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The Victoria NATURALIST

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Cover: The 98 Ha San Juan Ridge Ecological Reserve was created in 1972 to protect a rare and disjunct population of the white glacier lily/white avalanche lily (*Erythronium montanum*) June 2011. Photo: Jenny Feick.

In this year that has been so different in some ways, I've found some things are even better. Sticking closer to home has meant (re)discovery of places and renewed appreciation of the wonders of nature so close to us.

For me, one thing in the "even better" column as a result of spending more time in our yard is that we watched two bird families build nests and raise young—Pacific Slope Flycatcher and Hutton's Vireo—one on our porch light! and one in a tree just off our deck) and based on the number of chickadees, juncos, nuthatches and even an Black-headed Grosbeak(!), I am sure there were more but we didn't find the nests.

I hope you enjoy this issue as much as I have while compiling the content. It is, as always, full of varied and interesting articles and images. Our province is showcased in two articles, one about B.C.'s Great Northern Loop and the other about Ecological Reserves. Perhaps this will tempt more of us to explore. Stories from lizards to barracuda to fascinating sea creatures will also spark interest.

Two more things: field trips are happening, with appropriate precautions, and our evening presentation start again this September. This will be different since we will not be able to meet in person, but don't let the changes in the way we hold our evening presentations put you off. Topics from Wolverines to fish sounds, estuary to Antarctic, insects to orcas . . . there will be something for all of you!

Oh . . . and a teaser for an article next issue...how many species of birds do you know that sing at night? And not only owls are on the list.

Take care and safely enjoy your adventures.

GAIL HARCMBE

A Message from Your Board

For introverts, the province's request for "fewer faces and bigger spaces" is such a perfect fit. This mantra also appears to have really caught hold this summer with other British Columbians, with record sales of camping equipment and bicycles, and parks filling up. Finally people are realizing what we have known all along: nature is incredible and everyone should take the time to be out in it and observing it as often as possible. Hopefully the masses don't find all our quiet haunts though—at least not until they are ready to get *back to nature* rather than getting *back at nature*—the way some forms of outdoor recreation take shape.

Your Society field trips such as the weekly birding days and monthly butterfly counts, plus some other field trips have all been going as scheduled, even with COVID-19 restrictions. We hope you have felt comfortable if you have been participating. Please keep us informed if you have concerns; we want everyone to stay safe and enjoy their experiences. Also, as part of our collaboration with the Greater Victoria Naturehood effort (<https://www.facebook.com/NatureHoodYYJ/>), we're keeping track of numbers on our outings.

As mentioned in the last message from the board, preparations for delivering evening talks in the fall on Zoom are underway. Please do share the links to these with anyone you think would be interested in them—friends far away can also tune in and enjoy the wide range of speakers. For example, the first talk of the fall season is on **WOLVERINES!** And there will be video! Not having to venture out in the dark and rainy evenings of fall and winter will likely appeal to many of you and may be something we never want to change back. Or perhaps we will find a way to accommodate both options.

Each year, our umbrella organization BC Nature (Federation of BC Naturalists), asks all of the nature clubs across the province to submit resolutions to be put forward for a vote at their annual general meeting. Their AGM was affected

by COVID-19 closures, so the meeting was held virtually on 23 June 2020 and the Victoria Natural History Society's resolution was passed. It is a resolution in support of the BC Ecological Reserves, covering such things as a mechanism for their creation, their value, maintaining them, etc. The many years of neglect of the Ecological Reserves program has necessitated this action. Even something basic, such as a mechanism for proposing new ecological reserves, has not been put in place. If you would like to read the entire resolution as passed, please contact board member Stephen Ruttan. He was the driving force behind the submission. See page 14 for an article by Jenny Feick about B.C.'s Ecological Reserves.

Another province-wide issue is the use of second-generation rodenticides. Toxins build up in other animals that eat poisoned rats, resulting in the death of non-target animals. Your Society wrote a letter to Saanich council that ultimately helped pass a ban on the use of these rodenticides by the municipality, and we have added our logo to a fact sheet about the rodenticides that will be distributed more widely. Banning them outright must happen at the provincial level, so the municipal ban is just a first step. If you would like more information on the impact of these poisons please see the SPCA website: <https://spca.bc.ca/news/rat-poison-wildlife/>

On a cheerful note, a member of the Victoria Natural History Society, Rachael Tancock, was the recipient of the BC Nature's Rene Savenye Scholarship. Congratulations, Rachael, and best of luck with your schooling at Vancouver Island University in the fall. (Learn a bit about Rachael, see below).

And finally, we did not have a Board Retreat this summer because the ongoing uncertainty makes it difficult to chart a particular course, but many of us did go for a walkabout and socializing session just to stay connected and consider some future activities.

BC Nature Award

Meet the Rene Savenye Scholarship winner, Rachael Tancock! She was born and raised on the unceded lands of the W̱SÁNEĆ and Lekwungen-speaking peoples, now known as Victoria, British Columbia. Rachael is very passionate about the natural environment, which stems from spending most of her childhood outdoors, exploring southern Vancouver Island and sailing throughout the Salish Sea. After graduating from the University of Victoria with a BSc Major in Geography and Minor in Environmental Studies, she worked as a Research Intern at the Pacific Whale Foundation in Maui and as a Park Naturalist with the Capital Regional District. She has volunteered many hours with various environmental organizations as an environmental educator, research assistant, event coordinator, and restoration worker. Rachael enjoys spending time in nature, exploring natural areas, identifying native species, and snorkeling/freediving along Vancouver Island's coastline. She will be returning to post-secondary education in the fall to pursue a Bachelor of Education to continue her career aspirations in environmental education.

Exploring B.C.'s Great Northern Loop

By Rick Searle. Photos by author



Top to bottom: Peace River Valley, Yellow Warbler, Black Bear.

On July 7th, my wife, Dianne, and I set out on an epic journey—one that has been on my bucket list for many years.

Over a two-week period, we drove from Victoria to Prince George, up the Alaska Highway to Watson Lake in the Yukon and then back down the Stewart-Cassiar Highway before returning to Prince George. Along the way, we made several side trips: into the UNESCO Geopark surrounding Tumbler Ridge; through the Peace River Valley and the construction of Site C; passed by the Bear Glacier before visiting the little hamlet of Stewart; an exploration of the Nisg'a'a Memorial Lava Bed Provincial Park and the 'Ksan Historical Village in Old Hazelton; and finally a walk through the Ancient Rainforest near McBride. Total distance traveled during this part of our journey amounted to nearly 4000 kms.

