

# Redwood Experimental Forest (California)

## Introduction

The Redwood Experimental Forest at Yurok, California, was established in 1940 to study the silviculture of coast redwood and to develop techniques for regeneration and management. Redwood is located on the coastal front of the northern coast ranges in northern California, about 2.4 km inland from the Pacific Ocean and near the mouth of the Klamath River. The Redwood includes 379 ha drained by High Prairie Creek. Redwood is the principal forest species on the forest, with Douglas-fir, Sitka spruce, western hemlock, and Port Orford-cedar making up the remainder. About 59 percent of the timberland is classified as Site I and 35 percent is classified as Site II. Tree ages range up to 1,200 years. Topography varies considerably over the forest. Slopes range from 0 to 75+ percent, and elevation ranges from 40 to 340 m.

About 45 percent of the total area (226 of 502 ha) was clearcut in harvest units ranging from 1.2 to 62.7 ha between 1956 and 1985. About 1 percent (4 ha) was harvested in 1981 using the selection system. An additional 23 percent (87 ha) is available for approved manipulative research studies, and 16 percent (61 ha) is preserved in an undisturbed old-growth redwood forest condition in the Yurok Research Natural Area (RNA) established in 1976.

## Climate

The climate at the Redwood is typically mild and foggy in summer. The average July temperature is 12.6 °C, with little precipitation other than fog drip. The average January temperature is 6.8 °C. Annual rainfall averages 1,930 mm and snowfall is uncommon. No climatic data are maintained at Redwood, but data are available from the town of Klamath, in a similar climatic environment 6 km south and from Crescent City, 27 km north of the forest. Precipitation is well in excess of potential evapotranspiration, except for about a month in midsummer.

## Soils

The entire region is underlain by Mesozoic rocks of the Franciscan formation, a complex of raw to slightly metamorphic sedimentary rocks. This formation is generally soft and easily weathered, so that soil development is good, with unweathered regolith at depths of about 3 m in most areas. Rock outcrops are few, and where they do occur, shallow soils and exposure combine to make such sites ecologically unique. The major soil series is Melbourne, with a small amount of Hugo series along the ridgetops (about 6.5 ha) and Atwell series at the lower elevations on the southern part of the Redwood (about 2.0 ha). Unclassified alluvial soils are found along High Prairie Creek on about 32.4 ha.

## Vegetation

The Yurok RNA supports very dense stands of old-growth redwood averaging about 200 m<sup>2</sup> of basal area per hectare. The two dominant vegetation types on the forest are redwood-western swordfern and red alder-salmonberry.

## Long-Term Data Bases

Timber data on regeneration after cutting, young stand growth and yield, response to thinning, and redwood sprout development are available (intermittently) between 1956 and 1982. Post-harvest regeneration and effects of shelterwood removal data were recorded between 1970 and 1985. Soil-vegetation maps are also available.

Wildlife habitat data are available on species composition and abundance of vertebrate communities in response to changes in age, moisture, and structural features of forest stands from 1983 to 1985. Fish habitat data describing stream reaches and distribution of fish species in High Prairie Creek were mapped from 1984 to 1987.

## Research, Past and Present

The following topics have been studied:

- salmonid preference for obstacle-formed pools
- stream structure and fish production
- ecology of old-growth forest wildlife habitat community

## Facilities

The Redwood is readily accessible from U.S. Highway 101, 27.2 km south of Crescent City and 6.4 km north of Klamath. Commercial facilities are available in these communities.

Lat. 41°35' N, long. 124°5' W

## Contact Information

Redwood Experimental Forest

USDA Forest Service

Pacific Southwest Research Station

Redwood Sciences Laboratory

1700 Bayview Drive

Arcata, CA 95521-6098

Tel: (707) 825-2930

<http://www.fs.fed.us/psw/rs1/yurok>