

World Heritage Sites

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OLYMPIC NATIONAL PARK UNITED STATES OF AMERICA

Olympic National Park is an area of outstanding natural beauty combining a stormy coastline and numerous offshore islands with glacier-capped mountains and alpine parklands rising above an extensive mountain-slope rainforest. This is the largest and most intact rainforest of temperate latitudes with some of the world's largest conifers. Ten major river systems radiate from the massif with some of the best anadromous fish habitat in the country. It also has 90 km of the longest wilderness coast in the contiguous United States, and is rich in native and endemic animals and plants, including critical populations of the endangered marbled murrelet and bull trout.

COUNTRY

United States of America

NAME

Olympic National Park

NATURAL WORLD HERITAGE SERIAL SITE

1981: Inscribed on the World Heritage List under Natural Criteria vii and ix.

STATEMENT OF OUTSTANDING UNIVERSAL VALUE [pending]

The UNESCO World Heritage Committee issued the following statement at the time of inscription:

Statement of Significance

Olympic National Park features spectacular coastline, scenic lakes, majestic mountains and glaciers, and magnificent temperate rainforest. It is the lowest latitude in the world in which glaciers form at relatively low elevation. Its relative isolation and highly varied rainfall have produced complex and varied life zones. Olympic contains a great wealth of geological formations. The rocky islets along the coast are remnants of a continuously receding and changing coastline. The biological evolution, ecological variety and sheer splendour of Olympic National Park make it a special place.

Criterion (vii): Olympic National Park is of remarkable beauty, and is the largest protected area in the temperate region of the world that includes in one complex ecosystems from ocean edge through temperate rainforest, alpine meadows and glaciated mountain peaks. It contains one of the world's largest stands of virgin temperate rainforest, and includes many of the largest coniferous tree species on earth.

Criterion (ix): The park's varied topography from seashore to glacier, affected by high rainfall has produced complex and varied vegetation zones, providing habitats of unmatched diversity on the Pacific coast. The coastal Olympic rainforest reaches its maximum development within the property and has a living standing biomass which may be the highest anywhere in the world. The park's isolation has allowed the development of endemic wildlife, subspecies of trout, varieties of plants and unique fur coloration in mammals, indications of a separate course of evolution.

INTERNATIONAL DESIGNATION

1976: Designated a Biosphere Reserve under the UNESCO Man & Biosphere Programme (373,396 ha).

IUCN MANAGEMENT CATEGORY

II National Park

BIOGEOGRAPHICAL PROVINCE

Oregonian (1.2.2)

GEOGRAPHICAL LOCATION

Located in the northwestern United States 70-160 km west of Seattle in the northern central Olympic peninsula and in a separate 90 km strip along its western coast. Located between 47°29' to 48°16'N and 123°07' to 124°43'W.

DATES AND HISTORY OF ESTABLISHMENT

1897: Olympic Forest Reserve established by Presidential decree;

1909: Mount Olympus National Monument established by Presidential decree; but soon halved in size;

1938: Declared a National Park by Act of Congress, partly to protect the Roosevelt elk;

1953: The Pacific Coastal Area and Queets River Corridor added;

1976: Expansion of the north end of the Coastal Area to include Shi Beach and Point of Arches (now a National Natural Monument);

1976: Designated a UNESCO MAB reserve;

1986: Intertidal area in the coastal strip included;

1998: 95% of the Park designated a Wilderness by Act of Congress.

LAND TENURE

99% Federal Government, 1% privately owned. Surrounded by the Olympic National Forest and bordered by six smaller Wilderness Areas. Managed by the National Park Service (NPS) of the Department of the Interior. It is almost surrounded by Olympic National Forest lands.

AREA

369,659 ha: 352,335 ha in the Olympic Mountains plus 17,324.8 ha in the separate Pacific Coastal Area.

