

Cowichan Lake Research Station

Continue towards the end of the nursery beds. At the stop sign, take the road on the right. Keep the fence on your right until reaching the sign.

Stop 9: The great divide

Red alder in BC has two naturally distinct populations that split north and south of Bella Coola. The two groups of trees in this collection show clear differences in the amount and timing of their growth. These trees were selected from the forest for good growth and form, and can produce seedlings for reforestation that grow over 30% faster than average wild trees. Red alder wood is valued for cabinetry, flooring, and finishing products. First Nations used it for many medicines and products. Alder is an important element of biodiversity in our coastal forests, and thanks to its symbiotic relationship with nitrogen-fixing bacteria in its roots, it takes large amounts of nitrogen from the air and adds it to the soil: free fertilizer!

Backtrack along the road to the stop sign. Turn right and walk between the row of greenhouses to the end. Before the fence at Forestry Road, there is a gate - close it behind you. Enter and turn right. The sign is several rows along.

Stop 10: Yellow-cedar seed here

Because relying only on rooted cuttings is not going to provide new material to improve growth or adaptation to environmental stress or climate change, this yellow-cedar seed orchard was established to produce seed to grow seedlings for reforestation. Studies of pollen production, pollination, seed set, and orchard treatments have been ongoing here to improve seed production.

Go back out the gate, close it behind you. Return to the kiosk, which is the end of the tour.

We hope you enjoyed your visit.

For more information on forestry research in BC, please visit our web pages.

Climate

The Cowichan Lake Research Station has a mild coastal climate. It is substantially wetter than the east coast of Vancouver Island around Duncan, but drier and warmer in the summer than the west coast near Tofino. It is in the Coastal Western Hemlock zone, which means that, over the long term, forests tend to naturally develop into hemlock-dominated stands. This reflects the moist climate of the temperate rainforest where fires are uncommon and most disturbance is caused by windstorms or disease that affect small patches or single trees.

Forest

The forest at the station is a mixture of broadleaf and conifer trees. The most common is Douglas-fir. Others include red alder, bigleaf maple, western hemlock, grand fir, and western redcedar. The forest was harvested in 1899 using a clearcut, and burnt after. A dense mixture of red alder and Douglas-fir sprang up, and the forest development has been studied in research trials ever since.

Wildlife

Many animal species live here: blacktail deer, black bear, cougar, Pacific tree frogs, several species of woodpeckers, at least two types of salamanders, newts, squirrels, and banana slugs - and there are plenty of species below ground: worms, beetles, mites, and centipedes, to name a few.



Tour 1:

Nursery area

Please obtain permission from the office before going on this tour.

Check at the office what time the gate will be closed if you plan to stay after 3:30.

We need to keep our nursery facilities and the study materials disease-free.

Everyone must disinfect their shoes at the information kiosk, stop 1 on the tour.

