

The Friends' 2005 Annual General Meeting

On March 4, 2005, the Annual General Meeting of The Friends of Ecological Reserves took place at the David Strong Building at the University of Victoria. The meeting was very well attended and it was a pleasant surprise to see Dr. Ian McTaggart-Cowan, the grandfather of the study of wildlife ecology in Canada in attendance. In addition to committee reports, President Don Eastman gave his annual update to The Friends which you can read in its entirety starting on page 2. After the break, Dr. Jane Watson, the pre-eminent sea otter researcher gave an engaging and absorbing presentation on her work in Checleset Bay and the new questions it has raised. Look for her piece on kelp forests inside this issue. (*another photo on page 3*)



President of the Friends Don Eastman addresses the Annual General Meeting



1

Speaker Jane Watson in conversation with co-op student Morgan MacCarl and Dr. Ian McTaggart-Cowan

Inside ...

President's Message	2
Why Comox Bluffs ER Contains	
Out-Of-Range Plant Species	4
E-Log	5
Field Trips	6
The Friends Meet With Nancy Wilkin	6
Letter from Barbara Westerman	7
ERs of Southern Vancouver Island	8
Research Grants Awarded	10
From Kelp to Snails	11
Canadian Hydrographic	
Survey Charts	13
Calendar	13
State of ERs Report – An Update	14
State of the ERs – What Comes Next	14
Website of Interests	16



The LOG is published 3 times a year by the Friends of Ecological Reserves to promote the establishment, management and maintenance of Ecological Reserves in British Columbia. *The LOG* is distributed to members, volunteer wardens, affiliates, supporters, government, friends and the enquiring public.

The views expressed in this newsletter are not necessarily those of the Friends. Articles for publication are invited. The deadline for submissions for the Summer issue of *The LOG* is July 1, 2005

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President's Message

Last year, the President's message contained three parts. First, I extended thanks to those who have contributed to the Friends over the previous year. Second, I reflected on our accomplishments. Third, I looked ahead to 2004 and set out some objectives for the Friends. I would like to follow a similar format for 2004, as these topics seem as useful now as they did almost a year ago.

All volunteer organizations rely on the dedication of a few people to keep them active, attractive and alert! I wish to acknowledge the work of the eleven Directors that make up the Board, and our three staff members that carry on the day-to-day activity of our organization.

Again, I wish to especially thank Peggy Frank who continues to find time in her busy schedule to work on so many aspects of the Friends' business, including offering her home for us to meet (And a thank you, too, to Peter for tea and cookies). Tom Gillespie continues as our Membership person and as our mail "picker-upper." Evelyn Hamilton has reviewed applications for research, and provided guidance in making those difficult decisions about how best to allocate our research funds. Mary Rannie and Marilyn Lambert continue to organize field trips, to Race Rocks and Trial islands, respectively trips that are immensely enjoyable and educational. As well, Marilvn provides her valuable perspective as the Warden on our Board. Lynne Milnes has been quite successful this year in that very important job of fund-raising. Alison Nicholson continues as our webmaster. and maintains and enhances our very popular website. Saila Hull took on the job of Treasurer this year, and she has helped us keep up-to-date on our finances.

The Board has been fortunate in having the support of three staff, without whom the Friends would founder. We have had major changes over the past year: Saila Hull has come

back to the Director's fold after a spell as our Office Manager. We were fortunate in having Santiago Alvarez take over from Saila, and he has been doing a great job for us as Office Manager. Another change has been in the bookkeeping department where Diane Wootton has stepped down after many years of dedicated service; her duties have been taken over by Tom Gillespie. One position has remained unchanged for us this year and that is Denise de Montreuil, the Editor of The Log. Thankfully, she continues in this position, and she does an amazing job of producing issue after issue of a fine journal, notwithstanding the tardiness of some her contributors... who shall remain nameless at this point! Her expertise and experience continues to support us by producing an interesting and informative journal.

As well as changes in our staff, we have had four changes in the Board. Nichola Walkden stepped down to spend more time with her family, including and especially because of her new baby. We also had some returning faces and one new face. As I mentioned earlier, Saila Hull has re-joined the Board. Another "returner" is Steve Ruttan, who has come back as a Director after a recess of several years. Our "new kid on the block" is Mike Fenger. Mike has brought a new perspective, new energy and new expertise to our Board, and we are pleased that he has joined us.

Two key groups have helped make 2004 a successful year. Members of the Friends provide us with critical financial support, through annual dues and donations. Without this support, we could not exist as an organization. And, of course, we thank the Wardens, those eyes and ears of the ecological reserve system, who provide an invaluable service not only to the provincial government, but also to the citizens of the province.

To all of you, the Board, the staff, the members of the Friends and the Wardens, thank you for your work and support over the past year!

At last year's annual general meeting, I set out some objectives for 2004 related to the Supporting the Wardens, *continued on page 3* "President's Message" continued from page 2 Funding Research, Providing Outreach, and Keeping Effective. In recounting our activities over the past twelve months, I would like to refer back to these targets to see how well we have done.

Supporting the Wardens...over the past year, we have made some progress:

- Assisted on the Warden's Handbook, and supported BC Parks staff who is working on the revision.
- Kept the idea of an annual gathering alive, and starting some initial planning for the next one in 2006.
- Continued to keep a watchful eye on how governmental policies, plans and programs could affect the Wardens and the ecological reserve system, both positively and negatively. Over the past year, we held three meetings with Nancy Wilkin, the Assistant Deputy Minister of Environmental Stewardship in the Ministry for Water, Land and Air Protection. We also met several times with BC Parks staff.

