Glass Sponge Reefs
Western Painted Turtle Project - Kelowna
Coastal Wolves
In association with the Elders Council for Parks in British Columbia, BC Nature's home office is located at the Heritage Centre in Mount Seymour Provincial Park. Please visit Elders Council at http://www.elderscouncilforparks.org/

Color Version of BCnature is available online www.bcnature.ca

BCnature magazine is published quarterly by
BC Nature - Circulation 5,700

Editorial Team: Penelope Edwards piedward@telus.net
Betty Davison manager@bcnature.ca
Rick Gee rdgee@shaw.ca

Website: www.bcnature.ca
BC Nature Office - manager@bcnature.ca
Editorial: Bob Peart - bobpeart@shaw.ca

We welcome your articles, photos and letters. Please email your articles-photos-thoughts to the office. BC Nature reserves the right to edit submissions for length, style and clarity. For advertising rates, and cut-off dates, please email the office. Cut off date for Spring Edition - February 1, 2016

Cover Photo: Honey Mushroom Armillaria ostoyae
Photograph : Rosemary Taylor

BC Nature Executive

President Kees Visser
Vice President Alan Burger
Past President John Neville
Treasurer Reda Akladios
Recording Secretary Claudia Copley
Conservation Chair Rosemary Fox
Communications Chair Penney Edwards
Kootenay Coordinator Joan Snyder
Lower Mainland Coordinator Jude Grass
Northern BC Coordinator Fred McMecchan
Vancouver Island Coordinator John Neville
Thompson/Okan/Shuswap Coordinator Janet Patterson
Parks & Protected Areas Deborah Herbert
Education Chair Marg Cuthbert
Director at Large Bev Ramey

Email addresses may be found on www.bcnature.ca under "Contact Us" or telephone the office for further information

BCnature is printed on 100 percent recycled stock

BC Nature Executive
Editorial

The Future is Here

By Bob Peart

Home to three-quarters of Canada’s mammal and bird species, 70 per cent of its freshwater fish and thousands of other animals and plants, British Columbia has incredible biodiversity—so unlike most other places on Earth.

This abundance of nature is B.C.’s greatest asset when tackling climate change.

Climate change, the defining issue of our time, is already impacting B.C.’s natural landscapes. If we continue with business-as-usual, the impacts of unmitigated climate change threaten to devastate natural ecosystems, impacting food and water supplies for many B.C. communities.

Fortunately, there is a way through this situation—a three-pronged approach to climate change:

1. Stabilize the climate, by leaving fossil fuels in the ground, reducing our emissions and increasing the price of carbon.
2. Defend intact nature to preserve biodiversity and natural carbon banks, and to protect ecosystem services.
3. Rapidly transition to a post-carbon economy.

As climatic zones shift and new ecosystem relationships develop, areas with strong biodiversity have greater resilience. To maintain this resilience, conservation biologists argue that half the land base should be managed to protect wildlife and wildlife habitat and provide the environmental services, like clean water, that we count on.

B.C. has already made significant progress toward this goal. Protected areas comprise nearly 15 per cent of the land base with another approximately 16 per cent under development restrictions through designations such as the Agricultural Land Reserve and Wildlife Management Areas.

Although mostly intact, large portions of BC’s landscape with high ecological value remain unprotected. As the ecological zones of the province shift due to climate change the importance of these large, intact landscapes for connectivity is magnified.

B.C.’s carbon banks, our most effective tool in climate mitigation, need explicit protection. B.C.’s old growth forests act as “green carbon banks” as they capture 30 million tonnes of carbon dioxide annually and store this carbon in their trunks, roots and soils.

In turn, B.C.’s marine eelgrass meadows and salt marshes act as “blue carbon banks” These near-shore ecosystems perform a critical role in the capture and storage of carbon. Capturing and storing carbon at 90 times the rate of equivalent forest areas, scientists point to these “underwater forests” as high priorities for conservation, restoration and enhancement.

It is important to recognize that all conservation planning must proceed with the full understanding and acknowledgement that most of British Columbia is unceded land, subject to First Nations title and rights.

It is a challenging time and an exciting time. With the recent election of the federal Liberals and the seeming shift in society in the acceptance of the severity of climate change there is a new found possibility. Facing the climate crisis offers us an opportunity and an imperative to make positive changes in how we live, in how we manage the environment, how we do business and how we relate to each other.

Bob Peart is Executive Director of Sierra Club BC and lives in Sidney BC. Bob also serves on the board of Nature Canada and a community advocacy group The Friends of Shoal Harbour. Bob has been active in conservation and nature interpretation in BC for over three decades.

Join us for Something Extraordinary!

Dominica & St. Lucia
March 22 - 29, 2016 with Richard Knapton

A leisurely tour of two beautiful Caribbean islands. We will be treated to fabulous birding with lots of endemics and range-restricted species.

Manitoba Owls Photo Tour
March 1 - 6, 2016

Join award-winning professional photographer Brad Hill and local naturalist Ken De Smet to capture memorable images of boreal owls.

Point Pelee & Algonquin Park
May 9 - 20, 2016 with Kyle Horner & Steve Ogle

Spring migration in southern Ontario! From boreal species in Algonquin Park to a diversity of warblers at the “Big 3” migration hotspots.

Greenland & Wild Labrador Cruise
June 29 - July 11, 2016 30% off when booked in 2015

Cruise along the coast of Newfoundland and Labrador scanning for icebergs, whales and polar bears. Hike the secret wilds of Canada’s hidden coast. Explore the many fjords of Greenland and visit one of the world’s largest ice caps.

Eagle-Eye Tours
BC Licence #34413

Travel with Vision

Call now for your free catalogue!
1-800-373-5678
www.eagle-eye.com

BCnature Winter 2015
From the Desk of the President

Dear Member,

In the Fall issue of the BCnature Magazine, you may have noticed that the joint Federation-Foundation Annual Appeal arrived in your mailbox as the centerfold of the magazine. We hope that this has caught your attention and that you will give generously.

We have opted to once again use this method of reaching out to our members versus using separate large mailing envelopes, separate inserts, four-six page Foundation Annual Report and a return mailing envelope. In the name of conservation, we have found this newer format of the Annual Appeal has both reduced costs, paper use and extra postage.

At this time we have only received about 45% of the donations we received last year. I would like to thank those members who have already donated. For any members who had it in their mind to donate and have put it off for later in the year, please do not forget us.

We are indeed proud to be a force of 54 BC natural history clubs plus more than 100 direct members (and we can say that we are still growing!) We are extremely committed “To Know Nature and Keep it Worth Knowing”.

BC Nature and the BC Naturalists Foundation continue to work hard for nature and we need your ongoing support.

Now, more than ever, it is essential, that nature be valued and cared for, as so many habitats are at risk. For many years, BC Nature, in conjunction with BC Naturalists Foundation, have supported club programs with grants, which both educate and enable conservation projects at the club level.

We have a strong education committee that is committed to increasing the mentor program for our younger naturalists, we are committed to the Important Bird Areas (IBA) campaign and support a large number of nature projects throughout the province.

If you could manage to donate to BC Nature and the BC Naturalists Foundation this financial help would be greatly appreciated. * Thank you

Kees Visser
President, BC Nature

When is a caterpillar not a caterpillar?
By Al Grass

When is a caterpillar not a caterpillar? When it is a sawfly larva.

Often, when a bird like a warbler, vireo or chickadee is seen with a green “worm” in its beak, it’s called a caterpillar. But a lot of what are called caterpillars may not be caterpillars at all, but the larvae of sawflies.

Sawfly larvae resemble caterpillars but they have more than five pairs of prolegs – at most, eight pair.

Sawflies are not flies at all, but are related to ants, bees and wasps (hymenoptera). The name comes from a “saw-like organ” which is used to deposit eggs in plants.

There are several families including Common Sawflies (Tenthredinidae) and Cimbicids (Cimbicidae).

Sawfly larvae are often found on willows and alders, some in colonies. When common sawfly larvae are disturbed they form an “S” shape.

Look for them on many plant species including Hawthorn, Poplar, Currants, Gooseberries and conifers.

Birds know them as a tasty treat. *


When you look at owls, they look straight back … like this Short-eared Owl

By Clive Keen

Cimbex femoratus, Birch Sawfly larva

By Alexey Kljatov

Wishing to view your BCnature copy in electronic .pdf format? Laptops, desktop computers, tablets and yes, even cell phones, can now view the .pdf version of the magazine. To view the latest magazine, you should make note of the address label on the back of this magazine, it will have your name and a number on the top left of the label. The exact spelling (including spacing, punctuation) of your name - usually Surname and then first name needs to be typed into the members only area of www.bcnature.ca and your password is the number on the top left of the label (your BC Nature Identification).

After you have notified the office of your wish to view the electronic copy, manager@bcnature.ca, we will send you an email informing you when the latest magazine is uploaded to the website.
The last few months I have been very busy visiting a number of the clubs in the Northwestern BC, Southern Interior and Northern Vancouver Island, as well as attending the proceeding in Vancouver with our Northern Gateway court case with the Federal Court of Appeal.

My trip through the Pacific Northwest took me to Prince Rupert, Terrace, Nass Valley, Kitimat, Stewart, Smithers, Nechako/Vanderhoof, Prince George, Quesnel and Williams Lake. I gave six presentations/lectures on geological topics, and I hope that not everyone fell asleep.

In Stewart we saw a few bears and some impressive glaciers, especially the Salmon Icefield. There is no BC Nature club in Stewart. Although a very small village, the interest is there. We have talked to at least 200 people these six days. My spouse, who travelled with me, was nice enough to start the evening with a short BC Nature introduction, which was generally well received. In Prince Rupert, Wendy Brooks picked us up by boat to bring us to Digby Island, where we walked around and saw many Western Toads. Nexxon (Digby Island) and Petronas (Lelu Island) have plans for some major LNG terminals, which would destroy most of these islands, and Wendy is active in trying to stop the Digby Island project.

In Terrace we visited the Northern Amphibian Naturalists Society and were well received by Norma Kerby and Judy Chrysler.

Then on to the Nass Valley, where we were graciously hosted by Des Bolton and Dawn Germyn and were shown around to see the last lava flow ever in Canada, as well as some beautiful native villages. Possibly we will have a BC Nature camp there in 2017, and I can certainly recommend it.

After the Nass Valley, we went to Kitimat where Walter Thorne hosted us. Walter is a very enthusiastic nature man, with a large variety of interests. We had great weather in Kitimat and visited birding sites as well as amphibian/insects catchment sites. I understand that the Provincial Museum in Victoria has already identified a number of new species, which were collected by Walter. We also went to see the LNG and proposed LNG terminals, as well as the possible Enbridge terminal on Douglas Channel. Except for some survey points, not much is happening there at present, and we hope it stays that way.

On another beautiful day, on towards Smithers. On the way we admired the incredible totem poles in Hazelton. Around Smithers we visited Babine Mountain and Driftwood Provincial Parks, as well as Hudson Bay Mountain. On the last day we met the Bulkley Valley Naturalists with our presentations and were pleasantly received by Anne Hetherington. The club is experiencing some problems, but I trust this will be sorted out soon. This area is certainly beautiful.

Going on to Prince George, we had a two-day respite along the Nechako River with June and Dennis Woods. They live in a very nice area south of Vanderhoof, and both June and Dennis showed us graciously around. On the first day we also visited the spectacular Nechako White Sturgeon Hatchery in Vanderhoof. June wrote an article about it in the last issue (Fall 2015) of BCNature magazine.

The organizing committee of the 2016 FGM in Prince George received us; Sara Sparks, Alan Carson and the organizing committee also organized a nice potluck and they appear to be well on track for a well-organized FGM.

After Prince George we went to Quesnel and Williams Lake. Lorna Schley, Sally Hofmeier and their club (Quesnel Naturalists) had organized a great potluck dinner just before the presentations. Thanks to all. In Williams Lake we presented in the beautiful Scout Island Nature Centre and we were hosted by Fred McMechan, who also showed us around the next day in the Chilcotin Grasslands.

Although it was a long trip, it was a great pleasure to visit this beautiful part of BC. I would like to present my thanks to everybody who hosted, entertained or assisted us!

During this trip I have become aware of a potential disconnect between the Executive/Members who usually attend our general meetings and the membership of the clubs. The Executive is actively pursuing action against proposed pipelines, and a number of resource projects; these actions are always endorsed by the attending membership at the general meetings. However, when visiting the Pacific Northwest, it became clear to me that many if not most of the members there do not support these actions and are only interested in conservation, if it agrees with the economy and safety. I would be interested to hear from the membership, so feel free to email me.

I will also be visiting the clubs in Princeton and Osoyoos, and in November Comox and Campbell River. The Comox club (CVN) is organizing the 2016 AGM, May 12 - 15, and their program looks amazing, as you can see in this BCNature issue. Consider to being a part of it! My hat off to the organizing committee!

In early October the Environmental Law Centre finally made the BC Nature submission to the Federal Court of Appeal in Vancouver. We were very impressed with how thoroughly detailed, logical and professionally the arguments were presented. ELC captured the significance of this case when confronted with the prospect of the envisioned future of environmental law being as advocated by Enbridge. We don’t know at this point what the outcome will be, and we might have to wait until early next year.*
By Rhona Govender and Alexandra Barron

In 1987 a remarkable discovery was made off the coast of BC. Scientists mapping the ocean floor found strange mounds, up to 25 metres tall (the height of an eight-storey building) covering 1,000 km² of the seabed in Hecate Strait. On closer inspection with a remotely operated video camera they found ancient and fragile Glass Sponge reefs teeming with rockfish, spot prawns, and a host of other marine species. Prior to this discovery, Glass Sponge reefs were believed to have gone extinct 40 million years ago. For over a decade, the Canadian Parks and Wilderness Society (CPAWS) has been working to get the reefs protected.

Glass Sponge reefs were commonplace 200 million years ago during the Jurassic period. As dinosaurs roamed the land above, the reefs grew across the prehistoric Tethys Sea, which occupied most of what is now Europe. A glimpse into their past splendour can be seen across Spain, France and Germany, with their fossilized remains forming towering cliffs reaching hundreds of metres high often adorned with castles.

Dubbed “Jurassic Park submerged”, the reefs in B.C.’s Hecate Strait date back 9000 years and the reefs in the Strait of Georgia are at least a few thousand years old. Paleo-ecologist Dr. Manfred Krautter likened the discovery of the living reefs in BC to finding a herd of dinosaurs on land.

