The Log
www.ecoreserves.bc.ca
Autumn/Winter 2025/26
FRIENDS OF ECOLOGICAL RESERVES NEWSLETTER

Trial Islands Ecological Reserve Restoration Project

Submitted by Matt Fairbarns and Stewart Guy

(Permission to reprint from BCNature Fall 2025)

Trial Islands Ecological Reserve Restoration Project Submitted by Matt Fairbarns and Stewart Guy In the fall of 2021, BCnature magazine highlighted the importance of Ecological Reserve (ER) restoration work across B.C. Diane and David Reesor read about BC Nature's concerns and interest. Following up on that article, the Reesors provided BC Nature with a generous $5,000 donation toward assisting a restoration project at an ER in B.C.

Four years later, after consultation, engagement, and advice from BC Parks staff and Friends of Ecological Reserves (FoER), Trial Islands Ecological Reserve was chosen as the restoration site to receive this support.

The BC Parks License Plate Program that supports habitat stewardship in B.C. matched the Reesor donation with an additional $5,000 grant for further restoration work for the Trial Islands Restoration Project 2025.

The Reesors were invited to visit Trial Island Ecological Reserve with Matt Fairbarns, the ER's warden, to experience the native plants in full bloom. Linda and Stewart Guy with BC Nature and

Matt Fairbarns showing native and invasive plants to Diane and David Reesor

Rick Page with FoER accompanied the Reesors. The group saw the positive results of years of restoration work and spoke with restoration technicians currently working on the islands.

The Trial Islands, located offshore from Oak Bay on Vancouver Island, are home to fourteen rare species, one of the greatest concentrations of rarity in Canada. Some of these species, such as the Dense-flowered Lupine and the Island Ringlet Butterfly are known from very few locations in Canada, and the Trial Islands support their largest populations. Other species are even more rare. Macoun's Meadowfoam and Golden Paint-

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The Log

Autumn/Winter 2025/26

The LOG is published two times a year by the Friends of Ecological Reserves to promote the establishment, management and maintenance of Ecological Reserves in British Columbia. The LOG is distributed to members, volunteer wardens, affiliates, supporters, government, friends and the enquiring public.

We encourage you to submit articles for publication. The deadline for submissions for the Spring/Summer 2025 issue of The Log is June 1, 2026.

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brush are not just rare in Canada, they are globally rare, and the Trial Islands populations are globally significant. Rarest of all is the hemiparasitic Victoria's Owl-Clover, which only survives in four locations in the world, with over 95% of the global population found on the Trial Islands. Most of these rarities were once more common in the Victoria area as 95% of Garry Oak and associated ecosystems have been lost since European settlement.

The Trial Islands also support some very rare ecosystems, including extensive Garry Oak meadows and several small vernal seeps and pools filled with uncommon plants. These ecosystem types may also be found in small parks and protected areas in and around Victoria, but the Trial Islands examples are in particularly good condition and are protected from visitors who might 'love them to death'. In places like Beacon Hill Park and Uplands Park, many rare species have disappeared within the past 30 years and even some common plants have declined, mostly from trampling damage. In contrast, on the Trial Islands, there are still meadows with large pillows of Coastal Reindeer Lichen, a species that quickly disappears with even light foot traffic.

In 2003, the group that eventually became the Castilleja Conservation Society, began to remove invasive species from the Trial Islands, with the assistance of many key partners including the Habitat Stewardship Program (Environment and Climate Change Canada), the District of Oak Bay, University of Victoria student volunteers, an incredible cast of other community volunteers, generous donors, and BC Parks. For several years, the partners nibbled away at dense infestations of Scotch Broom until mature broom plants had been removed from the entire ER. Once

Golden Paintbrush (Castilleja levisecta) and Common Camas (Camas sp.)

the large Scotch Broom had been removed, the partners moved on to clearing out blankets of English Ivy that had flourished in shrublands and spread across the meadows as a suffocating ground cover. By 2022, most of the Trial Island ER had been cleared of English Ivy and the partners began to remove non-native bunchgrasses such as Velvet-grass and Orchard-grass. The Castilleja Conservation Society hopes to rid the Trial Islands ER of mature invasive bunchgrasses by the end of 2027.

Unfortunately, removing mature invasive plants isn't enough to restore ecosystem health. Scotch Broom continues to sprout from seeds buried in the soil long after the flowering plants have been removed. When English Ivy vines are removed, tiny fragments that remain must be searched out and destroyed before they can give rise to new infestations. And juvenile clumps of invasive bunchgrasses must be found and removed as they grow to flowering size. This means going back through previously treated areas each year to remove invasive species before they resurface. In areas which had been particularly badly infested with invasive plants, there are so few native plants left that reseeding and replanting is needed before the seeds of invasive plants can grab hold again.

The generous donation from Diane and David Reesor, and the matching grant from the BC Parks License Plate Program, has allowed

