

Lasqueti's Coastal Douglas-Fir Rarity

by Andrew Fall

Most of us think that the forested landscape of Lasqueti is special. Ecologically, it is one of the least common and most important forest types in BC, called the Coastal Douglas-fir zone. It represents only 0.3% of the landbase in BC, yet it contains the most diversity of plants and over-wintering bird species in the province. Sadly, 98% of its ecological communities are considered at risk of extinction.

Ecologists have divided the province into 16 “biogeoclimatic” zones based on plant species present (“bio”), the underlying soil types and geology (“geo”) and the climate (mostly temperature and precipitation). Zones are mostly named after the dominant tree species (except those without trees, such as the Bunchgrass and Alpine Tundra zones), but the zones are defined by the overall plant community, and in particular “indicator plants” that show the site conditions (e.g. skunk cabbage indicates wet, rich soils).

There are four main zones on the southwest coast of BC: Coastal Douglas-fir (CDF), Coastal Western Hemlock (CWH), Mountain Hemlock (MH) and Coastal Mountain-heather Alpine (CMA). The most widespread of these is the Coastal Western Hemlock (CWH) zone. This is the realm of the coastal temperate rainforests of Carmanah, Haida Gwaii, and North Vancouver. Drier variants of CWH zone occupy most of Texada Island, all of Cortes and Quadra Islands, Comox, Cowichan Lake and Stanley Park. A large portion of the lower elevation forest around the Salish Sea is CWH.

The Mountain Hemlock (MH) zone is the next most common. This includes the higher elevation rain/

snow forests of Strathcona Park, Mount Arrowsmith and the Coast Mountains. Above the tree line is the Coastal Mountain-heather Alpine (CMA) zone.

The Coastal Douglas-Fir (CDF) zone occupies a narrow band around the margins of the southern Salish Sea. On Vancouver Island, it includes Greater Victoria, Nanoose, Parksville-Qualicum west to just past Coombs and north to Bowser. On the mainland, there is only a bit at the mouth of the Fraser River, a small amount on the Sunshine Coast and a thin strip near Powell River. It

includes the southern Gulf Islands up to Hornby and Denman, and the west coast and north end of Texada Island. All of Lasqueti is in this zone.

Why is it unique? The CDF zone is ecologically very different from most of the Coastal Western Hemlock zone. We can feel it with our long dry summers. Winters are not what most people would call dry, but the rainfall on Lasqueti is only about 1/3 of the rainfall at Tofino. So it is relatively dry, which creates a very different plant community. Unlike the

CWH and MH, frequent forest fires historically shaped the forest.

The CDF is one of the most biodiverse zones in the Province, and it has the highest density of endangered species and ecosystems. Nearly 50% of the forest has been transformed to human land uses, and less than 1% of the original old-growth remains. Largely because of its climate and soils, the CDF is a nice place to live. Many First Nations have used the abundant resources in the CDF and the waters of the Salish Sea, and continue to do so. Most of the residents on Vancouver Island



hummingbird nest in cedar: one of many birds and other creatures who depend on individual trees for nesting and foraging for food, photo S. Harrington

