



REDWOOD CREEK WATERSHED AND COASTAL LAGOONS

This area encompasses the Redwood Creek watershed, Freshwater, Stone, Dry and Big Lagoons, and the associated streams draining into the lagoons (Maple and McDonald Creeks are the largest of these streams.) Redwood National and State Parks (RNSP) are located in the lower third of the Redwood Creek basin, and are managed jointly. The enabling legislation of Redwood National Park identifies "the primeval coastal redwood forests and the streams and seashores with which they are associated (Public Law 90-545) as the significant resources to preserve. RNSP, a World Heritage Site and an international biosphere reserve, contains 41,000 acres of ancient coast redwood forest as well as the Little Lost Man Creek Research Natural Area. The parks also exercise jurisdiction over near-shore waters and intertidal lands along their western boundaries. Humboldt Lagoons State Park and the Harry A. Merlo State Recreation Area are located in the southern portion of this focus area.



I. Resource Values

Natural

- RNSP contains 41,000 acres of **ancient coast redwood forest**. It is a World Heritage Site and an international biosphere reserve.
- Little Lost Man Creek, within RNSP, is a **Research Natural Area**.
- **Farther inland**, Douglas-fir dominates forests. Much of the eastern divide of Redwood Creek, called the Bald Hills, has prairies and oak woodlands,
- Along the **coast**, there are scattered stands of Sitka spruce, coastal shrub, and the coastal strand.
- The Parks include **35 miles of varied coastline**, from broad, flat marine terraces to steep rocky cliffs and beaches dotted with sea stacks.
- A chain of **lagoons** stretches from Orick (Freshwater Lagoon) south to Big Lagoon.
- Redwood Creek is recognized as an important **anadromous fish** stream.

Plants and Animals

- **Birds** of concern include:
 - Northern spotted owl
 - Marbled murrelet
 - Western Snowy Plover
 - Bald Eagle
 - Brown Pelican
 - and the recently delisted Peregrine Falcon
- **Aquatic and riparian** species include:
 - Tidewater goby
 - Coho salmon
 - Steelhead trout
 - Chinook salmon
 - Southern Torrent Salamander
- Several **large mammals** of concern to Parks', local landowners and population centers:
 - Roosevelt Elk
 - Black bear
 - Mountain lion
- **Beach layia** at Freshwater Lagoon is a federal and state listed endangered plant.