For the most part, we camped in provincial parks; however, many days of moderate to heavy rain drove us to occasionally take shelter in hotels. Northerners commented on how unusually wet the spring and summer were. Tired of the rain, we headed east to Tete Jeune and then south in search of sun and warmth eventually ending up at Juniper Beach Provincial Park near Cache Creek where the temperature soared above 36C. Here we lolled about for a couple of days before heading back to Victoria.

Nearly all the roads travelled were paved and in very good condition, except for a long stretch of gravel between Fort St. John and Fort Nelson. The dust in the air was so thick it became impossible to see vehicles in front or behind. I slowed to a crawl and put the emergency flashers on.

The distances between service stations are huge. Not surprisingly, a golden rule when traveling in the north is "Never pass a gas pump. Keep the fuel tank topped up!"

Once the oil and gas fields between Fort St. John and Fort Nelson are left behind, a traveller enters a vast sparsely populated region that covers 1/3 of the province. It is a nearly intact pre-contact wilderness teeming with wildlife. We were thrilled to see 31 Black Bear, 3 grizzlies, 6 Moose, 10 Stone Mountain Sheep, 40-50 Wood Bison, 1 wolf, 1 Lynx and 1 fox along the roadsides.

Having said this, I was surprised, and saddened, to only see two songbirds during the entire trip: a Myrtle Warbler and a Yellow Warbler. At Boya Lake Provincial Park, I met a couple who were biologists with the Yukon government. One remarked grimly that the decline in songbirds throughout the region has been dramatic. Fewer and fewer are seen or heard. On a positive note, we were delighted to be serenaded to sleep by the haunting call of the loon most nights.

The one form of wildlife we could've happily done without were the mosquitoes! In a few places, they were thick. Liard River Provincial Park was definitely the worst. We had been warned about them by the Park Facility Operator whom we met at Muncho Lake. But we had come prepared! Bug-spray

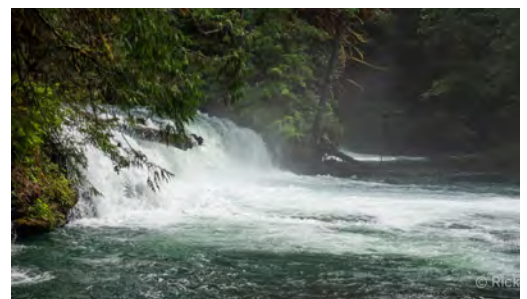


Dusty Highway.

with DEET kept them at bay while we put up our tents. After hunting down and swatting those that had slipped in with us, both the dining and sleeping tents were left spattered and stained with our blood (any suggestions on how to safely remove them?). We had also brought bug jackets but never had to use them as the spray and screened tents kept the pests at bay.

Boya Lake Provincial Park was a major highlight for us. In fact, THE highlight for my wife. What an astounding lake! The colour and clarity of the water are absolutely beyond a doubt breath-taking. It rivals Peyto, Moraine or Emerald Lake in Banff and Yoho National Parks. Truly.

The lake's hues of blue, green and grayish white are created by the presence of finely ground rock called marl



Left: Boya Lake.
Top: Bear Glacier.
Bottom: Vetter Falls Nisga'a Memorial Lava Beds Provincial Park.

coating the bottom. Sunlight reflected off this material up through the water column produces the hues.

The presence of marl can be explained by the action of glaciers 20,000 years ago. But why no other lake in the region that we saw (and we saw a lot of lakes, as well as trees and muskeg) can match it. Not even close. So why this lake? A mystery for now.

Another highlight was Kinuseo Falls which would tower over Niagara Falls by 20 m. Over its precipitous drop, cascades more than 40,000 litres per second of water.

Be aware though. The drive into the falls is over a gravel road peppered with deep potholes and nasty washboards. Google Maps says the gravel road is 50 kms long and will take on average 53 mins. I found with our 2007 Honda Odyssey that I needed to drive no faster than the posted limit of 40 kms. In fact, many times even slower. As a result, it took us almost double Google's estimate. Oh, and there was a lot of dust kicked up by passing vehicles, mostly big pick-up trucks going at least 10kms over the limit.

But the experience of the falls is so worth the effort of getting to them. In terms of its beauty and power, Kinuseo Falls is comparable to Helmcken Falls in Wells Gray Provincial Park and Takakkaw Falls in Yoho National Park, even though it is decidedly much smaller in scale.

In addition to the protection of Monkman Provincial Park, Kinuseo Falls have also been included within the UNESCO Global Geopark surrounding Tumbler Ridge. This unique park encompasses a vast expanse of nearly 8500 km² (both



Top: Kinuseo Falls Monkman Provincial Park.

Middle: Red Fox.

Bottom: 'Ksan Historical Village Old Hazelton.



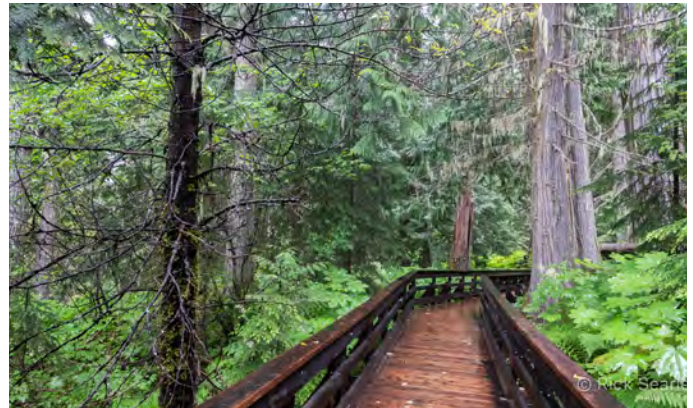
© Rick Searle

Banff and Yoho National Parks would easily fit inside its borders) with interesting sites scattered throughout. We hadn't known this before going to the park. We had thought previously that we could easily explore several sites within a day but when we saw the distances between them, we realized we would only likely be able to explore three. As it turned out, we just got to one: Kinuseo Falls.

The community of Tumbler Ridge sprang up during a coal rush in the 1980s. At the time, demand for this fossil fuel was high. Large mining companies poured massive sums of money into building infrastructure and hiring workers. But those halcyon days are fading into the past as the demand for coal continues to decline. Since 2015 there have been no coal mines operating near the community. Forced to find other sources of revenue, Tumbler Ridge has turned to eco-tourism (such as the UNESCO Global Geopark) and renewable energy. As you near Tumbler Ridge and come around a corner, you're suddenly confronted by dozens of wind turbines.

Speaking of a renewable energy that comes with a terrible and heart-breaking loss, we drove down a section of the Peace River Valley which included passing through the construction of the Site C power dam. What a tragedy to see such a beautiful landscape desecrated and eventually drowned.