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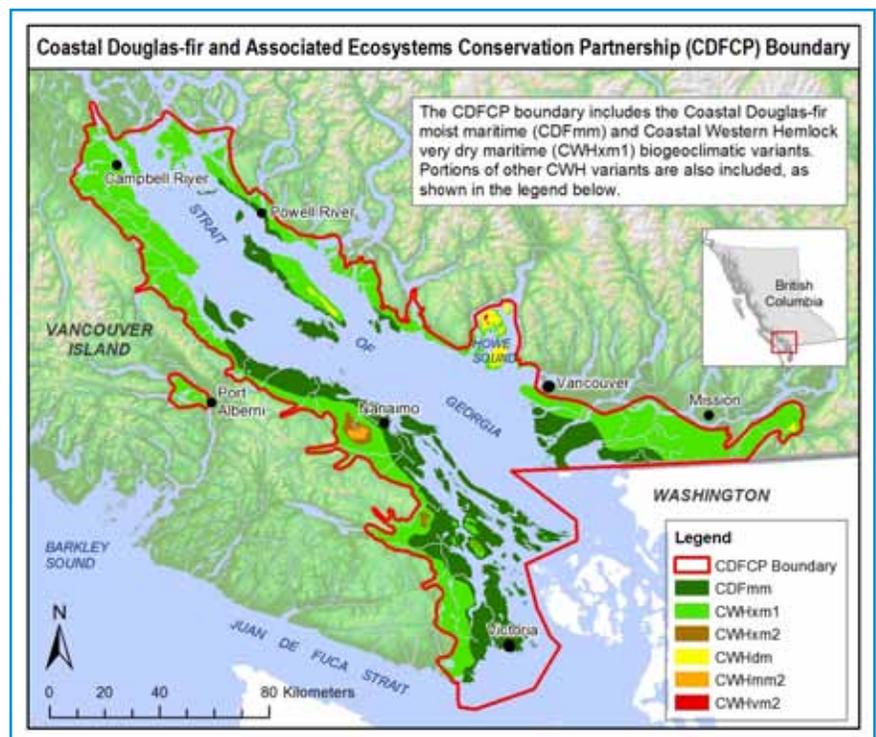
are in the CDF (Victoria, Duncan, Nanaimo, Parksville, Qualicum). Most of the farmland on Vancouver Island is in the CDF (Saanich, Cowichan, Salt Spring). As a result, the CDF has been, and continues to be, heavily modified and fragmented.

Because it is ecologically diverse, uncommon and threatened, efforts have been made to conserve representative areas in the CDF. However, due to its rarity, high levels of private ownership and high land prices, only about 9% has been formally protected. Most recently many conservation groups, including LINC, have joined to form the Coastal Douglas-fir and Associated Ecosystems Conservation Partnership, to identify areas that have the highest remaining ecological value and to consider what to protect and how to protect it.

Lasqueti Island represents about 2.5% of the total CDF zone, and the Lasqueti Local Trust Area, which includes nearby smaller islands, represents about 2.8%. The forests on Lasqueti represent one of the largest remaining areas of contiguous natural forest in the CDF. While most of the forest on Lasqueti was logged in the 1920's to 1950's, much of it has regenerated naturally, and so it has a lot of structural complexity, which is part of why it is so varied and beautiful. Some of the threats facing the forests on Lasqueti include reduction in forest fires, over-grazing of the understory (which reduces cover for bird, amphibians and other animals and affects which tree species can regenerate) invasive species and land clearing. That said, the level of change is significantly lower than most areas in the CDF, which face much higher levels of development pressure.

To better understand the effect of heavy grazing, LINC installed two exclosures on part of the shore of the wetland on the John Osland Nature Reserve, and these were planted with locally-sourced native trees and shrubs. Monitoring over time will provide information on differences within and outside the exclosures, and may be useful if riparian restoration is considered for riparian sites elsewhere on Lasqueti. LINC has also been working with BC Parks to make the fence in Squitty Bay Provincial Park functional to better protect the juniper reserve.

Nearly 12% of the Lasqueti Local Trust Area is in some form of protected area (Provincial Parks, Ecological Reserves, Islands Trust Conservancy Nature Sanctuaries, etc.). Since more than half of that is on the nearby islands, only about 6% of Lasqueti Island is in a protected area.



Nearly 50% of the CDF forest has been transformed to human land uses, and less than 1% of the original old-growth remains. CDFCP Map reprinted with permission

Given the combination of high ecological value and relatively low levels of protection, areas on Lasqueti Island have been rated as high conservation potential by the Coastal Douglas-Fir and Associated Ecosystems Conservation Partnership.

There are a number of ways that ecosystems and species in the CDF can be conserved, including: (i) as a protected area (which is LINC's goal for the Salish View property); (ii) conservation covenants (e.g. via the Islands Trust Natural Areas Protection Tax Exemption Program); and (iii) ecological stewardship by landowners (e.g. limiting development in sensitive ecosystems). There is no simple solution, but together we can help ensure persistence of the rare ecosystems and species in the Coastal Douglas-fir zone.