In 2001, nine smaller reefs were found in the Strait of Georgia, and more recently 12 more in Howe Sound. Although individual Glass Sponges are found around the world, Glass Sponge reefs appear to be unique to this area. In 2014 a small reef was discovered in Alaska, but so far this is the only verified reef outside of BC.

Although they look like plants, sponges are in fact simple animals; without lungs or mouths they pump water through their bodies to filter oxygen and bacteria to breathe and feed. The reefs play an important role in nutrient cycling and “cleaning” the water. A single small reef is able to filter the equivalent of an Olympic sized swimming pool of water in under a minute, and remove 95% of the bacteria.

We do not yet know why Glass Sponge reefs have only been found in BC and Alaska. Their delicate skeleton is made of carefully woven silica, or glass, which they extract from seawater. Scientists have estimated that BC’s Glass Sponge reefs require the equivalent of about 50,000 train-loads of silica in order to grow just one centimeter per year. The skeletons of the sponges create an intricate structure of tubes and towers, which provide ideal habitat for many animals, including juvenile rockfish and commercially important spot prawns.

Glass Sponges have the consistency of meringue and are very vulnerable to damage from fishing gear, such as bottom trawl nets and prawn traps, as well as anchors and cables, which crush the sponges. Before the Hecate Strait reefs were protected from bottom trawling scientists observed large craters and furrows in the reefs where bottom trawlers had reduced the reefs to rubble and dust. Sponges grow slowly and new sponges cannot grow on pulverized fragments, so partially destroyed reefs may take hundreds of years to rebuild, if at all.

Bottom contact fishing also kicks up huge clouds of sediment, which can smother and choke the reefs. As filter feeders, sponges are sensitive to sediments and will stop feeding. When this happens repeatedly the sponges will lose energy for growth and reproduction and eventually starve to death.

CPAWS has spent the past 15 years working hard to protect the Glass Sponge reefs from these threats. After lengthy negotiations with the fishing sector, in 2001 bottom trawlers voluntarily agreed to avoid the Hecate Strait sponge reefs, and legal fishing closures were established in 2002. In 2008 we proposed nine reefs in the Strait of Georgia and Howe Sound for protection due to concerns about damage from prawn traps. In May the government announced fishing closures for all bottom-contact fisheries on the reefs, including a 150 metre buffer zone. We are now working with conservation groups in Howe Sound to secure fishing closures for an additional 12 reefs in Howe Sound that were discovered more recently and currently have no protection.

Fishing closures are the first step in protecting the reefs. Ultimately we want to see the reefs designated as Marine Protected Areas, which will provide protection from all human impacts and allow them to thrive on our coast for many thousands of years to come. The Hecate Strait reefs were officially announced as a candidate for the Marine Protected Area (MPA) in 2010 and CPAWS has played a leading role in the Stakeholder advisory committee throughout the process.

In June of this year we were pleased to see the release of the draft regulations for the MPA for public consultation. This is an important stage in the MPA designation process, however the draft regulations were worryingly weak. CPAWS worked with our supporters, scientists and conservation groups including Federation of BC Naturalists, to demand stronger protection measures. With the appointment of Minister Hunter Tootoo and commitments from the new government to increase protection of our ocean we are looking forward to the establishment of a strong MPA with a high level of protection. Once the MPA is established CPAWS will seek World Heritage Status for the Hecate Strait Glass Sponge reefs.

BC’s Glass Sponge reefs are a national treasure. It is both our obligation and our privilege to take care of them. For more information visit www.cpausbc.org/campaigns/glass-sponge-reefs

Rhona Govender is the Ocean Conservation Analyst and Alexandra Barron is the Ocean Conservation Manager at the Canadian Parks and Wilderness BC Chapter.
Natural Mistakes
The Tao of Owling
By Clive Keen

You like owls and would like to see more of them? You’re certainly not alone. Owls are nearly everyone’s favourite brand of bird, and for a reason, I suspect, explained by Winston Churchill. Churchill was famously fond of pigs, and when asked why, said that dogs look up to you, cats look down to you, but pigs look straight in the eye. And that is exactly what owls do. When you look at owls, they look straight back: it’s a meeting of equals. You feel that you are not simply observing them, but are sharing the moment. Those large unblinking eyes are partly responsible for this, and so is the very unbirdlike owl shape, with the large head morphing gently into “shoulders”. You get a sense of being in the presence of a fellow being which is quite unlike the experience you get when observing “normal” birds.

But, the enthusiast for owls needs a good dose of the Tao if owling is to be practiced successfully. Taoism is of course a rich and subtle approach to life, and goes far beyond the McDonald’s version known to westerners, but some dim inkling can be grasped in phrases like “Just be; let yourself go in the flow; don’t force things; seek effortless harmony with nature.”

At the most basic level, owling is entirely a matter of not forcing things, and just letting it happen. Go wandering in the outdoors often enough, and every five years or so you’ll find yourself sharing the moment with an owl; it’ll be quite magical, and just might keep you happy until you see another, five years later. Most of us, though, would like more than two owls a decade, and thus prefer to force things a bit. But you still can’t rush it: the only way forward is to become a bona fide birder. The reason is that in recent years there has been an alliance between environmental puritans and thoughtful ornithologists to keep the locations of owls secret to all but the elect. Environmental puritans are offended by the idea of people chasing owl sightings, particularly if it’s those awful camera wielders. The rest of us might think that this is being a bit too austere: certainly, where diurnal (daytime-hunting) owls are concerned, there doesn’t seem too much of a problem with owl-watching. I’ve watched and photographed dozens over the years, and they’ve practically never shown the least concern. With the greatest ease they could have moved to a more distant spot, but they’ve rarely shown the inclination. The situation is certainly different, though, with nocturnal (night-hunting) owls. Thoughtful ornithologists are right to be wary about publicizing their location.

Nocturnal owls spend the day in a roost, essentially getting some rest from birds that would otherwise scold and force them to move. They typically have just one or two favourite roosts, and if these were publicized, it wouldn’t be too surprising if quite large numbers of people went visiting. Now our civilization has come on quite well in recent decades, but even relatively well-meaning people can think it would be nice if the owl would open its eyes wide for a moment, and perhaps some loud noises, or a very, very, small stone might make the owl oblige. And of course not everyone, even in our comparatively enlightened times, would stop there.

So, it’s now a rule among birders that they won’t publicize the location of roosts, and will be wary of giving out the general hunting locations of diurnal owls. And that is why you need to be a bona fide birder if you are to see them. While birders won’t publicize the locations of their findings, they’ll normally let other genuine birders, individually, into the secret.

You can’t leave the Tao behind when you go to those secret roosts, of course. The birds will be well hidden, as otherwise the scolding flocks would have found them. Typically, they’ll be in the densest part of a tree where it’s not possible to get an unimpeded look or clean photograph. Having been trusted with the secret, you won’t, of course, try to move branches or get so close that the bird might be disturbed. You’ll observe discreetly from a distance. Effortless harmony with nature, not the trailblazing spirit, must prevail.

What about birds at night, though? Few experienced birders can resist trying to find them, and especially the more uncommon ones that escape detection during the day. This is where a good dollop of Tao comes in most handy.

On a nighttime hunt for owls, you’ll be bereft of the usual satisfactions of daytime birding. No hawks observed in the distance; no passerines flitting through the trees; no LBJs in the undergrowth; not even some flowers to admire. It’s dark, so most of the time, you see nothing at all, including the tree stumps you blunder into. If you’re very lucky, after a few hours you might get to hear something owlish, and if you’re a good mimic you just might get to hear an owl close by. And if the environmental puritans haven’t got to you, you might even, with the aid of a powerful flashlight, get to see the owl. Just don’t count on it. For night-time owling, it’s best to keep in mind one of the chief corollaries of Taoism: “Blessed is he that expecteth nothing, for he shall not be disappointed.”

Clive Keen is author of six books and many hundreds of newspaper and magazine articles. He has had a varied career, including heading a marketing and public relations company, but with a parallel career as a philosophy lecturer and university administrator, acquiring a British Professorship before moving to Canada permanently to help set up the University of Northern British Columbia. Wildlife, caving and music have been his chief passions, with occasional forays onto the stage.
The Lure of the Chilcotin - Tatlayoko Field Camp - 2015

By Christie Mayall

Twenty-six naturalists from around British Columbia were drawn by the lure of the Chilcotin to a camp hosted by the Williams Lake Field Naturalists at the Nature Conservancy of Canada (NCC) property in the Tatlayoko Valley from September 6 to 12.

We were generously welcomed by Peter Shaughnessy, NCC Tatlayoko Project Manager, who explained the history of the NCC in the area and the ecological importance of their sites in the West Chilcotin. Avery Bartels talked about the Tatlayoko Bird Observatory, now in its tenth year of operation, and its significant role in monitoring bird populations on this flyway.

Each morning began with half a dozen early-risers heading out to the bird observatory to walk the nets and observe the banding. One typical morning yielded a Warbling Vireo, Lincoln’s Sparrow, Song Sparrow, and a Northern Harrier. Several participants also went out in the evening in search of Northern Saw-whet Owls. The first night of owling Avery almost caught one in his bare hands! And the next night, those who had ventured out were rewarded with watching as these experienced banders extracted a Saw-whet Owl from a net and weighed, measured, and banded it with only a few resulting bites and scratches.

The first full day dawned bright and blustery as we set off for a hike along the north shore of Tatlayoko Lake. A boat was available for crossing the Homathko River, but several intrepid individuals waded through the fast flowing stream in bare feet. Participants learned about the Chilcotin War and the importance of the Tatlayoko-Homathko River protected area while enjoying spectacular views of the Potato Range, named for the wild potatoes harvested by First Nations, and the Niut Range. In the evening, local ecologist Ordell Steen gave an interesting presentation about the forests, grasslands, and wetlands of the Chilcotin in preparation for the field trip the next day, which took us to an old-growth Douglas-Fir stand, a grassland site overlooking Choelquoit Lake and a shrub carr. Much of the area that we toured was recognized in the 2014 Supreme Court decision as part of the Tsihlqot’in title land.

The next evening we were lucky to have a presentation by well-known author Chris Czajkowski, who talked about her life in the wilderness.

The trip to Chilko River was a highlight of the trip for many. An interesting presentation by Keri Benner, Senior Biologist for Sockeye Stock Assessment on the Fraser River was followed by a tour of the remnants of several earth lodges. The Chilko River has a consistently high salmon run and has always been a gathering place for First Nations to procure their winter salmon supply. As everyone settled in along the river to enjoy a picnic lunch and watch the spawning salmon, we were thrilled to observe a mother grizzly and two cubs, one completely silver, emerge from the woods upstream and gradually make their way along the river in front of us. The cubs played and wrestled and the mother swam out and brought back salmon for them to eat.

That evening Pat Teti took us back in to Deep Time in British Columbia, with his presentation about the complex geology of our province. This was followed the next day by an exploration of some of the post-glacial features evident in the valley.

On our trip to Skinner Meadow we learned about the wetland fens that are so common in the interior and how the water balance is critical to their maintenance. A short walk took us to a bear marking tree and we learned that, in fact, these trees are really more like a community notice board advertising who is around. Many predators leave a sign that they have been there in the form of urine or rubbing scent against the tree and, not surprisingly, the prey just sniff the tree to see if it’s safe to stick around. We could smell the musky scent of the bears and decided that it would be best to move on leaving as little of our own scent as possible. We observed nearby evidence of bears feeding in the numerous anthills that had been excavated, overturned rocks, and decaying logs that had been mauled. We also visited the unfinished, but still standing, square-timbered lodge built by Charlie Skinner over a century ago in anticipation of a railway that was proposed, but never built, across the Chilcotin to Bute Inlet.

The final presentation was an exquisite slide show of wildflowers by Sally Mueller of the Tatlayoko Valley.

An additional day hike with Jim Sims on a perfect fall day took many of us in to the alpine on the Potato Range with its magnificent vista of the surrounding mountains and the valley and lake below. After the hike a few hearty souls refreshed themselves with a swim in the crystalline waters of Tatlayoko Lake.

Continued Page 9
It is with great sadness and regret that we announce the passing of a dear friend and fellow Rocky Mountain Naturalist, Peter Davidson on October 25.

Peter died doing what he loved best, enjoying nature by hiking and birding in the beautiful outdoors. With friends and his trusty dog Roscoe by his side, Peter passed away peacefully on the top of a rocky knoll surrounded by the fall beauty that he so cared about.

Peter contributed so much to the Naturalist Club through his many years of being a member and as President of our club. His kindness, sense of humour and knowledge will be sorely missed. Our deepest sympathies go out to Peter’s wife, Maureen and their family.

**Dates to Remember**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolutions Submission</td>
<td>Feb. 26, 2016</td>
</tr>
<tr>
<td>Awards Submissions</td>
<td>Feb. 28, 2016</td>
</tr>
<tr>
<td>Skagit Bird Blitz</td>
<td>May 6 - 8, 2016</td>
</tr>
<tr>
<td>Miltenatch Camp</td>
<td>May 8 - 11, 2016</td>
</tr>
<tr>
<td>AGM 2016</td>
<td>May 12 - 15, 2016</td>
</tr>
<tr>
<td>Rene Savenye Scholarship</td>
<td>June 3, 2016</td>
</tr>
<tr>
<td>Manning Park Bird Blitz</td>
<td>June 17-19, 2016</td>
</tr>
<tr>
<td>FGM - Prince George</td>
<td>September - 22-26, 2016</td>
</tr>
</tbody>
</table>

Many participants stayed in tents near the NCC yurt, which was our home base. Others stayed in RVs, and some slept in the luxury of two near-by B & B’s. Everyone enjoyed the delicious home-cooked meals at the Homathko River Inn, a real Chilcotin working ranch, and meeting Connie Bracewell and her three adult children, who worked together to make us all feel at home. Connie’s partner, Rudy, helped out in the kitchen, but was even more essential when, 250 km from the nearest garage with a mechanic, he fixed one person’s flat tire, and then the next day replaced a leaking Subaru radiator of one of the participants with one from a Ford that he kept on the “back 40” for parts.

The natural curiosity and knowledge of all participants was a pleasure. As one of the organizers said, “These people are just like my kids when they were little, climbing rocks, wandering off, and bringing back bugs and mushrooms and bark and flowers.”

Many thanks to the organizing team of Fred McMechan, Brian Chapman, Don Lawrence, Dave White, Ray Hornby, Ordell Steen, and Jim Sims. Fred made sure that every single detail was taken care of, Brian organized the wiring and floor covering for the presentation building, Fred and Jim built two showers and two outhouses, and Don organized the first aid plan and the appearance of the grizzlies on cue.