I'll wrap up by noting that we encountered many COVID-19 closures. The most significant was the Liard Hot Springs. The provincial park campground across from them is usually fully booked through the peak season. We found it nearly



Top: Stone Mountain Sheep.
Middle: Ancient Rainforest Boardwalk.
Bottom: Site C construction.





© Rick Searle

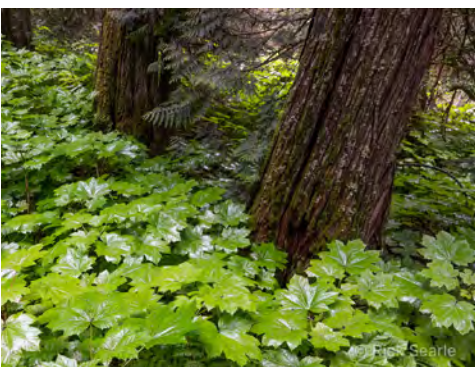
empty. And every indigenous community had barriers and/or check-points to prohibit visitors. Having heard so much about the Liard Hotsprings and the Nisga'a Museum, it was disappointing not to be able to experience them.

Will I ever repeat this epic journey? I'm pretty sure I won't. The distances are huge between sites of interest. Kilometre after kilometre is the same thing: lots of trees, muskegs and lakes. But don't get me wrong. I'm very grateful to have had this experience. I've come away with a treasure trove of images, memories and stories. I've gained a whole new understanding and appreciation of just how big BC is, especially its northern region. It was uplifting to see just how much of it remains in a wild state.

If you've never done the Great Northern Loop, I enthusiastically encourage you to add it to your travel bucket list. So much so, feel free to contact me if you'd like more information and ideas on what to see, where to stay, etc.



Top: Rainbow over 'Ksan Campground.
Right: Lynx.
Left to Right: Devils Club and Cedars, Wood Bison, Grey Wolf.



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Salish Sea Creatures: Northern Sun Star, *Solaster endeca*

By Tina Kelly. Photo by author

Sea stars and annual summer events—both notably absent. The former, absent from this column (until now!) and the latter, absent because of a pandemic. At Marine Day 2019, hosted by CRD Parks, divers from Seachange Marine Conservation Society brought up a Northern Sun Star, *Solaster endeca*.*

It was a treat to experience this new-to-me species. The striking orange colour is common in this species but it can also have reddish hues. Size-wise, it tops out at 40 cm. Nine arms are common but it can have 10. At the base of each arm are creases; these creases create a puffy appearance that is different from other local species of sun stars.

Alongside the Northern Sun Star, divers also collected sea cucumbers; coincidentally, they are a known prey of this sea star species.

Here's to the eventual return of community events where we can learn and enjoy new experiences.

*Note: divers returned the species back to the subtidal zone.



Northern Sun Star (*Solaster endeca*).

Western Fence Lizard (*Sceloporus occidentalis*) in British Columbia

By Ron Farrell, Gavin Hanke, and David Veljacic

Western Fence Lizard (*Sceloporus occidentalis*) is known from five islands off Baja and California, and on the North American continent, from northern Baja through California, Nevada, western Utah, Idaho, Oregon and Washington. They also have been introduced to two localities in Montana, and intentionally released at a minimum of three locations in Puget Sound. Western Fence Lizards frequent coastal environments throughout the species latitudinal range, where they are found on log-littered shorelines.

In Puget Sound, Western Fence Lizards were taken from just north of Everett and released at Clayton Beach (in 1986 and again in 1990), Oyster Creek (in 1990) and Cherry Point (also in 1990), and these translocations resulted in breeding populations. These intentional introductions muddled the definition of the species' native range in the region. On the west side of Puget Sound, Western Fence Lizards range north to Port Townsend, and in 1940, there was a published record of Western Fence Lizards at Cape Flattery, Clallam County, Washington. We have expected Western Fence Lizards to appear in British Columbia given the proximity to the Canadian border.

On June 6th, 2020, a single juvenile Western Fence Lizard was photographed by the lead author in the Cloverdale area of Surrey, British Columbia. While its dorsal colouration is much like that of a Sagebrush Lizard (*S. graciosus*), it resembles a Western Fence Lizard photographed at Teddy Bear Cove (<https://inaturalist.ca/observations/47077052>), and the pale yellow-orange tint to the rear surfaces of fore- and hind limbs is diagnostic for *Sceloporus occidentalis*. The tail of the lizard is almost entirely lost but is regenerating, and we estimate the lizard's total length at 50 mm based on dimensions of deck boards in the photograph.

The northern-most Western Fence Lizard population introduced in 1990, and established at Cherry Point, Puget Sound, is about 27 km south of where the BC specimen was photographed. The northern-most record in Puget Sound in *iNaturalist* comes from further south at Teddy Bear Cove–Chuckanut Mountain, south of Bellingham. The Cloverdale specimen represents the first verified record of Western Fence Lizard loose in Canada. It escaped and since no others were found, we assume it was a lone lizard, and either a stow away or possibly an escaped pet.

In addition to the Cloverdale record, there is an *iNaturalist* observation from April 29th, 2019, at MacNeill Secondary School, Richmond, British Columbia (49.164444°N, 123.115538°W), but the observation cannot be verified since



A cropped portion of the original photograph of the juvenile Western Fence Lizard (*Sceloporus occidentalis*) found in the Cloverdale area of Surrey, British Columbia. Photo: R. Farrell.

neither specimen nor photograph are available. There also have been three independent anecdotes of Western Fence Lizards in the Okanagan from as far north as Oliver. Since Western Fence Lizards range north to just short of our international border, are proven stowaways, and are popular as pets, we can expect more arrivals in the next decade—maybe even establishment in southern British Columbia.

Additional Reading

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B.C. Barracuda

By Gavin Hanke

It is 2020, and people ask whether this year will get any more strange? Then a Pacific Barracuda, estimated at a meter in length and 5.4 kg was caught in Alberni Inlet on July 5th. Hate to say it, but a barracuda in B.C. waters does not qualify as strange, but it is a really cool record and it should be added to iNaturalist.

Pacific Barracuda (*Sphyraena argentea*) is known to range all along our coast north to Alaska during El Niño years. The first record from Alaska (off Kodiak Island) dates back to 1937, where a school of barracuda were sighted—only one was caught. The surface waters of the Eastern Pacific Ocean must have been warm that year (1937) because a barracuda also was caught off Sooke, British Columbia. Another barracuda was found in Prince William Sound, Alaska, in 1958. And according to Hart (1973) in his classic book, Pacific Fishes of Canada, barracuda also have been found in Queen Charlotte Sound and the Prince Rupert area. The first record along the BC coast is a specimen cataloged at the Royal BC Museum (RBCM 33), caught at Otter Point in Sooke, July 27, 1904. It is the only Pacific Barracuda in the RBCM collection. But according to Peitsch and Orr (2019) the earliest record of Pacific Barracuda in the area comes from Gig Harbor, Puget Sound, dating back to 1878. Pacific Barracuda also have been taken in San Juan Channel off Whidbey Island and off Port Madison (Pietsch and Orr 2019).