Some readings for more information

Marcoux, D. What is the Biogeoclimatic Ecosystem Classification. Selkirk College. Online at: <http://selkirk.ca/discover/bec/zones/pdf/whatis.pdf>

Coastal Douglas-fir and Associated Ecosystems Conservation Partnership. <http://www.cdfcp.ca/>

Nuszdorfer, F. C., Klinka, K. and Demarchi, D. A. Chapter 5: Coastal Douglas-Fir Zone, Ecosystems of British Columbia, Special Report Series 6. Online at: <https://www.for.gov.bc.ca/hfd/pubs/docs/srs/Srs06/chap5.pdf>

Islands Trust Conservancy's Natural Area Tax Exemption Program: www.islandstrust.bc.ca/how-do-i/lower-my-property-tax-naptep/

The Value of Trees

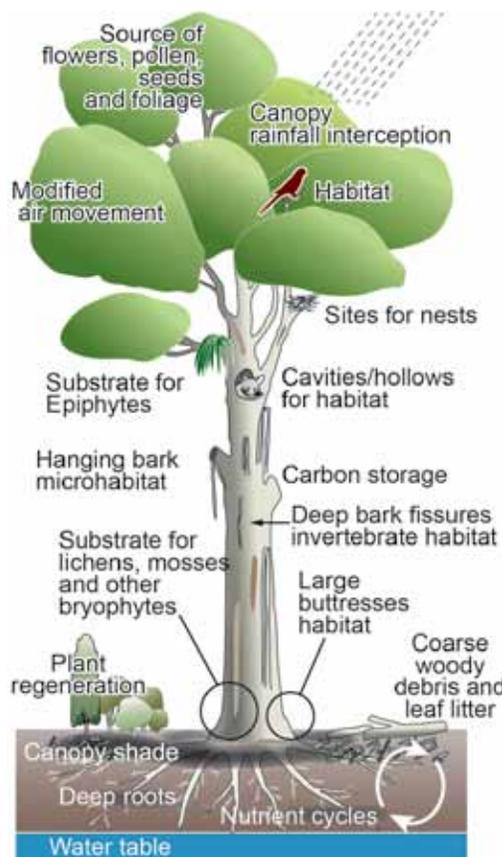
As Andrew Fall wrote, and Laurence Fisher and others will corroborate, most of Lasqueti was logged in the 20's to 50's. In 2018 Lasqueti has very few large trees left, let alone stands of them. Climate change and drought is rapidly affecting our island; dying cedars and hemlocks are on the rise. We are the stewards of what is left of our Coastal Douglas-fir forest for future generations.

Large old trees, and even smaller trees provide critical benefits: “These include roles in ecosystem processes such as hydrological regimes, carbon storage and nutrient cycling, micro- and meso-climatic regimes, and providing habitat for an enormous array of plant and animal species (Lindenmayer and Laurance, 2016)”

Trees provide essential ecosystem services: “including (among many others) carbon storage, seed production, pulses of flowering, rainfall interception, litter production, and the generation of large pieces of coarse woody debris.”

Some forested areas are not regenerating “because of the impacts of high-intensity grazing by domestic livestock (Manning et al., 2013). This has major implications not only for tree-dependent native biota, but also long-term integrity of agricultural environments through provision of critical ecosystem processes such as pollination services, the regulation of water tables to prevent secondary salinity (Stirzaker et al., 2002) and pest control (e.g. by bats).”

The Conservation Approach: *Protection of existing large old trees is the single most important action in managing populations of these keystone structures.... The protection of large old trees will often need to include not only living stems, but also dead large old trees as they can retain key ecological roles for multiple decades after tree death such as providing habitat for wildlife (Rose et al., 2001) and storing large amounts of carbon (Keith et al., 2009). Strategies to maintain populations of large old trees also must protect potential recruit trees, some of which will eventually become large old trees (Manning et al., 2013). Protection must be long-term because of the prolonged periods (often exceeding centuries) needed for new cohorts of trees to attain an equivalent size and condition to replace existing large old trees.*



Seen in Passing



Reserve - new enclosure, photo Sheila Ray
top right: monkey flower - common on islets and ungrazed areas of Lasqueti, Photo Sheila Harrington
right middle: tree frog on rose Photo Gordon Scott
right bottom: prickly pear cactus in bloom, photo Valeria deRega

Individual or small clusters of trees provide:

- provision of a distinct microclimate;
- increased soil nutrients;
- increased plant species richness;
- increased structural complexity;
- and habitat for animals.