**Tatlayoko Camp Continued**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tatlayoko 2015</td>
<td></td>
</tr>
</tbody>
</table>

Many thanks to the organizing team of Fred McMechan, Brian Chapman, Don Lawrence, Dave White, Ray Hornby, Ordell Steen, and Jim Sims. Fred made sure that every single detail was taken care of, Brian organized the wiring and floor covering for the presentation building, Fred and Jim built two showers and two outhouses, and Don organized the first aid plan and the appearance of the grizzlies on cue.

**Pelee Wings**

NATURE STORE

636 Point Pelee Drive
Leamington ON N8H 3V4

sales@peleewings.ca

Toll Free 1-877-326-5193

Expert Advice on:

- Swarovski
- Kowa
- Vortex
- Leica
- Nikon
- Pentax
- Eagle
- Canon
- Celestron
- Bushnell
- Manfrotto
- Zeiss
- New Victory SF, HT, Conquest HD & Terra ED all in stock!

Best Prices in Canada Guaranteed! Call or Email for Consultation and Quote
Most things happen by serendipity, and sometimes, true to chaos theory a little Lepidopteran flutter creates a perfect storm.

In March 2015 John Neville visited the Comox Valley and asked the reticent president of the Comox Valley Naturalists (CVN) to host - on relatively short notice - BC Nature’s AGM in May 2016. As it was, there might have been one pretext – CVN was created in 1966 and would be celebrating its 50th anniversary. Then, upon reflection, it was also noted that in 1916, Canada signed the Migratory Birds Convention Act (ratified 1917), which is the cornerstone of Canada’s conservation history. CVN’s roots lie in the achievements of Comox conservationists such as Hamilton Mack Laing (1883-1982), whose life was tied to the goals and implementation of the Migratory Birds Convention.

Well-known ornithologist, and World Wildlife Fund (WWF) founding member, Steven Price, the current President of Bird Studies Canada, will be one of the distinguished keynote speakers at our AGM on May 14. He will be giving a one-hour presentation on “International Bird Migration Legislation Today.”

The Comox Valley is the northernmost distribution of BC’s endangered Garry Oak Ecosystem. While that makes it home to a northernmost pocket of Mediterranean climate, it is also home to the rich alpine ecosystems of BC’s first and largest provincial park, Strathcona Park. The region therefore offers visitors a rich diversity of flora and fauna and landscapes, from ocean to alpine ecosystems.

So, within time constraints of organizing an AGM in a matter of 12 months, CVN’s and BC Nature’s AGM team has been preparing what should be a very memorable triple celebration. The event will be held from Thursday May 12 to Sunday May 15, 2016, at the centrally-located Filberg Seniors Centre. The format will be similar to the very successful Salt Spring 2015 AGM Conference.

The Comox Valley is Vancouver Island’s richest agricultural region. It is home to award-winning wineries. CVN’s AGM team has brought together the talents of the internationally renowned local caterers to ensure that this conference will be an organic gastronomic and vinicultural experience showcasing the best of the Comox Valley for all our visitors. The conference will include freshly made organic artisan baked goods, preserves and fruit for breakfast and will be adapted to a variety of dietary requirements.

While speakers are not all finalized, presentations and lectures will include international research currently being conducted on west coast mimosa genetics, and on northern Garry Oak ecosystems, estuary restoration, rare and endangered species in the Comox Valley, and expected regional impacts of climate change, amongst other topics.

Field outings will include: short trips to: Holmes Point Foreshore Ecology, the Bahama-like lagoons and sand-dune ecosystems of Tree Island, Comox’s Garry Oak ecosystems, the Comox Ecological Reserve, the Vancouver Island University Aquaculture Research Station, the Harold Macy Forestry Woodlot, Cumberland Community Forest, and Morrison Creek (home to an endangered species of lamprey). Comox is also home to the largest estuary outside of the Lower Mainland, with a rich 6,000 year or more archaeological history. It is Class one environment and heritage. Guided estuary outings will be available.

Finally, Sunday day trips include a guided trip to Quadra Island, a day on Tree Island, a trip to Mount Helliwell, and tours around Mitlenatch Island.

We look forward to making your stay in the Comox Valley a most memorable experience and help you understand, why, for the past 6,000 years visitors have called this valley K’omoks (The Land of Plenty)! Come celebrate Nature and our environmental heritage with us.

Registration forms and AGM schedule will be available online and in on Page 29 and 30 of this issue and in the Spring 2016 magazine.

Follow us in Social Media
Get updates as they happen
Share Interesting news tidbits and sites
Facebook - BC Nature
Twitter - @BCNature
Stewards of the Future

By Kristy Harrison

The Stewards of the Future program is a province-wide initiative for secondary teachers and their students that promotes community-based stewardship experiences. Initiated last year by the Lieutenant Governor of British Columbia, the Honourable Judith Guichon, the program provides funding for local outdoor field trips, support for environmental action projects and resources for classroom teachers. Students also have the opportunity to attend a conference where they can present their projects to youth from around the province. The aim of the program is to provide students with opportunities for place-based learning and to instill values of stewardship and sustainability in our future generation.

Three science classes at Semiahmoo Secondary in Surrey received funding from the Stewards of the Future program. Our Science 10 students participated in a field study at Sunnyside Acres Urban Forest in Surrey where they collected data and observations about the local environment. Students described the layers of the forest, observed symbiotic relationships, sketched evidence of biotic factors, compared light-rich and light-poor areas of the forest, and described abiotic factors typical of the temperate rainforest biome. Students also related soil analysis to the nutrient cycles discussed in class. We invited a speaker from the City of Surrey to discuss the effect of invasive species on our local ecosystems. We then walked to a nearby greenbelt where she taught us how to identify invasive plants such as ivy, blackberry, periwinkle, buttercup and holly and demonstrated the techniques for removing each species. Students then broke into groups and spent the afternoon removing the plants using shovels, gloves and clippers. Participating in this action project made the topic of invasive species more relevant to the students when they saw the effect on their own community.

We invited the Friends of Semiahmoo Bay Society to speak to our Biology 11 students about the biodiversity of the marine invertebrates on our local beaches. After the presentation by two local naturalists, the students participated in a field study where they conducted a population count of two types of invasive snails at Crescent Beach. Students then analyzed their data using statistical methods. We also had time to explore the tidal pools and identify marine invertebrates and seaweeds using our new laminated field guides that we acquired using the Stewards of the Future grant. The funding also provided us with the equipment for conducting quadrat surveys and line transects which we can use in future classes. Students gained an understanding of ecological survey techniques and an appreciation for the biodiversity on our local beaches.

Participating in the Stewards of the Future program allowed our students to engage with hands-on learning opportunities in their community with the aim of fostering respect, admiration, and responsibility for their natural environment. By inviting naturalists as guest speakers, we can not only connect youth to nature but also connect naturalists to youth. We are grateful to the Lieutenant Governor for supporting environmental education and funding stewardship initiatives in our classrooms in order to promote stewardship ideals in our future generation. We encourage BC Naturalists to connect with their local teachers to support a Stewards of the Future project. Kristy Harrison, Science Teacher, Semiahmoo Secondary and Director, Friends of Semiahmoo Bay Society, Surrey, BC

Be a Naturalist Mentor!

Foster Future Naturalists and Stewards of Nature!
Foster the Love of Nature and a Fascination in Science!

A Naturalist Mentor can help youth with:
• Nature Exploration and Field Trips;
• Outdoor Science Fair Projects and Judging;
• Habitat Enhancement Projects;
• Slide Shows to Community and Schools, and;
• Habitat and Wildlife Surveys

Learn more at www.bcnature.ca (education tab)
BC Naturalists’ Foundation Appeals to Donors

By Bev Ramey

With year-end approaching, here’s a reminder: please make a donation to the Foundation. For the longer term, consider a bequest or other planned giving that works for you.

The Foundation’s Annual Report is now available on the Foundation’s web page, within the BC Nature website. This Report includes updates on the ten club projects assisted with Foundation grants last March, plus a summary of the Foundation’s year-end Financial Statements. The full Financial Statements are also available on the web page. If you would like a hard copy of either the Annual Report or the full Financial Statements, please contact the BC Nature office to have a copy mailed to you, or you can contact any of the Foundation Directors.

For Clubs, the deadline to apply for Club Support Grants is January 31, 2016. The application form is on the Foundation’s web page on the BC Nature website.

Christmas Bird Count 2015 - 2016

British Columbia Field Ornithologists
Birding with a purpose...

For information for a Christmas Bird Count (CBC) in your area, please visit http://bcfo.ca/cbc-20142015-test/

The 116th Christmas Bird Count runs from December 14, 2015 through January 5, 2016. Participation is by donation to the CBC in your area.

The majority of places in BC have a contact name and email address for you to contact if the dates are not posted for your area. Support our little feathered friends by making them count!

Citizen Science at its best!

Invest With Your Values

Introducing the EcoPortfolios approach: a strategy for conservative, established investors.

You already make choices in other areas of your life that reflect your values surrounding the environment and sustainability.

Now, with our EcoPortfolios approach, you can do the same with your investments.

• Professionally Managed
• Green Bonds
• Energy Efficiency
• Water Conservation
• Sustainable Agriculture

Find out more at www.EcoPortfolios.ca

Brian Coote, CIM, CFP, SIPC
Portfolio Manager
Brian.coote@scotiamcleod.com
(604) 535-4709
The Mushroom Underground

By Terry Taylor

As you wander through the woods on a rainy winter day, few mushrooms will still seem to be there, but they are still there. At least, what produces the mushrooms is still there.

One of the fascinating things about mushrooms is the apparent sudden appearance from nothing. This, however, is an illusion. They develop underground, in many cases from an invisible organism. This may seem strange, but it has been estimated that one half of the world’s biomass is composed of microscopic life.

Mushrooms are not organisms. They are the reproductive structures of organisms. They are essentially the flowers of the fungi. Flowers are produced so that a plant can accomplish pollination, and produce seeds. Mushrooms are produced so that the fungus can produce spores. Although not actually seeds, spores function as seeds. Although you cannot see a spore, you can see a collection of spores. Put several mushrooms on a piece of paper and leave them overnight. Some of them will produce a powdery coating of spores on the paper.

Most biological processes do not happen on our level. They take place at the genetic and cellular levels. This is true of mushrooms as well. Most fungi are made of hyphae. These are microscopic threads, one cell thick and many cells long. They grow within a substrate, below the surface. These hyphae may be in the soil, in rotten wood or within another organism. Unlike animals which digest their food inside, fungi digest their food outside. Digestive enzymes are excreted into the surrounding environment, and the resulting food products are then absorbed through the walls of the hyphae. You cannot see a hypha, but you can often see masses of hyphae. Scrape away the duff layer on the forest floor, and you may see molds rotting down the old leaves. This is mycelium, clusters of hyphae busily eating their environment.

When the autumn rains arrive, it is time for the fungi to flower. They produce little buds on their mycelium. These buds expand, absorb water, and grow into mushrooms. Mushrooms are like apples on a tree, only for fungi the apples are bigger than the tree. It is very difficult to know how many fungi are growing in any one place. Some fungi are always microscopic, never producing mushrooms. Some fungi do not produce mushrooms every year.

In some respects the mushroom season can be compared with the flowering of the subalpine meadows. The mountain meadows only flower for a short time during the summer. The mushroom meadows only flower for a short time during the fall rains when there is ample water for spore germination.

The invisible fungal web of the mushroom underground is vital for terrestrial ecosystems. Without it there would be no forests, and probably few other kinds of higher plants. As a consequence there would be no land vertebrates. Our whole existence is dependent on the mycelium beneath the soil.

The mushroom underground does two basic processes. It builds up and it tears down. Many of the big mushrooms are from mycorrhizal fungi. These fungi keep trees alive by giving them water and nutrients in exchange for sugar. Most herbaceous plants have microscopic fungi that do the same for them. At the other end of the scale are the decomposers, such as bracket fungi and many of the small mushrooms. They break down wood, leaves and debris and return them to the soil, where their components are re-used to build future trees and other plants.

As you walk the trails think about the mushroom underground that maintains the whole surrounding forest.

Mitlenatch Camp - May 8 - 11, 2016

By Betty Davison

This exciting four-day, three-night camp will be based on Quadra Island at the historic Heriot Bay Inn. Plans are underway to schedule a three-hour trip out to Mitlenatch Island. Accessible by boat only, Mitlenatch Island Nature Provincial Park offers excellent opportunities to observe and photograph wildflowers and birds. Visit in May when the island’s meadows of spring wildflowers are in bloom, perhaps glimpse the seals and sea lions. Along with this visit, we are arranging for a trip to visit the petroglyphs and pictographs of the Tsa Kwa Luten, a trip out to the Clam Gardens and midden beach and a hike in Main Lake Provincial Park. This park protects a biologically exceptional area that includes more than 72 bird species and 234 plant species. Physically, the park is exceptional with limestone sinkholes and waterfalls and is home to a variety of wildlife, including wolves and cougars.

This camp runs to one night ahead of the 2016 AGM hosted by Comox Valley Naturalists so pack to stay the following three nights in Comox! More great outings and talks.

A full schedule for the Mitlenatch Camp is posted on our website www.bcnature.ca. Registration will start on Wednesday January 6, 2016 at 9:00 am, by phone in only 604 985 3057 - Phones will be answered starting at 9:00 am. This trip requires mobility (not wheelchair or walker accessible) for Mitlenatch trip and also the hike and possible second boat trip.
Focus on IBAs: Magical Mitlenatch Island

By Krista Kaptein

Screeching cries of Glaucous-winged Gulls, excited piping of Black Oystercatchers, low growling of Steller’s Sea Lions, underscored by the soft rush of incoming waves – a symphony of nature sounds animates Mitlenatch Island, the small rocky island which supports one of the largest seabird colonies in the Salish Sea. Mitlenatch means “calm waters behind” in the Coast Salish language, and though the waters may sometimes be calm, the island is never quiet. At its location four km south of Cortes Island, the tides from around the north and south ends of Vancouver Island meet, increasing the biological richness of the surrounding waters.