Barracuda have a long history in this region, and must have strayed this far north before European colonization.

Pietsch and Orr (2019) in their magnum opus, give a great update to the species' biology—the highlights are here. Pacific Barracuda range up to 122 cm, and up to 8.2 kg, are migratory, and swim at the surface to depths of 38 m. They tend to range northward in summer and retreat south in autumn, they usually avoid structure, but sometimes are found over reefs and in kelp and eelgrass beds. Juveniles tend to be found in shallower habitat and adults are more frequently found offshore—sometimes in schools of 500 or

more. They spawn from April to October in batches up to 512,987 eggs. Males mature before females and they live at least 18 years.

Pietsch and Orr (2019) note that Pacific Barracuda eat squid and a range of fishes including anchovies, and in turn are eaten by sharks, billfishes, sea lions, small whales (dolphins and porpoises), and a certain bipedal predator.

I wouldn't mind another specimen for the museum collection to go with the 1904 specimen, the Louvar and Finescale Triggerfish from 2014, the North Pacific Argentine from 2010, and the Spotted Porcupinefish from 2019, as evidence of southern residents straying this far north.

I wonder what fish is next? Maybe we will get more hammerhead sharks? The hammerhead seen off Ucluelet in 1952 and the second one seen in 1953, were not identified to species, although they most likely were Smooth Hammerhead (*Sphyrna zygaena*) (McFarlane and King 2020). Imagine the news sensation if a hammerhead came this far north?

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Pacific Barracuda (*Sphyraena argentea*). Photo courtesy of John Shelton, Dana Point Fish Company.





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British Columbia's Ecological Reserves, Forgotten Gems?

By Jenny L. Feick, PhD

On May 4, 1971, the Government of British Columbia became the first jurisdiction in Canada to pass legislation to protect ecological reserves. May 2021 marks the 50th anniversary of the *Ecological Reserves Act* and regulations and the establishment of B.C.'s first ecological reserves. Ecological reserves are permanent sanctuaries, located throughout B.C., selected to preserve representative and special natural ecosystems, plant and animal species, features and phenomena. The principal uses of ecological reserves are for scientific research and educational purposes. Despite their small size¹, they protect exceptionally important features. They truly are the rare gems of B.C.'s protected areas system. The southern Vancouver Island area contains 30 amazing ecological reserves, ranging from the rocky ocean islets of Race Rocks to the Garry oak meadows of Mount Tzuhalem (see Table 1, Page 16).

In the first two decades following the passage of the 1971 Act, the B.C. government created 84% of its 154 ecological reserves (ERs). The last one to be set aside was Det San near Smithers, designated in 2009 to protect rare old growth juniper. No new reserves have been established since then and five have been transferred to other levels of government². A 2005 assessment of the condition of existing reserves raised "concerns that the ecological values of many individual reserves are at significant risk and a more proactive approach to managing the reserves is required to reverse this trend."³

The Friends of Ecological Reserves (FER) proposed seven new ecological reserves to the BC provincial government starting in 2014 (for the list, <https://ecoreserves.bc.ca/2020/04/21/ecological-reserve-proposals/>). Three of the candidates that FER nominated include the rare alpine plant assemblage at Pink Mountain (see https://ecoreserves.bc.ca/portfolio_item/155-pink-mountain-proposed-er/), and two headwater areas on the Sunshine Coast—a small stand of huge ancient Pacific yew trees at Roberts Creek, and an old-growth Douglas-fir forest containing a rare and endangered plant species (*Rubus nivalis*) at Clack Creek.

FER hoped to entice the B.C. government to establish a few



Since its establishment in 1985, the eight Ha Honeymoon Bay Ecological Reserve in the Cowichan Valley has preserved an outstanding population of the pink fawn lily (*Erythronium revolutum*). April 2016. Photo: Jenny Feick.

new ecological reserves by the anniversary year of 2021 and to make a concerted effort to improve the stewardship of the existing reserves. Despite FER's periodic communications over the past seven years with B.C. government agencies about worthy candidates, no new ecological reserves have been added and from the reports of volunteer wardens in the past year, the state of existing reserves continues to deteriorate due to cumulative and inter-related internal and external threats.

At their November 2019 meeting, the FER Board decided to make a renewed and concerted effort to encourage B.C. government officials to establish several new ecological reserves and to address management, conservation and stewardship issues in existing ecological reserves in time for the 50th anniversary of the *Ecological Reserves Act*. At a meeting on May 26 with FER, government officials explained that no mandate exists to add any new protected areas in B.C. unless the proposal is brought forward by a politician or a First Nation. The new modernized land use planning process has no mandate to seek, assess or add new protected areas. B.C. has already exceeded its international commitments for

¹ The 148 ERs still under provincial jurisdiction comprise 166,918 ha, 0.008% of B.C.'s Protected Areas System.

² Since 2002, the B.C. government transferred five ecological reserves to Gulf Islands and Gwaii Haanas national park reserves, becoming part of the Canadian national park system, and one ER (UBC Endowment Lands) was reassigned to Metro Vancouver Regional Parks

³ State of British Columbia's Ecological Reserves, Report for 2005. November 2006. Sponsored by the Friends of Ecological Reserves With help from the Ministry of Environment and the University of Victoria Co-op Program, unpublished report (see <https://ecoreserves.bc.ca/2006/12/04/state-of-bcs-ecological-reserves-report-for-2006/>)



Top: The 390 Ha Mount Maxwell Ecological Reserve, established in 1972 on Saltspring Island, protects outstanding Garry oak stands (April 2019). Photo: Jenny Feick.



Top: Golden Paintbrush (*Castilleja levisecta*). Photo: Stephen Ruttan.
Bottom: Deltoid Balsamroot (*Balsamorhiza deltoidea*). Photo: Stephen Ruttan.

the amount of land it was to have set aside for biodiversity conservation by 2020⁴.

FER recognizes and respects the First Nations within whose traditional territories ecological reserves exist. FER acknowledges that much of B.C. remains unceded land and appreciates the graciousness of the Indigenous hosts in areas containing ecological reserves. Even though the *Ecological Reserves Act* does not explicitly address traditional Indigenous use of ecological reserves, FER supports this as long as the activities do not permanently destroy the values for which the reserve was established. Reconciliation may provide opportunities for additional ecological reserves identified by traditional Indigenous knowledge keepers for their Traditional Ecological Knowledge (TEK) values.