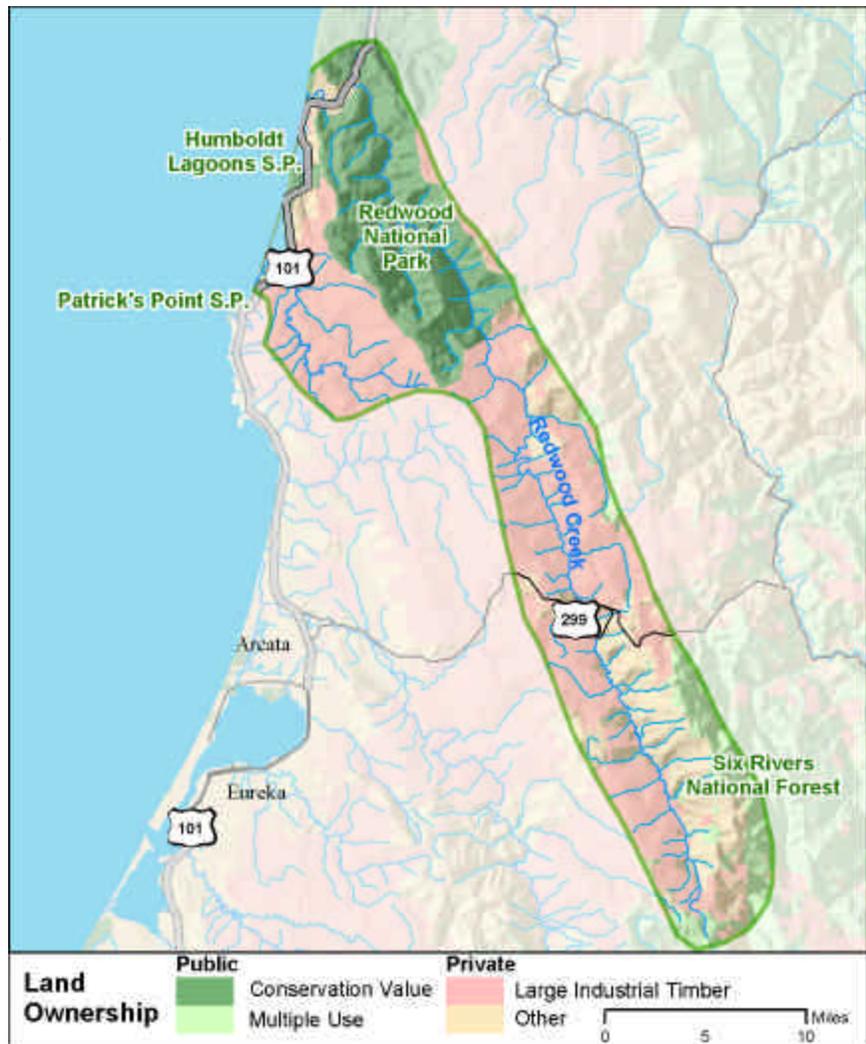
Cultural

- This area is rich in **Native American archeological sites**, based on the use by many tribes: Yurok along coast, Hoopa along Bald Hills, Ancestral Whilkut in upper Redwood Creek basin, and Chilula in lower Redwood Creek basin. Many sites are included in the Bald Hills Archeological District on the east side of Redwood Creek. The area is still used for tradi-

tional subsistence activities (gathering basket weaving materials, fishing, etc.).

- The history of **European settlement** is evident throughout the area. In 1828 Jedediah Smith led the first overland party in this area. In 1848 gold was discovered in inland mountains and soon gold was mined along Gold Bluffs Beach as well. Remnants of mining trails include the Trinidad Trail (seen at the Tall Trees Grove) and the Kelsey Trail in north district of RNSP. Evidence of ranching on Bald Hills is preserved in the form of historic barns, cabins and ranches, many of which are included in Lyons Ranches Rural Historic District.

- Concurrent with mining was the growth of **dairy, fishing and especially timber**. Remains of logging camps, train trestles and railroad grades, and logging roads from early timber harvest are found in many of the forested areas. The Prairie Creek Fish Hatchery, no longer in operation, is on the National Register of Historic Places.



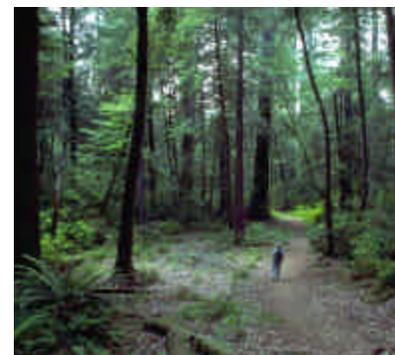
Recreation

- **Popular activities** include hiking, camping in both primitive and developed campgrounds, backpacking, bird and whale watching and wildlife viewing, beachcombing, agate hunting, boating (motorized and non-motorized), fishing, hunting on adjacent private land, swimming, historical sites, local cultures, biking, horseback riding, picnicking, surfing, ranger-guided activities, and visiting museums and visitor centers.



Visual

- Open, undeveloped **beaches** along the wild Pacific coast.
- Viewshed of Bald Hills, and pristine redwood forests, especially **old-growth redwood groves** such as the Tall Trees Grove.
- Popular viewpoints are located along **Bald Hills Road and Highway 101**.



II. Community Values

Land ownership

- Land ownership in the **Redwood Creek watershed** consists of Redwood National and State Parks (41%), BLM and USFS (3%), private lands downstream of Parks (1%), and private lands upstream of Parks (55%).
- Of the **privately owned upstream lands**, there are numerous landowners with < 3000 acres (10%), and eight landowners with > 3000 acres (90%).
- The **coastal lagoons and associated watersheds** are managed by the California Departments of Fish and Game and Parks and Recreation, Humboldt County Parks, Simpson Timber Company, Big Lagoon Rancheria, Redwood Trails (a private campground), and numerous small landowners.
- **Highway 101**, managed by Caltrans, is the major transportation route through this area, and influences resource values as well.