Much has been written about and much studied on Mitlenatch Island, designated an IBA in the mid 1990 with at least three bird species nesting in significant numbers on the island; Pelagic Cormorant (about 7.4% of the estimated National population); Glaucous-winged Gull (just over 1% of the estimated North American population, and as much as 8.4% of the estimated national population); and Pigeon Guillemot (just over 1% of the estimated national population). In addition, as many 300 Marbled Murrelets have been observed foraging around the island during the summer. Marbled Murrelets have been identified as nationally threatened. Mitlenatch Island also supports about eight pairs of Black Oystercatchers, 50 pairs of Northwestern Crows, and is an important moulting site for post-breeding Harlequin Ducks. Double-crested Cormorants are a recent addition to the nesting populations. From 1993 they have been nesting along cliffs immediately above the pelagics. Their nest counts vary; this year, 35 nests were counted. The surrounding marine area for at least a five km radius is important for wintering Grebes and Scoters.

The biodiversity of Mitlenatch Island has attracted various research programs since the 1960s and led to its designation as a Provincial Park in 1961. The 35.5 ha island, several smaller rocky islets and 119 ha surrounding waters (300 m beyond the high tide line) are all included in Mitlenatch Island Provincial Nature Park. Despite the Class A Park protection, one of the key conservation issues is the disturbance of the nesting seabirds by boaters. Each year, close to 2,000 visitors travel to the island. In the 1980s, volunteers began to assist BC Parks in protecting the island, which led to the establishment of the Mitlenatch Island Stewardship Team (MIST) in 2010.

MIST volunteers provide a protective presence for the nesting seabirds, and are responsible for infrastructure, educational activities, data inventory collection and habitat protection on the island - all needed to ensure the long-term conservation. Teams of volunteers live on the island from April to September, in one-week shifts. The volunteers greet visitors and advise them of the park rules; provide information about the flora, fauna, and marine life, natural and cultural history; record visitor numbers for BC Parks; maintain trails and park facilities; remove invasive plants; and participate in citizen science initiatives including recording birds, surveying intertidal life, and monitoring plant flowering.

In 2015, Jan O’Brien took over the role as coordinator of MIST and as Caretaker of the Mitlenatch Island IBA. “Our whole family immediately fell in love with Mitlenatch,” says Jan, a volunteer since 1997. “While we liked greeting the visitors and opening their eyes to the many charms of Mitlenatch, the solitary times on the island up at the gull blind tracking the development of the gulls, watching the bald eagles creating mayhem as they cruised over the gull nests, or observing the otters swimming with their young in the evening were very special. One of the most exciting weeks was in August 2013 when we were responsible for the beached bird survey. We discovered 18 Glaucous-winged Gull corpses over the week. At first we were mystified, then we spotted a Peregrine Falcon and learned that the clues left - eviscerated body with plucked feathers - were typical of a Peregrine. Like most MIST volunteers, we fiercely value the exceptional role Mitlenatch plays in the Georgia Strait ecosystem and feel privileged to play a small part in protecting it.”

Mitlenatch Island is notable for the number of nesting Glaucous-winged Gulls, from 1000-3000 individuals. In early April, the season of my own volunteer week over the past few years, the gulls in their breeding plumage look absolutely perfect with brilliant white heads and chests, and soft grey wings. With a week on the island there is ample time to observe all aspects of their daily lives. The birds were paired up and courting, choosing nest sites and gathering a few materials to surround their sites which are a simple scrape on the rocky ground. For ground-nesters, remote islands such as this are ideal, with few predators. Mitenatch visitors are not allowed to bring pets ashore, as that would be extremely disturbing to the birds – this enforcement duty is one of the most important tasks of the island stewards.

In early April, the days on the island are quieter than nights, with few human visitors. The gulls fly offshore to feed on fish in the Strait, returning to their chosen sites for the night. A great commotion would arise from the gulls when Bald Eagles flew over the colony, especially at dusk. Much of the colony would rise up in the air with a tremendous racket of calls and cries, wheeling over the rocky outcrops until the threat was gone.

Although I gained a new fondness for gulls on Mitlenatch, to me several other seabirds on the island were even more appealing. One of my favourites also nests on the island - the Pigeon Guillemot, with its elegant streamlined shape and striking breeding plumage. On calm days they would come ashore at Camp Bay, close enough for me to appreciate some of their most special features, like the bright red feet and brilliant red mouth. Another favourite species with colourful appendages, Black Oystercatchers, also nest on Mitlenatch. Their high-pitched piping becomes quite familiar after some time on the island. They also provide endless opportunities for photos with their constantly entertaining activity.

On a small island, it is tempting to imagine that its entirety can be fully known and studied – but much of Mitlenatch remains a mystery, and there is always more to be discovered. BC Nature is hosting a trip to Mitlenatch in May 2016, an opportunity for more naturalists to discover this magical island. *
The Land Conservancy of B.C. (TLC) and the Ecoforestry Institute Society (EIS) have now signed an agreement to transfer ownership of Wildwood Ecoforest to EIS in exchange for a $900,000 contribution. The agreed upon offer includes $110,000 in TLC creditor forgiveness and $790,000 in direct funds.

TLC acquired Wildwood Ecoforest from Merv Wilkinson and his family in 2000 with TLC Member and donor support, with the goal of operating the site as an example of Merv’s practice of sustainable ecoforestry.

The agreement includes a covenant and management plan to be approved by ecoforestry expert Herb Hammond to ensure the operation continues in Merv’s vision.

To accomplish the transfer of Wildwood Ecoforest to EIS, TLC will need to seek the approval of the Supreme Court of B.C. Madam Justice Fitzpatrick has ruled that she has the jurisdiction to over-rule the bylaw provision that was a hindrance to the transfer of properties declared inalienable by TLC.

“We have worked carefully and diligently to implement the Plan of Arrangement and ensure that TLC is in compliance with the Charitable Purposes Preservation Act (CPPA) to ensure donors’ intentions of charitable gifts continue,” said Briony Penn, Chair of TLC’s Board. “The Board and I are pleased that we could come to an agreement for the best use and future care of Wildwood. We are on track to do what we intended since entering CCAA two years ago; our properties will remain protected through appropriate new ownership and covenants while we raise funds to repay creditors.”

TLC will bring the offer to Court by early December. The agreement calls for the transfer of the property to be completed by December 11, 2015. Funds from the sale will pay TLC creditors according to the agreed upon Plan.

About The Land Conservancy of BC:
The Land Conservancy of BC (TLC) is a non-profit, charitable Land Trust working throughout British Columbia. TLC’s primary mandate is to benefit the community by protecting habitats for natural communities of plants and animals. Founded in 1997, TLC is membership-based and governed by an elected, volunteer Board of Directors. TLC relies on a strong membership and volunteer base to help maintain its operations.

About the Ecoforestry Institute Society:
The Ecoforestry Institute Society is a charitable non-profit society established in 1995 and comprised of ecoforestry and associated professionals. They have been the official managers of Wildwood forest since 2001 and volunteer their expertise, time, money and passion to steward Wildwood in an ecologically sustainable manner and to further the science and practice of ecoforestry in general.
"Play, Clean, Go" - Lillooet Regional Invasive Species Society

By Jacquie Rasmussen

The Lillooet Regional Invasive Species Society (LRISS), would not be in existence without our helpful partnerships. The Lillooet Naturalist Society was instrumental in the set up and establishment of LRISS. Approximately four years ago, the Lillooet region was one of the last areas that did not have a regional committee managing invasive species. LRISS is one of 17 regional committees in the province of BC and the Lillooet Naturalists Society (LNS) gave us essential support (administrative and board members), to get our committee up and running. Since that time, LNS has continued to collaborate with LRISS on projects, grants and our Board. Most recently, LNS supported our successful application to BC Nature and the BC Naturalists’ Foundation for educational features.

One of LRISS’s main programs is outreach and education to prevent the spread and establishment of invasive species. We focus on audiences and events that can reach the largest amount of people with the greatest diversity of backgrounds. Our local newspaper helped us to design Four Invasive spotlights for our local paper and a tourism guide feature. Our goal is to educate people about the invasive species that are of greatest concern in our region as well as activities that can cause their spread. You can see one of these features next to this article. It highlights recreational activities and actions recreationalists can take to “Stop invasives in their Tracks”. Many of the images and messages originate from the successful Play, Clean, Go campaign.

Last year we entered into partnership with Play, Clean, Go out of Minnesota, USA to focus on outdoor recreation’s role in the spread of invasives. LRISS recognizes the natural beauty and diversity of our region and the use of this environment for recreational activities. Play, Clean, Go offers partnering organizations the use of their branding, images and logo to send a consistent message. Their website shows 196 partner organizations spanning two Canadian provinces and 31 US states www.playcleango.org. Consistent and clear messaging is key to educating the public and this is the reason LRISS felt it was important to partner with Play, Clean, Go.

LRISS has definitely expanded its capacity and reach to educate the public about invasives because of our partnerships. We continue to seek out new partners as well as to foster our current ones. LNS’s President Vivian Birch-Jones and her Board continue to provide resources, inspiration and helpful feedback for our organization. LRISS thanks LNS, BC Nature and The Naturalists’ Foundation for supporting our work.

---

Help Prevent The Spread Of Invasive Plants and Animals.

- Arrive with clean gear.
- Burn local or certified firewood.
- Use local or weed-free hay.
- Stay on the trails.
- Before leaving, remove mud and seeds.
- Clean, Drain, Dry your boat.

For more information or to report sightings contact: Jacquie Rasmussen 250-354-4292 www.lriss.ca

---

The natural world needs you.

Turn your ideals into action through innovative programs that balance theory and practice across all aspects of ecological restoration.

**Ecological Restoration**

**PROFESSIONAL SPECIALIZATION CERTIFICATE**

Register now for the next course:

**Ecosystem Design through Propagation of Native Plants**

Starts Jan. 2016 (online)

**Restoration of Natural Systems** DIPLOMA/CERTIFICATE

Applications to both programs are accepted year round.

Offered as a partnership between the School of Environmental Studies and the Division of Continuing Studies.

E-mail: artssc1@uvic.ca
Phone: 250-721-8458
www.uvcs.uvic.ca/sustainability/

---

**Active Pass Nature and Arts Festival**

**April 22-24, 2016**

Galiano Island, BC

festivalactivepass.com

festivalactivepass2016@gmail.com
Clean that lens, get outside, and send us your best nature photographs. We are fortunate in that the majority of our naturalist amateur photographers spend so much time out in nature and are there to capture those special moments and great wildlife photos. Three categories will be judged this year; flora, fauna and landscapes of BC. Photographs will need to be available in large jpeg format - no cropping - for purposes of submission, you may make them into small size photographs for emailing, but original large format will be required should your entry win. Deadline for submissions is February 15, 2016. Please send your submission to manager@bcnature.ca. When emailing, please provide name of photographer and description of photograph. All photographs submitted may be used by BC Nature in promotions for the BC Nature Magazine, enews and BC nature website. Winners must be members of either BC Nature or a Federated BC Nature Club. First prize in each of the categories will grace the cover of the the Spring, Summer and Fall Bcnature magazine plus prizes!

Whiskeyjack Nature Tours
Tours for Naturalists

***ARIZONA IN FEBRUARY***
17-28 February 2016 (12 days) Cost $2990CAD (dbl occcup) from Phoenix
Arizona is home to some of the most unique, famous and unforgettable landscapes in the world. The Grand Canyon, the mesas and buttes of Monument Valley and the silhouette of a saguaro against a golden sunset are images so familiar that we have grown up with them since childhood. The tour includes The Grand Canyon, Monument Valley, Canyon de Chelly, Sedona, and the Sonoran and Chihuahuan Deserts. Join us for a midwinter tour to the blue skies and fascinating deserts of this famous state.

***SOUTHERN UTAH & DEATH VALLEY***
20th April-1st May 2016 (12 days) Cost $3350CAD (dbl occcup) from Las Vegas
Planet Earth contains an infinite variety of landscapes, but in southern Utah random geologic events have conspired to create rare, unexpected and beautiful consequences. The mighty Colorado River, aided by the arid erosion cycle, has waged battle across the eons with the sandstone strata and fashioned landscapes so unique and bizarre that they are more redolent of an extra-terrestrial origin. We visit Bryce Canyon, Arches NP, Canyonlands NP, Monument Valley, Zion Canyon and more + Death Valley.

***YUKON & DEMPFSTER HIGHWAY***
Tour I 18-29 June 2016 (12 days) Tour II 1-12 July 2016 (12 days)
Cost $3900 (dbl occcup) + GST from Whitehorse
The Yukon is a fabled land whose very name evokes archetypal images of wilderness and a frontier populated by colourful characters. On this tour we will experience both the natural and human landscapes of this fascinating and beautiful land, visiting the Klondike, the Dempster Highway, and the Mackenzie Delta. The Dempster is renowned as a naturalist’s paradise with its varied and beautiful landscapes, sought-after bird species, large mammals and we visit at the peak of the wildflower display. At latitude 66N we cross the Arctic Circle and enter the Land of the Midnight Sun. We also fly across the Mackenzie Delta to Tuktoyaktuk on the Arctic Ocean.

Leader: Tony Greenfield
WHISKEYJACK NATURE TOURS
BOX 319, SECHLT, BC, VON 3A0
Tel: 604-885-5539 E: m: tony@whiskeyjacknaturetours.com
Details & itineraries at website: www.whiskeyjacknaturetours.com
BC reg #34415

Federated Clubs of BC Nature

Northern Amphibian Nats. Soc. - Terrace
Prince George Naturalists - Prince George
Quesnel Trail & Nature Club - Quesnel
Timberline Trail & Nature Club - Dawson Creek
Williams Lake Field Nats. - Williams Lake
Vancouver Island

Arrowmount Naturalists - Parksville
Comox Valley Naturalists - Comox
Cowichan Valley Nat. Soc. - Duncan
NanOOSE Bay Naturalists - NanOOSE Bay
Pender Island Nats - Pender Island
Rickert EcoSoc. - Victoria
Rocks Point Bird Observatory - Victoria
Salt Spring Trail & Nature Club - Salt Spring Island
Victoria Nat. History Soc. - Victoria's

2016 - New Club - Campbell River

Volunteer position with BC Nature: Conservation Co-Chair

Conservation is one of mandates of BC Nature. From time to time, conservation issues arise and are brought by individuals or clubs to BC Nature for support. These are handled by the eight member Conservation Committee. At present we have a Conservation chair, mainly for Northern BC issues, but we have a need for a co-chair to assist with the southern part of BC. Please contact:
John Neville songbird@saltspring.com.

