

## Butterflies & Bees Found on Lasqueti

by Duane West

Recently LINC was asked if Lasqueti has a Butterfly Ranger. Nobody likely claims that title, but there certainly is interest and local knowledge on Lasqueti's butterflies and native bees. Sue Wheeler has been observing and submitting photos of Lasqueti butterflies for positive identification for a number of years. Read or reread her informative piece on our butterflies on [lasqueti.ca](http://lasqueti.ca) under Natural History.

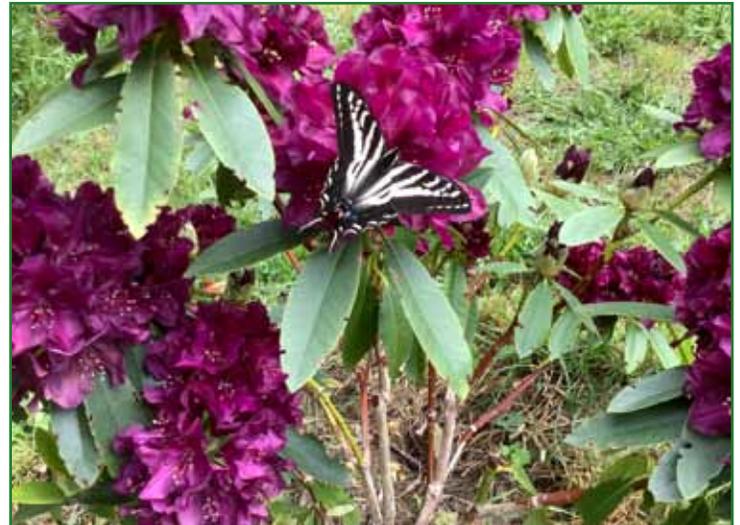
Butterfly Rangers are part of the David Suzuki Foundations Butterfly Project - a response to the fact that our native pollinators widely are in trouble. Worldwide it is estimated that insect populations have declined by 45 percent in the past 40 years. If that

fact alone does not alarm you, consider it's been estimated that bees are responsible for one out of every three bites of food we eat. Butterfly Rangers create insect welcoming gardens and encourage landscaping with more

native plants in their communities. The theory is that native plantings can create insect "highways" across urban barrens.



Butterflies, especially, are often dependent on very specific plants to complete their lifecycle. Well known is the relationship between Monarch butterflies and milkweed. However take the Thomas Checkerspot, *Euphydryas editha taylori* on our neighbour islands, Denman and Hornby. This threatened butterfly is dependent on native plant, marsh speedwell, thyme lead speedwell and a couple of introduced plantains to feed its larva. Without a detailed understanding of the role of these critical plants in each butterfly's life, it is easy to see how we can absentmindedly destroy vital habitat.



**Above:** Swallowtail on Rhododendron plant, (T Theiss)

**Below:** native bee in Grape Hyacinth (S. Harrington), native bee in rose mallow, W. Schneible

**Far Left:** bee in brassica, K. Lertzman

I want to use an example from my own yard here on Lasqueti. In un-mowed areas of our clearing the native Pacific trailing blackberry, *Rubus ursunus*, thrives. When the dense carpet blooms bumble bees and others arrive in the hundreds and feast for weeks. Now that I have seen their value I will maintain and protect these areas. I derive a lot of satisfaction from the fact native insects have a place to thrive on land under my stewardship.

**Specific butterflies found on Lasqueti  
with associated plants  
(see [lasqueti.ca/natural history](http://lasqueti.ca/natural%20history) for photos)**

**Pale Swallowtail *Papilio eurymedon***

The large, distinctive butterfly of May and June. White or cream with broad black borders and tiger-stripes.: Larvae feed on cultivated apple, alder, ocean spray. Adults nectar on lilac, delphinium, mint, and other garden and wild flowers.

**Lorquin's Admiral *Limenitis lorquini***

Large. Black with a broad band of white oval spots toward the outer edge of each wing, orange wing tips. Willows are the usual larval host plant. Adults feed on mustards, yarrow, buckwheat, thistle, fruits, mud.