In February 2020, FER worked with the Victoria Natural History Society (VNHS) to develop a resolution on the current plight of the ecological reserves system. The VNHS took it forward to BC Nature. BC Nature's executive approved it to go forward for ratification at the BC Nature AGM, held via Zoom teleconference on June 23rd. The resolution was passed and, in the fall, will be sent to the Minister of Forests, Lands, Natural Resource Operations and Rural Development and the Minister of Environment and Climate Change Strategy for a response on their planned action.

FER invites VNHS members to help them encourage

⁴ During the International Year of Biodiversity in 2010, the B.C. government and other Canadian jurisdictions committed to protect 17% of their land base by 2020. B.C. currently has 20% in some form of protection.

the B.C. government to add worthy new ERs, maintain the health of existing ERs, promote the use of ERs for science and monitoring, and support the volunteer ER wardens in their efforts to care for these gems of B.C.'s protected areas system. Express your support for a revitalized ER system in B.C. by contacting your MLA (see <https://www.leg.bc.ca/learn-about-us/members>) as well as George Heyman, the Minister of Environment & Climate Change Strategy at george.heyman.MLA@leg.bc.ca and Doug Donaldson, the Minister of Forests, Lands, Natural Resource Operations and Rural Development at doug.donaldson.MLA@leg.bc.ca.

About the Friends of Ecological Reserves (FER)

This volunteer-based, not-for-profit charitable organization raises awareness and promotes the interests of ecological reserves in B.C. FER fosters scientific research, monitoring and reporting in and around ecological reserves, volunteer wardens and the stewardship function within existing ecological reserves, and the nomination, assessment and establishment of worthy new ecological reserves. FER educates the public and government agencies regarding the significance of ecological reserves, the values they contain, and the threats they face. FER welcomes new members (see <https://ecoreserves.bc.ca/get-involved/membership/>) and encourages people to become volunteer wardens (<https://ecoreserves.bc.ca/get-involved/become-a-warden/>). Find more information at the FER website (see <https://ecoreserves.bc.ca/about-friends/>) and in issues of the FER newsletter, the Log (see <https://ecoreserves.bc.ca/news/newsletter-archive/>).

TABLE 1. ECOLOGICAL RESERVES ON SOUTHERN VANCOUVER ISLAND

Reserve Name	Main Purpose	Size in Ha (Marine Foreshore)	Year Est
Cleland Island	protects breeding populations of over eleven species of seabirds	8	1971
Lasqueti Island	protects vegetation and fauna characteristic of the dry subzone of the Coastal Douglas-fir Zone	201	1971
Saturna Island (GINPR)	preserves relatively undisturbed coastal Douglas-fir forests and associated fauna	131	1971
Mount Tuam	conserves forest ecosystems representative of the dry subzone of the Coastal Douglas-fir Zone	362	1971
Canoe Islets	protects nesting Double-crested Cormorants and gulls	<1	1971
Rose Islets	protects nesting seabirds	1	1971
Baeria Rocks	protects nesting seabirds and preserves rich intertidal and subtidal communities for research and educational purposes.	2 (138)	1971
Ambrose Lake	preserves a small coastal lake, adjacent bog land, and surrounding forest.	228	1971
Mount Maxwell	protects outstanding Garry oak stands and associated local vegetation.	390	1972
Nitinat Lake	preserves Douglas-fir trees near their westernmost limit of distribution on southern Vancouver Island.	79	1973
Ten Mile Point	provides an undisturbed, intertidal and subtidal study area accessible by car in the Greater Victoria area.	1 (14)	1975
Satellite Channel	conserves rich benthic communities typical of fine grained, level bottom environments in the southern Gulf of Georgia.	0 (340)	1975
San Juan Ridge	protects a rare and disjunct population of the white glacier lily/white avalanche lily (<i>Erythronium montanum</i>), subalpine mountain hemlock vegetation and subalpine wetlands	98	1977
Sutton Pass	protects one of the few known occurrences of the rare northern adder's-tongue fern (<i>Ophioglossum vulgatum</i>) in BC	3	1978
Oak Bay Islands	protects vulnerable nesting seabirds and meadow communities, with rare spring wildflowers, and has representative shallow-water marine habitats.	11 (221)	1979
Race Rocks	protects intertidal and subtidal communities and islands that are extremely rich in biodiversity as a result of strong tidal currents.	2 (225)	1980
Mount Tzuhalem	preserves unique Garry oak wildflower stands.	18	1984
Honeymoon Bay	preserves outstanding population of the pink fawn lily (<i>Erythronium revolutum</i>)	8	1985
Haley Lake	conserves a small population of the rare and endangered Vancouver Island Marmot (<i>Marmota vancouverensis</i>)	888	1988
Brackman Island (GINPR)	protects ungrazed Gulf Island vegetation, includes marine buffer	5 (25)	1989
Galiano Island	preserves a rare undisturbed peat bog in the dry Coastal Douglas-fir Zone	30	1990
Trial Islands	protects the most outstanding known assemblage of rare and endangered plant species in BC	23	1991
Bowser	protects a highly productive forest ecosystem in the Coastal Douglas-fir Zone for research use.	116	1996
Comox Lake Bluffs	protects rare plants on an unusual dry-site plant community in the CWH Zone	47	1996

TABLE 1. ECOLOGICAL RESERVES ON SOUTHERN VANCOUVER ISLAND (CONTINUED)

Reserve Name	Main Purpose	Size in Ha (Marine Foreshore)	Year Est
Hudson Rocks	protects a nationally significant breeding population of Pelagic Cormorants (no longer present)	2 (48)	1996
Klanawa River	protects old growth forest communities in which the rare redwood sorrel is a major component.	90	1996
Yellowpoint Bog	protects a highly diverse mosaic of ecosystem types from aquatic, peat bog and forest to dry-site ecosystems	138	1996
San Juan River Estuary	conserves a representative sample of the lower alluvial forest communities on the San Juan River flood plain, and protects tooth-leaved monkey flower, which is a rare plant known from nowhere else in Canada	185 (16)	1996
Woodley Range	protects exceptional plant species richness and sensitive meadow and woodland ecosystems developed on cretaceous sandstones.	166	1998
Ballingall Islets	protects nesting colonies of Glaucous-winged Gulls, Double-crested Cormorants and Pigeon Guillemots.	<1	2001

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WELCOME TO NEW VNHS MEMBERS

Our Society grew by 5 new members since the last issue. The following have agreed to have their name published in this Welcome section.

Eleanor McKinnon Victoria. Trees, flowers, frogs, birds.