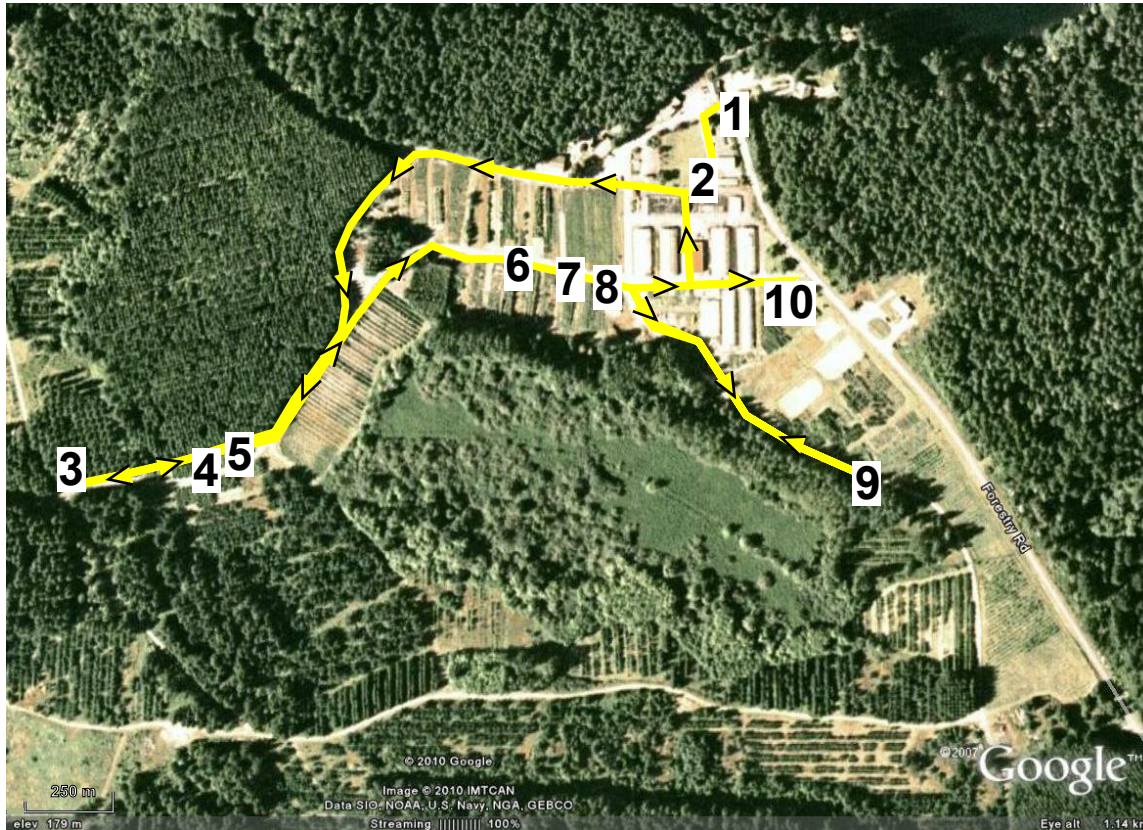
History

The Cowichan Lake Research Station was established in 1929 by the Canadian Forest Service. It was also a fisheries station and a forestry camp for unemployed men during the Depression. Since the 1930s it has been operated by the BC Forest Service. It is a valuable resource for scientists who study aspects of forest ecology, biology, productivity, management, and adaptation. The research station is a hub of research trials, archives of trees selected from forests around the province, and seed production for coastal species, including Douglas-fir, western redcedar, western hemlock, Sitka spruce, western white pine, yellow-cedar, true firs, red alder, bigleaf maple, and black cottonwood.

Cowichan Lake Research Station



Tour 1: Nursery area



Stop 1: It all starts here

The tour begins and ends here, to the left of the gate across from the office. **Everybody must pour some disinfectant on the mat and walk on it.** Maps show our facility and how BC is divided into biogeoclimatic zones using terrain, soils, vegetation, climate, and disturbance to classify and manage BC's resources. There is also information on seeds of native BC trees. *Walk uphill to the weather station.*

Stop 2: Hot or cold?

Staff collect data on temperature, precipitation, and sunshine twice every day. Ian Cairns, our long-time weatherman, won a prestigious award from Environment Canada when he retired for his long-term accurate record keeping, which is used in international, national, and provincial climate studies.

Studies on these trees provided important information about yew conservation and management. *Backtrack 70 m down the service road to the sign on your right.*

Stop 4: I'm in love with myself

This bizarre tree was not pruned - it is showing a growth mutation that is only apparent after the parent tree was fertilized by its own pollen. In fact, this tree's grandparent was also a self-fertilized tree, representing three generations of self-fertilization. In nature, most conifers have evolved ways to avoid pollinating themselves because self-fertilization causes harmful genetic effects to appear that you won't usually see in the wild since such trees die before they reach maturity. Cross-breeding with unrelated trees ensures seedlings end up with the best traits and increases their vigour. *The next sign is 10 m to your left.*

Walk back down to the service road, and head left. At the junction with the large plantation ahead and the fence on your right, turn left and follow this road for about 300 m until you see the interpretive sign on your right.

Stop 3: Yew who?

In the 1990s, yew trees around the northwest were being unsustainably harvested after taxol, a drug which helps fight cancer, was discovered to occur naturally in yew bark. Now it can be made in a lab. These yew seedlings - that deer love to browse - represent a collection of populations from all over BC.

Stop 5: The lesser of two weevils

Each row of spruce trees is from a particular region. The white pine weevil attacks the leader, causing it to curl and die, damaging the tree's form and wood quality. Some areas have naturally resistant Sitka spruce and you can see these rows have much less attack with taller and straighter trees. Research done here and around BC has yielded seed from weevil-resistant trees that is available for reforestation. *Walk back up the same road, turn right after the cedar hedges, then walk along the road between the beds of seedlings. Sign is on your left.*

Stop 6: Hold it!

These are holding beds, where seedlings that are specially bred or grafted for seed orchards, experiments, or other unique uses are held temporarily. Many species are in these beds. *Next sign is 25 m further on your left.*

Stop 7: Oh deer

Because of widespread reforestation problems caused by deer browse, there has been a research program established to select naturally occurring western redcedar with leaf chemicals that deter browsing. Young trees with high levels of these chemicals have the same height growth as other redcedar trees. By testing and breeding these trees, foresters will soon have the opportunity to plant western redcedar without expensive protection and fill planting. *Next sign is 10 m further on your left.*

Stop 8: Hedging our bets

In the wild, yellow-cedar tends to produce very little seed because of its environmentally harsh habitat. Most reforestation of this species in BC uses rooted cuttings, which are produced from these hedges. They are regularly pruned to keep foliage juvenile and vigorous to make the best cuttings. About 5000 individuals are in this hedge orchard.