

The Log

Winter 2002

FRIENDS OF ECOLOGICAL RESERVES NEWSLETTER

GSX Pipeline and Ecological Reserve 67

As reported in *The Log* (Spring 2002), BC Hydro, in partnership with American energy giant Williams, have submitted a proposal to build a natural gas pipeline from the mainland to Vancouver Island to transport fuel for the purpose of generating electricity.

Notwithstanding its protected status, the Georgia Strait Crossing Pipeline (GSX) partners want to route the pipeline through BC's only fully subtidal ecological reserve, Satellite Channel ER 67. This is, of course, not a permitted use for a protected area in British Columbia. Although no political decision has yet been taken on this precedent-setting change to the intent of protected areas legislation, a paper trail unearthed by environmental advocates shows the government's appetite and incentive for just such an outcome.

The pipeline proposal is subject to a federal National Energy Board (NEB) Joint Review Panel hearing, because of its international scope and this interest has invoked the *Canadian Environmental Assessment Act*. Originating at the Sumas, WA,

gas distribution hub, south of Abbotsford, BC, the pipeline would enter the Strait of Georgia near Cherry Point, WA, and traverse Boundary Pass to Swanson and Satellite channels before making landfall near Cobble Hill. From there it would continue to a connection with the existing Centra Gas transmission line at Shawnigan Lake.

Up to three associated power plants are indicated, one built and operational (Campbell River), one proposed (Nanaimo) and one as yet undetermined (rumoured to be for the Cowichan Valley). The pipeline and power plants would allow BC Hydro to decommission the aging transmission cables that currently deliver electricity to Vancouver Island from hydroelectric facilities elsewhere in the province.

The GSX's path to approval has run into a series of delays and obstacles. The proponents have not adequately consulted with First Nations, or answered a great many interveners' information requests. At the same time, an inspiring groundswell of public

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The Log

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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 next issue of *The Log* is March 15, 2003

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PRESIDENT'S MESSAGE

The Challenge of Choice

British Columbia is a wonderful place. Each day, living in the free western world we are faced with choices. Simple choices like which piece of clothing to wear? How to get to work? When to exercise? And more complex choices like who to vote for? What kind of paint to use? Choices are both a challenge and a benefit of living in the affluent western world. Some of the choices we make affect the rest of the world. We need to think about those choices consciously.

Many of our choices affect the environment. There are times when choices we make are contrary to our values. We have learned to accept this, to some extent. For example, we heat our home with oil, a limited natural resource. Oil warms the house in the cooler months, and I have not taken the time to explore solar energy or other heating alternatives. It is not wrong to make my choice, but at times I feel uncomfortable about the impact my choice has on the world. I live in a busy urban environment within a North America wealth of choices.

Choices are even involved as I decide how I spend my time. It is difficult for me to sit at the computer, read e-mails, respond to queries, review web pages of interest... I am an "active"ist who prefers hiking, skiing and boating. I am a "social"ist who enjoys dialogue. There is a garden outside, clay to be sculpted, neighbours on the street, aging parents in eastern Canada and a puppy crying softly in the background. However, Friends of Ecological Reserves is a responsibility I have taken on, as President.

I had to make a tough choice in October—spend time with my family in eastern Canada, or stick around to ensure that timelines for *The Log* were met and to address other Friends' business. Other Board members and our diligent office manager, Daphne Munroe, picked up FER responsibilities and I headed east. As a result, *The Log* is late and I was in Ontario when my father had a small heart attack, which led to a bypass operation. The choice I made was one that I apologize to the editor and readers for—but I stand by it and am grateful that I made my choice.

Choices in my life are often about health. Many of our readers ("Friends") know that I have been gravely ill and now I am much better. Illness was not only a challenge for me, but also an opportunity to reflect, to read and to change. It was a time to re-acquaint myself with inner spirit. As a young girl I made a choice not to accept religion. I felt uncomfortable in churches and comfortable in nature. I never saw my love of nature as a kind of spirituality—not until I was sick. Now I feel gratitude daily for what I have and I realize that I have become a spiritual person. Each breath, the ability to walk, loved ones nearby—these are all blessings I have been given thanks to the grace of God.