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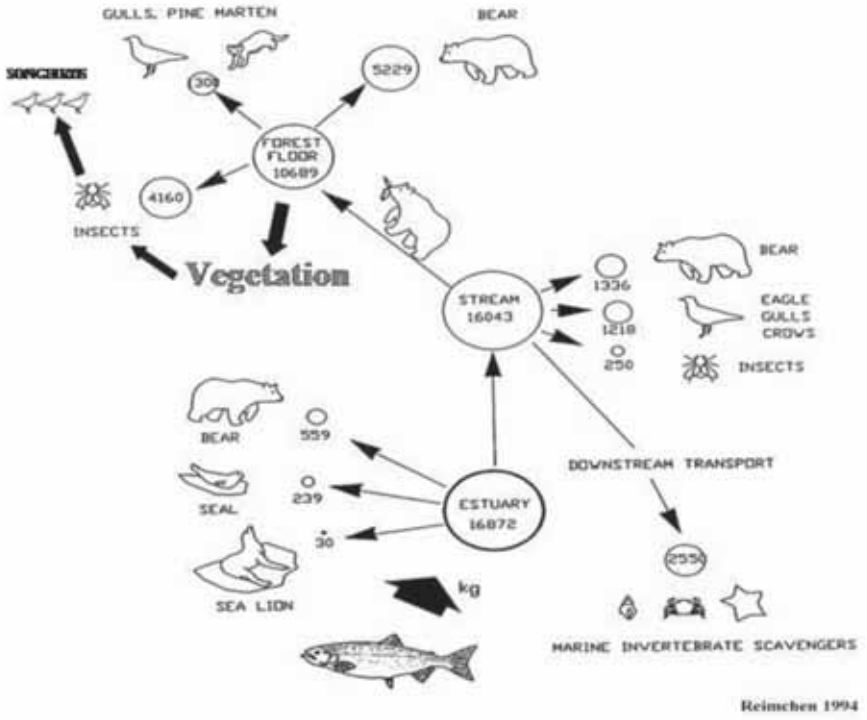
Marine-derived Nutrients Contribute to Terrestrial Productivity and Biodiversity

By Dr. Tom Reimchen, Ecological Geneticist and Adjunct Professor at the University of Victoria

Nutrients tend to flow from the land to the sea, but recent studies by researchers in Alaska, British Columbia, and Washington have focussed attention on the immense schools of migrating salmon that return nutrients from the open Pacific Ocean to coastal rivers and terrestrial habitats. Our research group has observed that black bears and grizzly bears throughout the British Columbia coast transfer large quantities of salmon carcasses from rivers into forests and these nutrients are incorporated into a broad diversity of plant and animal taxa. We are using nitrogen and carbon isotopes to quantify the uptake of salmon-derived nutrients by:

- mosses, herbs, shrubs, trees, insects (Wilkinson et al 2002, Hocking and Reimchen 2002, Reimchen et al. 2003, Mathewson et al. 2003)
- songbirds (Christie and Reimchen, 2008, Christie et al. 2008)
- bears (Klinka and Reimchen 2002, 2009a, 2009b)
- wolves (Darimont and Reimchen 2002, Darimont et al. 2003, 2007, 2008)



One of the results to emerge from our studies has been the detection of salmon signatures in the yearly growth rings of ancient trees. Conifer trees, particularly Sitka spruce, adjacent to salmon rivers on the west coast of North America incorporate marine-derived nitrogen from the carcasses of salmon carried into the forest by bears and other scavengers. We demonstrated (Reimchen et al. 2003) that small samples of wood

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the Castilleja Conservation Society to return to one of the most severely compromised areas of the Trial Islands ER to finish the task by removing thousands of germinating Scotch Broom as well as clearing out remnants of English Ivy and invasive bunchgrasses. In the autumn of 2025 this area, nicknamed Holodiscus Heights (after the native shrub Oceanspray), will be seeded with the native plant species that previously occurred there. In 2026, the group will supplement the native seedings with native plants purpose-grown in sterile potting mix on Greater Trial Island (to avoid bringing in any new pests).

Visits to the Trial Islands ER are strongly discouraged because it is impossible for any but the most skilled botanists to avoid unintentionally damaging the rare species that are so ubiquitous there. The Castilleja Conservation Society runs one open-volunteer day a year where people can help remove invasive species and get a brief tour of the island. The Society also raises funds to support highly trained conservation technicians who work to restore the Trial Islands ER and some other valuable conservation sites on southeastern Vancouver Island. An anonymous donor has agreed to donate twice as much funding as can be raised from other private donors to a maximum of $50,000/year. If you wish to donate, please contact the Society at *Castilleja.Conserve@gmail.com*.

BC Nature also hopes to facilitate more donations from our members and clubs for Ecological Reserve restoration projects in different parts of the province where ERs need restoration. We may potentially be able to also match donated funds from the BC Parks License Plate Program.

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(30 mg) extracted from cores of ancient trees contain detectable levels of 15N [note 1].

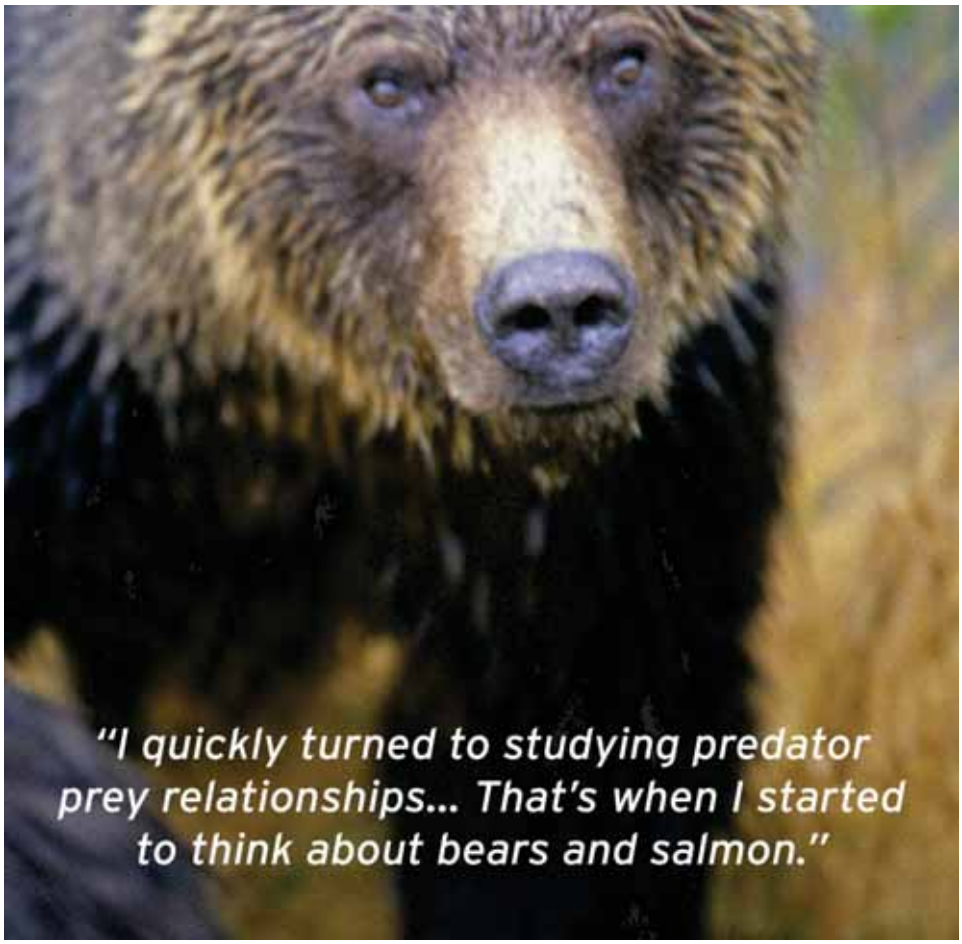
Comparisons among watersheds differing in number of salmon show that 15N levels in wood of trees are generally proportional to the present numbers of salmon entering the streams.

