IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 27 May 2014

Please note: this is an archived Conservation Outlook Assessment for Redwood National and State Parks. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Redwood National and State Parks

SITE INFORMATION

Country:
United States of America (USA)
Inscribed in: 1980
Criteria:
(vii) (ix)

Site description:
Redwood National Park comprises a region of coastal mountains bordering the Pacific Ocean north of San Francisco. It is covered with a magnificent forest of coastal redwood trees, the tallest and most impressive trees in the world. The marine and land life are equally remarkable, in particular the sea lions, the bald eagle and the endangered California brown pelican. © UNESCO

SUMMARY

2014 Conservation Outlook

Good with some concerns

Most of the park values are stable and adequately protected and the existing threats arise primarily from a legacy of past land use. The ancient redwood forest with its associated beauty and aesthetics is in good condition because the redwoods are growing well. While the established coast redwood trees are likely to persist, many associated species in the park are threatened. The known and anticipated threats to the park's resources such as invasive species, previous land use, changed fire regime, and future environmental changes require immediate attention to prevent resource loss. Declining funding for park management is the main barrier preventing the park from addressing the issues including restoration and monitoring.

Current state and trend of VALUES

Good
Trend: Stable

The ancient redwood forest is in a robust condition because the coast redwood trees themselves are thriving. The aesthetic values of the site are therefore also well preserved. However, biodiversity values of the site might be in decline. While the established coast redwood trees are likely to persist, many associated species in the park are threatened. Northern spotted owls and marbled murrelets are likely declining due to complex species interactions and lack of primary nest habitat.

Overall THREATS

High Threat

The ancient redwood forest with its associated beauty and aesthetics is in good condition because the redwoods are growing well. While the established coast redwood trees are likely to persist, many associated species in the park are

threatened. The known and anticipated threats to the park's resources such as invasive species, previous land use, changed fire regime, and future environmental changes require immediate attention to prevent resource loss. More data is needed to determine the magnitude of the potential threats to the park.

Overall PROTECTION and MANAGEMENT

Mostly Effective

There is a strong protection and management plan, but funding is the primary barrier to the successful completion of the plan. The park staff actively maintain relationships with neighboring landowners and work on solutions to protect park resources by changing forest management in the Park Protection Zone and upstream in the Redwood Creek.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Ancient Redwood Forest**
Criterion:(ix)

Redwood National and State Park preserves the largest remaining contiguous ancient coast redwood forest in the world in their original forest and streamside settings (Statement of Significance, 2006).

▶ **Natural beauty and superlative natural phenomenon**
Criterion:(vii)

Redwood National and State Park comprises a region of coast mountains bordering the Pacific Ocean, equidistant (560 kilometers or 350 miles) from San Francisco, California and Portland, Oregon. It is covered with a magnificent forest of coast redwoods (Sequoia sempervirens), the tallest living things and among the most impressive trees in the world. Several of the world's tallest trees grow within the property (Statement of Significance, 2006).

Other important biodiversity values

▶ **Diversity of flora and fauna**

The park's diverse habitats are home to 92 mammalian species (e.g. humpback whale, Megaptera novaeangliae), 17 amphibian species (e.g. Pacific giant salamander, Dicamptodon ensatus), 16 reptilian species (e.g.

Western fence lizard, Sceloporus occidentalis), 46 fish species (e.g. Coho salmon, Oncorhynchus kisutch), 251 avian species (e.g. Northern spotted owl, Strix occidentalis), 660 native vascular plants (e.g. Western hemlock, Tsuga heterophylla), and 986 species of lichen and fungi (e.g. Scaly chanterelle, Gomphus floccosus) that collectively are continuing to evolve in a relatively natural state (National Parks Conservation Association, 2008). The park provides habitat for nine threatened or endangered species and two species that are candidates for listing under the federal Endangered Species Act (National Parks Conservation Association, 2008). Humboldt Lagoons Important Bird Area (IBA global priority; criteria A1, D4i, D4ii) includes portions of Prairie Creek Redwoods State Park. The IBA is a major coastal wintering area for non-marine watersfowl. The mature redwood forest in the property supports a significant portion of California’s nesting marbled murrelets.

Assessment information

Threats

Current Threats

High Threat

Invasive species are affecting habitats, a notable example is the New Zealand mud snails that is impacting freshwater stream food webs; neglected young timber stands have stunted tree growth and modified species composition; neglected timber roads are contributing sediment to streams and estuaries; a lack of fire is changing forest understory structure and composition.