Funding Research...this has been an important year in this area:

- We initiated an assessment of the state of ecological reserves, and have made great strides, as is described elsewhere in this issue of *The Log*.
- We secured funding to advance our research program: this year we were very successful and hope to support as many as four or five research projects.

Providing Outreach: in 2004, we accomplished several objectives:

- We co-operated with the Cowichan Valley Wardens who are working to produce educational material on ecoreserves.
- We organized and held two successful field trips. On the Trial Island trip, we had 15 participants. On the Race Rocks trip, a total of 14 people participated plus several Pearson College students and Pearson guides, Gary Fletcher and Chris Blondeau.
- We produced three issues of *The Log*, and explored the value of distributing it electronically.
 We plan on beginning electronic distribution to those who want it in the next few months.

Keeping Effective: the main tasks we accomplished in 2004 were:

- Recruited three Board members Saila, Mike and Steve – and now have eleven Directors.
- We explored additional sources of funding, and met with some success with a grant from the BC government for our SER report.

All in all, we had a busy year, and have made some important progress in several areas.

Here are my thoughts on the year ahead for things we should try to complete. The list is not exhaustive, and I offer it for discussion and as a way of stimulating other ideas:

Supporting Wardens:

- Work at completing the updating of the Wardens' Handbook and orientation package.
- Get serious about planning the next Gathering for 2006.
- Continue keeping a watchful eye on governmental policies, plans and programs, and continue meeting with MWLAP staff and executive to communicate our concerns and our support.

Funding Research – in the coming year, I think we need to dedicate our efforts in four main areas:

- Complete and publish the "State of Ecological Reserves Report."
- Develop a list of research topics that the Friends believe is needed, and encourage appropriately qualified researchers to submit proposals.

- Compile a list of researchers who are interested in working in ecological reserves.
- Continue to explore additional funding to advance our research program:

Providing Outreach:

- Continue working on educational materials, in cooperation with interested clubs and organizations, e.g., revise the brochure on ER's.
- Organize field trips, with at least two in the Greater Victoria area (Trial Island and Race Rocks), and at least two elsewhere in the province.
- Produce three issues of *The Log*, and distribute it electronically to those who ask for it.
- Explore opportunities for joint membership in like-minded organizations, such as the Federation of B.C. Naturalists, the Canadian Parks and Wilderness Society and various land trusts.

Keeping Effective:

- Continue to explore additional sources of funding, especially building on the State of ER report.
- Make sure we continue to enjoy working together and sharing our passion for ecological reserves and the natural wonders of BC.

In closing my report, I want to once again thank all of those individuals who contributed to making 2004 a year to remember.



Jane Watson points out differences between river otter and sea otter pelts to board member Saila Hull

Why Comox Bluffs ER Contains Out-Of-Range Plant Species

by Chris Pielou

Comox Bluffs ER (47 ha), in the Comox Valley, Vancouver Island, is home to a number of interesting plants, which is why the Reserve was established (on April 30, 1996). Four of its botanical treasures are rare, blue-listed species, defined by the BC Conservation Data Centre as species of "special concern". These are Least moonwort, *Botrychium simplex*, one of the grape ferns; Macoun's groundsel, *Senecio macouni*; Dune bentgrass, *Agrostis pallens*; and Western St. John's-wort, *Hypericum scouleri*. They were observed there several years ago



Comox Bluffs Ecological Reserve



Shoreline vegetation at Comox Bluffs ER

by Adolf and Oluna Ceska, Hans Roemer and Betty Brooks; it's to be hoped they are still there, but so far, after one summer as the ER's warden, I have seen only the *Hypericum*.

Five other plants worth noting and protecting belong to species growing in outlying fragments of their main ranges. They are:

- American wild carrot, Daucus pusillus, a miniature version of Queen Anne's Lace to which it is closely related. In BC it grows only near the east coast of southern Vancouver Island, plus the Gulf Islands and adjacent mainland.
- Hairy manzanita, Arctostaphylos columbiana. It hybridizes with its close relative kinnickinnick where the two grow close together, producing hybrids known as Arctostaphylos X media which are obviously intermediate between their parents. They grow over much the same range as American Wild carrot and also in western Vancouver Island.
- Rocky Mountain juniper, Juniperus scopulorum, which is common in the Interior and the Rockies, and also along the east coast of VI and the Gulf Islands. It grows in Helliwell Park on Hornby Island, as well as on Comox Bluffs.
- Narrow sword fern, Polystichum imbricans. In BC this fern grows only in southern VI and in the southern part of the Fraser Canyon.

What these species have in common is their habitat. Their main ranges in BC are parts of the province with hot summers and with extensive dry, grassy, rocky lowland areas. The Comox Bluffs, although surrounded by wet raincoast forest, provide a small, outlying area of suitable habitat because of their geological origin.

continued on page 5

"Comox Bluffs..." continued from page 4

As you enter the ER at its eastern end, along the shore of Comox Lake, the first part of the walk is through shady Douglas-fir forest, beside a wide sandy beach. Not until you're half way through the ER does the scene suddenly change. Down at lake level, the beach ends abruptly to be replaced by a rock precipice rising steeply from the water. Inland from the shore, the gently undulating, low-lying forest gives way to steep rock bluffs. From cool shady forest you emerge onto hot sunlit slopes (weather permitting). The bluffs face south and because of their steepness, the sun's rays at midday in summer strike them almost at right angles. Not surprisingly, they are hot and dry for much of the summer.

