



## TEMPERATE RAIN FORESTS

Olympic National Park has often been referred to as three great parks rolled into one because of its rugged mountainous core, scenic ocean strip and lush temperate rain forest. It is the rain forest for which the park is recognized internationally as a Biosphere Reserve and World Heritage Site.

Take a mild coastal climate, which rarely freezes in winter or goes above 80 degrees in summer, add about 12' of rain a year, and some summer fog and you have the ingredients for a temperate rain forest.

The tree which is most closely associated with the temperate rain forest of North America is the Sitka spruce. It grows in a narrow band along the coast and up western-facing river valleys from southeastern Alaska to southern Oregon, where it blends into redwood forest. Indeed, some use the terms Sitka spruce forest and temperate rain forest interchangeably. However, when most people speak of the temperate rain forest in North America, they are usually thinking of those found in the western-facing valleys of the Olympic Peninsula.

A temperate rain forest is recognized by the following found in combination:

1. The presence of Sitka spruce.
2. Nurse logs—usually fallen Sitka spruce upon which seedlings grow.
3. Colonnades—which are the trees standing in a row as a result of their getting a start on nurse logs.
4. Trees standing on stilts—a result of seedlings sprouting on stumps that later decay away leaving a tree standing on the roots
5. A profusion of mosses and lichens.
6. Big leaf maples with clubmoss draperies. Big leaf maples are not common in the temperate rain forest as they tend to be restricted to coarse, well-drained soil.

People often wonder if the mosses and lichens hanging from the limbs of big leaf maples, vine maple and other trees harm these trees. The answer is no, except for an occasional breaking of limbs from tremendous weight. In fact, these trees often send special roots out from the branch crotches into the mats of mosses and lichens and tap nutrients found there.

A temperate rain forest is more than a collection of trees, mosses and other plants. Woven into the fabric is a population of animals, including the Roosevelt elk, after whom the park was almost named. Birds such as the varied thrush, western robin, winter wren, pileated woodpecker, gray jay, junco and raven add reside in the temperate rain forest. Mammals such as black-tailed deer, cougar, black bear, river otter, Douglas squirrel, jumping mouse and shrew dwell there. So do insects, reptiles and amphibians. There are no rain forests in the eastern Olympics. Indicator tree species for the "dry" (less than 50") side are Douglas fir and madrone. Big leaf maples are replaced by vine maples.

How do temperate rain forests compare with tropical rain forests? Both are the result of a great deal of rain. In tropical rain forests, the rain tends to be more evenly distributed throughout the year, although there are still "dry" and "wet" seasons. There may be two of each during the year. Rain frequently falls as strong shower bursts. In temperate rain forests, there tends to be one long wet season and a fairly dry summer where fog provides the necessary moisture.

Average temperatures in a tropical rain forest are warmer and

tend to vary less during the year, as do day and nighttime differences.

Tropical rain forests tend to look like the "typical jungle" with a profusion of vines and climbing plants, such as strangler figs.

The most common trees are broad leaf evergreens; in a temperate rain forest the most common trees are evergreen conifers, such as Sitka spruce, western hemlock, western red cedar and Douglas fir. The broad leaf trees associated with temperate rain forests, such as bigleaf maple, vine maple, alder and black cottonwood are deciduous, not evergreen. Whereas palms, bamboos, tree ferns and similar plants grow in tropical rain forests, they are absent on the Olympic Peninsula.

There is a greater variety of plants and animals in tropical rain forests than in temperate rain forests, although surprisingly the latter may support more living material. This is because temperate rain forest trees tend to be taller and bigger around than their tropical counterparts, although the tropical trees often have large swollen bases called flying buttresses.

Much more animal life occurs in the canopy of tropical rain forests than in temperate rain forests, i.e., a host of monkeys, birds, snakes and other creatures dwell there, some of which are brightly colored, some of which have loud, piercing voices and some which are poisonous.

Most of the animal life in a temperate rain forest are ground dwelling, and Olympic National Park contains no poisonous snakes.

Tropical rain forests are much more vulnerable than temperate rain forests. Once destroyed, they require a much longer time for their complex interdependent structures to rebuild. The torrential rains which rapidly leach the soils are probably also a key factor.



## BEARS

Black bears live throughout the Olympic Peninsula. Their acute sense of smell can lead them to unclean camps. If bears become accustomed to human food, they may become aggressive and dangerous. To protect visitor and property, a park biologist may have to remove a hazardous bear from the area or even destroy it. As visitors to this wildlife sanctuary, each of us has an obligation to respect bears and their habitat. The guidelines listed below are strictly enforced. A \$50 fine may be issued for improper food storage or your food may be confiscated.

Do not leave food or garbage unattended. Use bear wires, bear resistant containers or hang your food at least 12' high and 10' out from the nearest tree trunk. Keep a clean camp. Wash your dishes directly after meals. Hang cooking and eating utensils, food particles and garbage. Dispose of waste water at least 200' from a campsite or water. Never cook or eat in tents. Avoid cooking greasy or smelly foods. Store any items with unnatural odors such as deodorant, toothpaste, hygiene products, sun tan lotion, soaps and stove fuel with your food. Avoid odor-tainting your backpack by carrying food and garbage in plastic bags. If a bear comes into your camp, bang pots and pans and make noise to discourage further exploration. Double-check and remove any smelly food or garbage attractants. Pay attention and follow notices concerning recent bear problems or activity. Never store food in your backpack or tent!