The Log
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FRIENDS OF ECOLOGICAL RESERVES NEWSLETTER

Biological Diversity Key to a Healthy Planet

By Louise Beinhauer, Log Editor

At the conclusion of the Convention on Biological Diversity held in Montreal, a biodiversity framework was agreed to on December 19, 2022.

The background to this framework states that "Biodiversity is fundamental to human well-being and a healthy planet, and economic prosperity for all people; including living well in balance and in harmony with Mother Earth. We depend on it for food, medicine, energy, clean air and water, security from natural disasters as well as recreation and cultural inspiration and it supports all systems of life on earth." To see the full final framework, please visit: www.cbd.int/article/cop15-cbd-press-release-final-19dec2022

Here in British Columbia our new Premier, David Eby has named his provincial cabinet ministers and provided them with mandate letters to guide them in their various government roles. Of interest to the board members of the Friends of Ecological Reserves is the mandate to the Honourable Nathan Cullen, Minister of Water, Land and Resource Stewardship. It contains the following text:

- Protect wildlife and species at risk, and work collaboratively with First Nations, other ministries, and the federal government to protect and enhance B.C.'s biodiversity through implementing recommendations of the Old Growth Strategic Review and the Together with Wildlife Strategy.
- With support from the Ministers of Forest and Jobs, Economic Development and Innovation, and the Parliamentary Secretary for Environment, develop a new conservation financing mechanism to support protection of biodiverse areas.
- Partnering with the federal government, industry, and communities, and working with Indigenous Peoples, lead the work to achieve the Nature Agreement's goals of 30% protection of B.C.'s land base by 2030, including Indigenous Protected and Conservation Areas.

The board of FER will be constructing a strategy to help support and encourage the BC Government to expand the ecological reserve concept and other types of protected areas.

Please see the article on Key Biodiversity Areas on pages 2-4, as well as an article on the work that Elphinstone Logging Focus (ELF) has done (with the help of FER) on intact forest ecosystems highlighting scientific and Aboriginal knowledge, on pages 5, 6 and bottom of page 13.

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The Log

Autumn/Winter 2022/23

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 2023 issue of *The Log* is May 15, 2023.

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Island Gems are Among B.C.'s Seven Biodiversity Hot Spots

By Stefan Labbé

(Excerpted from the October 23, 2022 edition of the Times Colonist)

They're called "key biodiversity areas," (KBA) and seven swaths of land across British Columbia — including Tofino's mudflats, the Trial Islands and Fort Rodd Hill — now have that international designation, which is meant to prevent the decimation of wild animal and plant species before it's too late.

Under the key biodiversity area umbrella, more than a dozen conservation organizations have identified, mapped and helped monitor more than 16,000 key habitats around the world — from terrestrial forests, deserts and grasslands to mountains, marshes and reefs.

The global database allows scientists, conservationists and policymakers to prioritize what species need the most help, says Birds Canada's James Casey, a Fraser River estuary specialist.

"It's a massive transition that's happening," said Casey of the KBA classifications.

Casey added that by mapping out the habitats of Canada's most threatened and endangered species, individuals, non-profits and governments can "drive conservation on the ground."

Unveiled to the public this month, the designation now includes a patchwork of 73 key biodiversity areas across the country. More than 900 more locations are currently being assessed to be added in the coming years.

Some of the biggest tracts of land identified as KBAs in Canada include a whooping crane nesting area bordering Alberta and the Northwest Territories, a large part of the Canadian shoreline of Lake Superior in Ontario, and a stretch of rugged mountains, boreal forest and Arctic tundra in the Yukon known as Tombstone Territorial Park. Home to grizzly bears, caribou and a rare mountain lemming, the park also shows evidence of human use dating back 8,000 years.

The designation is not legally binding, but Casey says the more data fed into the maps, the better groups like Birds Canada, the Wildlife Conservation Society of Canada and NatureServe Canada — which make up Canada's KBA Secretariat — can make the case to governments that they should conserve critical habitat.

Citizen scientists play a key role, largely by uploading animal or plant sightings through apps like iNaturalist. But while that data is vital for conservation, others are warning of staggering losses of wildlife.

A Steep Decline

Last month, the latest State of the World's Birds report warned 49 per cent of global bird species (5,412) are in decline, with another one in eight critically endangered and under threat of extinction.

The slide matters, not only for bird populations, but the rest of ecosystems they are connected to.

"By collating and analyzing bird data, we not only understand their condition, but also gain an unparalleled insight into the health of the natural world as a whole," states the report.

"In effect, birds act as barometers for planetary health, allowing us to 'take the pulse of the planet.'"

One global study published this month found wildlife populations have declined by an average of 69 per cent since 1970. The staggering rate of loss includes 5,320 species of mammals, birds, fish, reptiles and amphibians, but not spineless invertebrates.

When it comes to birds, species

Key Biodiversity areas cont'd. from p. 2

decline is overwhelmingly caused by human activity: destroyed habitat due to expanding agriculture and logging, the rise of invasive species, residential and commercial development, and ongoing hunting and trapping practices.

Another threat, and one that's most prevalent in Canada, warns the State of the World's Birds report, is human-driven climate change.

Many threats build on one another, with deforestation and climate change increasing the risk of extreme wildfire, the report notes.