Field Trip Guidelines (for the COVID-19 environment)

In this “new abnormal environment”, when many events and activities are being cancelled, Dr. Bonnie Henry encourages us to get outside. For VNHS members, the preferred activity is a field trip. Yes, trips are still possible, if they can be done safely according to public health directives and using common sense.

Following are what we hope will be temporary guidelines for leaders and participants.

1. For now, trips are to be limited to 10 participants, including the leader. However, if there are more than 10, the leader has the option of splitting the group.
2. Please respect physical distancing, two metres apart, while on trails and in groups.
3. Please bring a face mask to be used if physical distancing is not possible.
4. Please ensure that your field trip waiver (attached to the membership application and renewal form) is current and signed. As stated on the form, you are attending field trips at your own risk.
5. Please do not carpool unless all occupants are from the same household.
6. Please bring your own binoculars and/or spotting scopes and avoid sharing them.
7. Please stay at home if you are feeling ill, especially if you have any possible COVID-19 symptoms, or even feel unsure about being with a group of people.
8. Please respect the trip leader’s right, and obligation, to limit the number of participants in any field trip. The leader also has the right to alter or even cancel a field trip. Please remember that our field trip leaders are volunteers, giving their time and knowledge freely and generously.
9. Finally, please check the VNHS website ahead of time to ensure that the trip is still scheduled to take place.

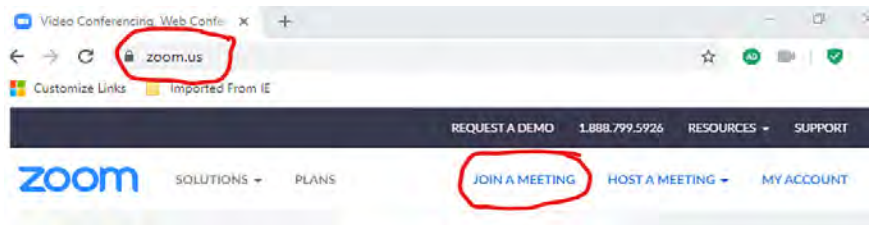
Zooming in to VNHS Presentations

[excerpt from July/August 2020 newsletter]

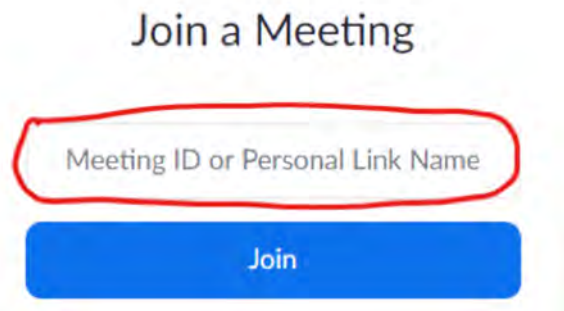
With UVic closed for in-person meetings in the fall, VNHS is going to use the Zoom platform. See the Calendar listings for meeting ID numbers and passwords for each of our presentations. If you have a computer, tablet, or even a smartphone, you can join in.

If this will be the first time you use Zoom, you will need to download a file to your computer, or to opt to use Zoom from your browser. Either will work, but the downloaded file will make this smoother. You can do this anytime before the presentation you wish to join.

Using your Internet browser, go to **zoom.us** and click on **Join a Meeting**.



Enter the meeting ID and click the **Join** button.



Follow the prompts from there. You will be asked for your name and email, but you don’t have to use your full or real name unless you want to. First names, initials, nicknames are all fine, if you’d prefer a bit of anonymity.

When you join the room, you will be able to see who else is there and will have an opportunity to use your computer microphone and webcam, if you’d like. Or you can just watch the presentation. If you have a computer that does not have speakers or a microphone, there will even be a way that you can dial in on your phone to participate in the audio.

We’ll make sure that there is a host present at least 15 minutes ahead of the meeting start time to explain how everything works for new users.

CALENDAR OF EVENTS

In these unprecedented times, the VNHS is exploring alternatives for Board meetings and evening presentations. We will do our best to keep you informed as things develop. Because UVic will not be available to us for the foreseeable future, nor will Swan Lake Nature House, the VNHS is planning to use Zoom for our Board of Directors meetings and Presentation Nights (see page 19 for how to join). The schedule should remain the same as previous years, but please check the website to make sure you have up-to-date information. See the VNHS Calendar at: http://www.vicnhs.bc.ca/?page_id=1518 For meeting/presentation Zoom links, please see the calendar listings below and online for each one.

Board of Directors meetings: the first Tuesday of each month at 7:30 p.m.

Natural History Night: the second Tuesday at 7:30 p.m.

Botany Night: the third Tuesday at 7:30 p.m.

Birders' Night: the fourth Wednesday at 7:30 p.m.

Marine Night: the last Monday at 7:30 p.m.

PLEASE NOTE: EVENT DETAILS ARE ACCURATE AT TIME OF PUBLICATION BUT CHECK THE WEBSITE FOR ANY CHANGES OR ADDITIONS. Despite our best efforts to schedule events in advance, changes are inevitable. Please check the website close to the date for any changes. We sometimes also schedule additional events due to unexpected opportunities. Please be sure that VNHS has your up-to-date email address to receive these changes or notice of additional events. If you do not use the internet, team up with someone who does to keep up with changes.

NB. While evening presentations are open to the public, field trips are designed for members. If space allows, guests may participate for up to three trips, after which they are expected to join the Society.

Codes for Field Trip Difficulty Levels: LEVEL 1—Easy walking, mostly level paths. LEVEL 2—Paths can be narrow with uneven terrain. LEVEL 3—Obstacles in paths or steeper grades, requiring agility. LEVEL 4—Very steep, insecure footing, or longer hikes requiring good physical condition. **Please—no pets on VNHS field trips.**

Remember that if you want to do a talk or know someone who might, please contact one of the presentation night coordinators. If you have an idea for a field trip or wish to volunteer as a leader, please contact the Field Trip Coordinator Claudia Copley. Many of you do interesting things either for fun or for work, and it would be great to share! See page two for email addresses and phone numbers.

TUESDAY MORNING BIRDING

Meets every Tuesday, one block south of the foot of Bowker Ave on the waterfront (off Beach Drive) at 9:00 a.m. or at the foot of Bowker Ave at 9:30 a.m., rain or shine. Birding activities take place at various locations around Greater Victoria. For more information, call Bill Dancer at 250-721-5273. Novice and experienced VNHS members all welcome. Non-members can participate for up to three trips, after which they are expected to join the Society.