Through involvement in Friends of Ecological Reserves, I have an opportunity to help protect the natural world that is so important to me. As President of "Friends", I feel, at times, that I am not doing enough. But then I remember my own limitations (they have been presented to me in such a way that I cannot doubt that I have them) and I know that one can never do "enough", when enough means making the world our idea of perfect. There is a compromise, a happy medium, where work is done and time is set aside to nurture the spirit. It has worked in my struggle against disease, so I can only trust that it will also work in our struggle to preserve special places.

(continued on page 3)

(“The Challenge...” continued from page 2)

I have the good fortune to work with others devoted to ecological values. I recognize that we each have some thing that we do well. It is in developing a network, or Community of Friends of Ecological Reserves that the best results can be achieved. Our Friends of Ecological Reserves Community includes wardens and the researchers we help fund. It includes those who write articles for the newsletter and those who clean beaches and the volunteers who create and review the Friends’ website. Our Community also includes others who keep abreast of the changing environmental climate in BC and report to us on activities around and within Ecological Reserves. Our Friends of Ecological Reserves Community even includes those working hard within government to ensure that Ecological Reserves remain intact despite the loss of the Ecological Reserve Program. The Friends of Ecological Reserves Community is part of a wonderful environmental haven and I am blessed and heartened to work within it. Thank you.

Choices. Friends of Ecological Reserves made a choice to move into the 21st Century. We now have, thanks to Gordon Harris, Cheryl Borris and others, a wonderful website (www.ecoreserves.bc.ca). In October, our webmaster-in-training told us that over 1,000 visitors have come to our website. That’s amazing! And it poses new challenges, as people ask questions and post ideas and information on our field notebook. The Board has to make choices. Should we respond to everything posted? Can we begin to?

The original idea of the notebook was to provide our wardens with a venue for chatting together, exchanging ideas and frustrations. Our involvement was to be limited to ensuring that appropriate language and topics were discussed. Now FER has to make a choice. We ask for your ideas. What do you think the Board of Directors should do? Have you been frustrated in a visit to the field notebook? Please e-mail us your comments.

It is with pleasure I announce that our fourth placemat/poster—“Alpine Wildflowers”—will be ready before Christmas (orders (\$5 each) or inquiries to ecoreserves@hotmail.com). Thanks here to Donald Gunn and others for their beautiful drawings, and Jane Francis for the graphic design and production work.

Before the press cools, let’s talk about our next choice in habitat. The next placemat/poster will feature **wetlands** so get your paints out and explore the province’s wetlands. We’re hoping to cooperate with other wetland organizations and will be accepting artwork soon. Paint your favorite wetland wildflower.

In closing, I hope that we can all review our choices and the impact that they have not only on the environment and but also on others in this world as we head towards the potentially consumptive Christmas season. Continue to give important things—like your time, your heart and your commitment. It is wonderful to be among such a supportive circle of “Friends”. ■

Happy Holidays.
Peggy Frank, President

With this issue of *The Log*, we remind you that your membership is based on a calendar year. Please use the handy form included with this issue to send us your membership dues for 2003. At this time of year, you may also wish to enrol a friend with a gift membership. And, please remember us when making your charitable donations. We are registered charity and your tax-deductible donations support ecological research and information programs in BC. ■

ANNUAL GENERAL MEETING

The Annual General Meeting of the Friends of Ecological Reserves will be held on
Thursday March 6 2003.

The meeting will be followed by an illustrated lecture by James Miskelly, who will discuss his research on endangered butterflies in the Garry Oak ecosystem

AGM Meeting:
6:00–7:00 p.m.

Guest Speaker:
Nancy Wilkin,
Assistant Deputy Minister
Environmental Stewardship
Ministry of Water, Land and
Air Protection

Illustrated Lecture:
8:15 p.m.

Place:
Greater Victoria Public Library
(Downtown Branch)*

*located at the corner of Blanshard
and Broughton Streets

CALL FOR NOMINATIONS

The 2003 Board of Directors will be elected at the Annual General Meeting in March 2003. If you are interested in serving on the Board of the Friends of Ecological Reserves, or if you wish to nominate someone, please contact the society at ecoreserves@hotmail.com or call Peggy at 250 510 0040



(“GSX Pipeline...” continued from page 1)

opposition to the plan has arisen both generally, and with regard to specific matters, such as the suggested route through the ecological reserve.