Comparisons within watersheds along a sharp gradient in salmon density also show a strong positive correlation with 15N levels in trees and salmon density. Historical fluctuations in 15N levels extracted from yearly growth rings of trees show significant tracking with salmon escapement over the last 50 years for some trees yet no association for other trees that occur within the same microhabitat. Within watersheds, larger and older trees exhibit higher 15N levels than small trees from the same habitat.

Among trees with major access to salmon carcasses, up to 75% of the total nitrogen in the tree appears to be derived from salmon nutrients. Our detection of 15N levels in yearly growth rings of trees using small quantities of wood from standard increment cores offers a novel tool for assessing the occurrence and potentially the relative abundance of salmon and other anadromous fish in past centuries from watersheds of North America, Europe and Asia (Reimchen and Fox 2013) and has applications for any regions with ancient trees near marine habitats including those on seabird colonies (Reimchen, McGehee, Glickman 2013).

The annual growth of Sitka spruce has been found to be higher in sites where carcasses were prevalent and also greater during years when spawning runs were elevated (Reimchen and Fox 2013).

This research was funded primarily by the David Suzuki Foundation (www.davidsuzuki.org), the Friends of Ecological Reserves (www.ecoreserves.bc.ca) [note 2], NSERC (http://www.nserc-crsng.gc.ca/index_eng.asp), and the Hakai Institute (https://www.hakai.org/).



When I moved to Haida Gwaii, just south of Alaska as an undergraduate, I was lucky enough to work with someone doing their PhD. We sampled a few lakes and we found stickleback, but they were very different from each other, and different from stickleback in Europe and Alaska. That was always in the back of my mind when I was doing my PhD, and I quickly turned to studying predator-prey relationships. I was trying to figure out how each of these predators interact with prey. Maybe there are different adaptations that sticklebacks have with each predator.

So I thought at some point I'd like to scale that up to another taxonomic group. That's when I started to think about bears and salmon, which I didn't know too much about. In 1992, I was able to initiate a project on the south end of Haida Gwaii looking at bear-salmon interactions: how bears capture the salmon, how they hunt, do they hunt at day or dusk or darkness — really basic predator-prey interactions — in an attempt to understand salmon and what type of defences they had to the bear. It was that original tangent to my stickleback work where I quickly found that the bears were doing much of their feeding at nighttime. They fed all the time more or less, but they were feeding throughout the night, and they were very, very successful at night time, mainly because the salmon were less responsive to the bears wading into the creek at night.

When I started to count how many salmon each bear was taking into the forest, it was incredible; there were basically 3000 salmon that were taken into the forest in an 8-week period by about eight bears. As soon as you looked at the bear, watched the bear, and it would eat what it wanted and then go back to the stream, as soon as it left, crows would pick away at what the bears

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left behind. Then raven would come in, but after 2 or 3 days, they would leave. There were occasionally flies, and flies would lay their eggs on the salmon carcasses. I didn't pay much attention to that. There were just a few tiny little eggs. But in 3 or 4 days, those eggs hatched and literally the carcass now was seeming with massive maggots. That was really interesting — I never thought too much of that other than the fact that no crows, ravens, pine martens — nobody wanted it. They only wanted the carcass when it was fresh.

In about a week, the maggots would turn the carcass remnant to just bones. These maggots would disburse out radially, and then dig into the moss substrate, and they'd pupate, and you wouldn't see them again until the following spring. They emerged when the songbirds were migrating. I saw all of these little things, and you start to go, 'Okay, the numbers of salmon being taken into the forest influenced how many nutrients there were for all of these other species. The number of salmon swimming into the streams determined how many bears there were, and when there weren't many salmon, there weren't many bears, and therefore weren't many transfers. Gradually over multiple seasons it very clearly became evident that this is a really rich ecosystem that is driven by salmon.

I started to use stable isotopes in my study, because salmon are enriched in a heavy isotope of nitrogen — all marine fish are. That allowed us to measure, as a proxy, how much of the nitrogen the vegetation uses — these giant trees, the huckleberry, devils club — how much nitrogen in their tissues has ultimately come from the ocean, come from the salmon.