► Invasive Non-Native/ Alien Species

High Threat
Inside site
Outside site

There are over 300 exotic plant, animal, and pathogen species in the park. Invasive species are affecting habitats, a notable example is the New

Zealand mud snail that is impacting freshwater stream food web. Fukashima floating assemblages are also affecting aquatic ecosystems (Golightly et al., 2011).

▶ Other Ecosystem Modifications

High Threat
Inside site
Outside site

Past timber harvest caused loss of woody debris, change in forest structure, loss of biodiversity and was associated with a legacy of ranching history and land conversion, which led to an introduction of exotics, altered hydrology, extirpated fauna including grizzly bears, rattlesnakes, and condors. This also contributed to the creation of a public road network that disrupts estuarine habitat for fisheries. Neglected young timber stands are stunting tree growth and modifying species composition (Golightly et al., 2011).

▶ Roads/ Railroads

High Threat
Inside site
Outside site

Neglected logging road network adding sediment to streams (Golightly et al., 2011).

▶ Other

Data Deficient

Too little fire is changing forest understory structure and composition (Golightly et al. 2011).

▶ Other

High Threat

Fauna impacted by sediment loading (National Park Service, 2000) and New Zealand mud snail invasion (Personal communication, 2011).

▶ Other

Data Deficient

Harvested stands surrounding the old-growth habitat are denuded forests that provide little habitat for marbled murrelets and mesocarnivores (including the Pacific fisher and Humboldt marten) and require restoration (National Park Service, 2000).

Potential Threats

Data Deficient

More data is needed to determine the magnitude of the potential threats to the park. Major climate changes are predicted for California and both water diversions and wind farms are potential future activities that could impact the park resources.

► Droughts

Data Deficient
Inside site
Outside site

Major climate changes predicted for California (Hayhoe et al., 2004). However, potential impacts on the site’s values are unclear.

► Renewable Energy

Data Deficient

Past proposals from energy industry (Personal communication, 2012).

► Other

Data Deficient

Currently, RNSP has 8 small dams, 2 of which are anadromous fish barriers (inside park). Trinity and Klamath dams are reducing streamflow and increasing stream temperature (outside of park).

Protection and management

Assessing Protection and Management

► Relationships with local people

Some Concern

The park works with adjacent landowners in the PPZ and watershed to restore roads and comment on Timber Harvest Plans. The park also has a government to government relationship with the Yurok Tribe and also consults with Elk Valley and Smith River Rancherias (Tolowa). At Ganns Prairie the park is beginning a plan that would reintroduce ceremonies and cultural practices to traditional cultural properties that were formerly maintained through such practices. However, there are some conflicting interests in resources within multiple communities surrounding the park (Personal communication, 2012).

► Legal framework and enforcement

Mostly Effective

Park law enforcement programs have been successful within the park boundaries (although adjacent watersheds and the upper watershed are still resource issues). State and federal ownership with jurisdictional overlap adds complexity.

► Integration into regional and national planning systems

Mostly Effective

Integration between the National Park Service and California State Parks required at all levels (National Park Service, 2000).

► Management system

Mostly Effective

The National Park Service (NPS) and the California Department of Parks and Recreation (CDPR) administratively combined Redwood National Park with the three abutting Redwood State Parks in 1994 for the purpose of cooperative forest management and stabilization of forests and watersheds as a single unit (NPS website, retrieved 22.01.2014). Redwood National and State Parks, including Prairie Creek, Del Norte Coast, and Jedediah Smith Redwoods State Parks and Redwood National Park, are managed under a cooperative management agreement between the NPS and CDPR. The parks

comprising the World Heritage Site share a General Management Plan / General Plan (2000) and cooperate across the board to protect park resources and provide visitor services (Consultation with park management, 2014).

▶ Management effectiveness

Some Concern

A strong management plan exists and yet there has not been enough funding to implement the plan fully (Personal communication, 2012).

▶ Implementation of Committee decisions and recommendations

Data Deficient

Not applicable.

▶ Boundaries

Mostly Effective

The site’s boundaries are adequate. The park works with landowners in the Park Protection Zone and also with adjacent landowners on issues of timber harvest and fencing for cattle (Consultation with park management, 2014).

▶ Sustainable finance

Some Concern

Funding has fallen short of what is needed to implement the management plan and is in continual decline. There will be at least a 5% reduction over the next three years (Personal communication, 2012).

▶ Staff training and development

Mostly Effective

Staff reductions likely to address shrinking budget (Personal communication, 2012).

▶ Sustainable use

Data Deficient

Unknown at the present time.