**Red Admiral *Vanessa atalanta***

Medium-large. Dark brown with red-orange bands, and a scattering of white spots on the black wing tips. Brightly patterned underside. Larvae feed on nettles, adults on a variety of flowers including thistle and fireweed, willow sap and rotting fruit late spring and late summer.

**Painted Lady *Vanessa cardui*:**

(If you see a butterfly like this but faded, in the spring, it is a migrant into the area. Fresh adults are seen in mid-summer.) Thistles are the favourite larval foodplant. Adults nectar on a variety of wild and garden plants, especially dandelion.



**Satyr Anglewing *Polygonia satyrus***

Medium-sized. Orange with dark blotches, trailing edge of wings "cut" into scallops. On the dark underside of the hindwings is a bright white comma, like a thin letter C with serifs. Peak flight in April and in July-September. The larval foodplant is nettle. Adults feed on willow sap, lilac, thistle, and fruit (apple, plum, etc.). wild and garden plants, especially dandelion.

**UN - sets the next decade for  
Ecosystem Restoration**

**Five-year Biodiversity Study  
Started at Mount Trematon  
Nature Reserve**

**by Cora Skaien**



The Islands Trust Conservancy and LINC are interested in assessing the impacts of herbivores on plant communities and exploring restoration opportunities at Mount Trematon Nature Reserve. Between May 27<sup>th</sup>

and 31<sup>st</sup>, surveys of plant communities began at Mount Trematon as part of a five-year Biodiversity Study. The intent of this study is to assess the ability of plant communities to recover in Mount Trematon Nature Reserve when ungulate herbivores (deer and sheep) are excluded using large fenced enclosures compared with unfenced study areas. Over time, vegetation changes will be monitored inside and outside the fenced areas. Some study areas will allow for natural regeneration only, while others will include planting of native species. The scientific aspects of the fieldwork are being led by Cora Skaien (the author of this article), an applied conservation biologist with background in studying herbivory.

This year, riparian and dry forest habitats will be fenced; next year, other habitats on the Reserve will be fenced. Study areas will have fencing at different heights; some areas will exclude both deer and sheep, others will exclude only sheep. This scientific study follows accepted experimental protocols used in the field of Ecological Restoration and results will help to inform future restoration initiatives.

Historically, there were probably apex predator species, such as cougars and wolves on Lasqueti, that would have contributed to keeping deer populations in check. Additionally, the local Coast Salish people managed their land across the islands in the Salish Sea, including hunting deer for food and technology such as bone awls. With colonization, the ecosystems throughout the Salish Sea

experienced dramatic changes, including the loss of apex predators, a reduction of Indigenous Peoples' land stewardship, and a decrease in hunting on many islands. There is likely less predation on ungulate populations now than at any time in the past 5,000 years, which has led to abundant herbivore populations on many islands in the Salish Sea. The cascading effects of herbivore overpopulation are well established from research in many places and include a sparse and species-poor understory plant community, which in turn reduces diversity of song birds, pollinators, insects, small mammals, and other species. This current study will investigate the impacts of fencing that exclude sheep and deer with additional restoration practices such as native planting and invasive species removal in order to increase understory diversity and abundance on the Mt. Trematon Reserve.

Lasqueti has among the lowest level of development or urbanization of the larger islands in the Salish Sea, and has one of the largest remaining areas of contiguous natural forest in the Coastal Douglas-Fir zone ecosystems with great conservation potential. However, there is good reason to believe that diversity of understory vegetation on significant areas of Lasqueti Island has declined substantially over the last century because of elevated populations of native and introduced ungulate herbivores and changed land-use practices. Similar patterns have been observed on other islands when native and non-native ungulate species reach levels far above the carrying capacity of ecosystems. The results of this study will inform future efforts to restore diversity on Mount Trematon Nature Reserve and other lands impacted by herbivores, a critical step in Salish Sea Island ecosystem restoration. We also hope to supplement this research project with more extensive surveys of ungulates and plant communities across Lasqueti and nearby islands in the future.