BC Nature Photo Contest

Lower Mainland Clubs
Abbotsford-Mission Club - Abbotsford
Alouette Field Naturalists - Maple Ridge
Bowen Nature Club - Bowen Island
Burke Mountain Naturalists - Coquitlam
Chilliwack Field Naturalists - Chilliwack
Delta Naturalists Society - Delta
Friends of Semiahmoo Bay - White Rock
Langley Field Naturalists - Langley
Little Campbell Watershed Soc. - Surrey
Nature Vancouver - Vancouver
Pender Harbour & District Wildlife Soc.
Royal City Naturalists - New Westminster
Squamish Isl. Env. Cons. Soc. - Squamish
Stoney Creek Env. Comm. - Burnaby
Sunshine Coast Nat. Hist. Soc. - Sechelt
Surrey Environmental Partners - Surrey
Whistler Natural History Society - Whistler
White Rock Surrey Naturalists - Surrey
WildLifeResearch - Burnaby

Kootenay Clubs
Fernie Nature Club - Fernie
Rocky Mountain Naturalists - Cranbrook
West Kootenay Naturalists - Castlegar

Thompson Okanagan Region
Central Okanagan Naturalists' Club - Kelowna
Kamloops Naturalists - Kamloops
Lillooet Naturalists - Lillooet
Nicola Naturalists - Merritt
North Okanagan Naturalists Club - Vernon
North Shuswap Naturalists - Scotch Creek
Oliver Okanagan Naturalists - Oliver
Shuswap Naturalists - Salmon Arm
South Okanagan Naturalists - Pentiction
Vernon Millan Forks Field Naturalist - Princeton

Northern BC
Bullday Valley Naturalists - Smithers
Kitimat Valley Naturalists - Kitimat
MacKenzie Nature Observatory - MacKenzie

BCnature Winter 2015
Each year NatureKids BC (formerly the Young Naturalists’ Club of BC) helps more than 1500 children get outdoors to play, imagine and explore in nearby nature.

You can help too, this fall please make a donation online at www.naturekidsbc.ca or by cheque.

Charity #: 84961 1926 RR0001

“Today, we went on our first trip with NatureKidsBC and loved it! I have never seen my daughter as engaged with an activity as she was at the bird banding station. It was fascinating for us too. Looking forward to more.” Marina, parent

Thank you and Happy Holidays to all the amazing NatureKids families, dedicated volunteers, passionate nature mentors, generous donors, board, & staff.

NatureKids BC
1620 Mt. Seymour Rd.
North Vancouver, BC V7G
www.naturekidsbc.ca
info@naturekidsbc.ca

Congratulations to Anne Murray Awarded the Douglas H. Pimlott Award

By Nature Canada

The Douglas H. Pimlott Award is Nature Canada’s highest honour, awarded to an individual whose outstanding contributions to Canadian conservation serve as an example to us all. Nature Canada is proud to announce that Anne Murray is the 2015 Douglas H. Pimlott Award Winner. Anne’s dedication to nature conservation is truly inspiring. Anne volunteers with a number of nature organizations, including Nature Canada, Bird Studies Canada, BC Nature, Delta Farmland and Wildlife Trust, Delta Naturalists’ Society, and the Royal Society for the Protection of Birds, UK. Anne was active for many years with the Boundary Bay Conservation Committee in highlighting the importance of the Fraser River delta and its migratory birds, and in successful and unsuccessful campaigns to protect habitat there. She co-authored Ours to Preserve which documented environmental goals around Boundary Bay, Delta, and was endorsed by numerous groups and municipalities. Anne also authored A Nature Guide to Boundary Bay and Tracing Our Past and A Heritage Guide to Boundary Bay, which explores the ecological history of the Fraser delta area. Anne has been deeply involved since 1996 with the Canadian Important Bird Area Program, and is a member of the BC IBA Program Conservation Team that oversees the province’s IBA Caretaker Program. As a Trustee of the Delta Museum and Archives Trustee she initiated the successful Delta History Hunters program. Anne has received recognition for her conservation work, including the John Davidson Award from Nature Vancouver, the Queen’s Golden Jubilee medal, and BC Nature’s Elton Anderson Award. Anne’s accomplishments are huge, but how did she get where she is today? We asked Anne to tell us more about how she became one of BC’s leading lights in nature conservation.

“I cannot remember a time when I did not like nature: birds, animals, flowers, even snakes! Yet I was not born in the countryside, or even in the suburbs, but in a city neighbourhood of London, England, when it was the second largest city in the world. Where did it come from, this innate love of nature? I grew up surrounded by buildings, streets, vehicles, and the visual scars of World War II bombing, so it must have come from my parents and early teachers. My father lived as a child in Eden — in his eyes the most beautiful valley in England, lying between the sands of the Solway Firth and the hills of Cumbria. My mother was born amid the gentle scenery of rural Sussex, later moving to the coastal county of Essex. Between them they knew the names and ways of animals and birds, and every flower that grew. Life’s waves and the war tossed them into London, where they grew vegetables and roses in rented gardens. My first bird watching was seeing house sparrows come to crumbs outside our kitchen window and watching the evening flights of starlings wheeling overhead as they headed to roost.

Few city children have the benefit of a woodland in their school yard, but the convent school had a farm and large grounds. We picked sticky buds of chestnut trees to watch them open in spring, and listened to the birds singing. One day, I found a grass snake in the long grass by the playing field. A teacher took us on nature walks in the wood, which had bluebells in spring and a deep hole that we were told was a fox burrow. Foxes still live in London; I recently saw a mother and two kits early one morning, beside the railway tracks at Hammersmith Station.

I loved books that had nature pictures: an encyclopedia was a particular favourite. My siblings and I would peruse the exotic birds and animals illustrated in glorious colour and would try and choose “a favourite”. As presents, I received four Ladybird nature books written by Grant Watson, illustrated by Charles Tunnicliffe, starting with “What to look for in spring”. I seldom had a chance to see the English countryside shown in the books – our family had no car – but I longed to inhabit it. Tunnicliffe’s beautiful watercolours showed nature and rural life with great accuracy. These were not cartoons and the colours were subtle and natural. I pored over them for hours.

When I was about twelve, I put nest boxes and bird feeders in our garden, and joined the Junior Bird Recorders Club of the Royal Society for the Protection of Birds (RSPB), which almost contemporaneously changed its name to the Young Ornithologists’ Club. I became an enthusiastic member, wearing my kestrel pin with pride and saving up my pocket money for field trips to RSPB reserves. My parents bought me bird books and encouraged my interest, and kindly naturalists took groups of us kids out to look for nightjars in the dark, on a boat trip to Havergate Island to see rare nesting avocets, and introduced us to the bitterns and marsh harriers of Minsmere. When the time came to leave school and interview for university, I headed to Exeter in Devon. Flocks of roosting gulls flew overhead in the pinkish dusk of a February evening, and I could smell the sea on the breeze. It was where I spent the next three years, and began my adult life.

I tell this story to illustrate that yearning to connect with nature can be found in many places, cities included. For children to connect with nature, and all the pleasure that brings, all it takes is some help from the adults around them. It is never too late. One of my greatest pleasures today, is sharing the sights and sounds of nature with others, and watching their interest grow as their knowledge increases.”

Book Review

Ian McTaggart-Cowan: the legacy of a Pioneering Biologist, Educator and Conservationist
Reviewed by Alan Burger

Dr. Ian McTaggart-Cowan died in April 2010, just two months short of his 100th birthday. This volume, a celebration of B.C.’s most famous zoologist and nature educator, was initiated as a birthday gift to him, with contributions from his numerous former students, colleagues and admirers. In a greatly expanded format the book serves as a detailed record of his many achievements, publications, and awards. It also highlights his overwhelming influence in academia, wildlife ecology and conservation.

The book also provides a valuable documentation of the changing face of wildlife research and conservation in British Columbia over Ian’s long and active lifespan. When he began his career as a zoologist in the 1930s, there was little known about the diversity, ecology and distributions of B.C.’s fauna. McTaggart-Cowan played a major role in building up our knowledge over the next 80 years. His career began with gun-toting horseback expeditions to collect birds and mammals in remote areas for museum collections. It ended with computerized analyses, DNA-based genetics and electronics-driven field research. The anecdotes and photos in the book wonderfully capture this evolving and dynamic field biology.

The book has three major parts. Part 1 summarizes McTaggart-Cowan’s life, beginning as a precocious nature-nut growing up in North Vancouver, through his student years, his career at the BC Provincial Museum and University of British Columbia (as Zoology professor, head of department and Dean of Graduate Studies) and his productive retirement years. One is left amazed at the energy, intelligence and strategical skill of this man. His interactions with students, administrators, business people and politicians were tactful, tactical and sometimes hard-nosed, but always decent and fair.

Part 2 comprises memorial accounts by 100 former students, colleagues and others influenced by this remarkable man. Although somewhat repetitious, these accounts provide personal insights into the influence that he had over many highly-respected biologists, administrators, TV personalities and more.

Part 3 is a catalogue of the legacy that Ian McTaggart-Cowan left, covering his numerous honours and awards, his scientific and other publications, and the theses that his 122 students produced. He was the Honorary President of BC Nature and BC Nature’s Outstanding Naturalist Award is named after him. I was fortunate to have met Ian a few times in his later life and was aware of his stature as BC’s pre-eminent zoologist, but I learned from this book of his prowess in other fields too. He was a medal-winning philatelist and gardener (with rhododendrons and alpine plants his specialties) and a Canadian pioneer in producing science and nature shows for TV.

The book is profusely illustrated with photographs. They include McTaggart-Cowan in the many stages of his life, his students and colleagues and also numerous photos of the animals that he and his students studied. Few will read this hefty book straight from cover to cover but it is rewarding to dip into regularly to learn more about the man and our province, and to enjoy the photos.

Ian McTaggart-Cowan touched the lives of hundreds of BC Nature members. For older naturalists who knew him this book is a very detailed reminder of his talents, enthusiasm and generosity. For younger generations of naturalists in B.C. this book provides a valuable insight into the tremendous steps taken in the past 100 years to document and understand the biological diversity of our province. The authors of this book talk about a “golden age” of wildlife science in B.C. during McTaggart-Cowan’s era. But I think they are wrong. There is still much more to learn and cherish about the organisms and ecosystems in our province. By looking back at the massive contributions of Ian McTaggart-Cowan one hopes that future generations of naturalists and ecologists will be inspired to build on his legacy.

Leave a Lasting Gift

Donate to The Nature Trust of BC in your will to help conserve the natural diversity of wildlife, plants and their critical habitats for future generations.

For more information, contact Deb Kennedy at debkennedy@naturetrust.bc.ca or call 604-924-9771 or 1-866-288-7878
www.naturetrust.bc.ca
Vortex Razor HD binoculars combine advanced optical technology and premium components to deliver astonishingly bright, high-definition images with true colour fidelity and edge-to-edge sharpness. Top quality optics at a competitive price provide a great investment in your outdoor life.
South Chilcotin Camp in the Bridge River Valley

By Betty Davison

Back in mid-August, 20 hardy members (myself included), headed up to the South Chilcotin Camp to learn about life in the high-country. Our home base was Chilcotin Adventure in Gold River, where we were housed in comfortable rooms throughout the ranch and enjoyed family-style meals in the main lodge.

After a meet and greet on Thursday late-afternoon, we managed to get in a small interpretive hike before dinner where we encountered white-tailed deer on the trail and heard and saw about 12 types of birds. An evening presentation on The Bridge River Valley - a unique Eco system was presented by Wilderness Stewardship Foundation, gave us the history of the area and the types of terrain that we could expect to see. From grasslands in the Gun Creek area to glaciers and the Chilcotin plateau where we would make the trek to the Alpine area. We were a bit too late to see the wildflower filled meadows but we did see deer and moose. This area is home to wolverine, bighorn sheep, mountain goats and of course grizzly bears. We struck out on all but the moose! One of the hikes did take the group to a grizzly bear den (thank goodness it was an empty one!) which appeared a lot smaller than what you would think.

Early morning birding was led by our own Alan Burger and through the early morning mist, and throughout the weekend we encountered 54 different types of birds, 11 species of mammals and three different types of amphibians...Pied-billed and Red-necked Grebes, a few types of warblers to Ruffed and Spruce Grouse to name a few. Western Toads, Columbia Spotted Frog, Mule and White-tailed deer to Moose were just part of the “spotting” we did. The group split into two, one group learning to saddle up their horse for a short trail ride in preparation for our Alpine ride the next day and the other group did a short hike up to some scenic points that oversaw the whole of the Bridge River Valley and the showed the shear size of Gun Lake. Our Friday evening presenter, Shelley Leech, tribal chief of T’it q’et (aka Lillooet band), gave an informative talk on the First Nations history in the area and then a hardy few went on an owling expedition with Alan.

Saturday dawned sunny, clear and promised to be a warm day, even up in the alpine. After early morning birding, the hardy hikers were dropped off at the halfway point, to start the hike up to the alpine and the already saddle-sore horse back riders started up the long trail to the alpine. Both groups met up around lunchtime in the alpine. The views were spectacular but we were a little to late in the season to witness how spectacular the wild flowers are in the alpine. We did see some Dwarf Lupin, Showy Asters and Cutleaf Anemone.

Our Saturday night presenter, Francis Iredale, RPBio, did a great presentation on the study of grizzly bear in the area using information received by GPS radio-collars. From the information gained from the movement of the Grizzly bears in the area, they were able to ascertain their foraging habits and the areas they frequented. A sample of the size and weight of the collar was passed around and I can only assume that the size of the Grizzly Bear would make this collar seem like a small necklace on a human! A very concise report on their findings is available on either the Lillooet Naturalists website or the government website by searching “Grizzly Bear Habitat Management.”

The social aspect of this camp had a few of our members doing sing-a-longs (without a campfire due to the ban) and some evening discussions on how to treat our saddle sores!

All in all, it was a very educational weekend and it was so nice to have met so many hardy BC Nature members.

TD Wealth

My goal is to help you reach yours

Benefit from a one-on-one relationship with a dedicated professional Investment Advisor. Receive sound financial advice while staying involved in the key decisions about your portfolio.

B. Kevin Neill, BA
Investment Advisor
604-482-8309
1-888-668-9966 (toll-free)
kevin.neill@td.com

Birder, Naturalist, Environmentalist
Socially responsible investing available

Now accepting new clients.
Start a conversation today.

TD Wealth Private Investment Advice is a division of TD Waterhouse Canada Inc., a subsidiary of The Toronto-Dominion Bank. TD Waterhouse Canada Inc. — Member of the Canadian Investor Protection Fund. 6/7 The TD logo and other trademarks are the property of The Toronto-Dominion Bank or a wholly-owned subsidiary, in Canada and/or other countries.
Status Report from BC Nature on Roberts Bank Terminal 2

By Roger Emsley

A. Overview and Status

The Federal Minister of Environment in 2014 determined that the Port Metro Vancouver (PMV) Roberts Bank Terminal 2 (T2) project should be subjected to the highest level of environmental assessment, an Independent Panel Review. This triggered the commencement of the environmental assessment – one of the first major projects to be assessed under the revised environmental assessment regulations passed by the previous Conservative government.