Now for the geological difference that accounts for the conspicuous contrast between bluffs and forest: The bluffs consist of ancient molten magma, now hardened to basalt and forming the Karmutsen formation. It was extruded as lava from long cracks in the mid-ocean ridge on the sea floor about 250 million years ago (Triassic), when Vancouver Island was at the

bottom of the ocean far out in the Pacific south of the equator. This happened long before the shifting tectonic plate on which it lies had moved up to, and latched on to, the North American continent. The forest immediately east of the bluffs grows on much younger, sedimentary rocks, chiefly, sandstone, laid down under the ocean about 80 million years ago (Cretaceous). The sandstone is softer and much more easily eroded than the basalt, and as a result, the surface of the forest floor overlying it is now low and undulating and the adjacent lake beach wide and sandy. The basalt, in spite of its much greater age, has withstood erosion. Its weathering has produced only a small amount of dust and grit, the first-formed ingredients of soil, and much of what is produced is quickly washed away by winter rain, over the steep, smooth rock. Hence the thin soil.

This explains the botanical contrast between the forest and the bluffs. It is all a matter of geologically-determined habitat. The bluffs are as hot and arid as the southern Gulf Islands, the southern Fraser Canyon and much of the southern Interior, and for that reason these areas have some plant species in common.

It would be interesting to know how the Comox Bluffs acquired the five "rocky bluff" species listed above. Either their seeds (or spores in the case of the sword fern) chanced to blow in on the wind from their distant mainland territories, which seems most unlikely. Or they migrated northward with all other plants as the ice-sheets of the last ice age melted back twelve or thirteen thousand years ago, exposing bare ground waiting to be occupied. These five particular species could only migrate through, and settle in, hospitable habitats - places where the summers are hot and dry. The steep south-facing slopes of Comox Bluffs are baked by the sun all through hot summer days, and rain, when it falls, drains away quickly over the smooth, steep rock. It is because of the bluffs' geological characteristics that these plants grow in the Ecological Reserve.

Chris Pielou is volunteer warden for ER 136, Comox Lake Bluffs

www.ecoreserves.bc.ca

Check out our popular website for information about British Columbia's ecological reserves, photos, back issues of *The Log*, interesting links and much more. We have been having some problems with our Field Notes feature

on the website. If you have some Field Notes, please send them to **ecoreserves@hotmail.com** and put "Field Notes posting" in the header.



E-Log

For those of our members who would prefer to receive *The Log* by e-mail and help us save paper and costs, please drop us a line at ecoreserves@hotmail.com.

Thanks, The Friends.



Field Trips

Trial Island Field Trip April 24, 2005

Join Botanists extraordinaire, Adolf and Oluna Ceska, on our annual excursion to view the wildflowers on the amazing Trial Islands. Lying just off the Oak Bay waterfront, these islands are home to the most outstanding known assemblage of rare and endangered plant species in British Columbia. We'll transfer to Trial Island in small, inflatable boats and spend a delightful few hours, as botanists do, on all fours, with our noses down and our bottoms up. Golden Paintbrush (*Castilleja levisecta*), Bear-paw Sanicle (*Sanicula arctopoides*) and Macoun's Meadowfoam (*Limnanthes macounii*) are just a few of the wonderful, rare plants we'll find blooming on this day that you won't soon forget!

Meet on the Beach at the foot of Transit Road, in Oak Bay at 9 a.m. for a short crossing by Zodiac to this small island with unique plantlife. Wear waterproof clothing, and bring your camera, sketchbook, and lunch.

FEE: FER Members – \$10, Non-members – \$30, Seniors/Students – \$25 (includes a 1-year membership to FER)
Trip limited to 15 people: call and register by April 18, if you would like to enter the lottery for a place on the 2005 Friends of Ecological Reserves Trial Island Educational Trip
TO REGISTER or FOR MORE INFORMATION call 477-5922

Okanagan Field Trip June 3–5, 2005

South Okanagan ER wardens Eva Durance and Laurie Rockwell will lead a group of Friends on a weekend trip to three ERs in their area June 3–5, 2005. MWLAP staff are also expected to accompany the group to provide their perspective on management concerns and proposed solutions.

The group will be limited to eight people. For further information or to sign up, contact Peggy Frank at 250-519-0040 or pegfrank@telus.net



The Friends Meet With Nancy Wilkin

by Peggy Frank

Mike Fenger and Peggy Frank met with Nancy Wilkin, assistant deputy minister at the Ministry of Water, Land and Air Protection (WLAP) to bring her up to speed on what we had been doing, and especially concerning progress on the State of Ecological Reserves Report. We thanked Nancy for the ministry's initial financial support and the support that our Co-op student Morgan MacCarl has received from her staff. We explained that the data base is coming along and should be finished in April, along with Morgan's Report. The usefulness of that database will spill over from FER to the Ministry (see Morgan's report elsewhere in this newsletter). Nancy suggested we look for a less controversial title for the report we have been calling the State of the Ecological Reserves in British Columbia. We tried to think of another name – Morgan's report is really a snapshot of what we know about the ERs in 2005. If anyone has a name suggestion, please feel free to contact Mike Fenger or Peggy Frank at ecoreserves@hotmail.com.