#### HELP WANTED

LINC is looking for strong individuals to help with installing the fencing at Mt. Trematon Nature Reserve this summer. The dates and rate of pay are yet to be determined, but if you are willing and able to put in a week or two's work in August, please contact us. [linc@lasqueti.ca](mailto:linc@lasqueti.ca) or call Duane 250 333 8596

## A New Chapter in Bat Conservation

by Tim Ennis



Photo: Emerging bat - J Saremba

The Comox Valley Land Trust (CVLT) in partnership with the Cumberland Community Forest Society (CCFS) are proud to be the agencies supporting the newest regional chapter of the BC Community Bat Program (BCCBP). The North Island Chapter of the BCCBP was soft-launched in 2019 and has been slowly ramping up activities since then. Lasqueti Island is included in the North Island Chapter.

The North Island Chapter is committed to responding to emails and phone calls related to all manner of bat-related issues via the "Got Bats?" initiative, coordinating and implementing the Annual Bat Count for known summer roost sites, supporting local communities to become Bat Friendly Communities and assisting with the White Nose Syndrome (WNS) surveillance initiatives.

*One of our more familiar species in buildings and bat boxes is the Little Brown Myotis. Like all BC bats, the Little Brown Myotis is an essential part of our ecology, consuming many insect pests each night. Unfortunately, the Little Brown Myotis is now endangered in Canada. In fact, bats in BC suffer from many threats, and almost half of our 15 species are 'at-risk.*

*A simple way to support bats including the Little Brown Myotis and other bats is to participate in the BC Annual Bat Count this June. The BC Community Bat Program is requesting colony reports and volunteer assistance for this citizen-science initiative that encourages residents to count bats at local roost sites.*

*Bat counts are easy, fun, and safe, not to mention vital for monitoring bat populations. Volunteers wait outside a known roost site, such as a bat-box, barn, or attic, and count bats as they fly out at twilight. Ideally, one to*

*two counts are done between June 1 and 21 before pups are born, and 1 - 2 more between July 11 and August 5 when pups are flying.” (Mandy Kellnor)*

A primary focus of the North Island bat team has been conducting research into bats in our area. Bats are a very cryptic taxonomic group that are inherently difficult to study. Very little is known about them anywhere, but this is particularly true in our region where bat research has lagged behind places like the Okanagan, the Kootenays or Alberta. Recent advancements in ultrasonic acoustic monitoring technology has presented new opportunities to expand our understanding of bats in very passive/non-invasive ways.

With the support of the Royal Bank of Canada Foundation we have launched the “Ultrasonic Citizen Science Project”. Through this project we are able to loan out ultrasonic acoustic monitoring equipment to interested members of the public to go out into the night and record the echolocation calls of bats themselves. All that is required is a smart phone or tablet (Android or iOS) that is capable of downloading and running the (free) app, and watching our short training video. This is the only citizen science project focusing on bats that has (to date) succeeded in capturing acoustic data about bats anywhere in Western Canada. Here too, the data we collect will be used to create habitat suitability models with an emphasis on protecting critical habitat.

The results of our research efforts to date have been stunning. We have so far provided evidence supporting the detection of three new species previously unknown from Vancouver Island. These include the Mexican Free-tailed Bat, the Fringed Myotis and the Eastern (Boreal) Red Bat. Confirmation of our acoustic recordings of the three species by independent bat scientists at Wildlife Conservation Studies Canada has recently occurred.

If you have bats in your buildings, know of important roost sites, foraging areas or hibernacula, come across dead bats (especially in the winter months) or are interested in participating in any way with our programs, we would really love to hear from you.

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## Book Review

*To Speak for the Trees*

by Diana Beresford-Kroeger

*My life’s journey from ancient celtic wisdom to a healing vision of the forest*

*reviewed by Sheila Harrington*

Starting from a rich and famous heritage in Ireland and England, Diana Beresford’s personal story begins with a number of traumas that put her firmly on a path of discovery. She was invited to share in the wisdom of her mother’s family in the Lisheen valley during her summers. She was shown the ancient knowledge of Druids and the Brehon Laws, learning that every leaf, root, trunk, bark and stem offers its own source of medicine, and healing.

“Trees offer us the solution to nearly every problem facing humanity today, from defending against drug resistance to halting global temperature rise.” These early teachings ranged from how to make butter, to the medicinal quality of many plants, and not the least of these lessons, was how to stay focused and calm, a trait that among many others stayed with her as she went on to become the first woman with a Masters at Oxford. Thus she learned to respect both local knowledge as well as scientific training.