Satellite Channel ER 67 was established in 1975 as a representative example of level, soft substrate seafloor habitat, and to conserve its rich, highly diverse community of benthic infauna and associated demersal species. Studied before its designation by University of Victoria researchers, the 343-hectare area’s protected status has since been ignored, and unenforced. Trawl boards have dug scars across much of the reserve. Until the pipeline proposal focused a bright light on this area, the only attention paid the reserve was from the Friends of Ecological Reserves, who expressed concern for a planned sewage outfall nearby.

If the GSX pipeline were to conform in both the spirit and letter of the *Ecological Reserve Act* and *Protected Areas of British Columbia Act* (2001), it would skirt the northern corner of ER 67, then climb the southern-most point of Cape Keppel on Salt Spring Island. However, BC Hydro-Williams have made it clear that their preferred routing, both financially and technically, is through the reserve. Citing environmental impacts, seismic engineering and construction issues and costs, the GSX partners recommend laying the pipeline through the existing reserve.

...protected status has since been ignored, and unenforced.

Documents obtained through a Freedom of Information request filed by the Georgia Strait Concerned Citizens Coalition (GSXCCC) trace the evolution of a plan to smooth the way towards this outcome while minimizing public reaction to a boundary adjustment to ER 67. In ongoing correspondence since July 1999 between the proponents and BC’s Ministry of Water, Land and Water Protection (WLAP),

the discussion eventually turns to an offer to deliver one-half of an estimated \$3million in cost-savings from BC Hydro/Williams to WLAP. Astonishingly, this offer appears to have been well received by senior government staff, pending the Minister’s approval of the alternative routing.

Any change in the reserve’s boundary would need to be authorized by the WLAP Minister Joyce Murray and would require, according to BC Parks staff, “full public consultation AXYS Environmental Consulting convened a consultation workshop in December 2001, but surely this single, invitation-only event cannot be construed to have met this obligation. It’s worth noting that the consultant’s final report to BC Parks (no longer available in either electronic or hard copy) conveyed a tepid recommendation regarding a change in the proposed pipeline’s routing:

“It is concluded that the overall environmental impacts of ... the alternative route (through the reserve) may be marginally less than the proposed route...

However when considering the risks to ER values, the alternative route would clearly result in greater risks ... (T)his evaluation has failed to identify any appreciable ecological or social benefits to the ER that would result from an approval of the alternative pipeline route.”¹

The National Energy Board (NEB) will hold a marine technical issues conference in Sidney on November 14–15, as a preliminary stage of its hearing process. This will attempt to address concerns related to the subtidal portion of the proposed pipeline, including in the vicinity of ER 67. A panel of scientists will deliberate on a range of issues including impacts of pipeline construction and operation on benthic flora and fauna, acoustic disturbance and cumulative effects on marine mammals, and barrier/predator effects resulting from restriction to the movement of crabs, prawns and fish.

Ultimately, the NEB panel will consider the evidence supplied at this conference and by interveners to the hearing process on the full range of approved issues. Whether the BC Hydro-Williams proponents request and are granted an adjustment to ER 67’s boundary for the purpose of these as yet unscheduled hearings remains to be seen.

There are still inadequate baseline data for the purpose of measuring the likely effects and assessing mitigation requirements of a pipeline along either routing in accord with *Canadian Environmental Assessment Act* applied with appropriate rigour. One thing is crystal clear: this question requires further study. ■

Peter Ronald,
Georgia Strait Alliance

For further information, contact the Georgia Strait Alliance at 250-381-8321 or peter@georgiastrait.org

¹ AXYS Environmental Consulting Ltd., Independent Assessment of Satellite Channel Ecological Reserve #67 With Respect to the GSX Pipeline, Sidney: March 2002

FIELD NOTES

Really happy to find your new website on behalf of the Nicola Watershed Community Round Table who have developed the Laurie Guichon Memorial Grasslands Interpretive Site. We are about to begin Phase 2, which will include grasslands and riparian nature walks and are starting to look at signage. We really like the Interior Grasslands place mat and wonder if we could discuss the possibilities of incorporating some of those images and text into our signage. ■

Katharine Shewchuk,
Merritt, BC



Alpine Flowers for Christmas and the New Year

As we go to press, Friends of Ecological Reserves is pleased to announce the availability of the fourth in our series of placemats. "Alpine Flowers", thanks to the generous support of the TD Friends of the Environment Foundation, will be educating users about British Columbia's alpine wildflowers, as well as safety in the mountains.