When it comes to birds, species decline is overwhelmingly caused by human activity: destroyed habitat due to expanding agriculture and logging, the rise of invasive species, residential and commercial development, and ongoing hunting and trapping practices.

With birds often touted as bellwethers for environmental change, perhaps it's no surprise that their sanctuaries make up a vast proportion of the areas identified as critical habitat under the Canadian KBAs.

In B.C., the estuary of the Lower Fraser River is among the province's most important habitats that require protecting, according the to KBA mapping project.

During the spring breeding migration, over a million western sandpipers have been observed foraging on the intertidal mudflats surrounding B.C.'s biggest cities.

"Any given year, you get 30 to 40 per cent of the world population of sandpipers using it as a stopover site oversight," said Casey. "That makes it super important."

"It is Western Canada's most significant bird site."

But at the same time, Casey added, the Fraser delta region is interlaced with Western Canada's largest urban population and the largest industrial port.

"We've got Roberts Bank Terminal 2 project, which is putting the world population of western sandpipers at risk, as well as threatening southern resident orcas and salmon," he said.

More than a million western sandpipers have been observed in the Fraser estuary feeding during their spring migration. (Photo: Jason Puddifoot)

Meanwhile, invasive species like the European green crab are destroying many of the shellfish beds several migratory birds rely on to sustain them on their journeys. And across Canada, domestic cats are thought to kill between 100 and 350 million birds every year.

Add climate change to the mix and more than 100 species of birds across the Metro Vancouver region are facing less than a 50 per cent chance of surviving over the long run, says Casey.

The importance of conserving B.C.'s wetlands and intertidal mudflats, however, is not limited to the Metro Vancouver area.

Another B.C. KBA surrounds the Vancouver Island town of Tofino, where six distinct mudflats support a rich community of plant and invertebrate life, which, in turn, sustains a massive migrating bird population.

Among the migrating birds are roughly 600,000 western sandpipers, which arrive in the spring to replenish critical fat reserves before continuing north toward Alaska.

Scientists have found there's something hidden in the mud, said Casey.

In the past, researchers thought the sandpipers only fed on invertebrates in and on the mud. But recent studies have shown a handful of bird species — including the sandpipers — consumer large quantities of something called "biofilm" off the surface of the mud.

The thin mucous layer contains a number of single-celled plants and other micro-organisms. When spring meltwater comes into contact with the salty ocean, the micro-organisms are thought to produce essential fatty acids that act as fuel and flight-performance enhancers for the birds' long migration.

The birds' body and behaviour also appear to be carefully adapted to rely on the biofilm. With a bristly tongue "like Velcro," they can consume up to 20 per cent of their body weight in biofilm every day, Casey says.

The sandpipers also appear to time their migration with the spring melt, scientists have found.

"If they don't get enough fuel, they don't successfully migrate that far," said Casey.

Little-known species on the edge

So far, seven key biodiversity areas have been mapped across B.C., though Casey says he is working with the KBA Canada Secretariat to assess another roughly 100 critical habitats in the province.

Outside of the mudflats in Tofino and the Fraser estuary, here's a

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Key Biodiversity areas cont'd. from p. 3

glimpse of where conservationists think B.C. needs to start paying attention to threatened and endangered species.

Little Quarry Lake

On an island off the Sunshine Coast, Little Quarry Lake has managed to keep the world out for a long time — long enough to support the evolution of a unique three-spined stickleback population.

At just over 20 metres deep and bounded by old-growth trees, the lake is only connected to the sea by a single high-angle stream. To keep the species alive in more than the pages of a book will require keeping outsiders out.

"Ensuring no invasive species are introduced is essential," notes the KBA Secretariat.

Trial Islands

More than 160 kilometres south, off the southern end of Vancouver Island, lie the Trial Islands, part of which is an Ecological Reserve — five islets home to "exceptional assemblages of rare and endangered plant species," including the "globally critically imperilled Garry oak" ecosystem, notes the KBA description.

Sharp-tailed snakes, which were only previously noticed on Vancouver Island, were discovered in 2011 in Pemberton. (Photo: Leslie Anthony)

Fort Rodd Hill

Nearby in the City of Colwood, Fort Rodd Hill's Coastal Douglas fir and Garry oak ecosystems are "among Canada's rarest," notes the secretariat.

In addition to a number of imperilled plants, the woodlands and rocky bluffs offer a home to great blue herons, barn swallows and olive-sided flycatchers, a migrating consumer of flying insects assessed as threatened in Canada.

The endangered Spalding's campion (*Silene spaldingii*) is restricted to two small areas west of the Rocky Mountains. Of those, only one is in Canada — the grasslands and sagebrush steppes near Grasmere, B.C. (Photo: Michael Keefer)

Pemberton

In the Coast Mountains, another area identified by the KBA Canada Secretariat is found north of Pemberton, where a junction of two ecosystems has produced a unique habitat and the only place in Canada where scientists have found a unique subspecies of sharp-tailed snake.

Yaq̓it ʔa·knuqłi'it (Tobacco Plains) Reserve

Go to the shores of the Koocanusa Reservoir between Fernie and the U.S. border, and you'll find the only Palouse Prairie ecosystem in Canada, a unique habitat caught between two mountain ranges.