ALTITUDE

Sea level to 2,428m (Mount Olympus)

PHYSICAL FEATURES

The Olympic Mountains are the highest mountains of the Pacific coastal range, and form the core of the Park. The massif rises abruptly like an island above coastal plains covered in a dense jungle of temperate rainforest which contains some of the world's largest conifers. The Park is in two sections: the mountainous core and a coastal strip stretching 116km along the Pacific shore, the country's longest undeveloped shoreline. The humidity is the result of moist Pacific air condensing on and precipitating on the mountains. Geologically their ruggedness results from the collision of continental plates: the subduction of the Gorda plate under the North American plate moved out to sea in mid Tertiary times resulting in the upwelling of submarine sediments and volcanic material. A dome 95km across, of contorted beds of shale, slate and sandstone with interspersed lavas was created. Ten major rivers and many glaciers, 60 of which remain, have carved the dome into a vast landscape of deep canyons and jagged peaks; the Park has over 4,800km of rivers and streams. Ancient 1,000m-thick continental ice sheets transported granite erratics from British Columbia 200km north (NPS, 2006; Tabor, 1975).

CLIMATE

The climate is moderate and temperatures rarely drop below -7°C or rise above 27°C. The mean annual temperatures are 10°C at lower elevations with a yearly range from 1°C to 17°C. The warm, moisture-laden air from the Pacific drops some 4,000mm of precipitation a year in western valleys and 5,000mm on Mount Olympus, most of it as snow, but the summers are dry. Only 53km to the north-east precipitation falls to 300mm, resulting in the world's most extreme temperate latitude precipitation gradient over distance.

VEGETATION

The cool, perpetually damp environment is the home range of 70m old growth conifers and 12m wide moss-covered maples with a dense undergrowth of fallen trees, shrubs, ferns, liverworts, epiphytes, fungi, lichens and flowers. There are five major vegetation zones: 1) A Sitka spruce zone (36,960 ha, 10%), containing temperate rain forest of Sitka spruce *Picea sitchensis*, western hemlock *Tsuga heterophylla*, western red cedar *Thuja plicata*, big leaf maple *Acer macrophyllum* and red alder *Alnus rubra* along the coast and in valley bottoms. 2) Lowland forest zone (36,960 ha, 10%), Douglas fir *Pseudotsuga menziesii*, an extensive fire sub-climax species growing up to 550m with western hemlock plus western red cedar, grand fir *Abies grandis* and Sitka spruce. 3) The montane zone (184,830 ha, 50%) from about 450-600m to 1250m, is dominated by western hemlock in lower and drier levels, Pacific silver fir *Abies amabilis* in higher and damper levels and Douglas fir as an extensive sub-climax in eastern parts of the Park, generally from 550-1,100m. 4) The subalpine zone (73,920ha, 20%) above 1,600m, is dominated by mountain hemlock *Tsuga mertensiana* in the western part of the Park and subalpine fir *Abies lasiocarpa* in the eastern part, including extensive park-like meadows, generally from 1,100m to around 1,600m, and Alaska yellow-cedar *Chaemaecyparis nootkatensis*. 5) The Alpine/glacier zone (36,960 ha, 10%) is characterised by red mountain heather *Phyllodoce empetrififormis*, tall sedge *Carex spectabilis*, spreading phlox *Phlox diffusa* and large tracts of snow and ice on the highest ridge and mountain tops.

The Park contains over 1,200 native plants, of which 8 are endemic, and hundreds of non-vascular plants. Endemic species occur mainly at high elevation including Olympic mountain milk-vetch *Astragalus australis* var. *olympicus*, Piper's bellflower *Campanula piperi*, Olympic mountain daisy *Erigeron flettii*, rockmat *Petrophytum hendersonii*, Olympic butterweed *Senecio neowebsteri* and Flett's violet *Viola flettii*, and seven varieties: Piper's bellflower white form *Campanula piperi* var. *soveregniana*, magenta paintbrush *Castilleja parviflora* var. *olympica*, wallflower *Erysimum arenicola* var. *arenicola*, white coiled-beak lousewort *Pedicularis bracteosa* var. *astrosanguinea*, kittentails *Synthesis pinnatifida* var. *lanuginosa* and Olympic rockcress *Arabis furcata* var. *olympica* (NPS, 2006).