► Education and interpretation programs

Mostly Effective

Programs are consistently available to park visitors but programs are underfunded (Personal communication, 2012). RNSP delivers environmental education programs featuring redwood ecosystems to ~7000 students annually at the Wolf Creek and Howland Hill outdoor schools.

► Tourism and interpretation

Mostly Effective

More than 400,000 people visit the park annually. While visitation is consistent, funding for interpretation is low (Personal communication, 2012).

► Monitoring

Some Concern

Some long-term data have been collected (e.g., water quality), but budget reductions will reduce programs (Personal communication, 2012).

► Research

Mostly Effective

There are approximately 40-60 annual permits for scientific research in RNSP.
Redwood Climate Change Initiative is a partnership among NGOs (Save the Redwoods League) and universities (Humboldt State University and University of California, Berkeley) to examine the growth of old redwoods and response to climate, helping park managers understand vulnerabilities under future scenarios.

Overall assessment of protection and management

Mostly Effective

There is a strong protection and management plan, but funding is the primary barrier to the successful completion of the plan. The park staff actively

maintain relationships with neighboring landowners and work on solutions to protect park resources by changing forest management in the Park Protection Zone and upstream in the Redwood Creek.

▶ Assessment of the effectiveness of protection and management in addressing threats outside the site

Mostly Effective

The park staff actively maintain relationships with neighboring landowners and working on solutions to protect park resources by changing forest management in the Park Protection Zone and upstream in the Redwood Creek watershed (Personal communication, 2012).

▶ Best practice examples

Upper Basin Watershed Restoration and Timber Harvest Plan Consultation. The park works with adjacent landowners in the PPZ and watershed to restore roads and comment on THPs.
Marijuana Interdiction. Park law enforcement programs have been successful in preventing grows in park boundaries (although adjacent watersheds and the upper watershed are still resource issues).
Watershed Restoration in Redwood Creek and Mill Creek have eliminated 100s of miles of logging roads and skid trails, improving TMDL sediment loads in Redwood Creek and removing erosion threats.
Redwood Climate Change Initiative is a partnership among NGOs (Save the Redwoods League) and universities (Humboldt State University and University of California, Berkeley) to examine the growth of old redwoods and response to climate, helping park managers understand vulnerabilities under future scenarios.
Education. RNSP delivers environmental education programs featuring redwood ecosystems to ~7000 students annually at the Wolf Creek and Howland Hill outdoor schools.
Indigenous People. The park has a government to government relationship with the Yurok Tribe and also consults with Elk Valley and Smith River Rancherias (Tolowa). At Ganns Prairie the park is beginning a plan that would reintroduce ceremonies and cultural practices to traditional cultural properties that were formerly maintained through such practices.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ **Ancient Redwood Forest**

Good
Trend:Stable

The ancient redwood forest is in a robust condition because the coast redwood trees themselves are thriving. Volume of annual wood production has been increasing in many coast redwoods since the 1950s (Sillett et al., 2010).

▶ **Natural beauty and superlative natural phenomenon**

Good
Trend:Data Deficient

The ancient redwood forest with its associated beauty and aesthetics is in good condition because the redwoods are growing well. No visitor survey data available.

Other important biodiversity values

▶ **Diversity of flora and fauna**

The park’s diverse habitats are home to 92 mammalian species (e.g. humpback whale, Megaptera novaeangliae), 17 amphibian species (e.g. Pacific giant salamander, Dicamptodon ensatus), 16 reptilian species (e.g. Western fence lizard, Sceloporus occidentalis), 46 fish species (e.g. Coho salmon, Oncorhynchus kisutch), 251 avian species (e.g. Northern spotted owl, Strix occidentalis), 660 native vascular plants (e.g. Western hemlock, Tsuga heterophylla), and 986 species of lichen and fungi (e.g. Scaly chanterelle, Gomphus floccosus) that collectively are continuing to evolve in a relatively natural state (National Parks Conservation Association, 2008). The park provides habitat for nine threatened or endangered species and two

species that are candidates for listing under the federal Endangered Species Act (National Parks Conservation Association, 2008). Humboldt Lagoons Important Bird Area (IBA global priority; criteria A1, D4i, D4ii) includes portions of Prairie Creek Redwoods State Park. The IBA is a major coastal wintering area for non-marine watersfowl. The mature redwood forest in the property supports a significant portion of California's nesting marbled murrelets.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Good

Trend: Stable

The ancient redwood forest is in a robust condition because the coast redwood trees themselves are thriving. The aesthetic values of the site are therefore also well preserved. However, biodiversity values of the site might be in decline. While the established coast redwood trees are likely to persist, many associated species in the park are threatened. Northern spotted owls and marbled murrelets are likely declining due to complex species interactions and lack of primary nest habitat.

