

## Western and Mountain Hemlock

The coastal temperate rainforest of North America is the most extensive and impressive example of temperate rain forests in the world. On the west coast, it occurs only in the northern Pacific region.

Temperate rain forests are distinguished from other temperate forests by the rarity of fire, their evergreenness, and their complex structure. There are many canopy layers, a wide range of tree sizes and ages within a patch of forest, an abundance of epiphytes (plants living on the surface of other plants) such as hanging lichens, mosses and ferns, and a dense shrubby understory.

Dominance by conifers distinguishes the North American temperate rain forests from other temperate rainforests of the world. Productive, low elevation, old growth rainforests are among the most massive ecosystems on earth. Western hemlock (*Tsuga heterophylla*) is the dominant tree of low and middle elevations from Oregon through eastern and central Vancouver Island.

Subalpine forest is characteristic of an area with a substantial, persistent snowpack. These conditions are at high elevations generally above 1000 metres in the southern part of our region. Mountain hemlock (*Tsuga mertensiana*) is one of the characteristic species of this area.

The combination of long intervals between catastrophic disturbances and the presence of species with great longevity produces forests that can legitimately be called ancient. Individual trees between 600 to 1000 years are not uncommon. We are lucky to be able to see old growth mountain hemlock and western hemlock right near Vancouver at Cypress Provincial Park. The beautiful and accessible Yew Lake trail takes you into a forest of these within minutes. They are growing with ancient yellow cypress and Pacific silver fir.

Mountain hemlock looks quite similar to western hemlock, but there are key differences. The larger cones and bottlebrush needles distinguish it from western hemlock. It rarely exceeds 40 metres in height and may even be stunted or bonsai like if growing in exposed places or bogs. The needles are blue-green and arranged around the stem in a bottlebrush like fashion, not flattened. Unlike western hemlock, the lengths of the needles are equal.

Mountain hemlock has branches that sweep upwards at the tips, whereas western hemlock's branches have downward sweeping boughs. For this reason mountain hemlock doesn't provide much protection for those seeking shelter from the rain. The purplish-brown cones of mountain hemlock are long and cylindrical and are more than double the length of western hemlock cones.

Western hemlock is taller than mountain hemlock, growing to 60 metres in height with a distinctive drooping tip. The branches have a feathery appearance due to the small delicate needles which are shorter than other conifers. If you look closely, you will notice the needles are unequal lengths, some being very short and others longer, varying from 5-20mm. Flat and blunt tipped, the shiny yellow-green needles have two fine lines of white stomata on the underside.

First Nations used hemlock for a wide range of purposes. Tender new growth needles were made into a tea rich in vitamin C. In late spring the inner bark was harvested and eaten fresh or dried with high bush cranberries and oulachen grease. The tips of the branches were nibbled as a hunger suppressant, and the branches were placed into the ocean to catch herring eggs, a favourite food.



*Note that the larger cones and 'bottle-brush' needles of mountain hemlock distinguish it from western hemlock.*



*Note feathery uneven needles and small cones of western hemlock.*

Sources: Native Plant Society of British Columbia - <http://www.npsbc.org>; Plants of Coastal British Columbia - Pojar and Mackinnon; Tree Book - Roberta Parish