IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 08 November 2017

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

2017 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. More staffing and financial resources are required to sustainably protect and restore natural and cultural resources.

FULL ASSESSMENT

Description of values

Values

World Heritage values

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

Redwood National and State Parks (property) preserves the largest remaining contiguous ancient coast redwood forest in the world in their original forest and streamside settings (World Heritage Committee, 2006).

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

The property 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 (World Heritage Committee, 2006).

Other important biodiversity values

▶ **Diversity of flora and fauna**

The property’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), 1,000 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 property 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 waterfowls. The mature redwood forest in the property supports a significant portion of California’s nesting marbled murrelets (Brachyramphus marmoratus).

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, widespread(15-50%)
Outside site

There are over 300 exotic plant, animal, and pathogen species in the property. Invasive species are affecting habitats,notable examples are the New Zealand mud snail that impacts the food web within the Redwood Creek

estuary and reed canary grass which displaces native vegetation on coastal stream banks.

► Roads/ Railroads

High Threat
Inside site, throughout(>50%)
Outside site

Neglected logging road network adding sediment to streams (Mantgem et al. 2013; Golightly et al., 2011).

► Other

Data Deficient
Inside site, widespread(15-50%)
Outside site

Too little fire is changing forest understory structure and composition (Lorimer et al. 2009; National Park Service 2010; Golightly et al. 2011).

► Other Ecosystem Modifications

High Threat
Inside site, throughout(>50%)
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 road network that disrupts estuarine habitat (and aquatic habitat generally) for fisheries. Also, small-statured young forests do not provide as much cooling to streams, leading to temperature impairment and negative impacts on fish populations. Neglected young timber stands are stunting tree growth and modifying species composition (Golightly et al., 2011; Keyes and Teraoka 2014; Koopman et al. 2014).

► Other

Data Deficient
Inside site, throughout(>50%)
Outside site

Harvested stands surrounding the old-growth habitat are denuded forests

that provide little habitat for marbled murrelets, mesocarnivores (including the Pacific fisher and Humboldt marten) and many more species, and require restoration (National Park Service, 2000). Inside the property, around two-thirds of the forest has previously been harvested, and outside of the property it is understood that the extent is as far as 95%.

▶ Other

High Threat
Inside site, localised(<5%)
Outside site

Fish populations are impacted by sediment loading (National Park Service, 2000) and New Zealand mud snail invasion (Personal communication, 2017) within the estuary and surrounding watershed.

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, Temperature extremes

Data Deficient
Inside site, throughout(>50%)
Outside site

Major climate changes predicted for California (Hayhoe et al., 2004; Fernandez et al. 2015). Twentieth century climate changes accelerated growth of Sequoia sempervirens (Sillett et al. 2015), but the future impacts of further climate changes to S. sempervirens and other taxa are unknown.

▶ Renewable Energy

Data Deficient
Outside site

Past proposals from energy industry (pers. comms., 2012).

► Dams/ Water Management or Use

Data Deficient
Inside site, extent of threat not known
Outside site

Currently, RNSP has several small dams which are anadromous fish barriers (inside park). Klamath dams have negatively impacted fisheries by reducing streamflow and increasing stream temperature (outside of park), however dam removal is planned for 2020). Maruijuana cultivation upstream of the property in the Redwood Creeks is also understood to have the potential to divert significant proportions of the flow in the water watershed, thereby affecting the ecosystem and its biodiversity (Bauer et al., 2014).

Protection and management

Assessing Protection and Management

► Relationships with local people

Mostly Effective

The park works with adjacent landowners in the Park Protection Zone (PPZ) and the Redwood Creek watershed as a whole 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 working with tribes to 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, 2017).

► Legal framework

Highly 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.

► Enforcement

Some Concern

Park resources are negatively impacted by illegal activities including marijuana cultivation, burl and wildlife (deer, elk, fishing) poaching, social trails, unpermitted rock and tree climbing and because these activities occur scattered throughout the park, they are difficult to police. Park law enforcement programs have been largely successful in preventing marijuana grows in park boundaries, although grows continue upstream of the property within Redwood Creek watershed, which is the same as for the property, and are negatively impacted by illegal and legal plantations of the cash crop.

► 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

Mostly Effective

A strong management plan exists but most of the park areas lack a specific restoration plan in addition to shortage of funding to implement them (IUCN Consultation, 2017).

► Implementation of Committee decisions and recommendations

Data Deficient

Not applicable.