One side of the placemat/poster has a variety of representative alpine species illustrated in colour by several artists. On the reverse side, artist and Friend, Donald Gunn, has created an image of hikers safely enjoying the mountains and observing alpine species, framed within leaf silhouettes of over 30 alpine plants.

This placemat/poster is a wonderful educational gift or an addition to the collection, which now includes plants of the Garry Oak Forest, Douglas Fir Forest, Interior Grasslands and Alpine areas of British Columbia.

The order form is on page 15 of this issue of *The Log* or go to our website (www.ecoreserves.bc.ca). Conservation organizations can buy bulk orders to complement their fund-raising opportunities. Contact Daphne, at 250 595 4571 for more information. ■



Funding for Research

Each year, the Friends of Ecological Reserves welcomes applications for funding in support of biological and ecological research projects related to ecological reserves in British Columbia. The application should include:

- title of research project
- name of applicant(s)
- mailing address of applicant
- institutional (college or university) affiliation
- a brief description of the research and its relationship to ecological reserves in BC
- any other pertinent details
- two letters of reference supporting the project

Financial information should include:

- total budget required for project, with an indication of contributions from other sources
- amount requested from FER

Note: If the project is a multi-year proposal, provide an indication of how the project is to be supported/funded through its duration.

Applications will be judged on the merit of the project, the financial viability of the project and the financial need of the applicant. Research grants are generally between \$500-\$2000. As a condition of award, applicants are asked to submit regular reports on their research findings and may be required to present a public lecture on their research. Applications for funding for 2002 should be received by April 1, 2003.

Send applications to:

The Friends of Ecological Reserves
PO Box 8477 Stn Central
Victoria BC V8W 3S1 ■

Thanks to Our Supporters for 2002!

It's that time of year—time to express our appreciation to all the people who help to keep the work of our society going!

First, thank you to our volunteers to all their efforts on behalf of FER...

- Pen Brown's record-keeping •
- Tom Gillespie, for maintaining our mailing lists •
- Gord Harris and Cheryl Borris, for building our website •
- Jane Francis Design for creative work on our placemat series •

We are also sustained by the generosity of our donors:

Eden Conservation Trust
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Anonymous (1)

Donations and Bequests

The Friends of Ecological Reserves relies on the support of members and friends to carry out the work of the society. Individuals can make donations or bequests to our address. Tax receipts are issued for donations of \$20 or more.

(Charitable BIN#118914597RR)

Sky Spy

In an attempt to identify environmental violators, a committed environmentalist armed with a digital camera and a helicopter is photographing the entire length of California's 1,100-mile coast and posting the resulting photographs on the Internet.

The California Coastal Records Project is the brainchild of photographer Ken Adelman with the help of his helicopter pilot wife, Gabrielle. Adelman says, "We've flown over most of the California coastline before and have seen the beauty of the natural coastline and destruction that man has wrought unto it. We've been called to photograph "after" pictures of illegal activity that has destroyed the coast, but rarely do we have the "before" pictures. More than once we wished we'd used the opportunity to photograph a "before" picture. This started us thinking—what if we photographed the entire coast as a baseline of "before" pictures?"

Since 1997, the Adelmans have volunteered, with their helicopter, for the Sierra Club, to help protect the California coast. Now, the website, which will eventually contain about 13,000 images, will create a permanent record of the California coastline as it is today and a vehicle for a new kind of high-tech environmental activism. Using the images, property owners' abuses of state law can be identified so that remedies can be sought.

To visit the site, go to <http://www1.californiacoastline.org> ■

The BC Ecological Reserve System

August's Johannesburg summit makes an occasion (if one were needed) to think about BC's ecological reserves. They were Canada's chief contribution to the International Biological Programme of 1964-1974, attended by 58 nations. Indeed, BC outranked every other region in North America in establishing these specially chosen, carefully protected sites for conserving the biodiversity of our corner of this continent.