We sampled about 140 different watersheds on the British Columbia coast, and I started to core the trees because I realized each ring on the trees contained potential

Dr. Tom Reimchen and crew took tree core samples from about 140 different watersheds on the BC coast. Ultimately the isotopic signature in the wood produced proof that nitrogen came in the forest came from salmon. That's how the concept of the "Salmon Forest" emerged.

information on how many salmon were yielded in a year. I cored thousands of trees. I cored beside a salmon river and a little further away in the forest, and on creeks a little farther away. Then, via a lab in California, I was able to identify the isotopic signature in the wood. It turned out that it had not ever really been accomplished before, except once on the east coast, when they cut a whole tree down because there is not much nitrogen in wood. Even though there was hardly any nitrogen, we were still able to pull out that signature of how much of that nitrogen came from salmon. And that produced evidence that the insects, the spiders, the beetles, the songbirds, the martin — everything below the waterfall — was enriched with this marine isotope. And that's how the concept of the "Salmon Forest" emerged.

When you go to rivers where there are no salmon, because there is a waterfall right at the mouth or there are no spawning gravels, you tend to have low songbird diversity, lower insect diversity, you don't have bears, you hardly have any crows. What you see with two streams side by side, maybe a half a kilometer apart, one with and one without salmon, you see these major differences in ecosystems, and it's the same type of difference that you get when you go above a waterfall and below a waterfall, on rivers that do have salmon down below the waterfall. So the same change in the vegetation community structure that you get between streams with and without salmon, are the same differences you get within a stream above and below a waterfall.

The whole idea of the salmon forest being connected is that the nitrogen that salmon accumulate in the middle of the Pacific Ocean ultimately ends up in the canopy in these ancient forests, and spiders in the canopy still have that nitrogen from the middle of the ocean. It has eliminated the idea of the land and the sea being two separate things. I had no concept of this at all before.

I had been previously prepped for the marine-terrestrial connection 10 years earlier when I was studying stickleback at Drizzle Lake. We found that Red-throated loons do not feed their chicks fish from the lake but rather fly to the

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Documenting Biodiversity in a Haida Gwaii ER

BC Parks News, Conservation, (posted on December 12, 2025)

Since 2019 the BC Biodiversity Program has employed teams of naturalists and researchers to conduct biodiversity surveys throughout the province, with a focus on protected areas including provincial parks, ecological reserves, and conservancies.

Formerly called the BC Parks iNaturalist Project, this program uses the community science platform iNaturalist to document this province's incredible biodiversity. This program also aims to promote community engagement with biodiversity through iNaturalist, which allows users to upload photos of living organisms for identification by a community of experts and amateur scientists. iNaturalist is a fantastic tool that makes it easy for anyone to contribute to broadening our understanding of B.C.'s biodiversity; see the BC Biodiversity Program's website for guides on getting started, and visit the BC Parks project on iNaturalist to see what has been recorded in provincial protected areas. The BC Biodiversity Program is funded in part by the BC Parks License Plate Program.

Views from the high elevation bog forests in Vladimir J. Krajina Ecological Reserve. (Photo by Julia Carr)

A permit is required to access Vladimir J. Krajina Ecological Reserve. Permits are available for research and educational purposes only.

In August of 2024, the BC Parks Biodiversity Program field team

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ocean about 15 times a day and bring marine fish back to the young in the lake. The adults brought from 500 to 1000 small marine fish to the lake each summer. We published this in 1984 and 1985. However, I did not think of the broader implications of this transfer at that time.

Working with the bears and salmon and insects, I really recognized the continuity of these ecosystems from the ocean through to the forest. In some ways it was a bit of an "Aha" moment, but it developed slowly over time, every time I turned the corner, not sure whether my new set of measurements were going to be supportive or not. At the very beginning it could have gone in any direction. But then my confidence expanded that this was a real thing that was happening.

Read more at:
http://web.uvic.ca/~reimlab/

Additional Notes:

While precipitation and maritime climate contribute to the productivity of these ancient forests, marine-derived nutrients, including salmon (*Oncorhynchus spp.*), Pacific Herring (*Clupea pallasii*), and shellfish can be transferred by predators and scavengers into the riparian zone. This is known to increase productivity and biodiversity in select localities (Ben-David et al. 1998; Cederholm et al. 1999; Hilderbrand et al. 1999; Reimchen 2000; Helfield and Naiman 2001; Drake et al. 2002, 2011; Hocking and Reynolds 2012; Fox et al. 2014; Trant et al. 2016; Cox et al. 2020).

Tree ring analyses also show salmon isotopic signatures (Reimchen et al. 2003), with a 19% to 30% greater annular growth in the presence of salmon nutrients (Reimchen and Fox 2013; Reimchen and Arbellay 2019).

The results provide direct quantification of the contribution of salmon-derived nutrients to yearly growth rings of old-growth Sitka Spruce among and within watersheds throughout coastal British Columbia.

Watch The Salmon Forest Project film, produced in 2024.
https://salmonforestproject.ca/

Notes

1 Nitrogen-15 (15N) is a stable, non-radioactive isotope of nitrogen

2 A 1989 grant from the Friends of Ecological Reserves: (www.ecoreserves.bc.ca)

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was fortunate to spend three weeks on the beautiful islands of Haida Gwaii, conducting biodiversity surveys in protected areas. We did several day trips to different parks around Haida Gwaii, using community science tools like iNaturalist and eBird to log our sightings. We were constantly amazed at the biological diversity in these parks, especially in bryophytes (mosses, liverworts, and hornworts) and other bog plants. Undoubtedly, the most memorable experience was our trip to Ahlúu Ḵáahlii *Vladimir J. Krajina (Port Chanal)* Ecological Reserve, on the remote west coast of Haida Gwaii.