FAUNA

56 species of terrestrial mammals occur, at least 16 being endemic. The native fauna is intact except for the local subspecies of wolf *Canis lupus nubilus*, which was extirpated by man before the Park was established. The large coastal subspecies of elk *Cervus elaphus roosevelti* was first described in the Olympic Mountains and its protection was an important reason for establishing the Park. There are now an estimated 3,000-5,000 animals in the area. Rocky Mountain goat *Oreamnos americanus* was introduced before the Park was created and now has an estimated population of 300, reduced by culling from about 1,200 in 1983. Endemic Olympic fauna include: Olympic marmot *Marmota olympus*, Olympic snow mole *Scapanus townsendii olympicus*, Olympic yellow pine chipmunk *Tamias amoenus caurinus*, Olympic pocket gopher *Thomomys mazama melanopes*, Olympic stoat *Mustela erminea olympica* and North American river otter *Lontra canadensis*. Other noteworthy species are snowshoe hare *Lepus americanus washingtonii*, mountain beaver *Aplodontia rufa*, coyote *Canis latrans*, American black bear *Ursus americanus*, cougar *Puma concolor cougar*, Columbian black-tailed deer *Odocoileus hemionus* ssp. *columbianus*. 24 marine mammals are seen from time to time, among them sea otter, *Enhydra lutris* (EN), harbor seal, *Phoca vitulina*, northern fur seal *Callorhinus ursinus* (VU), Steller sea lion *Eumetopias jubatus* (EN), California sea lion *Zalophus californianus*, northern elephant seal *Mirounga angustirostris*, Pacific white-sided dolphin *Lagenorhynchus obliquidens*, harbour porpoise *Phocoena phocoena* on migrations, gray whale, *Eschrichtius robustus*, humpback whale *Megaptera novaeangliae*, minke whale *Balaenoptera acutorostrata*, killer whale *Orcinus orca* and white-flanked porpoise *Phocoenoides dalli*.

Among the 300 species of birds are golden eagle *Aquila chrysaetos*, peregrine falcon *Falco peregrinus*, marbled murrelet *Brachyramphus marmoratus* (EN), spotted owl *Strix occidentalis* and gray-crowned rosy-finch *Leucosticte tephrocotis*. There are at least 13 amphibian and 4 reptile species and some 37 native species of fish. There are seven species of salmon, anadromous trout including bull trout *Salvelinus confluentis* (VU) and the endemic Beardslee trout *Salmo gairdneri beardsleei* and Crescent trout *Salmo clarkii crescentis*, isolated in Lake Crescent (NPS, 2006).

CONSERVATION VALUE

Olympic National Park is an area of outstanding natural beauty combining a stormy coastline and numerous offshore islands with glacier-capped mountains, alpine parklands and forested mountain slopes. The Park contains the largest and best example of virgin temperate rain forest in the western

hemisphere, the largest intact stand of coniferous forest in the contiguous United States, and the largest truly wild herd of Roosevelt elk. It lies within a WWF Global 200 Freshwater Eco-region, and overlaps a UNESCO Biosphere Reserve.

CULTURAL HERITAGE

A 12,000-year old spearhead has been found embedded in a mastodon. About 3,000 years ago the hunter-gatherer societies turned to living in farm settlements until their 19th century disruption and appropriation by western settlers leaving over 650 archaeological sites. Europeans first discovered the area from the sea, first settled the coastal plains in the mid 18th century and crossed the mountains in the 1880s. There are 130 historic structures dating from this period (NPS, 2006).