Economics

- Historically, **employment** in this area was strongly based on timber. Timber harvest is still the primary land use in the upper Redwood Creek basin.
- Commercial beach **fishing** and sport fishing occur.
- The parks draw **tourists**, with June, July and August having the highest visitation. The area attracts many international visitors as well.
- **Other economic sectors** include farming, construction, ranching, services, and government.

III. Opportunities and Threats

Redwood Creek watershed

- Continuing **timber harvest** adjacent to park boundaries creates "edge effects" that impact natural values in the adjacent protected parkland.
- An aesthetic issue is that of **clearcuts** near public use areas which mars the perception of an unfragmented forest in park lands.
- **Forest fragmentation** on surrounding timberland due to timber management practices impacts the ability of wildlife to disperse through the area between suitable nesting, foraging and dening habitat.
- Simpson Timber Company is the largest **private landowner**, which provides a stewardship opportunity to cooperate with one entity instead of a checkerboard ownership pattern.
- Continuing **timber harvest and road construction** on private lands upstream of park boundaries has led to a concern regarding downstream impacts. In the past, increased erosion and sedimentation affected downstream park resources through elevated stream temperatures, disrupted



aquatic habitat, increased flood risk, etc. Cooperative erosion control efforts are on-going to reduce the potential for damage in the next large flood.

- The construction of **flood control levees** on Redwood Creek has impaired natural functioning of the estuary by decreasing water circulation, increasing sedimentation and diminishing water quality.
- **Gravel mining** is common near the mouths of north coast rivers. Gravel is extracted from rivers beds for use in industry and road construction or as part of flood-control programs. Gravel extraction can deplete the supply of gravel in a reach of river, can change the aquatic habitat and ground water levels, and increase bank erosion.
- **Fire Suppression** in second-growth and old-growth redwood forests is having unknown effects. The fire ecology of the coast redwood is relatively poorly studied and the long-term effects of such suppression is unknown, but may lead to favoring of more shade-tolerant species and the replacement of redwood over time at the stand level. Prescribed burns are presently used to manage prairie and oak woodlands along the Bald Hills.
- Change in peak and low flow **hydrologic regimes** due to timber harvest, road construction, and possibly diversions.
- **Communicable plant diseases** and pathogens threaten several tree species.
- Oak woodlands are being threatened by an oak fungus causing "**sudden oak death**". It is spreading slowly from the south, but has yet to reach Humboldt County. Loss of native oaks can cause extensive changes in vegetation communities and wildlife use patterns, as well as serious erosion when hillslopes are destabilized by the decay of tree roots.
- **Port-Orford Cedar** is being killed in many areas by a root disease carried through water courses and human transportation networks.

Coastal Lagoons

- **Artificial breaching** of lagoon spits releases a surge of water from estuaries. Due to the timing of the action this may carry young salmon and trout out to sea before they have reached a size needed for ocean survival.
- **Exotic aquatic species**, such as the bass and bullfrogs are out-competing endangered native fish, including the tidewater goby.
- **Stocking trout** for anglers is affecting the endangered tidewater goby and other native fish species.
- **Contamination and pollution** including chemical spills along highway, septic system failures, former Louisiana-Pacific mill site, and use of 2-stroke engines and MTBE-laced fuel in water craft.
- Proposed **commercial development** may affect the character of the area, and threatens to bring with it increased resource impacts, pollution, etc.
- Enforcing **water speed limit** on for motorized vehicles to minimize noise pollution and accidents.

- **Exotic plants**, including European Beach Grass (terrestrial) and aquatic weeds in Freshwater Lagoon, are out-competing endangered native plants.
- **Low capacity culverts** under Highway 101 at Stone Lagoon limits fish passage, creates an upstream flood risk, and constricts natural lagoon flow.
- Upstream **erosion and sedimentation** in streams draining to lagoons, and associated flooding in Redwood Trails area.
- Need to **coordinate management** among the multiple agencies and landowners involved in management of the Coastal Lagoons (i.e. off-road vehicle policy, exotic plant control, Snowy plover protection).