Seeing that Ireland was devoid of trees, she discovered that the ancient Celts taught each other to think for the next seven generations. She eventually moved to the forests of Ontario, where First People’s told her the same. Her academic training as a botanist and medical bio-chemist caused her to link these two different types of knowledge. As she learned about the Earth’s atmospheric change from ferns to evergreens, she realized that “Forests were being cut down across the globe at breathtaking rates—quite literally breathtaking. In destroying them we were destroying our own life-support system.” She went on to Carleton University in Canada to take her PhD, showing how serotonin as a molecule is a neuro-generator and that tryptophan tryptamine pathways exist in trees, proving that trees have the same neural ability to listen and think. This is heady stuff, and as she went on to work in a Canadian experimental farm she discovered

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# Cedar Dieback in Coastal British Columbia

by Ken Lertzman

**H**ave you noticed many formerly healthy Redcedars on Lasqueti are turning brown and dying over the past couple of years? About six to seven years ago, many cedars started to look more drought-stressed at the end of the summer than normal, with an unusual amount of reddish-brown foliage. At first, they seemed better the next spring. However, in the last three years, we've seen a disturbing number of cedars dying within one season—both large, well-established older trees and younger ones. And they are not just dying in locations where you might expect them to be susceptible to drought stress—on dry rocky outcrops or other locations with shallow soils and little moisture-holding capacity. There are dying cedars on sites that apparently provide good growing conditions. Of course trees, young and old, do die naturally, but cedars are dying at a much greater rate than normal—a rate which could deplete the population of mature cedars.

It turns out that cedar dieback is not just a problem for Lasqueti, or even just Vancouver Island. Redcedars are dying at an alarming and elevated rate from Oregon through into British Columbia. We've known for a long time that the Yellow-cedar in SE Alaska and the North Coast of BC has had elevated mortality related to climate change (see research by Paul Henon and colleagues), but this dieback of Redcedar in warmer, southern ecosystems is a new problem.

In the fall of 2020, ecologists and foresters from Oregon, Washington, and BC met on a series of zoom calls to discuss cedar dieback, what we know about it, and to begin planning a regional strategy for research

into the problem. Though we are at early stages in figuring out what is happening and what, if anything, we can do about it, there was a lot of useful information provided. I attended with two goals: professionally, I'm interested in understanding what we know about the problem, its causes, and its solutions. Personally, I'd like to know what we can do on Lasqueti to try to keep Redcedar as an important part of the forest.

There is no single factor that has been identified as the smoking gun, but the evidence so far indicates that drought stress caused by climate change is at the root of the problem. Species like cedar, that have less ability to respond adaptively to drought, are doing worse than species with better physiological mechanisms for drought adaptation, like Douglas-fir. However, once trees are stressed, they become susceptible to other problems,

such as insects and disease. It sounds like the problem is worse to the south (in Oregon and Washington), where on dry sites and old agricultural land there is a lot of drought related mortality even of Douglas-fir.

One of the first issues is to map the extent of the problem to figure out where cedars are dying and how bad the problem is in different areas. One way this is being approached is through the use of "citizen science" via the iNaturalist app. If you aren't familiar with iNaturalist, it is a great tool for sharing natural history information and creating on-line natural history communities. You can search for natural history information to help with identification, and you can upload your own observations. Information is geo-tagged, so you know where things are being seen. Some of the cedar dieback researchers have created a project within iNaturalist specifically for mapping



cedar decline, in which anyone can participate. See <https://www.inaturalist.org/projects/western-redcedar-dieback-map> for this project. For a video on how to add your own observations go to <https://www.youtube.com/watch?v=nh1Ye3pDONw>). There are currently no observations uploaded from Lasqueti—lets change that.

The cedar dieback problem is made worse because cedar is preferentially browsed by deer and sheep. This means that not only are we losing mature trees, but we often don't have a cohort of younger cedars in the understory to replace them. So far, planting cedar on appropriate sites and protecting them from browsing is probably our best strategy for supporting cedar in the forest. I heard that some people had good success watering individual trees close to their homes, but this is of limited application to the forest more generally.