We also talked about expanding the remainder of the Report to look at Ecological Reserves and other Protected Areas which if combined, could serve as benchmarks or control sites for measuring the impact of resource use. Nancy was interested and encouraging, but could not promise any funds toward this expanded Report.

Like us, Nancy was disappointed that the Warden's Handbook was not yet completed. She promised to ensure that the Ministry's review was done quickly. And it has been. I had an e-mail from Laura Darling that a new draft was being circulated for review. Thank you to Eva Durance and Laura and others who have worked so hard to get the wardens equipped with an up to date handbook for their volunteer work.

Letter from Barbara Westerman

In the last issue of this newsletter my name was mentioned in relation to the Mara Meadows Ecological Reserve. I have been working to try and protect the watershed from many threats. I appreciate this acknowledgement; however, there was an error regarding my status. I was listed as the warden for the Reserve. This is not so. Peter Bailey of Armstrong has been the warden for many years and has been most helpful in my endeavors in the watershed. I will take some responsibility for this error since I had agreed to provide an article and failed to do so. I wish to remedy this here.

The Mara Meadows is situated in the North Okanagan/Shuswap, east of Salmon Arm. It is a wetland complex (fen) with rare orchids and many other species. I am a local resident living below the Meadows. Violet Creek, which flows out of the Meadows, goes though my property. It is both a pleasure to have and a seasonal source of water, by water licence. In the 13 years since I've lived here I have been engaged in constant activity regarding the watershed.

My most recent work (volunteer) was to file a compliant with the British Columbia Forest Practices Board regarding the effect of logging and road building on the water flows to the Meadows. The logging is in a "woodlot" just west of the Meadows and right next to its border for part of it. The Board's report is on their web site at www.fpb.gov.bc. Click on complaint, investigation report, under 2004 see Approval of Harvesting near Mara Meadows, at top of page click on "full report". The process involved providing massive documentation, a binder filled with documents obtained from the local Ministry of Forests Office in Salmon Arm through the Freedom of Information Act, an on site visit with others, many hours of tedious reviews, and "corrections" and comments on

the two draft reports before finally going to the Board. It was over a year from the time I filed the complaint until the Board made its recommendation. Although the Board did note some problems with the procedure, logging is continuing.

"When is a stream not a stream?...When you read the Forest Practices Code."

Through this process and previous ones. I note that the legislation for the protection of water in the province is inconsistent. Under the Water Act, streams of any size and whether seasonal or not are considered streams. However, under the Forest Practices Code (whatever it is called now, I'm not sure) streams must be a certain size and have certain characteristics to be a classified stream. This is important because streams classified from 1 to 6 (the smallest) require some consideration when logging, from a 30 meter "management" zone where some understory is left to a "reserve" where no trees are cut. In the woodlot area. which is being logged, there are only two "classified streams", Violet Creek which only passes though the far corner and a small tributary. Interestingly, this only became classified after I complained about it being put into a ditch for 1200 meters by an excavator. However, there are in fact lots of little watercourses within the woodlot which flow to the Meadows. They get no protection. As I stood with a Ministry of Forests official next to one of these little watercourses with running water while on the tour he told me it wasn't a stream. I thought, yeah, the emperor has no clothes! As a result, I made a riddle "When is a stream not a stream? Answer? When you read the Forest Practices Code!

Additionally, the deep road cuts which intercept subsurface water may be of greater concern. In her report, the Ministry's hydrologist talked about this issue and the relationship to the chemistry of the Reserve. Even after her report was produced, the Ministry did not act on any of her recommendations. I was able to point this out to the Board. They did recommend that these be acted on.

Recently, I received notification that the next logging plan is being developed and there is a 30 day public comment period. The deadline is January 3, 2005. I don't know if I have the energy for it.

Prior to the complaint I have been able to accomplish the following:

- A new logging road was built to the south, to bypass the Reserve. Previously, an old road that went through the Reserve was used by log trucks, even though the Reserve is closed by Order in Council and a permit is needed to go in for education or research. This was triggered by my letter to the District Manager about this issue.
- 2. A new Park was created through the Land and Resource Management Plan (LRMP) process and covers a 100 meter wide strip along Violet Creek above the Meadows and the three "bogs" which feed the creek. I was the proponent of this park proposal.
- 3. A dam proposal which would have flooded an area above the Reserve and altered water flows was finally abandoned by Salmon Arm. This process lasted many years and included Water Management, BC Parks and local water license holders (myself and others) and riparian owners.

I hope that the Reserve will continue to survive as an ecosystem but there are a lot of continuing threats.

Ecological Reserves of Southern Vancouver Island PART I

ER 1 – Cleland Island

- Located 14 km West of Tofino on the west coast of Vancouver Island
- 7.7 ha
- As its number indicates, this low-lying basalt island was the very first ecological reserve established back in May, 1971. Vegetation includes a dense central shrubby zone surrounded by a grassy belt on sandy soils next to the outer zone of bare rocks and beach logs. Storm petrel, puffin and rhinoceros and Cassin's auklet use the grass belt for nesting, tunneling into the sandy soil. Pigeon guillemot, glaucouswinged gull, black oystercatcher, pelagic cormorant and common murres make their home on the island's various surfaces. Cleland Island has been designated internationally as an Important Bird Area for its density of species relative to its size.
- Potential Threats: Completely encircled by Vargas Island Park, the reserve is vulnerable to inappropriate recreational uses which take place in the adjacent area. Signage and public education on reserve values and its restricted access status are vital to the reserve's integrity as a protected area.
- Warden: no warden on record