This ecological reserve is located on the middle west coast of Xaadáa Gwáayee xáa.uguusd | XaaydaGa Gwaay.yaay IinaGwaay *Graham Island*, and is a protected area over 9,700 hectares in size. Accessible by boat, float plane, or helicopter only, it comprises mountainous terrain (up to 825 m in elevation), 60 km of shoreline, two large islands, and a fjord with the name Ahlúu Ḵáahlii *Port Chanal*. The ecological reserve—currently named after botanist Dr. Vladimir Joseph Krajina—is in an area known by the ancestral Haida name Ahlúu Ḵáahlii. BC Parks staff are working with the Haida Nation on a project to restore this and other ancestral names of protected areas and ecological reserves on Haida Gwaii.

On the first morning, we caught the ferry from HlGaagilda *Skidegate* to Gaats'iiGundaay *Alliford Bay*, making our way to the K'il Kun *Sandspit* airport to meet our helicopter pilot. There, we met up with Nicole Day from the Heritage & Natural Resources department of the Council of the Haida Nation, who joined us on the trip. Nicole would be conducting plant surveys and recording signs of human habitation, such as culturally modified trees (CMTs). Upon arrival, unfortunately we discovered that the helicopter did not have enough room for all five of us and our gear, no matter how hard we tried to condense it. One of us would have to stay behind. So, I said a tearful goodbye and watched them ascend in the helicopter. Oh well, I thought – at least I'll have our accommodations to myself for a whole week!

Lepidozia filamentosa, a liverwort with long filamentous strands found in BC's very wet coastal forests. (Photo by Julia Carr).

Or so I thought. Thirty minutes after departure, I got a text from a team member: "Don't board the ferry! We're coming back!!". Despite it being a mild and relatively clear day in K'il Kun, as they got closer to the west coast, the pilot determined it was too socked in to safely descend into the reserve (a common story on the wild west coast of the islands). With the help of our project manager Arianne back in Vancouver, we came up with a contingency plan: we would charter a boat from Massett on north Xaadáa Gwáayee xáa.uguusd | XaaydaGa Gwaay.yaay, travelling some 150 kilometres around the northwestern tip of Haida Gwaii and down the west coast. It was a big change from our original plan, but we were just glad to have another way to get to the ecological reserve.

The boat ride was very fun, very wet, very bumpy, and very rewarding: we got to see some of Haida Gwaii's beautiful outer coastline, as well as a tufted puffin, an albatross, and many other seabirds. Upon arrival in the ecological reserve, we set up base camp in an idyllic mossy grove not far from the shore and began exploring around our camp.

On our first full day, we ventured up to the nearest high point, hiking through Sitka spruce forests and Haida Gwaii's beautiful bog ecosystems. We found many interesting bryophytes (the group that includes mosses, liverworts, and hornworts), including Lepidozia filamentosa, a liverwort with long filamentous strands found in the very wet forests along the coast, and Wood's whipwort

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(*Mastigophora woodsii*), a B.C. red-listed (provincially endangered or threatened and at risk of being lost) liverwort with records in the UK and Ireland, the Himalayas, and Mexico.

Wood's whipwort (Mastigophera woodsii), a red-listed liverwort also found in the UK and Ireland, the Himalayas, and Mexico. (Photo by Abby Hyde).

Another standout was *Plicanthus hirtellus*, a blue-listed (provincially of special conservation concern) liverwort growing in the mossy mats of the high elevation bogs.

Plicanthis hirtellus, a blue-listed liverwort also known from Polynesia, Australia, and Africa. (Photo by Finn McGhee.)

Newcombe's butterweed (Teogriserus bewcinbei). (Photo by Julia Carr)).

We also found some cool vascular plants, including the Haida Gwaii endemic (found only on Haida Gwaii in the whole world) Newcombe's Groudsel (*Tephroseris newcombei*), and broad-petalled gentian (*Gentiana platypetala*).

broad-petalled gentian (Gentiana platypetala)(Photo by Abby Hyde).

Below: A Haida Gwaii black bear (Ursus amerianus ssp. carlottae), an endemic subspecies of black bear we saw foraging along the shore during our voyage back

Abby along the ancient trail we stumbled across, with Culturally Modified Tree in the background. (Photo by Julia Carr).

That evening, we got some unfortunate news: the weather was turning, and the boat would need to pick us up the following afternoon. We made the most of the next morning, hiking through another bog forest and along the river to a nearby lake, where we saw river otters, belted kingfishers, and American dippers. On the way back, we came across an ancient trail through giant old growth cedar and spruce, and numerous culturally modified trees – illustrating the extent to which the Haida inhabited and made use of their territory. It was a beautiful ending to our trip.

We are grateful to the Haida for their hospitality and their stewardship of Haida Gwaii since time immemorial. If you plan to vaisit Haida Gwaii, please take a look at the Haida Gwaii Pledge at: https://www.haidagwaiipledge.ca

Saying Goodbye to Well-known Biologist Hans Roemer

Hans Ludwig Roemer
April 25, 1938 - Feb 3, 2026

Hans has left us to explore the alpine meadows in heaven, correcting the misnamed plants and finding unknown species. Having spent his early years growing up in the shadows of the Alps, he was passionate about plants and mountains all his life.

In 1965, Hans' life path was shaped by a mountaineering expedition to Afghanistan. In 1967 a call from Marc Bell in Canada offering work as a research assistant at the new University of Victoria changed his path again. He signed up for one year, but he never left Victoria.

Hans' kind, generous, and adventurous spirit will be remembered by future generations of professionals, friends, and family who have benefited from his knowledge and mentorship over the years. In his life he published a native plant guide and was honoured to have a native grass named after him (*Festuca roemeri*). Hans leaves behind a legacy of research, stewardship, and leadership in protecting rare ecosystems... as well a special alpine rock garden.

He will be missed by his family: his wife Heidi, son Markus (Emily van Lidth de Jeude), daughter Julia (Keith Davies) and grandchildren Taliesin, Rhiannon and Evan, as well as his siblings in Germany and the family labradoodle Mädi.