The assessment is managed by the Canadian Environmental Assessment Agency (CEAA). CEAA oversees the process, manages periods of public and First Nations input, and sets in process the Federal Panel Review under direction from the Minister of Environment. Details are on the CEAA website http://www.ceaa.gc.ca

August 2014 CEAA published draft terms of reference for the Panel and opened these up for public comment. Despite significant comment from the public and agencies the terms of reference were adopted with only minor changes. One of the main areas of contention was the issue of “care and control”. PMV maintained that it is only responsible for the project footprint within its care and control, being the man-made island to be built for T2 and the port causeway. This eliminated any assessment of the impacts of increased road and rail traffic impacts – air pollution, traffic congestion, noise, etc. beyond the port footprint. It also eliminated shipping impacts, in particular the volume of vessels passing through the Juan de Fuca and Georgia Strait and the noise and disturbance to marine life. CEAA did finally require PMV to report on shipping impacts but bizarrely the Panel will not be able to make recommendations on shipping impacts.

PMV submitted their Environmental Impact Statement (EIS) to the CEAA in April 2015. It was open for public First Nations and agency comment as to the completeness of the EIS, with comment required by June 15 2015.

A large number of comments were submitted by the public, stakeholders, First Nations and government agencies at federal, provincial, regional and municipal levels. That said the BC Government and its Environmental Assessment Office had no comment to make.

On July 31 CEAA advised PMV of additional information that they would be required to supply. Once again CEAA ignored many of the comments and asked for relatively little additional information. Additionally CEAA refused to advise how it had handled the comments it had received, except for those provided by First Nations.

(Note: after repeated badgering of CEAA they have now advised me of how they handled my comments).

On October 26 PMV provided the additional information to CEAA and this response was posted to the CEAA website. The expectation is that CEAA will now:

- Open the latest PMV submission up for comments on the completeness.
- Following the appointment of Panel members (expected to be three) by the Minister of Environment, establish and manage the Federal Review Panel.
- Open up the EIS for further comment as to its sufficiency and technical merit.
- Call for Panel hearings.

B. Issues

1. The main issue has been and continues to be the environmental impact of building a man-made island one third the size of Stanley Park, slap-bang in the middle of the Fraser Estuary. Roberts Bank is a dynamic estuarine environment, the very fulcrum of one of the top ten “Most Important Bird Areas” in the world and the ecological crucible of the Fraser Estuary. The risk is enormous. T2 will result in irreparable harm to one of the most important areas of wildlife abundance and biodiversity in the whole of North America. The T2 project is likely to cause damage if not outright destruction of bird species, especially the Western Sandpiper. It will cause further disturbance to fish and crab habitat, to areas critical to the very survival of marine mammals, especially the already endangered Orca population. The risks are severe; the impacts will be immediate, irreversible and cannot be mitigated. PMV claims that the environmental impact is minimal and can be mitigated. But what if PMV has got it wrong? What if there is huge environmental impact and there is significant damage and degradation to the entire ecosystem of this area of Roberts Bank? What happens if their various hypotheses turn out to be incorrect – and there is massive destruction of biofilm, accompanied by population level declines in bird species including the Western Sandpiper that relies on the unique biofilm found in and around Brunswick Point? PMV could well be wrong. Environment Canada in 2005 warned that further development on Roberts Bank could break the chain of the Pacific Flyway. If this unravels and Roberts Bank is compromised there will be significant international implications. There will be international and public outcry and the possibility of boycotts for both BC and Canada. Is Port Metro Vancouver really prepared for that consequence and the huge associated risk?

2. Biofilm. Perhaps the single largest issue ignored by CEAA is that of the impacts on biofilm in the area around Brunswick Point where millions of birds migrate through and feed. One of the many failures in PMV’s Environmental Impact Statement for T2 is its incomplete and heavily flawed analysis of the potential impacts on the unique biofilm that is present on Roberts Bank.

It appears from the work that PMV carried out in this area that they identified the outcome that they wanted to portray and then built a series of hypotheses to support that outcome. The many PMV failures in carrying out a robust assessment of the importance of the Roberts Bank biofilm are becoming all too clear. Notably a number of submissions to the CEAA on the T2 environmental assessment identified and documented a flawed and incomplete environmental assessment. One of the more important submissions was from Environment Canada: http://www. ceaa.gc.ca/050/documents/p80054/101866E.pdf

3. Marine Mammals. Five marine mammal species (Southern Resident and Transient Orca, Harbour

BCnature Winter 2015

Continued Page 24
Roberts Bank Con’t

Porpoise, Humpback Whales, Fin Whales and Grey Whales are frequent users of the waters surrounding Roberts Bank as well as the shipping channels used by vessels calling at terminals on Roberts Bank (as well as other PMV terminals). These mammals use the deeper waters off the banks and river channels to feed on herring, salmon and eulachon during spawning migration runs. Orcas reside in the area year round and are listed as an endangered species. PMV admits in their Environmental Impact Statement that the Orcas are likely to be further endangered by T2, but then preposterously suggests that T2 impacts are of no consequence since the orcas are already listed as endangered.

Not only will T2 impact marine mammals’ abilities to access food sources (especially orcas that depend on Chinook and Chum Salmon), but in addition they are increasingly impacted by both physical disturbance and vessel noise that both transit the precise area where they tend to reside as well as when they are at dock. T2 will significantly increase the number of vessel transits and thus the noise will be much worse. The noise has been shown to impact the whales’ ability to both communicate and navigate.

4. Container Trade Forecasts. The business case for T2 relies on aggressive forecast expansion in container trade volumes. The projections for future PMV container growth are way over stated. The assumptions of effective capacity of existing West Coast container terminals and the potential for their expansion are not correctly portrayed. There are significant rail issues. It appears from recent information that has been gathered that PMV is relying on handling ever increasing volumes of US containers, especially through T2. Much of the recent US container growth in Vancouver results from the 2014/2015 labour unrest in the main US west coast ports of LA/LB, Oakland and Seattle-Tacoma. These labour disputes are now over and the US ports are operating normally. Furthermore, Seattle-Tacoma (which handled 3.4 million containers in 2014) has plans to make improvements that will increase their capacity to 6 million containers by 2020. Hence they will have enough capacity to handle US container growth for years to come, without ever building T2.

Take out the recent growth at PMV in handling US containers and we find that growth in Canadian trade has been low – way less that three percent over the years from 2008 to 2015. At these levels the planned expansions at existing PMV terminals (Deltaport, Vanterm and Centterm plus the significant expansion at Prince Rupert) are more than enough to satisfy Canada’s trading needs for many years to come.

PMV’s mandate is “To facilitate Canada’s trade objectives, ensuring goods are moved safely, while protecting the environment and considering local communities.” Handling US containers, which adds little or nothing to the Canadian economy, is not part of their mandate. Hence there is no justification for the T2 project that is almost entirely dependent on poaching more U.S. bound cargo.

Off-Road Vehicle Regulations Now in Force

By Bev Ramey and Joan Best

November 1, 2015 marked the date that the Regulations for Off-Road Vehicles became mandatory. You may recall the Off-Road Vehicle Act passed in March 2014, marking the culmination of years of effort to improve management of ORVs. Some naturalists may even remember efforts of the Federation of BC Naturalists extending back as far as the 1970s when concerns were raised with government officials regarding damage to sensitive habitats by off road motorized vehicles.

The Act requires one-time registration (and again if vehicle is sold) for all ORVs, including All-Terrain Vehicles, Quads, Side-by-Sides, Motorized Trail Bikes and Snowmobiles when driven on Crown land and including resource roads. Registration includes the display of a clearly visible numbered plate or decal. Registration is managed through ICBC, so records are in the provincial data base, accountable and readily connected with enforcement officials. Registration will assist with tracking theft, so this has appeal to many of the motorized enthusiasts. The Regulations also include safety requirements.

On November 17, 2014 registration ($48) began as a voluntary step. 41,478 ORVs voluntarily registered under the Off-Road Vehicle Act between November 17, 2014 and October 31, 2015.

As of November 1, 2015, registration is now mandatory. Poor driving practices by an ORV driver, such as harassing wildlife, or damaging sensitive habitats, can be reported to Conservation Officers or the RCMP. Wherever possible, note the plate/decal number. Anyone who witnesses a contravention of the Off-Road Vehicle Act is encouraged to call the Natural Resource Violations Hotline at 1 844 NRO-TIPS (1 844 676-8477). Please visit the website of the Ministry of Forests, Lands and Natural Resources Operation for further information http://www.for.gov.bc.ca/mol/ovr/

Milestones which led to the ORV framework decision include:

• In 2005, the former Coalition for Licensing and Registration of Off-Road Vehicles in BC, composed of ten stakeholder associations including BC Nature, produced a report with 47 recommendations to address longstanding ORV management issues in BC.

• In 2006, the Coroners Service of British Columbia, Child Death Review Unit, recommended an improved ORV regulatory framework to help address ORV accidents resulting in injuries to youth and deaths.

• Over the years, the Union of British Columbia Municipalities (UBCM) has passed ten resolutions requesting an improved ORV management regime in BC.

Joan Best and Bev Ramey have represented BC Nature on advisory committees to implement legislation dating back to about 2001 and since 2009 on the government’s Off Road Vehicle Joint Advisory Group. They welcome this news.
The Elders Council for Parks Outreach program 2015 included many great programs. One of these programs included a walk around Yew Lake on Cypress Mountain. The talk and walk was aptly named “Birds, Butterflies and Blooms” and we were fortunate to have our naturalist extraordinaire, Al Grass, and Katherine Steig (Friends of Cypress Provincial Park) lead this event. This event really spoke to the dedication of community groups who are passionate about protecting these stunning natural areas, in collaboration with BC Parks. Without their expertise and hard work, these areas would not be as accessible to the public and the natural displays such as the wealth of unique and rare plants wouldn’t be seen for all to enjoy. It is an ongoing project to educate the public about the need to protect this recreational area from the increase in public use and also to maintain the trails for accessibility. With the trails being so well maintained, they allow for those with physical challenges to safely and comfortably enjoy them as well. Paul Rutherford, is one such individual, who travels on public transit from downtown Vancouver and has never let MS get in the way of enjoying a visit to the wild, taking photographs or bird watching. Paul is a great user of these accessible trails. This just confirms that there are so many health and educational benefits to being outdoors in the wild.

Partnerships this year included a program between Hope Morris (Deep Cove Heritage), and Alex Douglas (Mount Seymour History Project) who together created an interesting handout called History of Old Buck Trail on Mt. Seymour. Another one of our hikes led us around Killarney Lake at Crippen Regional Park (Bowen Island) where we met Owen Plowman, President of the Bowen Island Conservancy, who gave us a colourful introduction on their mandate to preserve natural areas, as well as an account of a trip to Apodaca Provincial Park.

We forged a new partnership with Parkgate Library offering again this year “Building Our Log Cabin on Mount Seymour in 1948” a multi-media presentation created by Ross Regan that attracted 40 participants! This event brought to life the extensive culture of ski-cabin lovers who want to protect and preserve this unique local history. In September, Hollyburn Heritage Society member, Donald Grant, and Iola Knight presented their most recent showing “Searching for the Nasmyth Mill Site on Hollyburn Ridge”.

In September we also participated in North Shore Culture Days. We also had Janna Kumi with a workshop on Japanese woodblock printing at the Heritage Centre, leading us through a little history and some of the Japanese printmaking techniques. Participants learned how to carve a wood block and then print it on special mulberry papers.

Book Review

Born to the Wild, Journals of a National Park Warden in the Canadian Rockies
Author: Rob Kaye
Grey Wolf Books, 2015
Price: $21.95 (Amazon)
Reviewed by Daryl Calder

In his new book, Born to the Wild - Journals of a National Park Warden in the Canadian Rockies, former park warden Rob Kaye recounts his boyhood adventures growing up in Jasper National Park. As a warden patrolling the vast mountain wilderness that he called home, Kaye gives a vivid account of warden’s lives in the park.

Born and raised in the town of Jasper, Alberta, Kaye was fascinated by nature, and entranced by the Rocky Mountains from an early age. Kaye’s early adventures led to a lifelong passion to protect the natural environment. Kaye worked with the Canadian Wildlife Service for three years before realizing his dream of becoming a park warden with Parks Canada. His 33-year career included one year as a park ranger in Australia. Rob specialized in backcountry management and resource conservation. He retired in 2010 and lives on Vancouver Island.

A gifted writer, Kaye describes backcountry wildlife encounters, tales of adversity, and accounts of survival. Kaye relates heartfelt and humorous stories about the wardens most trusted companions - the riding and pack horses that shared their high country travels. The author’s passion for the preservation and protection of wilderness and wildlife is a theme which runs throughout the book. Kaye invites the reader to ponder the future of our national parks. In reflecting on his career with the Warden Service, he illustrates how the few remaining (and no longer pristine) wild spaces are threatened by over use, commercial development, habitat loss and climate change. Kaye is very diplomatic when bravely addressing the major conflicts currently faced by Parks Canada. His unique writings tell of a warden service in transition from the ‘good old days’ to it’s present dismantled state. This book is a plea for greater protection of our mountain spaces and species in the face of politics vs. science and development vs. conservation. The concluding chapters describe the policy changes and horrific losses of personnel and resources suffered by Parks Canada under recent governments.

This book should be of interest to all Canadians concerned about the very uncertain future of some National Parks and the responsible agency, Parks Canada. This agency is responsible for the almost impossible task of balancing park recreation and tourism while preserving the ecological integrity of these former wild spaces.

If you have ever known or longed for the wilderness, you must read Rob Kaye's beautifully illustrated Born to the Wild.
The Power and Influence of a Western Painted Turtle

By Hugh Westheuser

In April 2009 two students of Ecole KLO Middle School in Kelowna, were jumping into a sand-pit on the school property when they accidently uncovered a nest with remnants of 10 turtle eggs. Of these 10, the remnants contained, two live baby turtles, but sadly the other eight were dead. They were the endangered Western Painted Turtles *Chrysemys pida bella*, listed by COSEWIC as a species of Special Concern. Although the students were not part of her class, they took the turtles to the School’s Environmental Educator, Madame M. Hamilton. In addition to a Master’s Degree in Education, she is a life-long naturalist, and a member of the Central Okanagan Naturalists' Club (CONC). She immediately recognized the value the turtles were to her teaching program and with the aid of her home class students the turtles were nurtured in a terrarium and reared seven days a week until their release, two months later. (Students would continue to monitor the sand-pits for young turtles over subsequent years; all removed and reared in the terrarium for subsequent release.)