Large Douglas fir trees including dead snags are the most important wildlife trees in BC.

non-italicized (quoted) text by Sheila Harrington, all else is “Reprinted from *Biological Conservation* 211, 2017 David B, Lindenmayer, “Conserving Large Old Trees as Small Natural Features”

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with permission from Elsevier (<https://www.sciencedirect.com/science/article/pii/S0006320716307893>)

Figure provided by David Lindenmayer

Salish View

How we arrived at a purchase price

In June 2017 LINC hired Cunningham and Rivard Appraisals Ltd from Nanaimo to conduct a fair-market appraisal of the Salish View property. After looking at recent sales of similar properties, the appraiser determined that the fair market value of the 28-acre Salish View property is \$300,000, or \$10,714 per acre. The appraisal was reviewed by an expert panel of Appraisers who approved the value. LINC and the landowner then negotiated a bargain sale whereby the landowner agreed to reduce the purchase price by \$70,000 in exchange for a charitable tax receipt and eligibility for an Ecological Gift tax deduction. The final negotiated purchase price for the 28-acre Salish View property is \$230,000.

Salish View is an Opportunity

LINC is not trying to save Salish View from logging or development because there is no threat right now. Instead, the Salish View project is an opportunity to get ahead of the next wave of development, which is coming: three properties have sold in the neighborhood of Salish View within the last two years and new homes are being built nearby. It's usually much better to seize an opportunity rather than respond to a crisis, and the Salish View project is such an opportunity because it is : 1) still undeveloped; 2) contains rare old-growth Douglas-fir forest ecosystem; 3) is adjacent to Squitty Bay Provincial Park and; 4) the landowner is supporting and cooperative.

Highest and Best Use is Conservation

It doesn't take too much imagination to envision a home site or two on the Salish View property. It is a steep and cliffy property, but there are plenty of examples of creative road building and home siting on Lasqueti. Because there isn't any viable agricultural land on the

property it wouldn't make a good homestead, thus a higher and better use is conservation. But that doesn't mean one or two summer homes couldn't be built on the site. Two easily developed building sites exist on the property within easy access to Main Road. The development, demographic and economic trends in the Lower Mainland and Vancouver Island over the next few years suggest that summer and retirement homes will dominate Lasqueti's land use pattern for the foreseeable future.

Film Review by Barb Brooks

Call of the Forest The forgotten Wisdom of Trees with Diana Beresford-Kroeger, A film by Jeff Mc Kay, Documentary

If you love our island with all its forests, rocks and ocean, then see this movie! The botanist, Diana Beresford-Kroeger's perspective is global, historical and in depth. Seeing forests from her perspective makes it easier to understand the significance of living in British Columbia's Coastal Douglas-fir ecosystem. Ireland 2000 years ago was entirely covered by an Oak Forest. After cutting down all but one percent of the native species trees, we know what Ireland looks like today. Ocean shoreline health is also linked to the adjacent forest, according to Diana Beresford-Kroeger. Find out more as there will be another screening of *Call of the Forest* on island in the near future. Reviewing this movie broadened my understanding why it is so important to protect as much of the Coastal Douglas-fir ecosystem as we can. Salish View is an opportunity organized and ready to go, with skilled people working hard at the goal. We just need the funds, it is within our reach. Two Thumbs Up! Thanks Sylvia St. Ledger for bringing this beautiful movie to our island. Plant a Tree!

Donate and help us reach our goal by Dec 21.

We've raised \$112,000 thanks to so many generous people and the Sitka Foundation.



**Garden
and Homestead Tours
Next one July 29, 12 - 5
Tickets on sale at
Provisions, Crystals &
Cammomile & Post
Office**



August 25th Fundraising Dinner, Auction & Band

Support Salish View for
generations to come, and
have a lot of fun too!

\$50 dinner, auction & band
\$20 after 8-band/dance only
The Gerry Barnum Trio