The family wishes to thank Hans' doctors and the compassionate and dedicated team of palliative and hospice care givers. Instead of flowers, please consider a donation to the Marc Bell Scholarship in Environmental Studies at UVic. https://extrweb.uvic.ca/donate/marc-bell

Condolences may be offered to the family below at: McCall Gardens, www.mccallgardens.com.
(Thanks you to Hans' family for permission to reprint his obituary.)

Hans Roemer on a glorious day on limestone cap in Strathcona Park, Vancouver Island. (Photo taken by Paul Spriggs with permission)

Summary of an Interview with Hans Conducted by FER President Mike Fenger in 2011

Hans Roemer became interested in ecology long before he came to Canada from Germany. He spent one year as a research assistant, before he started on a PhD at the University of Victoria. He worked in the natural environment in forest ecology and was interested in the Ecological Reserves program as well. Hans did his dissertation on forest ecosystems on the Saanich Peninsula. He attended the early meetings of the so-called "Reserves Committee" which included scientists, foresters and biologists from far and wide.

He was offered the Ecological Reserves job in 1978 which had been vacated by Dr. Jim Pojar. He became the ER ecologist. He surveyed potential ERs looking for pieces that would fit the puzzle. As Hans was a plant ecologist he was looking for original native pieces of forest that were undisturbed, especially those ecosystems that were already becoming uncommon at that time. The Coastal Douglas

Mike Fenger (left) interviewing Hans Roemer as part of the BC's Protected Areas Legacy Project. The interview was held October 14, 2011 in Hans' backyard Garry Oak Forest.

Fir zone is a prime example of an area that was logged heavily and only a few places remained. The process to advance the idea of an ecological reserve in this type of area was long and arduous and very often not approved.

When Hans was asked how many ERs were established when he began, he thought in the order of 100. Hans worked with Bristol Foster who was the ER Coordinator and Director of the ERs and with different temporary people like Trudy Chatwin (at that time Trudy Carson) and Lynne Milnes.

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Remembering Hans Roemer Cont'd from p. 9

Hans travelled quite a bit and did manage to add some ERs in the eastern corner of BC. He wasn't as successful with the northern part of B.C. Hans worked directly for the ER program for 17 years. When asked if he remembered an area that stood out and he recalled the following:

"I remember one time we were up in the McGregor River area and were surveying a transect that went from river flats through wetlands, up slopes to a mountain top. When we got up there we looked back down and there was a big grizzly bear with two cubs. The mother, presumably it was the mother, was teaching the two cubs how to catch ground squirrels. She would dig them out and let them go and the little ones would pounce on them and catch them again and so on. That was quite delightful. Many such adventures happened during work and I enjoyed them."

(Photo taken in 1981 of Hans Roemer and Trudy Carson collecting and climbing on the Nunatak. Taken from a Jim Pojar report entitled "Nunataks and Nootka: The Brooks Penninsula, Vancouver Island's Ice Age Refugium: https://ecoreserves.bc.ca/2021/05/01/nunataks-and-nootka-the-brooks-penninsula-vancouver-islands-ice-age-refugium-by-jim-pojar/

Burnt Sage bush on Haynes Lease ER, photo taken by Hans Roemer in 1993. https://ecoreserves.bc.ca/1993/04/08/the-1993-fire-at-haynes-lease-er/

A 2010 Trip to San Juan Ridge ER with Hans Roemer

A beautiful June day on a FER Field Trip to San Juan Ridge Ecological Reserve. Photo by Fred Beinhauer – Back left: Mike Fenger, Mary Rannie & Louise Beinhauer; Front left: Stephen Ruttan, Wynne Miles, Tory Stevens and a smiling Hans Roemer)

On a balmy day in June, Friends of Ecological Reserves Board members Mike Fenger, Stephen Ruttan (trip organizer), Mary Rannie and Wynne Miles along with guests; our guide, biologist Hans Roemer, Ministry of Environment's Tory Stevens, Fred Beinhauer and I car pooled along Highway 14 on our way to the San Juan Ridge Ecological Reserve.

About three kilometers west of Jordan River, our two-vehicle convoy turned off the highway and began an 18-kilometer upward trek on the Jordan River Mainline, an active logging road.

We stopped briefly on the way at a beautiful marshy area. After a short walk over boggy ground, Hans pointed out clusters of marsh-marigold (*Caltha leptosepala*) as well as subalpine daisy (*Erigeron peregrinus*), Western bog-laurel (*Kalmia microphylla*) and a plant that I found most fascinating, Round-leaved sundew (*Drosera rotundibolia*) that exudes drops of sticky fluid which ensnares insects that not only pollinate the plant but feed it as well!

Then it was back into the vehicles to climb the rest of the way up the dirt road to an informal parking area. We hiked our way up the narrow road for another 400 metres or so and then turned north onto a small trail that took us to the Kludahk Trail. We were at an elevation of approximately 825 meters – subalpine!

Round-leaved sundew (Drosera rotundifolia)

The Kludahk trail runs east to west for approximately 48 kilometers along the spine of the San Juan Ridge and passes close by the Ecological Reserve. The trail is managed by the Kludahk Outdoors Club who were instrumental in its creation. This trail is snow-bound

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Does Logging a Burned Out Forest Hurt or Help

By Sydney Lobe, Local Journalism Initiative Reporter,
(Excerpted with permission from *Canada's National Observer* Aug 8, 2024)

Years ago, ecologist Dr. Karen Price walked through a forest ravaged by wildfire that had been logged and replanted. It was a uniform mass of pine trees, devoid of birds and wildlife — it was "ecologically boring," she recalls.