This was the start of a journey that not only involved teaching, but would attract the interest of many other students, teachers, District School Board, parents and volunteers from within the community including local governments; many businesses and organizations, like CONC. The students made presentations to these organizations raising awareness, funds and volunteer help. They narrated and produced a video that won First prize of $1000 at B.C. Green Games. It can be seen at: http://2011.bcgreengames.ca/component/project/?id=348

An investigation disclosed an adult female turtle likely found the long-jump sand-pits as a place to lay her eggs, having emerged from a small pool of water at the edge of school property. The pond was in fact the only open area of what was Fascieux Creek before it was buried. The creek channel ran between the school buildings and the School sports field (Top right image). Sometime in the 1980s, the School Board had the creek buried because students were playing in the muddy water and there were liability concerns. A half galvanized pipe was first laid in the creek bed and covered by plywood, with several inches of concrete poured on top. Madame Hamilton recognized that if the creek could be uncovered and restored there were many valuable learning experiences possible for students, who were now willing to tackle a restorative project. It would take a committee of parents, school officials, biologists, naturalists and others to help manage and guide this project.

First the long-jump sand-pits were taken out of service design plan made. With the School Board on side, the real work began, and many students were engaged over several years of the project. Volunteer work was measured in hundreds of hours; over $200,000 in funding was raised and an additional $200,000 of “in-kind” work was recognized. In mid October 2015 the now open and restored creek was officially celebrated. CONC played a significant role throughout the life of the project, including both money and key volunteers. Madame Hamilton and her ECO Club were recognized by B.C. Nature in 2011 for the work started on this restoration with the “BC Nature Recognition Award.”

But the real value of the project was incalculable to students. They can take the credit for inspiring a community to act for nature, along with their dedicated teacher, who guided them through the ups and downs. Today Mallards, geese, Painted Turtles and fish are enjoying Fascieux Creek again. Endangered Western Painted Turtles can move and influence a whole community, with a little help from their friends. *
Nicomekl Riverbank Cleanup in South Surrey
By Leona Breckenridge

“What’s all the white stuff?” asked the school kids peering through my spotting scope on their field trip to Elgin Park on the banks of the Nicomekl River. Puzzlement gave way to dismay as we realized the bend in the river was littered with styrofoam, washed up docks and other trash. Something had to be done.

The Nicomekl River is only 34 km in length, arising in Langley and emptying into Mud Bay in South Surrey with a sea dam near King George Boulevard. Recreational use is concentrated on the lower five km. There are two marinas, boat moorage at floats in a river basin, and private docks along the south side of the riverbank. The northwest side of the river is diked, with prime farm land lying to the north. The dike is managed by the Surrey Diking District and there is no public access.

It was not until White Rock Surrey Naturalists (WRSN) was granted access to the dike by the property owner that we discovered the true extent of the environmental damage and the challenge facing us.

How was it possible that a river in the Lower Mainland, enjoyed by so many, could have a mess like this on its banks?

The answer lies in the widespread use of unencapsulated styrofoam (more correctly referred to as expanded polystyrene or EPS) as flotation for public and private docks, combined with the lack of individual and community concern for the garbage we generate.

WRSN has held three cleanups this year, and removed 26,300 lbs. (12 metric tonnes) of garbage, styrofoam, and derelict dock materials (four 40-cubic yard dumpsters) from a four km stretch of the riverbank. We have not yet finished the job.

The large blocks of styrofoam and most of the pieces that are greater in size than 2.5 cm have been cleaned up. We have filled more than a 40-yard dumpster with styrofoam alone but many small bits remain. The impossibility of removing these from the riverbank is illustrated by the photo.

Our primary focus to date has been to clean up the styrofoam before it could break down further, but we will be exploring what can be done to prevent the usage of unencapsulated expanded polystyrene as flotation in our waterways. Any expertise and assistance that can be provided in this regard would be appreciated.

Our secondary focus has been to clean up all the garbage. We estimate that we picked up over 5000 food and beverage related items, over 2000 plastic bits and pieces, and more than 200 shoes. We found fishing gear, car seats, bumpers, 26 tires, propane tanks, a fire extinguisher, fridge, safe, dinghy, wet suit, life jacket, air mattress, Asian flag, painting, syringes, hookah pipe and a baggie that appeared to contain some sort of illicit drugs.

The cleanups are recorded as Great Canadian Shoreline Cleanups and were featured in the Vancouver Aquarium’s blog “Mega Cleanups from Groups Small and Large” on April 28, 2015. http://www.aquablog.ca/2015/04/mega-cleanup-groups-small-and-large/ The GCSC data forms include a count for tiny trash less than 2.5 cm and we tried to count the small bits at the last cleanup. With only a quarter of the garbage counted we had recorded 1400 styrofoam pieces and over 300 plastic bits. The garbage volume was simply too great to make this a practical effort and we shoveled the rest into bags.

We could not have accomplished what we have without the assistance of the City of Surrey which provided a chainsaw, backhoe, personnel, and arranged for the dumpsters donated by Progressive Waste Systems. The repeated access permitted by the farm owner, for people and heavy equipment, was essential to our cleanup effort. We were assisted by volunteers from the Langley and Delta Naturalists Clubs, Friends of Semiahmoo Bay Society, Progressive Waste, family members, and friends. Donation of clean-up supplies by Home Depot also expedited our project.

We will be continuing our efforts next year and if you wish to be informed of future cleanup dates please email wrsn@shaw.ca.

By Leona Breckenridge

Discover Our Natural World.
Hanuman Langur
in India

Visit QuestNatureTours.com to browse our expert-led small group tours

The shocking amount of debris found on the banks of the Nicomekl River
From snakes to spawn, wildlife congregations show richness of local habitat

By Anne Murray

It is not uncommon to see eagles, seals, and salmon around the Lower Mainland, but some kinds of wildlife sightings can be more unusual. Often a species is virtually invisible in the wild until a surprising congregation occurs. In the spring we have seen two fascinating events on the shores of Boundary Bay in South Delta: an amazing gathering of garter snakes within the dike, and a massive spawn of herring just offshore. Such phenomena illustrate the importance of the Fraser delta for a wide range of animals, and remind us that even if we do not commonly see them, many different species depend on these habitats.

The 500 hibernating garter snakes were found when workers began shoring up the Boundary Bay dike at Beach Grove in late February. The work crew had no idea the snakes were there until they started digging; the local schoolchildren knew of the den (hibernaculum) and raised the alarm. The snakes began to wake up once the rocks were moved, so they were taken by the bucketful to Burnaby’s Wildlife Rescue Association (WRA). The large number of snakes took everyone by surprise. It took a few days, but they were eventually all settled into cool, dark buckets lined with damp sawdust; some were tagged for later study. A month later, still in a state of hibernation and with the dike work completed, they were released back to Boundary Bay on March 22. It is hoped that once the weather becomes warmer, they will wake up and disperse through the marsh habitat as normal. It is unfortunate that they were disturbed, and moving them was a risky strategy, but hopefully no lasting harm was caused.

Garter snakes are an important small predator in the ecosystem. It is not uncommon to see one basking on the dike in summer or moving secretively through the marsh grasses, but large congregations are unusual in the Lower Mainland. The ones in the hibernaculum were Western Terrestrial Garter Snakes (Thamnophis elegans), also known as Western Garter Snakes, a species widely distributed in Western Canada. They were identified by a herpetologist, Professor Patrick Gregory of the University of Victoria, and he explained to me that garter snakes are very variable in colour and size, so they can be confusing for even experienced naturalists to identify. Typically, the Western Garter is greyish-brown with three paler-coloured stripes down its back. The stripes are broken by two rows of alternating, dark-coloured blotches, the top row of which invades the mid-dorsal stripe, giving it a variably wavy appearance. Yolanda Brooks at WRA mentioned that the snakes were different sizes. This is to be expected as females are larger than males, and snakes keep growing throughout their lives, with the rate of growth slowing with age.

Western garter snakes are common in Fraser marshes, where they readily enter water, despite their “terrestrial” name. They consume a varied diet of slugs, earthworms, fish, frogs, nesting birds, and small mammals, and have a primitive constricting ability, sometimes coiling their bodies around mammal prey while biting them. Their saliva may be mildly poisonous. Live young are born between July and September and in fall the snakes cool and lower their metabolic rate, before entering a hibernaculum for the winter. According to Gregory, the Boundary Bay hibernaculum is much larger than average for our region, but in other areas of North America, winter dens of hundreds or thousands of garter snakes have been found.

From snakes to spawn: nature’s congregations are often spectacular. The waters around the Tsawwassen-Point Roberts peninsula recently turned milky-white, as Pacific herring spawned in the eelgrass beds. Herring numbers are influenced by fishing levels and water conditions (e.g. temperature) and have fluctuated quite dramatically since the 1940s. Many people remember wonderful herring spawns along the west side of Boundary Bay from 1960 through to the late 1970s, which attracted thousands of birds into local waters every March. By the late 1980s, the spawning event had moved to other locations further north in the Strait of Georgia. The year by year changes in location and size of the annual spawn were very well-documented on the B.C. coast from 1930 onwards by the Department of Fisheries and Oceans, and there is a time-lapse map on their website http://www.pac.dfo-mpo.gc.ca/science/species-species/pelagic-pelagique/herring-hareng/herspawn/pages/beach7-eng.html. Recent years have seen more favourable environmental conditions in the water for herring and more controlled levels of fishing, though there is now also a lucrative roe (egg) fishery. As a consequence, herring populations seem to be on the rebound and returned to spawn once again in Boundary Bay, attracting diving ducks, loons, grebes, and other birds. The spawning activity also spread to Roberts Bank eelgrass beds, on the west side of the Tsawwassen peninsula near the ferry terminal.

As the fish deposit their roe on the fronds of native and Japanese eelgrass growing in the water, seals, sea lions, and hundreds of scoters and other waterbirds congregate around them, lured by the easy pickings. Shorelines are covered with the jelly-like roe, picked over by gulls and other birds, before they slowly dry out. Nature’s abundance is more than enough to feed the flocks, yet it is amazing that any eggs survive to adulthood.

These two contrasting congregations, of snakes and herring roe, illustrate the wealth of our local habitats, on land and sea. Such sights are often marvelled over by local residents but can go unrecognized by wide-scale planners and developers, who too frequently consider the Fraser delta as a wasteland waiting to be urbanized. Yet for those with an interest, there is always something fascinating to observe down by the water.

BC NATURE CONFERENCE AND ANNUAL GENERAL MEETING

May 12 to May 15, 2016
Hosted by the Comox Valley Nature
“Celebrating Nature for 50 Years and 100 Years of Conservation”

PROGRAM

For changes/updates visit www.comoxvalleynaturalist.bc.ca/bc-nature-agm

Thursday, May 12
Registration from 8 am – 12 pm & 3 pm – 6:30 pm

Workshops
Lunch on your own

Workshops
Executive Meeting, Filberg Centre Rotary Hall
Directors Meeting, Filberg Centre, Rotary Hall
Supper on your own
Wine & Cheese with Cash Bar Filberg Centre
Pre-Conference Welcome
Terry Thormin Photography Show
Leslie Baird, Mayor of Cumberland
Kevin Flesher, Poet Laureate
Dr. Richard Hebda: Climate Change in the Comox Valley
Krista Kaptein (Important Bird Areas)

Hall closes

Friday, May 13
Registration: 8 am – 10 am & 3 pm – 6:30 pm

Morning Birding Outing
Artisan Breakfast at Filberg Centre
Welcome: Andy Everson & Norma Morton

Presentations: Two Concurrent Sessions
Ecological Conservation Economics: N. Dawe
Tree Diseases: Dr. D. Morrison
West Coast Mimulus Genetics: Dr J. Friedman
Project Watershed Wetland Conservation: Dan Buffett

Coffee

Lunch on your own
Tsolum Restoration: Jack Minard
Estuary Restoration: J. Sutherst

Field Trips (Mitlenatch leaves at 12:30 pm*)
Cash Bar, Filberg Centre
($) CVNS 50th Birthday Dinner
Presentation of CV Plant List: Helen Robinson
Keynote Speaker Dr. Briony Penn
Hall closes

Saturday, May 14
Registration: 8 am to 10 am & 3 pm – 6:30 am

Morning Birding Outing
Artisan Breakfast at Filberg Centre
BC Nature AGM, Keynote Speaker, Steven Price BSC

Lunch on your own
Field Trips
Cash Bar, Filberg Centre
($) AGM Banquet: M/C Loys Maingon
Awards
Keynote Speaker: Dr. Val Schaefer
Raucous Auction with Loys Maingon
Hall closes

Sunday, May 15
Registration: 8 am to 10 am & 3 pm – 6:30 am

Morning Birding Outing
Artisan Breakfast at Filberg Centre
BC Nature AGM, Keynote Speaker, Steven Price BSC

Field Trips
Cash Bar, Filberg Centre
($) AGM Banquet: M/C Loys Maingon
Awards
Keynote Speaker: Dr. Val Schaefer
Raucous Auction with Loys Maingon
Hall closes

Field Trips (Quadra Island leaves at 7:45 am*)

Notes
($) means extra costs; see Registration Form
Th = Thursday, F = Friday, S = Saturday, Su = Sunday
* Field trips involving BC ferries are time sensitive. ** Not covered by BC Nature insurance; requires CVN waiver

Workshops: Child Nature Workshop (Th)
Birding Workshop (Th)
Photography Workshop (Th)
Comox Valley Rare and Endangered (Th)
Watershed Restoration (Th)
**BC NATURE CONFERENCE AND ANNUAL GENERAL MEETING MAY 12-15, 2016**

Hosted by Comox Valley Nature

“Celebrating Nature for 50 Years and 100 years of Canadian Conservation”

### REGISTRATION FORM

For changes/updates visit [www.comoxvalleynaturalist.bc.ca/bc-nature-agm](http://www.comoxvalleynaturalist.bc.ca/bc-nature-agm)

| Name: _______________________________________________________________________________________________________________ |
| Clubs: _________________________________________________________________ _________________________________________ Director     Executive |
| Address: _____________________________________________________City: ________________________________________________________________________ |
| Postal Code: _________________________Tel: __________________E-mail (Please print/type clearly):______________________________________________ |