The very dry and very hot forests and grasslands are the only place in the country you can find the endangered Spalding's campion, a long-lived flowering herb.

The Yaq̓it ʔa·knuqłi'it First Nation regularly monitors for the rare flowering plant on its lands. Members are also working to control invasive plants and are removing cattle from their reserve this year to provide respite.

But the biodiversity hot spot still needs help. According to the KBA Secretariat, that could take the form of managing invasive plants and cattle grazing on provincial lands.

Another big concern is the encroachment of forests onto the grasslands, the result of decades of fire suppression.

Intact Forest Ecosystems – A Conservation Campaign

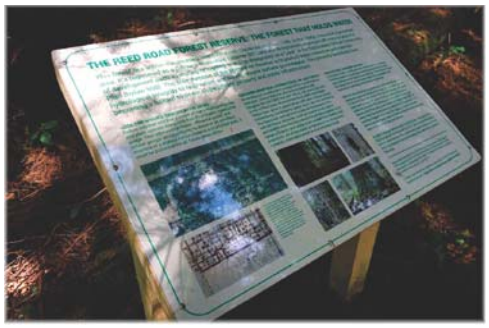
By Louise Beinhauer with information provided by (ELF)

Introduction

The Friends of Ecological Reserves (FER) and (Elphinstone Logging Focus (ELF) have worked together on a number of forest conservation campaigns which resulted in successful outcomes. FER Board member Garry Fletcher met with Ross Muirhead and Hans Penner of ELF to walk a proposed B.C. Timber Sales (BCTS) block that was fully engineered for logging. The party drove to what ELF had named 'The Roberts Creek Headwaters Forest' consisting of towering old-growth Western redcedars and Alaskan yellow-cedars – many of them turned into candelabra structures.

Garry noted the high density of Pacific yews growing at the bases of many of the redcedars. ELF returned with a group of volunteers – they flagged over a 100 of these yews in a small 15Ha stand. This news caught the attention of Andy MacKinnon (who was still at the BC Ministry of Forests Research Branch) and he arranged a trip to the site with two assistants and made several research plots. He later wrote a favorable letter to BCTS Planners regarding this rare association of redcedar with this high cluster of yews. Subsequently, the block was dropped by BCTS and is now mapped as an OGMA, but FER *still maintains that it should get a higher protected status that an ER would grant.*

FER has attempted to convince the provincial government to provide ER status to another forest stand that ELF was working to protect on the Mt. Elphinstone slopes. The Clack Creek Heart Forest is the site of the largest occurrence of Rubus Nivalis (snow bramble) found anywhere in the Province. Again, it was another BCTS block targeting a Mature stand of Douglas-fir with plant



communities that were in peril, or of special concern. The block was redesigned to protect the majority of the snow bramble sites with half of the block being dropped to secure this habitat. These reserves need to legally protected so that a logging plan never emerges down the road.

Read on for more up-to-date information on this important work that ELF is doing in this area of the Sunshine Coast.

Educational Forest Project

As part of its mandate to increase public awareness of the many benefits derived from intact forest ecosystems, Elphinstone Logging Focus (ELF) has completed the installation of a series of signs highlighting the scientific and Aboriginal knowledge of local plant, tree species and associated ecological processes. The signs are presented on baked enamel plaques each attached to 4x4 posts installed along two different trails. The information for each sign was taken from open sources and professionally edited. Where available, First Nation language names for species were added, in addition land acknowledgements are made to the Shíshálh and Sḵwx̱wú7mesh Nations.

The two locations for the Educational Forest project are along the Elphinstone Health Trail (Roberts Creek) and a trail through The Reed Rd Forest Reserve (Gibsons). The signs are placed in front of each species and/or ecological feature being described. There are twenty (20) signs installed along the Health Trail and ten (10) along the Reed Rd Forest Trail for a total of thirty (30) signs researched, edited, printed and installed.

The signage provides information on: Douglas-fir, western redcedar, western hemlock, pacific yew, alder, salal, Oregon grape, mushrooms, medicinal plants, wildlife trees, nurse log, Mature Forest, huckleberry, salmonberry, a story from a Shíshálh elder, xwesam (Roberts Creek), western white pine and fire as a natural disturbance. At the beginning of each trail, a large introductory sign provides detail on the conservation campaign underway, its history and future opportunities for protection.

The idea of an Educational Forest originated from Allen Banner (RPBio), a forest ecologist and expert in Ecosystem Based Management. ELF hired Mr. Banner to provide an ecosystem-based management assessment for the Reed Rd Forest Reserve and suggested in his conclusions that besides the ecological values of this Mature Forest supporting a well established plant community, there was value in protecting this area also for the educational opportunity it presented since this beautiful forest is close to the growing Town of Gibsons.

The information is intended for the amateur botanist, university and high school students who can use the trail as an outdoor classroom, and the hiking public who are looking to delve deeper into the ecology of the temperate rainforest.

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Elphinstone cont'd from page 5

Funding for this project came from the Ananda Fund with special thanks to Marlena Blavin and dedicated to the late Rick O'Neill who first championed the idea of a Mt. Elphinstone Protected Area in the early 1990s.

Mt. Elphinstone Water Protection Forest

In the early 1990s, The Federation of B.C. Naturalists identified the Elphinstone Forest as "environmentally important" and an "exceptional location" on the Sunshine Coast. In their words: "The Elphinstone Forest is most representative of the ecology of the Sunshine Coast. Gentle slopes (10-15%), a southwest aspect, low-to-mid elevations, and well to moderately drained soils combine here to grow almost uninterrupted coniferous forests.

"What is exceptional about the Elphinstone Forest is that a serendipitous combination of fire and logging history left intact a large area of natural, low-elevation forest. In the 1860s, before hand-logging began, a catastrophic fire burned almost the entire slope, leaving alive only large, fire-resistant Douglas-fir. Some of these fire veterans were later logged by hand-loggers, especially lower on the slope, but most live on, centuries old, and in places, in dense concentrations.

In the proposed logging area, old-growth Douglas-fir vets, survivors of the 1860s wildfire, are scattered across the slope along with mature Western redcedar. There is limited hand logged cedar noted from the shake cutting era. These conditions should be kept intact to safeguard hydrological function.

"At several different times through the 20th century, the area has been selectively logged for the old-growth Red Cedar that was killed by the fire. This was done with relatively little disturbance because the wood was cut to shake-block size on-site and taken out by flume or on minimal roads. The regenerating fir and cedar were not quite large enough to be cut in early power-logging days, especially as there was still older growth available elsewhere. So, it is only recently that clearcut logging has started in this area.

"Only three small, special sites, totaling 140 hectares have been selected for protection within the original 1,500-hectare Elphinstone Forest Protection Area Strategy proposal. One site is near the upper elevation limit and contains 2 or 3 hectares of wetter ground on which old-growth Hemlock has survived, as well as impressive old-growth Fir and Cedar.

"A second area, at mid-elevation, contains a dense concentration of Douglas-fir veterans. In just a single, square, one-hectare block, 50 old-growth trees have been counted. This veteran stand is only one of many identified. This area also includes the largest veteran so far recorded from the slope: a giant, 2.3 metres (7 feet, 5 inches) in diameter, in the ravine of Roberts Creek.

A logging road (NK-450) required to connect up the three sub-blocks would cross multiple small streams such as this one. This stream doesn't show up on the BCTS map as it's seasonal and thus there's no riparian protection granted.

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Columbia Lake Ecological Reserve #20

A Warden's Report by Jenny L. Feick, PhD

ER Name: Columbia Lake Ecological Reserve, # 20

Trip Date: September 10, 2022 (only day a BC Parks staff member available for site visit); Report finalized September 24, 2022.

Warden Names: Jenny Feick and Ian Hatter, driven and assisted by Trevor Kinley of Invermere

BC Park Staff: Ranger Liza Pegura, East Kootenay North

No. of volunteer hours logged: 2.5 hours at the ER, plus 2 hours travel time to/from Invermere. This does not include time spent getting to/from and visiting Mt Sabine ER, which was done the same day.

Extent of the ecological reserve visited, or tour route

- Ranger Liza Pegura drove the BC Parks truck and resource person Trevor Kinley, who had been to the ER before when he was doing bobcat research, drove his 4WD Toyota Tacoma truck up the access road.
- Explored lower area of the ER adjacent to the access road with Ranger Pegura, who pointed out the patches of giant helleborine orchids (also known as stream orchids) and other areas where calcareous-loving plants live in the wet sites.
- Ian, Trevor and I explored the upper portions of the ER on foot on their own following the site visit to Mount Sabine ER.
- It was fairly easy walking through open forest and along existing informal paths and game trails.

Purpose and Objectives for This Site Visit

Purpose: Collaborate and learn about the Columbia Lake ER and its values from one another.

Resource person Trevor Kinley and ER Warden Ian Hatter near north-eastern boundary of the Columbia Lake ER.

Objectives:

- Locate the Columbia Lake ER (UTM coordinates);
- Assess ease of access for rangers' vehicle;
- Assess if the boundaries of the ER are adequately identified/marked, and if not, what needs to be done to better demarcate the boundaries;
- Assess the basic condition of the ER and identify any obvious damage and threats;
- Record natural history observations (evidence of wildlife, and vegetation, especially the species/plant communities related to the purpose of each ER), including posting images on iNaturalist of key plant species; and
- Discuss potential ideas for research, inventory and monitoring activities for 2023.

Specific Expectations for BC Parks: assist new ER rangers in finding the boundaries of the ERs, assess ease of access, and work with them on the other objectives.

Plant and Animal Species Observed

Forest Composition:

- Douglas-fir–pinegrass is extensive (pictured on the right).
- A Douglas-fir-snowberry association occurs in moister sites.
- Douglas-fir-bluebunch wheatgrass-rabbitbush community in the driest situations in the upper part of the ER above the limestone cliffs.
- Well-spaced Douglas-fir trees cover most of the ER.
- Ponderosa pine, lodgepole pine, limber pine, and trembling aspen are also present.

Shrub layer:

- Rocky Mountain, common and creeping junipers are common with fleshy cones present.
- Western snowberry, buffalo-berry bushes are present but there are very few berries.

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Warden's Report cont'd from page 7

- Prickly rose has rose hips (pictured on right).
- Rubber rabbit-brush and shrubby cinquefoil (pictured below on right) still in bloom.

Ground covers:

- Pinegrass, bluebunch wheatgrass, bearberry and bunchberry (with dry berries) were common.
- Late season bloomers included smooth blue aster, white prairie aster, North American harebell. (pictured below), elegant goldenrod, and northern goldenrod.
- Many plants were in seed or identifiable from their dried leaves (e.g., Giant helleborine orchids, Western meadow-rue. bush penstemmon, mountain death camas).
- Fee's lip ferns were growing amid the limestone cliffs (pictured below on right); several looked dried up.
- Lichens included wolf lichen on Douglas-fir branches and candle flame lichen on limestone cliffs.

Animal Species Observed or Evidence of Wildlife

- **Mammals:** found Elk, deer, and bighorn sheep pellets; heard a red squirrel.

North American harebell.

Prickly rose has rose hips.

- **Birds:** saw a falcon (possibly a Peregrine falcon), a turkey vulture, and dark-eyed junco; heard American robins, red-breasted nuthatches, dark-eyed juncos, and mountain chickadees.
- **Arthropods:** Mormon fritillary (pictured below bottom right), turfgrass ants.

Shrubby cinquefoil.

Fee's lip ferns

Cultural Resources

- Potential areas where stone tools may have been made. This would require authentication by an experienced archaeologist like Wayne Choquette and should be done in collaboration with the Ktunaxa First Nation.

Public Access Issues

- Access to the lower portion of this ER is along a rough 2WD gravel road accessible with the AWD 2007 Subaru Forrester owned by the ER Wardens.
- However, due to deep ruts, rocks, steep grades, the ER rangers would not be able to access the upper portion of this ER using their own vehicle. This will require

Mormon fritillary.

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parking their vehicle on the lower section of the road and walking up the steeper areas.

- High clearance 4WD trucks, ATVs and ORVs can drive near the ER boundary; and a trail biker had obviously accessed the upper area of the ER (above the cliffs) using an old trail, based on tracks in the fine grained silt.
- Since the upper perimeter of this ER is unmarked, it is unclear where it is exactly, so people may not know they are trespassing on an ER.

Signage Issues

- The signs that have been placed adjacent to the lower access roads are clear and current.
- There are no signs or markers of any kind along the actual upper boundary of this ER.
- Found a survey marker pin (see below right) but not sure if this relates to a formal survey of the ER.

Maintenance Issues

- Deteriorating access road conditions

Visitor Activities

- People have had a campfire in the dry grassy area above the limestone cliffs at the end of the trail used by the trail biker (see evidence pictured below).

Warden Activities

- Made a short visit to the lower (south-western) end of the ER to see the seepage areas with the patches of giant helleborine (stream orchid), and tufa deposits;
- Identified an alien invasive plant species, white sweet clover.

Evidence of a campfire.

Ranger Pegura removed the plant. She noted there is also sow thistle north of the giant helleborine patch.

- Explored the north-eastern part of the ER on foot; and
- Recorded observations of plant and animal species, took pictures, and posted them to iNaturalist.

Wardens' Proposals or Suggestions

- Find out if the boundary (see map below) has ever been officially surveyed. Are there survey pins? Who installed the survey pin found on Sept. 10, 2022 and what does it signify? If not, a survey should be conducted.
- Find out who (if anyone) is responsible for road maintenance in the area.
- Clearly mark the upper (north-east) boundary of the ER with signs people know when they enter it and what activities are allowed/not permitted.
- Survey for presence of alien invasive plants near areas adjacent to access roads. Develop and implement a plan to remove alien invasive plants.
- Investigate adjacent Crown land in the East Side Columbia Lake Wildlife Management Area for ecological and biological values.
- Assess ongoing health of limber pine trees (e.g. evidence of white pine blister rust), as follow up to the "Columbia Lake Ecological Reserve Limber Pine Survey" prepared by Randy Moody.
- Inventory Indigenous cultural and archaeological resources (location and significance) in collaboration with the Ktunaxa First Nation.
- Set up vegetation plots to monitor change in species composition with climate change, including the limestone cliffs (see pictures on top and bottom left on next page)and the calcicolous vegetation growing in the wet sites along the spring-fed stream on the west side of the ER (see picture on bottom right on next page). Note: BC Parks staff already monitors the giant helleborine patches.
- Consider setting up a wildlife camera to document wildlife use of the area.
- Consider using a drone for monitoring the less accessible portions of this ER.

To see Jenny's complete Warden's report including on Columbia Lake Ecological Reserve # 20 Appendix,, visit the FER website at: https://ecoreserves.bc.ca/2022/09/25/columbia-lake-ecological-reserve-20-wardens-report-sept-2022/.

Survey marker pin.

Lasqueti Island Revisted

By Rick Page, FER Board Co-Chair

In 2016, the Board of Directors of FER visited the Lasqueti Island Ecological Reserve by private boat. (see Spring/summer 2016 LOG https://ecoreserves.bc.ca/wp-content/uploads/spring-summer-2016-colour-final.pdf and Figure 1 on right.)

During that visit we noticed that the fence in the reserve was damaged in many locations by fallen trees allowing the feral sheep on the island to heavily damage the plant communities. On September 23, 2022, Harry Crosby and Rick Page visited the reserve to see if repairing the fence was feasible.

The Lasqueti Island Ecological Reserve was created to preserve a rare ecosystem containing some of the largest Rocky Mountain junipers in British Columbia, two rare plant communities, and two blue-listed rare plants, giant chain fern (*Woodwardia fimbriata*) and poison oak (*Toxicodendron diversilobum*). At least 15 plants considered rare in the province also occur in the ecological reserve, as well as rare animals such as the Alligator Lizard (*Elgaria coerulea*).

Lasqueti Island is not on the BC Hydro grid. There are no paved roads and the only access is by a passenger only ferry. Early settlers released sheep on the island over a century ago and their abundant populations heavily damaged the plant communities throughout the island. Some residents rely on the sheep as a food source and the community is divided on whether they should be completely removed. In response to the damage to plants, BC Parks constructed a fence enclosing part of the reserve, probably around 1990.

Figure 1: Field trip participants in 2016 except for Stephen Ruttan who took the photo. ER Warden Alf Gaensbauer is second from the right. Our transportation, the Bastion City is in the background.

Alfred Gaensbauer is the longtime warden of the ER, but now in his '90's, spends relatively little time on the island. He was a wonderful host for the FER board when we visited in 2016 but we didn't see him on this trip. Alf maintained the fence on the reserve for many years but it has fallen into disrepair in the last decade. On our previous visit, we noticed locations where trees had fallen and sheep had crossed. There were many active trails and signs of intense browsing pressure.

On our first night on the island on this trip, we met with members of the Lasqueti Island Nature Conservancy (LINC), Gordon Scott

Giant chain fern (*Woodwardia fimbriata*)

Poison oak (*Toxicordendion diversilobum*)

Alligator lizard (*Elgaria coerulea*)

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Lasqueti Island Revisited cont'd from page 10

and Chris Francis, and found many areas of common ground between our two organizations. LINC has an agreement with BC parks to manage areas on the island including the ER. This makes them an excellent partner for us in restoring the fence. They have also erected a number of fences themselves in partnership with the Islands Trust as well as BC Parks.

The next morning, Gordon met us at the hotel and provided transportation to the southeastern end of the reserve where we also met Chris Francis. Chris owns land immediately adjacent to the ER and has fenced large areas of his property this year. Gordon, Chris and Chris's two sons were our guides for the day. They know the ER intimately.

Both ends of the fence begin above steep cliffs into the ocean making it impossible for sheep to go around the end of the fence (see figure 3 on next page). However, this first section of the fence of roughly 100 meters has been exposed to saltwater from the bay and is badly rusted (see figure 2) and will need to be replaced completely.

It was a dull day, but the predicted rain held off. We walked the entire fence line and found roughly two dozen places where trees had damaged the fence (see figure 4 on the next page). In most cases, the fence was knocked down or knocked off the post without being broken. Once the offending tree is removed, the fence can be easily repaired. Most of the fallen trees were dead and broken and can be removed without the need for a chainsaw. Other than the initial rusted section very little of the rest of the fence will need to be replaced, and the steel posts are intact for the most part.

The existing fence is five, six or even seven feet tall but we only need a four foot fence to prevent sheep from crossing. Black tailed deer will continue to enter the reserve and browse. Gordon suggested that we create some small exclosures within the fenced area with eight-foot-high fence to also exclude deer. We could then compare browsing from sheep and deer, just deer, or no browsing at all.

Figure 2: The easternmost section of the fence has been heavily rusted due to saltwater exposure.

We believe the fence can be repaired with relatively little effort. Partnering with LINC and Chris Francis we expect to get materials from the island and hire help locally to perform the work, as has been done for other fencing projects. Both the cost of materials and the expected labour should be within our budget of $5,000.

There may be some sheep remaining within the reserve when the fence is complete. We recommend that we leave one section open with a game camera to monitor any movements of sheep in or out. If there is no movement, then the fence can be completed. Later, a survey will be done to see if there are any sheep remaining

Continued on page 12

Lasqueti Island Revisited cont'd from page 11

within. However, we are open to other suggestions.

We have to finalize arrangements with our partners, BC Parks and meet with the First Nation before we can consider any actual field work. We are hoping this is a prototype for the maintenance of Ecological Reserves throughout the province and that similar partnerships with local conservation groups can be created in other areas. We look forward to returning to the Lasqueti Ecological Reserve this spring to carry on with this project.

Figure 3: Both ends of the fence began above high cliffs going directly into the ocean. There is no way for sheep to go around the ends of the fence.

Figure 4: Harry Crosby inspects a downed section of fence with many rotten logs that have created the damage.

Figure 5: The fence at the Osland Nature Reserve shows how quickly the vegetation will respond in only 2 years to the removal of browsing by sheep. This reserve is about a km NE of the ER.

BC Protected Areas Research Forum (BC PARF) Presents Two Student Awards

To recognize the enduring legacy of Tori Stevens (BC Parks)(on left) and Pam Wright (University of Northern BC) two student awards have been created to recognize students who demonstrate research excellence when presenting at BC PARF.

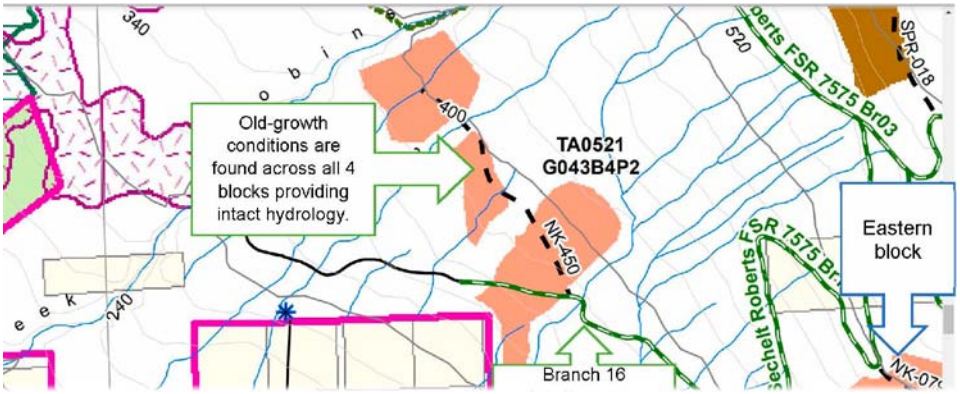
The Tori Stevens Award recognizes a student in biological sciences. The Pam Wright Award is given to a student in social sciences.

Cassandra Elphinstone (UBC) (on left) and **Hannah Dubney** (VIU) are the 2022 Tori Stevens and Pam Wright award winners. Cassandra's research focused on the *influence of climate change and increased recreation on alpine plants in the Nch'kay region* and Hannah's research explored whether *park crowding is more than an inconvenience: Experiences of people with mobility disabilities in crowded parks.*

Elphinstone continued from page 6

"A third area, near the top of Crowe Road, is home to about 3 hectares of old-growth forest. A linear wet area with some surface water flow supports at least 15 Sitka Spruce, some over a metre in diameter, and many more Red Cedars, both of old-growth age."

– From "Environmentally Important Sites and Streams on the Sunshine Coast" published by Land For Nature, an initiative by the Federation of B.C. Naturalists, circa mid-1990s.



For more information on the work of the Elphinstone Logging Focus reports with maps on the foregoing reports, please visit: https://loggingfocus.org/

Oldriska (Oluna) Ceska, 1938 - 2022

Oldriska Ceska was born in Prague on July 1, 1938, and died on November 9, 2022, in Victoria, BC.

After finishing high school, Oluna studied biology/mycology at Charles University in Prague and married her fellow student Adolf. They immigrated to Victoria, BC, in 1969.

At UVIC, she worked as a lab assistant and research associate at the UVic Biological Department with Dr. Derek Styles and Dr. Michael Ashwood-Smith, where she discovered and described a previously unknown compound, Coriandrin, in cilantro.

She was a founding member of the South Vancouver Island Mycological Society (SVIMS), where she channelled all the energy previously given to the Victoria Natural History Society and Vancouver Island Rock and Alpine Garden Society. In 2004, Oluna started a long-term mushroom survey of Observatory Hill. After almost 15 years and over 550 visits, she found about 1,450 fungal species in an area of about 75 hectares. COVID-19 and an aggressive form of small-cell carcinoma ended her unique research project.

Over 10,000 of her mushroom collections are deposited in the UBC herbarium. Based on her collections, mycological experts described several new species, including *Cortinarius ceskarum* and *Inocybe ceskae* named in Oluna's honour. To continue Oluna's legacy, please contribute to the UBC Oluna and Adolf Ceska Mycology Award: https://give.ubc.ca/ceska-award.

Mycologist Oluna Ceska at work on Observatory Hill

The Fungal Bodies of *Cortinarius ceskae*

A newly discovered fungus species, *Cortinarius ceskae* is highlighted in today's BPotD. The species is named in honour of its discoverers, local mycological experts Oluna and Adolf Ceska. Oluna and Adolf collected this species as part of a decade-old macro-fungi survey of Observatory Hill in Victoria, British Columbia, Canada. So far, the species has not been found on any other site. Thank you for sharing this exciting discovery with us, Oluna and Adolf!

Oluna Ceska, with the assistance of her plant ecologist husband, Adolf, has been observing and collecting fungi from Observatory Hill since 2004, and has made over 300 collection visits to the site. From these visits, Oluna has collected records of well over one thousand species of fungi from a less than 75ha (<185 acres) area. Last year, Oluna and Adolf donated 3312 dried specimens to the Beaty Biodiversity Museum, and over the last decade the Ceskas have been responsible for filling one quarter of the the Museum's 26771 specimens of fungi. The specimens collected by the Ceskas have resulted in many new species records for British Columbia, and also a number of newly described species, such as *Cortinarius ceskae*, which was published in the *Index Fungorum* in 2014.

Cortinarius ceskae is found in coniferous forest and produces mushrooms in autumn. The *Index Fungorum* (PDF) describes it as follows:

Pileus 20-30mm, at first conical, later almost plane, often with an acute umbo, reddish to rusty brown with an olive tone. Lamellae moderately spaced, cinnamon brown when old. Stipe 30-50mm long, 4-5mm thick at apex, cylindrical, fibrillose-rusty fibrils over yellowish background, base of the stipe yellow, at least when young. Context ochre. Odor in lamellae radish-like. UV fluorescence: pileus bright yellow on drying, lamellae bright yellow but patchy, stipe bright yellow, flesh in stipe pale yellow.