A committee created by the IBP initiated the establishment of a system of representative terrestrial and aquatic ecosystems around the world. In Canada, the National Research Council funded the work of identifying and describing nearly 1,000 biologically important sites in the country, on standard international check sheets. Many of the sites are in BC. The first Ecological Reserves were, for the most part, selected from the NRC list. In 1968, the then government of BC, encouraged by several BC scientists, notably the late Dr Vladimir Krajina of UBC, agreed to form an Ecological Reserves Committee to advise on the choice of sites to be set aside as ecological reserves. In 1971, the Legislature unanimously approved the Ecological Reserves Act, making BC the first province to formalize and give permanently protected status to ecological reserves (ERs). The first 29 reserves were officially protected, by Order-in-Council, on May 4, 1971. [For more details, see <http://www.ecoreserves.bc.ca>]

When Krajina lobbied politicians to create ecological reserves, he estimated that about 100 of them should suffice, and that they should occupy 1% of the area (presumably the terrestrial, that is, the land-and-freshwater area) of BC. At present, we have 151 reserves occupying a total area of 166,918 ha. Of this area, 119,271 ha are in terrestrial reserves and 47,647 ha are

in marine reserves. Therefore, the proportion of the province set aside in ecological reserves is only 0.126% of the total terrestrial area, far short of the area regarded by scientists as the minimum required. The unfortunate discrepancy between Krajina's two estimates of what's needed, namely, 100 reserves and 1% of BC's area, presumably arose because many of the reserves set aside have been exceedingly small. For example, 19 of them are smaller than 20 ha, and the smallest (the Ballingall Islets, with nesting colonies of glaucous-winged gulls, double-crested cormorants, and pigeon guillemots) is only 0.2 ha in size.

When it came to choosing whether to use 100 sites or 1% of the province's area as the criterion for ecological protection, the government's inclination can be guessed (go ahead and try).

The purpose of ecological reserves is to protect rare and endangered species, and rare and endangered communities; to maintain BC's biodiversity; to maintain representative examples of our numerous, diverse, ecosystems; to provide a genetic "data bank"; to provide baseline data on the pristine state of our ecosystems; and to provide sites where long-term, non-disturbing ecological research can be done on and in natural communities, safe in the assurance that the work won't be prematurely terminated by removal of a site's protection. To ensure that ERs can serve these purposes, they are truly protected in a way provincial parks are not. Camping, campfires, and the use of motorized vehicles are not allowed in them. They are closed to hunting, fishing, trapping, mining, logging, grazing, firewood, mushroom, and salal gathering—indeed, to any interference. They are emphatically not created for outdoor recreation. But most of them are open to the public for non-consumptive use. Noise is a

no-no, of course: it would disturb mammals and nesting birds. Trampling of the vegetation is obviously undesirable. Ecological Reserves are important sites for non-destructive scientific research. However, people who know the rules, such as naturalists, birders, nature photographers and, biologists, are welcome to visit and enjoy them.

Now there are reasons to worry about the future of our ERs. By 1985, the Ecological Reserves Committee had been dissolved and the Ecological Reserves Program had been moved to the jurisdiction of BC Parks, which currently administers it. Today's drastic cutbacks in Parks staff and funding put ERs at risk. I urge you to take notice of what is going on, and to support the Friends of Ecological Reserves in their efforts to protect ERs.

For anybody unfamiliar with ERs, here is a list of a baker's dozen of typical ones showing the kinds of things they protect; sites of geological interest are as much a part of the ER system as sites of biological/ecological interest. The ER's listed here are shown with their official number:

#26. Ram Creek, SE of Canal Flats: Hotsprings and associated plants, and burnt forest.

#31. Lew Creek, E of Upper Arrow Lake. Three biogeoclimatic zones in one drainage basin.

#36. MacKinnon Esker, N of Prince George: Long compound esker, well-developed lichen community.

#38. Takla Lake, E of Hazelton: Most northerly known occurrence of Douglas Fir.

#47. