nonpersonal services program, development of the parks' significant themes, and the types of facilities needed to provide access to resources need to be addressed.

**Actions.** Interpretive operations and media will be used to provide a similar emphasis on general and preservation information about natural and cultural history topics. Research and resource management actions will be explored in depth and fully supported.

Most of the parks' visitors will receive an in-depth interpretation of primary interpretive themes through additional facilities, publications, and programs. Additional opportunities will be provided for visitors to see and enjoy old-growth redwood forests, wetlands, prairies, and sites related to local American Indian cultures; however, visitor use of these sensitive resources will be carefully managed to protect resources.

Interpretive media will be used in the Bald Hills area to provide a similar emphasis on preservation and general information about old-growth forest management, second-growth forest management, watershed resources, prairie and oak woodland vegetation, and human use.

### ***Information, Orientation, and Interpretive Centers***

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**Issue.** Almost none of the interpretive facilities in the parks were designed or constructed to present in-depth interpretation of significant RNSP resources or allow for the expansion of visitor services. Existing small interpretive facilities provide similar and often duplicative services. Their roles and functions need to be improved or changed.

**Actions.** Action items are as follows:

All functions at the Redwood Information Center will remain: interpretive facilities, exhibits, and sales areas will be upgraded as opportunities arise. However, the facility was constructed in an area where it is subject to severe damage or destruction. First, it is in a tsunami run-up zone. Redwood Information Center was approved for construction at its current location in 1983 based on scientific knowledge current at that time. Since the early 1980s, considerable advances in understanding the earthquake and tsunami potential in the area have been made. It is now recognized that a major 750-mile-long fault zone that runs just offshore of the parks could rupture along its entire length with a magnitude 9 earthquake. When an earthquake occurs along this fault zone, a tsunami could occur within minutes, possibly before the ground shaking stops, posing a considerable threat to life and property. Second, the center is in an area where it could be flooded or destroyed by the shifting of the mouth of Redwood Creek.

If the facility is significantly damaged by future events, the functions of Redwood Information Center will be relocated to a new primary visitor center that will be built outside the tsunami hazard zone between Orick and Prairie Creek and adjacent to U.S. Highway 101. Opportunities for constructing *a new* facility through public, private, and/or tribal partnerships will be sought. The visitor center will be constructed in an area that will not impact RNSP resources but that will provide direct access to the primary resources and the opportunity to interpret the park's primary interpretive themes. Services provided at the facility will be expanded and will include museum quality exhibits, a dedicated auditorium for multimedia presentations, book sales, and trip planning. A number of hiking and driving tours will originate here. Redwood Information Center will be removed, and the site will be converted to day use with interpretive opportunities including beach access, boardwalks, and wayside exhibits.

The functions of the Hiouchi Information Center and Jedediah Smith Redwoods State Park *visitor* center will be combined into a new facility that