The foregoing was published by Doniel Mosquin on March 25, 2015.

The Board of the Friends of Ecological Reserves extends their sincere condolences to Adolf.

Cortinarius ceskae.

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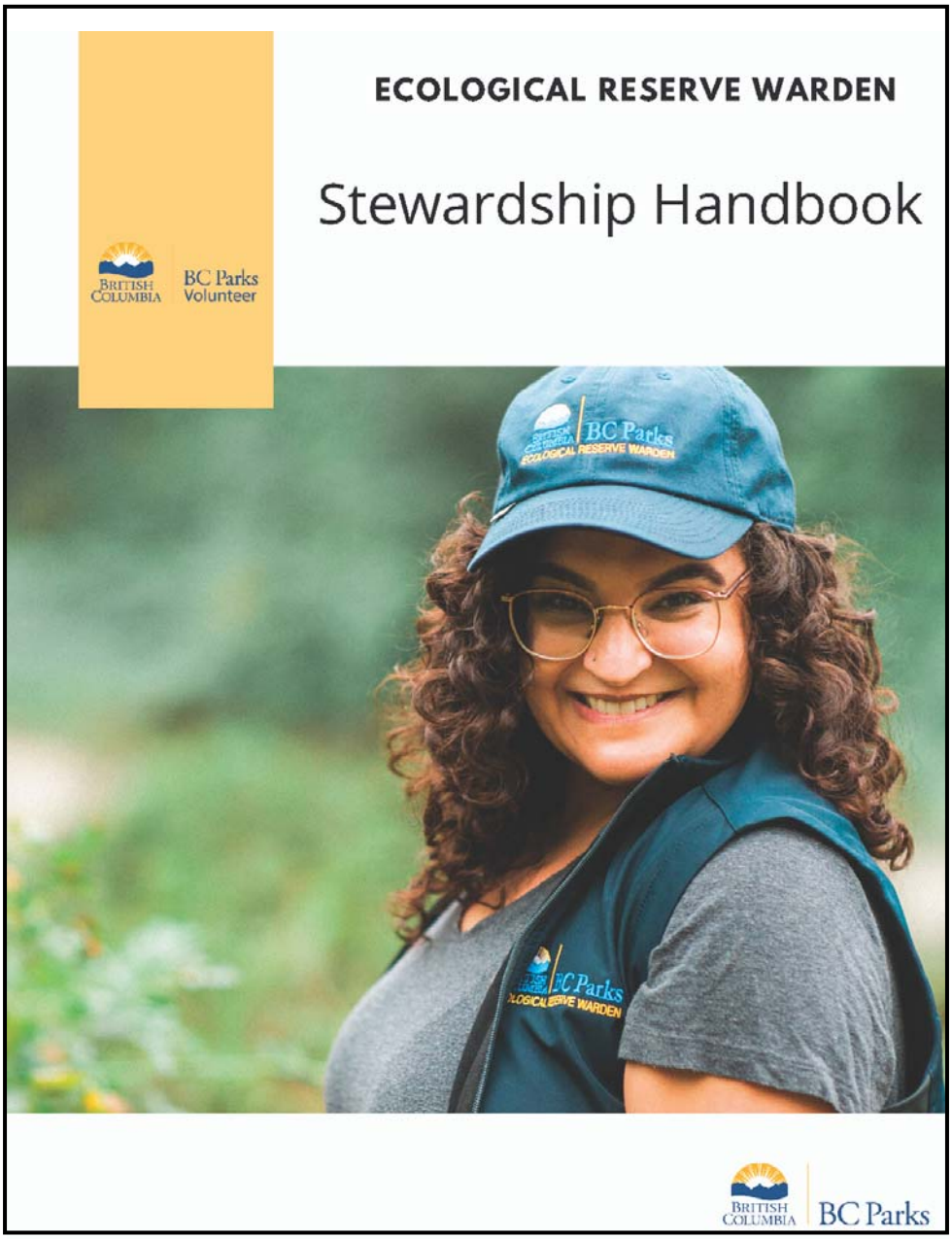

The latest edition of the Ecological Reserves Wardens' Handbook is now posted on the Friends of Ecological Reserves website at: https://ecoreserves.bc.ca/wp-content/uploads/ERWardenHandbook-2022.pdf.

Ecological Reserve (ER) Wardens are a team of dedicated volunteers across the province who make significant contributions to the parks and protected areas system. In partnership with BC Parks staff, ER wardens provide a variety of services that include: manual invasive plant control, inventory of flora and fauna, and trespass monitoring. ER wardens are the eyes and ears for BC Parks in the ecological reserves. These dedicated volunteers care deeply for the protected areas they work in and serve an invaluable role in the long-term protection of the ecological reserves.

If you are interested in volunteering to become an ER Warden please visit BC Parks website at: https://bcparks.ca/volunteers/about/programs/er-wardens.html.

The Log

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Dear Wardens:

The Friends of Ecological Reserves always includes a 'Membership Form' in its issues of The LOG. You might notice that there is a series of check boxes on the lower right-hand portion of the form. Occasionally we do receive volunteering interest from renewing or new members. If you, as a Warden, have a project that needs a volunteer(s), please let us know so that we can match you up with a willing helper.