By contrast, the nearby eco reserve — which had also burned, but was left undisturbed — was a sound bath of bird calls and rustling leaves, and home to rare wildlife like goshawks. She notes that while this is just an anecdote, the juxtaposition was a more powerful illustration of the difference between a forest logged for "salvage lumber" and one left to regrow naturally than she'd seen in any graphs of young forests.

Price, alongside other experts, is expressing concern that salvage logging — the process of logging wildfire-disturbed forests — has no ecological benefit and contradicts B.C.'s promise to prioritize ecosystem health over timber. They say, in that context, the process should be reconsidered.

However, the B.C. government released new regulations in April that expedite the practice.

The 2023 wildfires were the most destructive in B.C.'s history, and burned out more than 2.8 million hectares of forest. In April, the provincial government introduced new measures that make logging wildfire-damaged timber easier and "more economic" for forestry operations and First Nations, according to a press release accompanying the change.

The release explains that "salvage allows for quicker reforestation efforts and land recovery after wildfires," and the new measures streamline the process to allow for these outcomes.

In a panel facilitated by Conservation North, an environmental group, many experts agreed that salvage logging is carried out to compensate for lost timber profits post-fire, but reforestation and land recovery actually occur more productively without such interference.

"We always think we have to do something, that we have to fix something," Price told Canada's National Observer. "Often, the best action to restore an ecosystem is to let it restore itself. Nature does better than humans."

The Draft B.C. Biodiversity and Ecosystem Health Framework,

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Remembering Hans Roemer Cont'd from p. 10

for almost seven months of the year, November to June and we hiked over many places with some snow still on the ground.

We travelled east along the trail for a few kilometers so that we could view the ER and admire another picturesque wetland area where tree frogs were chorusing. Hans knew every plant along the way – both their common and botanical names.

We decided to turn around and head west so that we could stop at one of the various huts along the trail. We were aiming for the Tea Hut, an interpretive centre with a wonderful view of the San Juan Valley far below.

Along the way to the hut, we saw hundreds of beautiful blue-listed avalanche lilies (***Erythronium montanum***). They were the reason for our trip as they are most spectacular in mid-June. They bloom as the snow is retreating.

Avalanche lilies (Erythronium)

We also stopped at several tranquil alpine lakes along the way. Every lake and most meadows were named; there was even one called the Hans Roemer Meadow.

At one small lake, I made a half-hearted attempt to catch a Rough-skinned Newt in order to see the orange belly that Tory said they had which serves as a warning to would-be predators. Much to my surprise, I actually caught him and his belly was indeed bright orange. I carefully put him back into the water and we continued on our way.

We arrived at the Tea Hut and sat and ate our lunches, admiring the spectacular view and reading the information panels adorning the wall. All too soon it was time to return to our cars for the drive back to town.

This was the only time that I had met this knowledgeable, kind man. I was so impressed with his calm easy-going manner. His contributions were many and he will be missed. I am grateful for his recent book which he wrote in collaboration with Mary Sanseverino called *Native Plants of British Columbia*'s *Coastal Dry Belt*.

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introduced in 2023, describes a vision for resource management that focuses on protecting biodiversity and ecosystem health.

"We've come from a long history of industrialized forestry," says Lennard Joe, CEO of the BC First Nations Forestry Council, as well as a registered professional forester and member of the Nlaka'pamux First Nation. "Now we're being faced with changes in climate, and it's extreme. We've got to find ways to move forward."

The Old Growth Strategic Review, another effort to reevaluate the province's natural resource priorities and old growth management, acknowledges that "society is undergoing a paradigm shift in its relationship with the environment, and the way we manage our old forests needs to adapt accordingly."

Price says the move to streamline salvage logging is "very concerning, because it goes against any potential 'paradigm shift.'"

Eddie Petryshen, a conservation specialist with environmental advocacy group Wildsight, says the continued practice of salvage logging hinges on a misunderstanding. Also sometimes called harvest or sanitation logging — and said to promote "renewal" and "recovery" — the implication is that the practice fosters a healthier, more resilient ecosystem, he says.

"We're acting like that's a really good thing to be happening on the landscape and that we need to streamline it to make it easier to incentivize it," he says. "This is what some of the world's best forest ecologists call 'attacks on natural ecological recovery.'"

Price agrees. "Logging is logging," she says. "You're removing trees from an ecosystem. And in that perspective, it doesn't matter if you're removing it from a live forest or dead forest."

Price explains that actually, dead trees often have as much or more ecological value as live trees. They continue to store carbon, benefit species that rely on dead or burnt wood and create a biodiverse environment.

The aftermath of a summer 2023 fire that burned an area near Kamloops B.C. (Photo by: Jennifer Osborne for Canada's National Observer)

Areas where salvage logging and replanting occurs often become "biological deserts," she says, removing natural complexity that is essential for the wellbeing of forests. Disturbed trees, fallen logs, and snags (dead trees left upright to degrade) all contribute to a healthier ecosystem than those that develop after salvage and replanting.

The ministry argued in a statement that salvage logging makes forests more resilient against wildfire.

"By salvaging dead and dying trees, we are reducing fuel and the risk of future wildfires," the ministry said in a statement. Experts outside the government disagree, saying salvage and replanting can actually increase that fuel, as well as the severity of future burns. On the other hand, burned forests left alone can resist wildfire for at least 20 years.

A 2021 study from Forest Ecology and Management concludes that "salvage logging does not necessarily prevent subsequent disturbances, and sometimes it may increase disturbance likelihood and magnitude."

For Price, a wealth of factors — the primary values of the specific ecosystem in question, what kinds of trees are being harvested and fire severity — need to be considered for salvage to take place in a way that honours a shift away from timber-centric values.

But Petryshen explains that the province incentivizes salvage by reducing fees for logging burned wood and making regular adjustments to the amount of timber logging companies are allowed to log each year on the basis of how much burned wood is available to salvage — such as the changes made in April.