SATURDAY MORNING BIRDING

Meets every Saturday morning, usually at 8:00 a.m., rain or shine. Check the Calendar page of the VNHS website (http://www.vicnhs.bc.ca/?page_id=1518) on the Thursday/Friday before to find out the week's location. Novice and experienced VNHS members all welcome. Non-members can participate for up to three trips, after which they are expected to join the Society. For more details, contact Rick Schortinghuis at 250-885-2454 or Agnes Lynn at thelynns@shaw.ca or 250-721-0634.

Please Note: Although some activities are listed here, they MAY NOT happen, so please check the website for up to date information. Please also be aware that new field trip guidelines have been developed according to public health recommendations and will be implemented. See page five.

SEPTEMBER

SATURDAY SEPTEMBER 5

FIELD TRIP (LEVEL 2)

Waterfront Birding

This is a good time to check out the waterfront for birds. Meet leader **Marie O'Shaughnessy** at Cattle Point (Beach Dr between

Rutland Rd and Dorset Rd) at 7:30 a.m. We will wander around Cattle Point and make a few stops between there and Clover Point. We'll end up at the Ogden Point Breakwater. There will be birds on the water as well as shorebirds to watch for. Remember that you will not be able to share cars. Contact Agnes at thelynns@shaw.ca or (250) 721-0634 for more information.

SUNDAY SEPTEMBER 6

FIELD TRIP (LEVEL 2)

Monthly Butterfly Outing

Join **Gordon Hart** on our monthly Butterfly outing. Each outing is intended to help us learn more about our local butterflies. This outing is weather dependent. It needs to be warm and sunny to make it worthwhile. But if it's still dry, there won't be enough butterflies and we may cancel it so check the web calendar close to the date. We will start at the top of Mount Tolmie (off Cedar Hill Cross Rd). Meet at 1:00 p.m. in the lot by the reservoir where we will have an initial look for butterflies and then decide where to go from there. Contact Gordon at (250) 721-1264 or butterflies@vicnhs.bc.ca for more information.

TUESDAY, SEPTEMBER 8

NATURAL HISTORY NIGHT

Chasing a Trace

Wolverines are one of the most elusive mysterious animals on the planet, and a good indicator as to the health of our landscapes. Wolverine researchers in Western Canada have spent the last ten years putting the puzzle pieces of how to conserve wolverine for the long term into place. Join us for a short (20 minute) film that will focus on one of the crucial missing pieces by following wildlife scientist, **Mirjam Barreuto** on her quest to find elusive breed female wolverines in the high alpine mountains of Canada's west. Mirjam is part wolverine herself, as a tenacious scientist and endurance athlete, she's the perfect person for the job. She is trying to find out what female wolverines (engines of the population) need to survive, and what the effects of things like logging, mechanized recreation, and fur trapping are on wolverine populations. Following the film, Tim Burkhart will present on the work Yellowstone to Yukon is doing to help protect and connect wolverines and other wide-ranging species in British Columbia.

To join us, please register by entering this link in your browser and following the instructions. <https://zoom.us/join/register/tjwqdeyoqT4oH9009D4qCDY-wR7rwhm5lmzQ> or go to the VNHS online calendar and click on the link in the September 8 Natural History Night description.

TUESDAY, SEPTEMBER 15

BOTANY NIGHT

Presentation to be determined. Please go to the VNHS online calendar and click on the September 15 Botany Night description for the link and instructions on how to join. https://zoom.us/join/register/tjMtceqqz8oH9a_5J4Jm_fy-OrG0S30jGWN

SATURDAY SEPTEMBER 19

FIELD TRIP (LEVEL 3)

Pedder Bay Birding

Come join the VNHS Saturday Birding Group at Pedder Bay Marina. To reach Pedder Bay Marina, go out Rocky Point Rd and watch for a left on to Pedder Bay Rd. There is a big sign for the marina. We will meet at 8:00 a.m. at the public parking lot. Rocky Point Bird Observatory operates a banding station there and several interesting birds have been reported from there. We will

walk around the area for a couple of hours and after that you may have an opportunity to visit the banding operation if you are interested. Contact Agnes at thelynns@shaw.ca or (250) 721-0634 for more information.

WEDNESDAY, SEPTEMBER 23

BIRDERS' NIGHT

The Future of the Fraser River Estuary

The Fraser River Estuary is one of the richest bird habitats along the Pacific Coast of North America. It has been global designated as an Important Birds and Biodiversity Area, a Ramsar Wetland of International Significance and a Western Hemisphere Shorebird Reserve Network Site of Hemispheric Importance. The Fraser Estuary is also one of the economic drivers of the area and a key port in the North American strategy to grow trade with Asia. James Casey of Birds Canada will present some of the results of a threat management assessment undertaken by the Raincoast Conservation Foundation in partnership with UBC and UVic. He will then explore in more detail the impacts associated with the proposed Roberts Banks Terminal 2 project. He will end with some recommendations from the conservation community on priority actions needed to ensure the resilience of the Fraser River Estuary's natural assets (plants, animals and habitat) into the future. We will meet on Zoom at 7:30 p.m. Come early to socialize! Presentation begins after VNHS announcements.

To join us, please register by entering this link in your browser and following the instructions. https://zoom.us/join/register/tj0sc-urrz4pG9TjpXjs5_vJTMSdlGrzU-N or go to the VNHS online calendar and click on the link in the September 23 Birders' Night description. Bring your own coffee (or whatever your preferred beverage might be!) Everyone is welcome. Note: UVic parking is \$3.50, but you won't have to pay that for Zoom meetings!

SUNDAY, SEPTEMBER 27

FIELD TRIP (LEVEL 3)

Hawkwatch

The VNHS Saturday Birding Group will start from Aylard Farm in East Sooke Park to get to the vantage point above Beechey Head to watch for raptors. Meet at the parking lot at the end of Becher Bay Rd at 10:30 a.m. **Rick Schortinghuis** will lead the way up to the lookout. Rick and others will be available up at the top to help you find those illusive raptors till about 2 p.m. The hike up to the viewpoint requires a 20-minute trek up a steep and rocky trail. Bring binoculars, water and perhaps a lunch. You can stay as long as you like and then return to the parking lot whenever you wish. If you do not want to make the trek up to the hill, there are good opportunities in the field near the parking lot to look for raptors as well. You must register for this trip as the number is limited to 10 people at the top. Contact Agnes at thelynns@shaw.ca or (250) 721-0634 to register or for more information. PLEASE COME ON A DIFFERENT DAY IF YOU WISH TO COME ON YOUR OWN TO AVOID OVERCROWDING.