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Baeria Rocks Ecological Reserve

ER 24 – Baeria Rocks

- Located at the head of Imperial Eagle Channel, Barkley Sound on the west coast of Vancouver Island
- 53 ha, 48 ha of which is subtidal
- The reserve is comprised of two low-lying rocky islands and surrounding subtidal areas. The only vascular plant species is hairy goldfields (Lasthenia maritime). Cormorants, glaucous-winged gulls, black oystercatchers and pigeon guillemots nest here. Harbour seals haul out on the rocks and other marine mammals frequent the reserve year round. Marine invertebrates and algae completely cover the intertidal shoreline while the subtidal areas support a diversity of invertebrate fauna, rockfishes and kelp greenling. The reserve is

convenient to the nearby Bamfield Marine Station as a research site for marine mammal behaviour, marine biodiversity and other topics of interest to the marine sciences.

- Potential Threats: impacted by recreational activities, commercial and recreational fishing and potential oil spills.
- Warden: no warden on record

ER 90 - Sutton Pass

- Located beside Highway 4 in Sutton Pass, 25 km West of Port Alberni on Vancouver Island
- 3.4 ha
- The reserve shares a narrow valley bottom with the highway in a pass between two river drainages. A small pond dammed by an ancient continued on page 9

8



Sutton Pass Ecological Reserve



Comox Bluffs Ecological Reserve

"Ecological Reserves..." continued from page 8 rockslide lies at the heart of the reserve, its water level and area fluctuating seasonally and with rainfall. This reserve's primary role is to protect its population of the blue-listed adder's tongue fern (*Ophioglossum pusillum*) an inconspicuous and most unfern-like perennial species with a single basal orchid-like leaf and a fertile stalk, the eponymous "adder's tongue". The occasional flooding keeps shrubs from advancing and provides ideal habitat with minimal competition for the flood-adapted adder's tongue fern

- Potential threats: Given its proximity to the highway and its small size, the reserve is particularly vulnerable to road maintenance activities. Upslope logging could also impact water quality and the water regime upon which the adder's tongue fern is dependent.
- Wardens: Judy and Harold Carlson
- Warden's Report: According to the brand new State of the Ecological

Reserves report, the wardens didn't list any significant threats at this time and gave the reserve the highest ecological rating.

ER 135 – Bowser

- Located 15 k north of Parksville on the east side of Vancouver Island
- 116 ha
- This reserve protects a transitional Coastal Douglas-fir and Coastal Western Hemlock forest ecosystem and wetland of ponds and swamps. In the 100 years since a forest fire burned it off, the succeeding Douglas-fir community has grown into very large specimens with potential to become record-size trees. A highly diverse dragonfly community, some of them rare in this region, inhabits peatland areas. This type of southeastern Vancouver Island environment is under-represented in the protected areas system and highly impacted elsewhere, hence the reserve could provide a much-needed forestry research opportunity.
- Potential threats: forest harvesting and associated activity on adjacent land could adversely impact the natural values. Uncontrolled public access poses risks associated with campfires, dumping, damage and pollution.
- Warden: no warden on record

ER 136 - Comox Lake Bluffs

- Located on north shore of Comox Lake, Vancouver Island
- 🔳 47 ha
- The eastern half is Coastal Douglasfir forest growing in sandy soil and the western half steep, sunny, basalt bluffs with thin soil and a unique plant community, including four blue-listed species. Because of their hot, dry climate, the exposed bluffs are home to several plants typical of dry interior BC and the Fraser Canyon.

continued on page 10

"Ecological Reserves..." continued from page 9

- Potential threats: The threats are more than potential: the forested half of the ER which has attractive sandy beaches on the lake is heavily used for partying; many of the party-goers get there by boat. This has been going on since long before the ER was established in 1996. Fortunately the bluffs (the western half of the ER) descend almost vertically into deep water, making them party-proof. Where the bluffs level off at the top, and are thinly forested with shore pine, numerous mountain bike trails have been created. Bike traffic has destroyed the moss covering on the level parts of many rock outcrops and it's unlikely the moss will ever get a chance to recolonize. It is to be hoped that mountain-bikers' loathing for dirt-bikers will ensure that we shall have the help of the former in repelling the latter who are heavy users of adjacent land just outside the ER boundary.
- Warden: Chris Pielou
- Warden's Report: see Page 4 for Chris Pielou's report on Comox Bluffs

ER 137 – Hudson Rocks

- Located 25 km North of Newcastle Island
- 49.5 ha
- Like Baeria Rocks, this reserve is made up of small rocky islets (4 islets of 2.5 hectares in this case) surrounded by 47 hectares of marine foreshore. It is a breeding and feeding ground for glaucouswinged gulls, pelagic cormorants, black oystercatchers and pigeon

guillemots and a feeding area for common murres, ducks and a variety of gulls. Double-crested cormorants were last observed nesting here in 1995 while the population of pelagic cormorants, a total of 142 nests in 1987, had dropped to three nests in 2000. The hope is that with the establishment of this protected area in 1996, cormorants may return to nest at the site.