► Boundaries

Some Concern

The site's boundaries are mostly adequate, but some habitats including pine forest, oak woodlands, and estuaries are not fully protected because of administrative boundaries that fragment these habitats. However, the park works successfully 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). A major Federal highway (Highway 101) is impacting the Park habitat within Del Norte Redwoods State Park (Last Chance Grade), rerouting of the highway is likely in the decade ahead and will cause significant habitat destruction.

► Sustainable finance

Serious 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 with a multi-year trend of budget reductions (Personal communication, 2012).

► Staff training and development

Serious Concern

California Department of Parks and Recreation staff at the Park are already below minimal staff levels and Redwood National Park staff reductions are likely given the predicted shrinking budget over the next five years (Personal communication, 2017).

► Sustainable use

Some Concern

Unknown at the present time. Legal activities: Cultural practices for plant and seashell gathering is considered effective now due to a new Federal rule allowing collecting in National Parks (pers. comms., 2017). Corvid populations are increasing due to human food subsidies in campgrounds which increases predation on native fauna (West et al. 2016).

► Education and interpretation programs

Mostly Effective

Programs are consistently available to park visitors but programs are underfunded (Personal communication, 2017). RNSP delivers environmental education programs featuring redwood ecosystems to ~7000 students annually at the Wolf Creek and Howland Hill outdoor schools.

► Tourism and visitation management

Mostly Effective

In 2016 nearly 1.5 million people visited the park (media: http://www.triplicate.com/news/5262489-151/money-does-grow-on-trees). While visitation is consistent, funding for interpretation is low (Personal communication, 2017).

► Monitoring

Some Concern

Some long-term data have been collected (e.g. water quality through the Inventory Monitoring Program), but future budget reductions will reduce programs (pers. comms., 2017).

► Research

Mostly Effective

There are approximately 40-60 annual permits for scientific research in RNSP. The Redwoods and Climate Change Initiative is a partnership among an NGO (Save the Redwoods League) and university (Humboldt State University) 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. More staffing and financial resources are required to sustainably protect and restore natural and cultural resources.

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

Mostly Effective

While some administrative boundaries of the park make it difficult to fully protect and manage some habitats, the park staff actively maintain relationships with local tribes to manage natural and cultural resources and work with other neighboring landowners to change forest management in the Park Protection Zone and upstream in the Redwood Creek watershed to protect park resources (Personal communication, 2017).

▶ Best practice examples

A new example of collaborative park resource protection and restoration, is Redwoods Rising, a joint effort by the National Park Service, California Department of Parks and Recreation, and Save the Redwoods League to restore previously logged redwood habitat. By leveraging park staff time and financial resources with new public and private support, Redwoods Rising is a creative new model to accelerate habitat restoration and improve visitor enjoyment of the park. Redwoods Rising effectiveness stems from the strong track record of watershed restoration in Mill Creek, Prairie Creek, and Redwood Creek that has set (to date) 5,000 acres of logged forest on a trajectory towards recovery and eliminated hundreds of miles of logging roads and skids trails to reduce erosion threats. 2) The park delivers high-quality environmental education programs featuring redwood ecosystems to ~7000 students annually at the Wolf Creek and Howland Hill outdoor schools. 3)The park has a government to government relationship with the Yurok Tribe and also consults with Elk Valley and Smith River Rancherias (Tolowa).

Through these partnerships, the park is implementing a plan at Ganns Prairie to 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). However the climate impacts on associated species are largely unknown.

▶ **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.

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). Waterways are also impaired and infrastructure is degrading in many places. 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

Benefits

Understanding Benefits

► **Outdoor recreation and tourism**

Around 1.5 million people visited the property in 2016.

There are minor impacts of social trails and new invasive species.

► **Carbon sequestration**

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

Sudden Oak Death is killing tanoak trees in RNSP, leading to a loss of carbon storage and sequestration.

▶ **Water provision (importance for water quantity and quality)**

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

Salmonid habitat is significantly impacted by legacies of past land use, including logging roads.

▶ **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.

Sea level rise and invasive coastal species threaten habitats.

▶ **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. Nearly 1.5 million people visited the park in 2016 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 and CDPR	Endangered Species Recovery	
2	NPS and CDPR	Climate Change Vulnerability Assessment	
3	NPS and CDPR	Cultural Resource Inventory	
4	NPS and CDPR	Sudden Oak Death Monitoring and research	
5	NPS	Redwood Creek Forest Management	
6	NPS	Redwood Creek Estuary Restoration	
7	NPS and CDPR	Road removal	

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