MONDAY, SEPTEMBER 28

MARINE NIGHT VIA ZOOM

The Fish Sound Project: Unraveling the Identity of Fish Sounds in British Columbia

Some fish produce sounds to find mates, defend territory or keep cohesion within their group. Sounds can be detected over large areas just by listening in the ocean. **Xavier Mouy** is a PhD candidate at Uvic and an acoustician at JASCO Applied Sciences in Victoria. His work will help to associate sounds with specific species and potentially their numbers. A new video/acoustic instrument array, composed of 6 hydrophones and 2 cameras, has been developed and deployed at various locations off Vancouver Island to identify fish sounds that have not been documented before, including sounds from quillback rockfish and lingcod. This presentation will describe the approach used to identify fish sounds and how these results can be potentially used to monitor marine protected areas in BC.

To join us, please register by entering this link in your browser and following the instructions. <https://zoom.us/join/joinMeeting?jEkd--urT8oGN3-AY8NacX0c6hlyRLK4iyU> or go to the VNHS online calendar and click on the link in the September 28 Marine Night description.

MONDAY, SEPTEMBER 28

FIELD TRIP (LEVEL 3)

Hawkwatch

We will repeat this trip on Monday. Please register for it as well. Contact Agnes at thelynns at shaw.ca or (250) 721-0634 to register or for more information. PLEASE COME ON A DIFFERENT DAY IF YOU WISH TO COME ON YOUR OWN TO AVOID OVERCROWDING.

OCTOBER

SUNDAY OCTOBER 4

FIELD TRIP (LEVEL 2)

Urban Forest–Esquimalt Gorge Park

This will be another one in a series of walks around areas where the cover of vegetation consists of both native and introduced trees and shrubs. We need to be reminded that these areas of Urban Forest are very important to our wild creatures and to us. As we wander, we'll talk about why the trees are important. There are a number of trees along the edge of the Gorge Waterway as well as in the Park. Historically, the area was famous for the BC Electric tram cars which brought sightseers to the Japanese Garden in the Park prior to the Second World War. Some of those introduced trees are still there. Meet at 10:00 a.m. in the parking lot in the Esquimalt Gorge Park, off Tillicum, just south of the bridge over the Gorge Waterway.

TUESDAY, OCTOBER 13

NATURAL HISTORY NIGHT

Unsung Stories of Insects and Their Fungal Associates

Earth's most diverse multi-cellular groups are largely unknown to science. Yet, what we do know of them is the stuff of dreams...

and nightmares! Join **Dr. Cara Gibson** (scientist, educator and illustrator) to discover and delight in wondrous tales of insect fungal symbiosis. Learn more about Cara's work on her website: <http://www.CaraGibson.com>

To join us, please register by entering this link in your browser and following the instructions. <https://zoom.us/join/joinMeeting?register/tjwqdeyoqT4oH9009D4qCDY-wR7rwhm5lmzQ> or go to the VNHS online calendar and click on the link in the October 13 Natural History Night description.

SATURDAY OCTOBER 17

FIELD TRIP (LEVEL 2)

Birding Sidney Waterfront

The VNHS Saturday Birding Group will be going to check out the waterfront areas north of Sidney. The Friends of Shoal Harbour like to celebrate All Buffleheads Day near to October 15 as the Bufflehead generally return to this area on or about October 15 every year. So we will check out the area where they generally appear on Saturday October 17. Of course, there will be lots of other birds on and off the water to see as well. First meet at 8:00 a.m. at the end of Surfside Place in Sidney. To reach Surfside, from Beacon go left on Third, right on Beaufort, right on to Surfside. Then return to Beaufort and Third and head south, right on Lovell, right on Fifth. After that look on the beach, go south to Amelia and turn right, then right on Resthaven until right on to Ardwell Beach Access in hopes of seeing the Buffleheads there. Check the Friends of Shoal Bay website at www.shoalharbour.com closer to the date for more details on the Buffleheads. Contact Agnes at thelynns at shaw.ca or (250) 721-0634 for more information.

TUESDAY, OCTOBER 20

BOTANY NIGHT

Presentation to be determined. Please go to the VNHS online calendar and click on the October 20 Botany Night description for the link and instructions on how to join. https://zoom.us/join/joinMeeting?register/tjMtceqqz8oH9a_5J4jm_fy-OrG0S3OjGWn

WEDNESDAY, OCT 28

BIRDERS' NIGHT VIA ZOOM

Antarctica and the Southern Ocean—Changes Underway

Before the coronavirus, **Michael Webb** and his wife, Donna-Lee took a three-week cruise on Silver Explorer encompassing parts of the Falklands, South Georgia, the South Shetlands, and the Antarctic Peninsula. They made 19 landings in the destination islands revisiting several places they had previously visited. Michael will show changes he noted over a relatively short period of time and places that still seem relatively unchanged. We meet on Zoom at 7:30 p.m. Come early to socialize! Presentation begins after VNHS announcements.

To join us, please register by entering this link in your browser and following the instructions. https://zoom.us/join/joinMeeting?register/tj0sc-urrz4pG9Tjpxjs5_vjTMSdlGrzU-N or go to the VNHS online calendar and click on the link in the October 28 Birders' Night description. Bring your own coffee (or whatever

your preferred beverage might be!) Everyone is welcome. Note: UVic parking is \$3.50, but you won't have to pay that for Zoom meetings!

MONDAY, OCTOBER 26
MARINE NIGHT VIA ZOOM

The Ecology of Transient (Bigg's) Killer Whales.

In the eastern North Pacific, three ecotypes of killer whale have been identified: resident, transient, and offshore. Transient killer whales are apex predators that specialize in foraging for marine mammals. This specialization shapes all aspects of their ecology, from foraging and acoustics, to social structure and genetics!

Josh McInnes is a Canadian ecologist who grew up on Vancouver Island British Columbia, Canada. He studied marine biology and ecology with a focus on food web, and community dynamics at the University of Victoria. Over the past decade Josh has traveled to remote locations off British Columbia, Washington, Alaska,

California, Australia, Antarctica and South Africa to study killer whale populations.

To join us, please register by entering this link in your browser and following the instructions. <https://zoom.us/meeting/register/tJEkd--urT8oGN3-AY8NAcX0c6hlyRLK4iyU> or go to the VNHS online calendar and click on the link in the October 26 Marine Night description.

SATURDAY OCTOBER 31 FIELD TRIP (LEVEL 2)

Birding at Viaduct Flats

Come join the VNHS Saturday Birding Group at Viaduct Flats. Plenty of water birds should be back enjoying this area by now after the quiet summer season. As well, there should be lots of fall birds in the surrounding woods. Meet at 8:00 a.m. in the parking lot near the intersection of Interurban and Viaduct. Contact Agnes at thelynns at shaw.ca or (250) 721-0634 for more information.



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Sea Otter at Rocky Point. Photo: Rick Hardy.