LOCAL HUMAN POPULATION

Eight native American tribes with traditional associations to lands now in the Park live on reservations near to or adjoining Park lands. They keep their traditions and once again exercise rights to tribal fishing and plant-gathering for religious and ceremonial purposes retained under treaties signed in 1855. These tribes are, in the northwest, the Makah, who have revived their ancient whaling; in the north the Elwha Klallam, Port Gamble S'Klallam and Jamestown S'Klallam; on the coast the Quileute and Quinault; in the east the Skokomish (NPS, 2006). Towns on the peninsula are small - Port Angeles has 16,500 inhabitants - but less than 80km to the east, across Puget Sound, the Seattle-Tacoma urban complex has a population of nearly two million.

VISITORS AND VISITOR FACILITIES

Over three million people visit the Park annually (3.14 million in 2005) but most stay near the 269 km of peripheral roads that lead up the mountain valleys and skirt some 25% of the Pacific Ocean coastline. In 2005 there were 3,142,774 recreational visits, 315,500 visited visitor centres and contact stations, 31,000 overnight campers and 23,100 attended ranger-led education programs. Almost 1,000 km of hiking and riding trails cross the mountain interior, with 175 wayside exhibits. There are at least 125,000 overnight hikers each year, many hiking the coastline. There are nine ranger stations, nine seasonal tourist facilities located around the edge of the Park, 4 overnight lodges, 16 developed campgrounds, a downhill ski concession and river rafting. Several villages, as well as the towns of Port Angeles, Forks, and Sequim offer tourist amenities (NPS, 2006).

SCIENTIFIC RESEARCH AND FACILITIES

Since 1971 management studies by the Park staff have extensively investigated human recreational impact and its mitigation in back-country camping areas. Other management problems needing research include baseline surveys of all major biotic subsystems, terrestrial and aquatic, as benchmarks for sound management strategies; the ecological role and appropriate management of wildfire, population ecology and protection of *Cervus elaphus roosevelti* and its role as a consumer in forest communities; status and protective measures needed for native genetic stocks of anadromous fish species; and the status and protection of alpine plant endemics with increasing recreational use. Distinctive plant communities have been described by Fonda & Bliss 1969, Kuramoto & Bliss 1970, and Fonda 1974. There is a 5,000-specimen study collection and reference library in the Port Angeles centre.

MANAGEMENT

The Park is strictly protected under an Act of Congress of 1938, but fishing is permitted. About 95% of the Park is managed as a wilderness and 5%, including all public facilities, as a natural area. A draft General Management Plan was subjected to public comments in 2006; these are still being analysed. A goat management program continues the removal of the remaining mountain goats from the Park. In train is the Elwha System Restoration project for the removal of two dams blocking a salmon river in the north.

MANAGEMENT CONSTRAINTS

The core of the Olympic Mountains is still largely undisturbed mountain and forest. No timber harvesting is permitted in the park but there is some illegal felling at the boundaries. Introduced mountain goats *Oreamnos americanus* have had an impact on high elevation communities. They have reduced plant cover, increased erosion and shifted plant community dominants toward more resistant or less palatable species, and they have been recorded feeding on at least three of the endemic plant species (Houston *et al.*, 1994). The 1% of the site which is privately owned, is visually obtrusive. The Park has suffered two large oil spills from offshore shipping since 1988 and remains vulnerable to such accidents. Air and

water quality in coastal areas is also threatened by large-scale applications of herbicides in timber-producing areas adjacent to the Park. Tourists and other visitors have an adverse effect on the Park (NPS, pers. comm., 1995).

STAFF

In 1995 there were 126 permanent and 154 seasonal employees (NPS, pers. comm., 1995).

BUDGET

US\$7,600,00 in 1995 (NPS, pers. comm., 1995). More recent information has not been found.

LOCAL ADDRESS

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REFERENCES

The principal source for the above information was the original nomination for World Heritage status. Numerous publications are available in the park library, Pioneer Memorial Visitor Centre, Port Angeles.

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DATE

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