I've been wanting to plant young cedars on our property to start making up for the losses. What is the take-home message so far from the dieback research in terms of a planting strategy? Previously, I might have focused planting on some of the wettest sites on our property, since these seemed like they would be best suited for summer drought conditions. The understory there is also often especially heavily browsed and depleted, making it a priority for planting. But the cedar dieback research indicates that cedar is not doing well on sites with a fluctuating, seasonally high water table. This is because trees on these sites tend to have a shallow rooting depth. Because the roots are shallow, in summer, when the water table is low, the trees can't access the wet zone lower down. So, instead, I will focus my planting on slightly drier sites with deeper, better drained soils, and if possible, a good year-round source of sub-surface water. I'll look to plant saplings, not on the wettest alder bottom type sites, but on benches a little up from that, without standing water in the winter, and with good evidence of productive growing conditions. I'll look for the kinds of sites on our property where there are still healthy cedars that seem to be surviving, then will try to find sites like that with a somewhat open canopy that are in need of a young cedar cohort. Lower slope locations with a cool aspect and deep, fine-textured soils are a good bet. If the browsing pressure isn't too bad in your area, look for Three-leafed Foamflower, lush Swordferns, and maybe a little salmonberry as indicator plants. Of course, all cedar plantings need to be protected from browsing.

Unfortunately, the reality is that the future of cedar in drier ecosystems on the coast, such as the Salish sea, is rather grim. The modest changes in climate we've experienced so far, which are already having an impact, are just a taste of bigger change to come, with wetter winters and longer, drier summers. The presence of cedar on the landscape will likely shrink back to "micro-refugia" represented by the best possible combinations of site conditions and microclimate. This makes it very important that there is cedar established in those places.

Last winter, LINC brought over hundreds of "Trees for Tomorrow" cedar seedlings which were distributed to people across Lasqueti. We hope to do this again next year and will let you know when they are available.

For those interested in reading about the research done on Yellow-Cedar dieback in Northern BC and Southeast Alaska:

Hennon, P.E., D. D'Amore, S. Zeglan, M. Grainger. 2005. Yellow-cedar decline in the North Coast Forest District of British Columbia. Res. Note PNW-RN-549. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 16 p

Hennon, P.E., D.V. D'Amore, P.G. Schaberg, D.T. Wittwer, and C.S. Shanley. 2012. Shifting climate, altered niche, and a dynamic conservation strategy for yellow-cedar in the North Pacific Coastal Rainforest. *BioScience* 62:147-158.

### ———Continued from P. 4 - Book Review ——

bioluminescence and sought financial support for her work. Frustrated by the problems of a woman trying to make a go of it in professional life in the '70s and '80s, she decided to do her own research. She developed a global bioplan, which involves every person planting trees, stewarding their own neighbourhoods and towns, and protecting all the forest we still have.

Publishing her books such as *Arboretum Borealis: A Lifeline of the Planet*, and other essays brought her to the attention of the CBC and the filmmaker who brought us *Call of the Forest*, which Sylvia Saint shared a few years ago. The last part of her book details the connections between specific trees and healing powers, such as the hazelnut, whose anti-proliferation agent is used in cancer treatments. Beresford-Kroeger's book brings together ancient and academic knowledge. Her respect for both as pivotal to our future is a joy. (Random House Canada, 2019) available books by mail

# Salmonberry - *Rubus Spectabilis*

by James Schwartz

The salmonberry bush, so ubiquitous in our environment, is often overlooked as a thorny obstacle in our way. But a closer look at this remarkable plant reveals an important player in forest ecology from Alaska to Northern California and one that has nourished generations of people over millennia.

*Rubus* (Latin for red) *spectabilis* (named for its showy flowers and fruit) is a species of brambles in the *Rosaceae* (Rose) family. A woody shrub covered in fine prickles and growing up to four meters tall, it often occurs as dense thickets on moist soils in open forest settings and along shady stream sides. Its bright purple-pink, five-petal flowers and resultant large colourful fruits arranged as an aggregate of drupelets make it a visually attractive addition to our forest. The common name of “salmonberry” is thought to have come from indigenous peoples' fondness for eating the plant's stems and berries with salmon roe. It could also be due to the fruits' resemblance to clusters of salmon eggs.