#### Options (GST included where applicable)

<table>
<thead>
<tr>
<th>By Mar 15</th>
<th>After Mar 15</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full registration: includes all Presentations, all Field Trips, and Workshops on May 12-15 except those requiring additional charges</td>
<td>$135</td>
<td>$150</td>
</tr>
<tr>
<td>or Thursday May 12 only (Workshops, Presentation, Wine and Cheese with Cash Bar)</td>
<td>$40</td>
<td>$50</td>
</tr>
<tr>
<td>or Thursday May 12 Evening Social only (Presentation, Wine and Cheese, with Cash Bar)</td>
<td>$20</td>
<td>$25</td>
</tr>
<tr>
<td>or Friday May 13 only (Presentations, Field Trips, and Workshops)</td>
<td>$75</td>
<td>$80</td>
</tr>
<tr>
<td>or Saturday May 14 only (Field Trips and Annual General Meeting)</td>
<td>$60</td>
<td>$70</td>
</tr>
<tr>
<td>Friday May 13 CVN Birthday Supper with Cash Bar</td>
<td>$35</td>
<td>$40</td>
</tr>
<tr>
<td>Friday/Sunday May 13/15 Mitlenatch Tour with Guy Monty (Car Pool and Boat)</td>
<td>$85</td>
<td>$95</td>
</tr>
<tr>
<td>Friday/Saturday May 13/14 Innisfree Farm Botanic Garden</td>
<td>$10</td>
<td>$15</td>
</tr>
<tr>
<td>Saturday May 14 Banquet with Cash Bar</td>
<td>$45</td>
<td>$50</td>
</tr>
<tr>
<td>Saturday May 14 VIU Marine Research Station (Car Pool)</td>
<td>$20</td>
<td>$25</td>
</tr>
<tr>
<td>Saturday/Sunday May 14/15 Tree Island Trip (Car Pool, Includes Boat, requires CVN waiver)</td>
<td>$20</td>
<td>$25</td>
</tr>
<tr>
<td>Saturday May 14 Kevin Flesher Environmental Poetry Tour</td>
<td>$10</td>
<td>$15</td>
</tr>
<tr>
<td>Sunday May 15 Quadra Island Trip (Includes Bus, Ferry, BBQ Salmon Lunch and Museum Tour)</td>
<td>$87</td>
<td>$95</td>
</tr>
<tr>
<td>Sunday May 15 Mount Hellwell on Hornby Island (Car Pool, includes Ferry)</td>
<td>$35</td>
<td>$40</td>
</tr>
<tr>
<td>Friday May 13 CVN Birthday Supper with Cash Bar</td>
<td>$35</td>
<td>$40</td>
</tr>
<tr>
<td>Friday/Sunday May 13/15 Mitlenatch Tour with Guy Monty (Car Pool and Boat)</td>
<td>$85</td>
<td>$95</td>
</tr>
<tr>
<td>Friday/Saturday May 13/14 Innisfree Farm Botanic Garden</td>
<td>$10</td>
<td>$15</td>
</tr>
<tr>
<td>Saturday May 14 Banquet with Cash Bar</td>
<td>$45</td>
<td>$50</td>
</tr>
<tr>
<td>Saturday May 14 VIU Marine Research Station (Car Pool)</td>
<td>$20</td>
<td>$25</td>
</tr>
<tr>
<td>Saturday/Sunday May 14/15 Tree Island Trip (Car Pool, Includes Boat, requires CVN waiver)</td>
<td>$20</td>
<td>$25</td>
</tr>
<tr>
<td>Saturday May 14 Kevin Flesher Environmental Poetry Tour</td>
<td>$10</td>
<td>$15</td>
</tr>
<tr>
<td>Sunday May 15 Quadra Island Trip (Includes Bus, Ferry, BBQ Salmon Lunch and Museum Tour)</td>
<td>$87</td>
<td>$95</td>
</tr>
<tr>
<td>Sunday May 15 Mount Hellwell on Hornby Island (Car Pool, includes Ferry)</td>
<td>$35</td>
<td>$40</td>
</tr>
<tr>
<td>New club membership (required for non-members)</td>
<td>$30 - $40</td>
<td></td>
</tr>
</tbody>
</table>

#### BC Nature membership available through [www.bcnature.ca](http://www.bcnature.ca) OR

Comox Valley Nature (Individual memberships $30, Family $40)

### TOTAL

$30 - $40

#### Will you attend the Directors/Executive meeting? Please circle:

- [ ] Executive
- [ ] Director

Please select, for each day, your 1st, 2nd and 3rd choices for workshops and/or field trips in the table below. Field trips: maximum 15 people, some exceptions apply.

$ indicates extra costs for the activity. For prices, see table above. For more information, see our website: [https://comoxvalleynaturalist.bc.ca/bc-nature-agm/](http://https://comoxvalleynaturalist.bc.ca/bc-nature-agm/)

<table>
<thead>
<tr>
<th>THURSDAY MAY 12</th>
<th>FRIDAY MAY 13</th>
<th>SATURDAY MAY 14</th>
<th>SUNDAY MAY 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning Workshops</td>
<td>Morning Field trips</td>
<td>Morning Field trips</td>
<td>Morning Field trips</td>
</tr>
<tr>
<td>Child Nature Education</td>
<td>Morning Birding Outings</td>
<td>Morning Birding Outings</td>
<td>$7 - Tree Island Sand Dunes</td>
</tr>
<tr>
<td>Birding Workshop</td>
<td>Afternoon Field trips</td>
<td>Afternoon Field trips</td>
<td>$7 - Mitlenatch Bird Sanctuary</td>
</tr>
<tr>
<td>Afternoon Workshops</td>
<td>Harold Macy Woodlot</td>
<td>Cumberland Community Forest</td>
<td>$7 - Mount Hellwell &amp; Hornby Isle</td>
</tr>
<tr>
<td>Nature Photography for Beginners</td>
<td>Estuary Archaeology/Restoration</td>
<td>Estuary Archaeology/Restoration</td>
<td>Comox Lake Ecological Res.</td>
</tr>
<tr>
<td>CV Rare and Endangered Species</td>
<td>$7 - VIU Marine Research Station</td>
<td>Varier Garry Oaks/Towhee</td>
<td></td>
</tr>
<tr>
<td>Watershed Restoration</td>
<td>Point Holmes Foreshore</td>
<td>Tree Island Sand Dunes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$7 - Mitlenatch Tour</td>
<td>Morrison Creek Headwaters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kin Beach Native Plant Botany</td>
<td>Bear Creek Park Hetchery/Ducks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Morrison Creek Headwaters</td>
<td>$7 - Innisfree Farm Botanic Garden</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alan Brooks &amp; Mack Laing Tour</td>
<td>$7 - K.F. Environmental Poetry tour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$7 - Innisfree Farm Botanic Garden</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mountainaire Avian Rescue Soc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### DIETARY REQUIREMENTS *

- [ ] Vegan
- [ ] Vegetarian
- [ ] Lactose Free
- [ ] Gluten Free

How to register:

1. Complete the above Registration Form (one form per person).
2. A signed Waiver Form is required for each Registrant. Read carefully and sign. Registration and Waiver forms are available at [https://comoxvalleynaturalist.bc.ca/bc-nature-agm/](http://https://comoxvalleynaturalist.bc.ca/bc-nature-agm/).

* Please indicate all dietary requirements clearly with check mark. We will accommodate if possible.

Confirmations will be sent by Email or Canada Post. For more information email to cvbcagm@gmail.com

Further details on the AGM, Accommodations, and Conference Updates are available at [https://comoxvalleynaturalist.bc.ca/bc-nature-agm/](http://https://comoxvalleynaturalist.bc.ca/bc-nature-agm/).

No refunds after April 1. Prices indicated may be subject to change due to circumstances beyond our control.
Bats are BC's main group of nocturnal flying mammals, distinguished from other terrestrial mammals by their use of sophisticated echolocation and powered flight, both important for navigation and catching their prey, which primarily consists of flying insects. BC is home to 16 of the 19 species of bats in Canada. Unfortunately, one bat in BC is red-listed (threatened) and seven are blue-listed (special concern). Federally, four species are identified as at risk, with the Little Brown Myotis and Northern Myotis emergency listed to Canada's Species at Risk Act as endangered on December 17, 2014. Some good news is that a recovery strategy for these two species and one for the Pallid Bat is scheduled for completion by Environment Canada in 2015-16. This article will focus on describing some important aspects of bat ecology and what naturalists can do to help conserve this threatened mammalian order.

Foraging bats: Most bats forage twice each night, feeding around dusk for up to two hours and again just before dawn. The timing and amount of feeding can vary by species and situation (e.g., females raising young may feed repeatedly each night). Insect-rich habitats that bats frequent include streams, ponds, meadows, along forest edges, and near light sources. In Clayoquot Sound, bats were significantly more common within 30 metres of water, suggesting riparian areas are extremely important.

Roosting: Day roosts are sites that bats use to sleep, hide from predators, raise young, and maintain their body temperature. These can be natural habitats, such as rock crevices, caves, tree cavities, tree branches, and under tree bark, or human-constructed structures, such as attics, bat boxes, and spaces under shakes and shingles. Breeding females congregate in maternal roosts in the location they were born. These roosts can do to help conserve this threatened mammalian order.

Ecological Services: Bats are best known for their important role in controlling insects, such as mosquitoes and crop pests. Non-reproductive bats will consume the equivalent of about 50% of their body weight in insects each night, while reproductive females will consume up to 110% of their body weight.

Observing Bats: Watching bats or looking for roosting sites is best done on a warm, dry evening during spring and summer and from a good vantage point. Bats can often be seen near water when they leave their roosts to get a drink. Sit still and quiet, listening for potential squeaks or clicks that many bats admit before emerging. Unfortunately, the Spotted Bat is the only species in BC that emits sounds our ears can detect. An echolocation device, such as an Anabat, can be used to help differentiate bat species by the frequency of their call. Differentiating species by sight can be hard to impossible due to physical and behavioural similarities, thus capturing bats in a mist net or harp trap is often necessary. Bat Watch (http://www.bcbats.ca) is a citizen science initiative in BC to monitor bat populations. Citizen scientists count the number of bats as they emerge from a known roost site, ideally four times a summer.

Bat Conservation: Naturalists play a vital role in the conservation of bats. In 2006 the North Okanagan Naturalists Club helped count bats along the middle portion of the Shuswap River and in 2012 the Lillooet Naturalists and landowners conducted an acoustic inventory of bats using a Songmeter, recording 5,831 bat detections from eleven species. The Bulkley Valley Naturalists and Fraser Valley NatureKids Club have both held successful community bat box building workshops.

The following is a summary of actions naturalists can take to benefit bats:

Habitat Enhancement: Plant species that provide habitat for night flying insects (e.g., moths); provide a source of open water (e.g., pond); and install and maintain bat boxes in suitable locations.

Conservation: Avoid disturbing and report maternal roosts and hibernation sites, both critical and very sensitive habitats, to the BC Conservation Data Centre (http://www.env.gov.bc.ca/cdc/); retain large trees and those with deep and loose bark, removing only those portions needed for safety; retain or enhance old barns and other structures as potential roost sites; use environmentally friendly means to control pests and weeds; and report and submit dead bats to BC's Animal Health Centre (http://www.agf.gov.bc.ca/ahc/).

Advocacy: Work with provincial and federal government representatives to reduce or eliminate threats to bats, such as habitat loss (e.g., forested areas, wetlands, caves or mines), pesticide use, and wind turbine mortality, and support local businesses (e.g., agricultural producers, nurseries, retail stores) that sell neonicotinoid free plants (https://www.wildernesscommittee.org/blog/where_go_plants_season). Organizations: the Community Bats Projects of BC (www.bcbats.ca) is a network of organizations across BC that appreciate help with their activities to conserve bats. Bat Conservation International (http://www.batcon.org/) is a great organization helping bats locally and globally.

Greg Ferguson is a naturalist and registered professional biologist who's passionate about the conservation of species at risk and their habitats in British Columbia.
Canada's Pacific Coast: Paradise for wolves

By Pacific Wild

A thousand islands rise out of the Pacific ocean, standing as guardians of Canada’s vast temperate rainforest stretching along the central and north coast of British Columbia. Here, on the outer islands and mainland watersheds, genetically distinct wolves are found making their living largely from the marine environment.

For over 20 years, staff at Pacific Wild have been following multiple packs over many seasons, as these enigmatic and fascinating sea wolves fish for salmon, hunt seals and sea lions on wave-washed rocky haul-outs, search the perimeters of their island territories for beached whales, and scour beaches for barnacles, clams, and more. Despite decades of observation, their uncanny relationship with the Pacific Ocean is still a new and fascinating field of study.

Sea wolves are morphologically different than wolves of the interior; they are smaller and, due to the geographic isolation of the remote, rugged and uninhabited islands where they live, coupled with the lack of human persecution, they have retained and safeguarded levels of genetic diversity lost in most other wolf populations. This means these sea wolves have not experienced the extreme levels of human-caused mortality that has forced their continental kin through various degrees of genetic bottlenecks.

Today, there are few examples of wolf populations that have not suffered high rates of artificial mortality, and this is one of the reasons that Pacific Wild is spearheading the initiative to have sea wolves recognized as an evolutionarily significant unit.

Following the sea wolves has given us great insight into this globally unique population of wolves, as well as an intimate perspective on the inner workings of their home, the Great Bear Rainforest. Like wolves elsewhere, sea wolves play a key role in a complex ecosystem. While their inland kin work to maintain ecosystem function, sea wolves do the same with one added responsibility: transferring marine-based nutrients from the ocean into the rainforest.

Despite being an evolutionary and ecological wonder, sea wolves face challenges against which they have no evolved defences — human persecution, climate change, industrial forestry, trophy hunting, and more.

Regardless of their uniqueness, the provincial government does not provide a single area where these (or any) wolves are protected from the hunting and trapping designed to "control" other populations of wolves in the province that are (unfairly) blamed for harassing livestock or endangered species. Not even for eco-tourism or scientific research.

A hunting ban and broader habitat protections are paramount to the effective management of this genetically distinct population. Until that changes, Pacific Wild will continue to urge the government of British Columbia to recognize that sea wolves meet all criteria for evolutionary significant unit designation, and to adopt broader evidence-based, humane, wolf management policies. For details on how you can help, visit www.pacificwild.org/wolves.

Pacific Wild is a non-profit dedicated to developing and implementing conservation solutions to protect the land, sea, and communities of the Great Bear Rainforest.