- Potential threats: erosion from ferry wash, commercial harvesting within the reserve, sports fishing next to the reserve during nesting season and an increase in recreational use are exacerbated by the reserve's proximity to Nanaimo and its accessibility. Signage and public education about reserve values are vital to this reserve's integrity.
- Warden: no warden on record

Notice to Wardens:

The next issue of The Log will feature Klanawa River (ER 138), Nitinat Lake (ER 54), Haley Lake (ER 117), Honeymoon Bay (ER 113), Ladysmith Bog (ER 139) and Woodley Range (ER 142). Wardens of these reserves are asked to contact Denise de Montreuil, Editor of The Log at 250 598-9825 or e-mail the Friends of Ecological Reserves at ecoreserves@hotmail.com to fill us in on the latest news from your reserve. Our apologies if we've missed out on wardens in past ER features - we're doing the best we can but our contact list is woefully out of date. If you are a recently anointed warden (recent being any time in the past five years) get your contact information to The Friends so we can put you into the mix.



Research Grants Awarded

This year's crop of research grants has been awarded by the Friends of Ecological Reserves. The recipients are as follows:

Patrick Williston of Gentian Botanical Research in Smithers is working with *Polysticum kwakiutlii* which is Canada's rarest fern. Patrick will undertake genetic studies in cooperation with UBC into whether or not it is a unique species.

Amy Wilson at the Center for Applied Conservation Biology at UBC will use her award to study the preservation of genetic diversity within ecological reserves. She will focus on song sparrows in and out of reserves. Amy is pursuing a PhD. in conservation genetics.

Brad Fedy of the Centre for Applied Conservation Biology at UBC will be working in Mt. Tsitika and Mt. Derby Ecological Reserves studying population genetics and habitat use behaviour of the Vancouver Island white-tailed ptarmigan. Brad is pursuing a PhD after finishing his MSc at York University.

Carla Mellott is working on her MSc in the School of Environmental Studies at the University of Victoria. She is looking into the historical ecological perspective of the impact of cattle grazing on the high elevation grasslands of the Nemiah Aboriginal Wilderness Preserve and focusing on *Claytonia lanceolata*. The project is being undertaken in collaboration with the Xeni Gwet'in First Nation and the Nature Conservancy of Canada.

Krista Roessingh is pursuing her MSc at the School of Environmental Studies at the University of Victoria. She is involved in the Klaskish Inlet Trail restoration project and is studying the ecological and cultural values of the Klaskish-East Creek trail. The project is also supported by Quatsino First Nation and The Sierra Club. Congratulations all! ■

From Kelp to Snails – sea otter research in Checleset Bay Ecological Reserve

by Jane Watson

Sea otters, which were hunted for their pelts, were extirpated from BC in a fur trade that lasted less than125 years. This rapid local extinction occurred because sea otters, as with many commercially-lucrative species, became more valuable as they became rare. In the early 1900s two sea otter pelts provided enough cash to buy a house in downtown Victoria, making hunting for the last few sea otters economical. Fortunately, from 1969-1972, 89 Alaskan sea otters, were released into Checleset Bay on the west coast of Vancouver Island where they flourished. Today there are over 3000 sea otters in BC waters.

This story almost repeated itself in the northern abalone. The BC commercial fishery for abalone lasted until 1990 when stocks became so depleted that harvesting was prohibited. But as abalone became rare they became more valuable and poaching further reduced abalone stocks.

Northern abalone and sea otters are both listed as threatened, and are protected by the Species at Risk Act. Recovery activities which are aimed at increasing abalone and sea otter abundance are underway. However, recovery planning can get complicated, especially when one threatened species (the sea otter) eats another (the abalone).

Sea otters eat invertebrates. Sea urchins, a favorite sea otter prey item, are grazers that eat seaweed and limit the abundance of kelp. Sea otters quickly reduce urchin populations, which lessens grazing and allows kelp to grow. Consequently, in areas without otters, urchins are abundant and kelp is rare whereas in areas with otters, urchins are rare and kelp is abundant. Kelp in turn has a myriad of effects on nearshore communities. As kelp becomes more abundant it fuels detritus-based food webs and increases coastal productivity. Kelp also affects invertebrate and fish populations by reducing water currents which influences larval dispersal.

I am interested in how invertebrate populations change in response to the effects of sea otters and specifically how prev like abalone coexisted with otters. In areas without otters, abalone are large, abundant and out in the open, whereas in areas with otters abalone are small, rare and cryptic. Thus, rather than studying how otters affect hard-tofind abalone I use a model species; the red turban snail (Fig. 1). The turban snail is a good model because it is ecologically and biologically similar to abalone but unlike the abalone, red turban snails are abundant and not commercially harvested.

...sea otters, as with many commerciallylucrative species, became more valuable as they became rare.

First I compared turban snail density in areas with and without otters. I predicted that because otters eat snails, snails should be more abundant in areas without otters. To my surprise snails were equally abundant in both areas (Fig. 2). However, in the areas with otters the snails were smaller and generally less than 40mm in diameter (Fig. 3). This was expected because sea otters select large prey since the energy gained from small prey is often less than the cost of finding and eating it. If snail abundance in the two areas is equal,



Figure 1. A red turban snail that has been tagged with a small numbered disk. These tags, which are used to tag bees, were glued to the snails with super glue. One year later the tags are still readable.

then there must be more small snails in areas with otters. There are several potential explanations for this. Perhaps snail settlement is better in areas with otters. Maybe newly-settled snails have a high survival rate or perhaps snails in areas with otters grow more slowly. In the last few years I have started to test these ideas.