► Assessment of the current state and trend of other important biodiversity values

Low Concern

Trend: Deteriorating

Many common bird species have stable populations, though a few are declining (Golightly et al., 2011). The hydrologic regime and aquatic habitat complexity is in good condition due to stewardship and restoration, yet key salmonid populations are declining (Golightly et al., 2011). Northern spotted owls and marbled murrelets are likely declining due to complex species interactions and lack of primary nest habitat. Currently little data is available on marbled murrelets (Golightly et al., 2011).

Additional information

Key conservation issues

▶ Logging roads legacy

Local

Old logging roads in the park are contributing sediment to the streams and degrading water quality.

▶ Restoration of estuary

Local

Pollution and sedimentation of the estuary, control of invasive species, and improved hydrologic connection to the ocean are needed to protect biodiversity.

▶ Restoration of streams

Regional

Water quality and habitat structure for critical salmonids needs to be improved.

▶ Fire management

National

The capacity to manage fire in the park needs to be restored to emulate the historic fire regime which is needed to maintain ecosystem function and biodiversity.

▶ Forestry restoration

Local

Restoration silvicultural practices to encourage old-growth forest characteristics both within and outside of the parks are needed to create more habitat for wildlife.

Benefits

Understanding Benefits

► Outdoor recreation and tourism

More than 400,000 people visit the park annually.

► Carbon sequestration

The coast redwood forest is the most carbon rich forest on Earth.

► Water provision (importance for water quantity and quality)

The watersheds in the park filter water and provide critical habitat for threatened salmonids.

► Importance for research

The park provides many opportunities for research and education, is a repository for cultural history.

► Coastal protection

The park protects more than 35 miles of coast.

► Does management of the site provide jobs (e.g. for managers or rangers)?

The park provides many jobs in local community for resource management, law enforcement, education, and tourism.

► Wilderness and iconic features

The park includes traditional lands of cultural and spiritual significance for Native American groups including the Chilula, Tolowa, and Yurok (National Parks Conservation Association, 2008).

Summary of benefits

The park offers widespread benefits ranging from local jobs and critical resources protection to vital cultural preservation and global carbon sequestration. Specifically, nearly half a million people visit the park for recreation, research and education. The park resources store a disproportionally large amount of carbon in the forest and clean water for surrounding communities. The park protects coastline and numerous spiritually and culturally significant lands.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	NPS		Strawberry Creek Restoration
2	NPS		Bald Hills Prescribed Fire
3	NPS		Lost Man Creek Second Growth Restoration
4	CDPR		Mill Creek Watershed Restoration
5	CDPR		Mill Creek Forest Management
6	NPS		Exotic Plant Management
7	CDPR		Gold Bluffs Beach Restoration

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	NPS	Road Plan	
2	NPS	Redwood Creek Watershed Restoration	
3	NPS	Redwood Creek Watershed Restoration	
4	NPS	Estuary Restoration	

№	Site need title	Brief description of potential site needs	Support needed for following years
5	NPS	Redwood Creek Forest Management	
6	NPS and CDPR	Sudden Oak Death Management	
7	NPS and CDPR	Cultural Resource Inventory	
8	NPS and CDPR	Climate Change Vulnerability Assessment	
9	NPS and CDPR	Endangered Species Recovery	

REFERENCES

№	References
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2	Golightly, R. T., S. H. Kramer, and C. D. Hamilton. 2011. Assessment of natural resource and watershed condition: Redwood National and State Parks, Whiskeytown National Recreation Area, and Oregon Caves National Monument. Natural Resource Report NPS/NRPC/WRD/NRR—2011/335. National Park Service, Fort Collins, Colorado.
3	Hayhoe, K, et al. 2004. Emission pathways, climate change, and impacts on California. PNAS, 101(34): 12422-12427.
4	National Park Service, U.S. Department of the Interior. 2000. Redwood National and State Parks, California, General Management Plan. Denver Service Center, Denver, Colorado.
5	National Park Service, U.S. Department of the Interior. 2004. Lyons Ranches Historic District Cultural Landscapes Inventory.
6	National Park Service, U.S. Department of the Interior. 2012. Archeological Sites Management Information System (ASMIS) database of archeological site condition.
7	National Park Service, U.S. Department of the Interior. 2012. List of Classified Structures (LCS) database of historic structure condition.
8	National Park Service, U.S. Department of the Interior. Prairie Creek Fish Hatchery Cultural Landscapes Inventory.
9	National Parks Conservation Association. 2008. State of the Parks: Redwood National and State Parks, a Resource Assessment.
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