IV. Conservation Action

Current

- Redwood Creek Landowners Association has a **Memorandum of Understanding** with RNSP. Inventories of road-related problems are in progress. Through a cooperative effort with RNSP, 43 miles of roads on privately owned lands have been upgraded or removed. There is the opportunity to fund a joint study of cumulative watershed effects to help prioritize projects and direct restoration efforts in upper Redwood Creek basin.
- Redwood National and State Parks are currently **decommissioning abandoned logging roads** within park boundaries. Although 205 miles of road have been treated so far, another 130 miles of road are still slated to be removed.
- The **North Coast Watershed Assessment Project** (California Resources Agency) is currently conducting a watershed assessment of Redwood Creek, which will be used to identify restoration and protection needs.



Ready-to-go projects

- Assign a **Redwood Creek Estuary Coordinator** to coordinate efforts with Army Corps of Engineers, private landowners, and other agencies to explore restoration options for the estuary (i.e. setback levees, restoration of riparian vegetation, breaching the levee)
- The Coastal Conservancy has funded a **hydraulic study** and a feasibility study by the Army Corps of Engineers to assess various designs for setback levees and alternatives for estuary restoration.

Prospective

- **Acquisitions** from willing sellers to accomplish park resource management goals such as relocating roads, reducing fragmentation, preserving the Scenic Corridor along Prairie Creek, and facilitating trail construction near Stone Lagoon.
- Resolve **remaining land title issues in RNSP** including acquisition of remaining privately held timber and mineral rights on all parkland.
- Acquire conservation easements on **RNSP and Humboldt Lagoon State Park boundaries** (called Special Treatment Areas - 200 ft. buffers - under

the California Forest Practices Act) to reduce edge effects of timber harvest on adjoining parklands. Goal is to retain sufficient canopy in STAs to mitigate edge effects. Especially important where old-growth redwoods adjoin privately held lands. Explore the possibility of expanding the existing Coastal Commission Special Treatment Area rules, which are in place to protect viewsheds.

- Acquire conservation easements along **riparian zones** of salmon and trout streams, especially along steep unstable stream banks.
- **Stone Lagoon:**
 - Work with **Caltrans to replace culverts** in McDonald Creek at Stone Lagoon to decrease sedimentation and flooding problems and reduce fish migration barrier.
 - Establish **larger riparian protection zones** along the main channel of McDonald Creek and North Fork McDonald Creek, both on state park lands and upstream private lands.
- **Wetland protection/easements** on portions of Big Lagoon formerly managed by Louisiana Pacific.
- Assist in **second-growth management** efforts of RNSP with the opportunity to accelerate late-seral, uneven-age stand development through management practices.
- Establish **Regional Redwood Ecosystem Institute** to coordinate stewardship activities, research, and adaptive management policies in the redwood region.

V. Potential Partners

Big Lagoon Rancheria
Bureau of Land Management
California Coastal Commission
California Coastal Conservancy
California Department of Parks and Recreation (Humboldt Lagoons State Park, Harry Merlo State Recreation Area)
California Department of Transportation
California North Coast Regional Water Quality Control Board
California State Lands Commission
Department of Fish and Game
Department of Forestry and Fire Protection
Hoopa Valley Tribe
Humboldt County Parks and Recreation
Humboldt County Resource Conservation District
National Marine Fisheries Service
Private Landowners
Redwood Creek Landowners Association
Redwood National and State Parks
Simpson Timber Company
State of California's North Coast Watershed Assessment Program
Trinidad Rancheria
U. S. Forest Service
U. S. Geological Survey
U.S. Army Corps of Engineers
U.S. Bureau of Land Management
Yurok Tribe

VI. Linkages

- The Smith River and Lake Earl areas adjoin this area to the **north**.
- Several of the projects listed in Section IV involve **strengthening linkages**, reducing fragmentation, and increasing corridor protection.

VII. References

Noss, R. F., ed. 2000. The Redwood Forest: History, Ecology, and Conservation of the Coast Redwoods. Island Press. Washington D. C. 339 p.

U. S. Department of Agriculture Forest Service. 1993. Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. Report of the Forest Ecosystem Management Assessment Team. 730 p. plus appendices.

U. S. Department of Interior National Park Service and California Department of Parks and Recreation. 1999. Final General Management Plan/General Plan. Volume 1. 488 p.