Snails are also eaten by crabs, which of course are eaten by otters. Thus, small snails in areas with otters may suffer less mortality than similar-sized snails in areas without otters. Tethering experiments are often used to see what eats hard-shelled prey. Prev species are tethered in areas with and without the suspected predator. When the prey is eaten, a piece of the shell remains stuck to the tether line, providing evidence of predation. I tethered snails in areas with and without otters and, as expected, more snails disappeared in areas without otters (= more crabs).

continued on page 12

"From Kelp..." continued from page 11 However, urchins which are abundant in areas without otters, and absent in areas with otters, grazed through my wire tethers and set the snails free, so I still don't know if crab predation is higher in areas without otters.

Finally, I examined snail growth. I glued numbered tags to snails (Fig. 1), measured and released them then relocated them the following year. The snails in areas with otters grew twice as fast as the snails in areas without otters. Snails in areas with otters may grow faster because there is more food or kelp. Interestingly, I recovered more tagged snails in areas with otters than in areas without otters. Snails in areas with otters barely moved whereas in areas without sea otters snails often moved >50m. In areas where kelp is rare snails may have to range farther to find food.

So, I know that in areas with otters, snail growth, settlement and/or survival appears to increase. Snails in areas without otters are on average larger and appear to move more. I can only guess that similar differences may occur in abalone. The next step is to look at changes in size/age at reproduction, a character that can change in direct response to predation. I should have new results to report to the Friends next year.

Jane Watson teaches ecology at Malaspina University College in Nanaimo and is an adjunct within the Marine Mammal Unit at UBC. Jane is interested in how nearshore marine ecosystems work and in the affects of vertebrates (including humans) on these systems. She considers her teaching role extremely important especially when it comes to getting both students and general audiences in particular to think about how our activities affect ecosystems. Sea otters are a wonderful model for this process. Jane loves what she does because she never stops learning.



Figure 2. Snail abundance in areas with and without sea otters in 2004. The values are the average number of snails per half square metre. The error bars (one standard error) are a measure of how variable the density estimates were.



Figure 3. The size frequency of red turban snails in areas with and without sea otters in 2004. Most of the snails in areas with sea otters are smaller than 40mm. Snails larger than 40mm are common in areas without sea otters.



Dr. Jane Watson on the water

Canadian Hydrographic Survey Charts

by Stephen Ruttan

Recently the Friends of Ecological Reserves have become aware of a problem for our island and coastal ecological reserves. Boaters have been landing on ecological reserves, and are seemingly unaware that they are landing on restricted areas. We have been told that they don't know they are landing on an ecological reserve, because they are not marked on C.H.S. charts. A study of charts in the public library gave this some credence. Some of the charts had the reserves marked on them, and some did not. With this in mind I e-mailed the Canadian Hydrographic Service. I outlined the

problem to them, and emphasized our concern about it.

I had an excellent reply to the e-mail. Dave Prince, their manager of nautical publications, wrote "The concern you have raised is one we are well aware of and are continually addressing. It is our current policy to identify these ecological reserves, as well as other environmentally sensitive areas, with each new edition of the chart concerned." He goes on to point out that one chart that had concerned me, the 1993 edition of "Approaches to Oak Bay" that did not have the reserves marked on it, had actually been superseded by a 2003 edition that did have the reserves marked. He goes on to say that "It is important that mariners follow the Canada Shipping Act and use only the current edition of the chart."

So boaters now have no more excuses. If they do land on ecological reserves they can be presumed to know exactly what they are doing, and held accountable. Congratulations to the Hydrographic Service. It's nice to see they're on top of the situation.

Stephen Ruttan is a member of the board of the Friends of Ecological Reserves and librarian with the Greater Victoria Public Library.

Implication of Climate Change in BC's Southern Interior Forests

April 26–27, 2005

Revelstoke Community Centre, 600 Campbell Avenue, Revelstoke, BC

This workshop is directed at forestry professionals and technicians, biologists, ecologists, protected area managers, and other managers and planners with an interest in how climate change may affect forest ecosystems and forestry.

Contact: Columbia Mountains Institute of Applied Ecology Box 2568, Revelstoke, VOE 2S0 Email: office@cmiae.org Website: www.cmiae.org Tel/Fax: 250 837-9311

C A L E N D A R

The Canadian Youth Climate Change Conference

July 3–8, 2005 Royal Roads University, Victoria, B.C.

Four days of workshops, roundtables, mentorship and skill building for 15 to 20 year olds on their role in meeting the challenge of climate change and sustainability.

Contact: Alysia Garmulewicz, Director, Changing Climates Environmental Society RR1, S.2, C.49, New Denver, BC, V0G 1S0 Email: alysia@YC3.net Website: www.yc3.net Tel: 250 358-2303 Fax: 250 358-2353

Climate Variability and Sub-Arctic Marine Ecosystems

May 16–20, 2005

Victoria Conference Centre, Victoria, B.C.

This symposium's scientific objective is to present current knowledge of the effects of seasonal to multi-decadal climate variability on the structure and function of Sub-Arctic marine ecosystems. Registration discount for students. Go to the website for a registration form and more information. Website:www.pml.ac.uk/globec/ structure/regional/essas/ symposium/announcement.htm

> Field Trips See Page 6

State of Ecological Reserves Report – An Update

by Morgan MacCarl

First of all, I would like to thank all the Wardens and Area Supervisors that I have talked to in the last two months. I really enjoyed talking to all of you and appreciate you taking the time to go through the questionnaire with me. Your input is essentially what makes up the basis of my section of the Report

It is this sort of commitment that is so essential for conservation to be truly successful...