The *Rubus* genus is subject to frequent hybridization causing it to be taxonomically complex and making *Rubus spectabilis* a polymorphic species. This means there can be considerable differences in individual plants, especially showing itself in varied berry colouration. From bright red to pale orange, this colour difference does not tell us how ripe the berry is but rather indicates different morphs of the plant. Different “morphs” have different soil condition preferences (although often occurring alongside each other) and this may account for the multicoloured show of its berries.

This abundant plant does much to enhance its native environment. Its spreading rhizomatous root structure holds stream banks and fire-stricken slopes secure against erosion. Beaver feed on salmonberry bark



Years ago I acquired a salmonberry cutting originally collected as a field mutant and brought to the UBC “Native Garden” (as it was then called). Now named *Rubus Spectabilis Double Flowered Group*, this beautiful botanical “sport” holds its own as an ornamental in any garden setting.



and woody stems. Dense thickets of it provide sheltering and nesting habitats for birds and small mammals. Leaves, twigs, and stems are grazed by deer, elk, rabbits (and here on Lasqueti Island by feral sheep). Flowering over a long time, from March to June in our area, and as one of the first to bloom in spring, salmonberry flowers herald the arrival of the migrating Rufous hummingbird and provides nectar over that long period for them and for the early bees, butterflies and various insects. Flowers are followed by fruits, available from late spring to midsummer, providing a valuable food source for many bird and rodent species and also for bears and their cubs waking from hibernation.

Indigenous cultures tell of a long and deep relationship with the salmonberry. Orally passed legends and stories from various indigenous groups highlight the plant's importance in their lives. Not only were fresh stems (eaten raw or peeled and steamed) and the berries a significant food source, but leaves, bark and roots were also used in various medicinal preparations.

As so many have before us, let us honour this often undervalued plant and see it for the forest star that it truly is.

# Seen In Passing



*Yellow Blackbird - a rare sighting by Jay Rainey*



*Evening Grosbeak, attracted to feeders, seen by James Schwartz*



*Barred Owl and Mourning Dove near Laings Road by Mikyla Lironi*



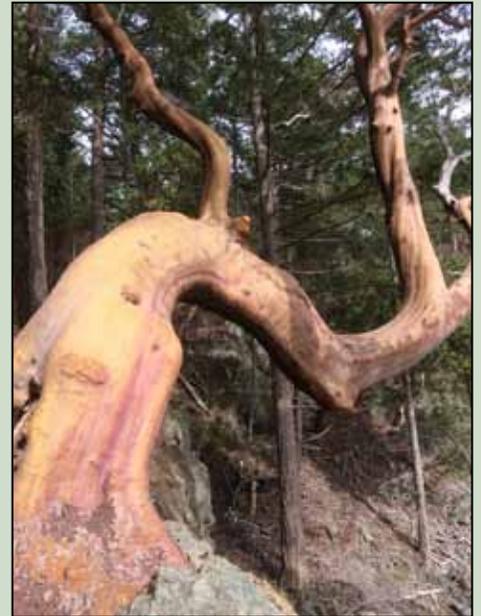
*Above: Glaucous-winged Gull eggs and chick, Below: Oystercatcher eggs by S. Harrington*



*Nighthawk chicks, sighted by Matt Grinell seen behind their bluff last summer*



*Pacific Dogwood: by Pete's Lake there are two smaller trees under the mother, photo by Duane West*



*Giant Arbutus near the Ecoreserve seen by Darcy Dobell*

**We welcome your nature photos for "Seen in Passing" section.**

**Past Newtletters and Seen in Passings are at [www.lasqueti.ca/linc](http://www.lasqueti.ca/linc)**



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**Watch for our Member Survey & Community Outreach as we develop our Strategic Plan for 2022-25**

**Contact us: [linc@lasqueti.ca](mailto:linc@lasqueti.ca) 250-333-8754 [www.facebook.com/LINCBC](http://www.facebook.com/LINCBC)**

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