Since natural resources are managed provincially, salvage logging regulations vary province to province in Canada. In general, salvage logging is noted in different provinces' forest legislation as an option following wildfire or other natural disturbances. Many provinces, including B.C., provide incentives for salvage, like reduced fees for harvesting, or adjusting a predetermined harvest volume to allow for salvage. In Alberta, Manitoba, Ontario and Quebec, the amount of harvest allowed per year can also be adjusted to account for the salvage of wildfire-burned areas.

Salvage logging is an economically important practice across the

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Bat and Toxicology Research on Vineyard Edges: Haynes Lease Ecological Reserve

By Nicole Besler, PhD candidate

Growing a variety of grapes and tasting wine is part of what makes the southern Okanagan unique in B.C., where the natural desert landscape is unlike anywhere else in Canada. Protected areas in this region include Haynes Lease Ecological Reserve, that extends from a cliff edge to wetland area where in-between is dominated by bunch grass, shrubland, and cactus. The reserve borders vineyards and Osoyoos Lake and, as such, shares the same air and water with the rest of the region.

Haynes Lease Ecological Reserve #100.

Pest control substances applied on vineyards, other crops, and right-of-ways can be transported via wind, ground leaching, and run-off to natural areas. Additionally, smoke from local and distant wildfires can suffocate the entire region. The pest control substances and wildfire smoke contain a cocktail of chemicals that vary in toxicity to invertebrate and vertebrate wildlife. This can diminish all insect populations, not only pests, which then affect the vertebrate wildlife that feed on these organisms. Insect-feeding wildlife also

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country. In B.C., companies and First Nations rely on salvage logging to compensate for timber lost to wildfires.

Joe, with the First Nations Forestry Council, notes that for the majority of First Nations reserves in rural areas in B.C., forestry is a primary economic business.

"Salvage is a part of the process," he says. "There's a number of things you have to balance when you look at it. ... You can't just do a simple brushstroke."

The Ministry of Forests said in its statement that values such as "retention, watershed health, water quality, wildlife habitat, biodiversity, burn severity, hydrological systems, soil productivity, cultural values and reforestation" must be considered when salvage logging.

For Price, the solution isn't to do away with salvage logging altogether, it's to reconsider the approach from a perspective that's "ecologically based, so it puts ecological values at the forefront, adding timber as a service that the ecosystem provides for humans."

"We are living amidst biodiversity and climate crises," she adds. "Every decision we make should be in that context."

Thanks again to Canada's National Observer: https://www.nationalobserver.com

(Left: Image credit iStock Ruby Rain)

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sustain direct toxicity through exposure from the air and water that passes from cropland to protected areas.

As the hot sun sets behind the cliffs, one group of wildlife fly over these shrubland and grape plants, engorging on a variety of insects: bats. The southern Okanagan is home to the greatest diversity of bats in Canada, where they consume ground-dwelling and aerial insects, as well as spiders and potentially scorpions. Many of the species here roost in cliff crevices and make their way across the open landscape to the water. As such, bats can contribute to pest control where there is a mosaic of natural habitat and cropland, but this increases their exposure to chemicals where the extent and effects of contaminants on bats are unknown in this region.

I am a wildlife biologist based in Kimberley and a PhD candidate at the University of Calgary. I am seeking to understand the potential toxic effects of pesticides and wildfire smoke on bats in southern B.C., specifically genotoxic and immunotoxic effects. One of my study sites includes Haynes Lease Ecological Reserve where for one night in each of July 2024 and 2025 I captured bats to collect fur and blood samples. At sunset I open mist-nets placed in flyways where captured bats are removed from the net and handled with care under a permit. While under the dark sky with only a headlamp on, I take a small amount of fur from between the scapula and blood from a vessel on the tail membrane. Exposure to light and handling time are minimized to reduce stress, and once bats re-warm in a holding bag, they are released.

In 2024 I captured three bats, each of different species: little brown myotis (*Myotis lucifugus*; Endangered); fringed myotis (*Myotis thysanodes*; Data Deficient); and Townsend's big-eared bat (*Corynorhinus townsendii*; Blue-listed). In 2025 I did not catch any bats at this site. The low numbers from both years may be due to difficulty in finding suitable net placement, weather conditions during survey, or an overall decline in little brown myotis which I observed at all my sites.

Townsend's big-eared bat (Corynorhinus townsendii)

In the lab I analyze blood samples under the microscope for signs of DNA damage (genotoxicity) and to obtain immune cell counts. I will use the fur samples to test for pesticides and compounds found in wildfire smoke. To date, there appears to be a strong correlation between air quality and genotoxicity rates in bats, regardless of proximity to cropland. However, lab work is still underway and I'm hoping that further analysis and monitoring will help identify how environmental contaminants alongside other stressors, such as weather and the arrival of bat-specific diseases (e.g., white-nose syndrome), are cumulatively impacting bats and their important connections with

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Honeymoon Bay and Mt. Tzuhalem Field Trip

Genevieve Singleton, the warden for Honeymoon Bay Ecological Reserve for many decades, will lead us through the wildflower meadows on Thursday, April 23rd. After, we can also climb to Mt Tzuhalem ER. Members can join for either or both.

Contact Rick Page, rpage53@hotmail.com for more information or to reserve your place.

Please Note: Depending on phenology the dates may change; if so you will be notified.

Photos left: Camas (*Camassia*) quamash with a sample of a paler colour variant, right: Deltoid balsamroot (*Balsamorhiza deltoid*), Photos from a 2015 field trip to Mt. Tzuhalem ER (Excerpted from a LOG article by Emily Dent) https://ecoreserves.bc.ca/2015/07/08/mount-tzuhalem-breath-taking-vista-of-wildflowers/

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