The report is really getting exciting. This is certainly thanks to the indispensable information that I have acquired from the Wardens and Area Supervisors. Using that information, along with the Conservation Risk Assessments and other WLAP documents, I am building a database that will allow for easy review of the state of the individual reserves. After listing all information, each Reserve will be given an overall Friends of Ecological Reserves (FER) rating that will be based on internal and external threats and what management and research the reserves receive or need. This will give us a much clearer perspective on where valuable time and money needs to be spent to improve the integrity of our reserve system and especially where FER research priorities might be directed.

Following the completion of this database I will be summarizing the main findings in a report. The reserves will be described so that all critical areas will be emphasized with clear recommendations for management considerations. One section of the report will focus on the warden program, information will be summarized and recommendations will be included.

This has been a wonderful experience for me so far; I really enjoyed talking to the Wardens and the Area Supervisors who know these reserves the best. It has been wonderful to see the commitment that the Wardens are willing to give to these reserves. It is this sort of commitment that is so essential for conservation to be truly successful, and surpass the pressures of human influence. Thank you all again for your time and effort – it is truly appreciated. ■

Morgan MacCarl is an undergraduate student in biology and environmental studies at the University of Victoria. She is working on the State of the ER's Report courtesy of UVic's excellent co-op program.

State of the ERs – What Comes Next

by Peggy Frank

Morgan's section of the Report focuses specifically on existing Ecological Reserves. The committee's original plan was to lay out criteria for an ideal Provincial Ecological Reserves system, then examine the existing system to see how we measure up. However, as the State of the ER Report developed, it became apparent that it was bigger than simply ERs, and required more input than just the Ministry of Water Lands and Air Protection and FER. FER Board member Mike Fenger did a great deal of thinking about this, some preliminary outlines and consulted with others who appreciate the importance of Ecological Reserves in the context of other Protected Areas. Ecological Reserves are one of few areas within the Province which can serve as benchmarks, or control sites on the landscape.

The effectiveness of a science-based approach requires that industry and academic institutions measure the consequences of human activity on an ecosystem against an undisturbed natural system. Ecological reserves, protected areas, old growth management areas, ungulate winter ranges, protected grasslands and wildlife habitat areas can only provide natural research bench marks when they are of comparable quality to those in the resource use land base. Now that we have a reasonable snapshot of the Ecoreserve system, the next section of the Report will look at the location (ecologically) of existing (ER and non-ER) long-term benchmarks, and where the gaps are in the system. Assessing existing Protected Areas and pinpointing potential conservation areas of similar quality to the major ecosystems being harvested will highlight areas lacking adequate natural area benchmarks for Sustainable Forest Management plans.

Mike's goal is to develop a peer-reviewed scientifically robust method of assessing contributions from existing Protected Areas. He has contacted and discussed this project with staff at the Ministry of Sustainable Resource Management (MSRM), the Ministry of Forests (MOF), the Ministry of Water, Land and Air Protection (WLAP), and the Forest Practices Board. There is strong support, and we hope to see financial contributions from some of these agencies. You too can help – a tax deductible donation to the Friends can be earmarked for this important research (see Page 15 for how to contribute). ■

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□ Renewal for 2005

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Websites of Interest

by Denise de Montreuil

The Otter Project, dedicated to protecting the California sea otter offers nice footage of otters on land and in the water, news links including a CNN piece on a big die-off this spring, discussions of threats of California's otters and research papers on sea otters. www.otterproject.org

In case you haven't heard, there's a provincial election coming up on May 17th. Don't know who to vote for? Confused about the referendum on electoral reform? Environmental concerns at the top of your list? Here are some useful websites to help you answer these questions.

Wonder where various politicians stand on environmental issues? The folks at **Conservation Voters of BC** are collecting quotes, endorsing candidates and commenting on environmental politics in the runup to the election. www.conservationvoters.ca

The Sierra Club, Greenpeace, Western Canada Wilderness Committee, CPAWS and eight other environmental organizations have pooled their resources to conduct a huge door to door campaign on environmental issues for the coming provincial election. They are polling voters and looking for a response from candidates on four key priorities identified in their press release: "the expansion of open net fish farms, the lack of effective provincial endangered species legislation, the crisis in funding for B.C.'s provincial parks system and the expansion of provincial highways that is at odds with smarter, regional transportation planning". The coalition is called Priorities for Environmental Leadership and the full press release can be found on their website as well as links to all the other organizations connected with the campaign. If you're interested in participating or just want to read the commentary, have a look at www.environmentalleadership.org/

What the heck is STV? It stands for Single Transferable Vote...and it will be the subject of a referendum on May 17th. For an explanation, go to the **Citizens Assembly on Electoral Reform** website where you can download the report or get the information painlessly by watching some animations. The members of the assembly put months of their lives into scoping this out for us so the least we can do is check it out...and hey, the politicians don't seem to like it much so chances are its good for voters... **www.citizensassembly.bc.ca/public** Haven't registered yet? It's easier in BC than practically anywhere else in the world provided you act before the April 26th deadline. Go to the **Elections BC** website and register online. They also have candidate lists, party statements, links to the major political parties and if you're unhappy with the 44 parties we have already and want to start your own, here's where to get the forms. http://www.elections.bc.ca/



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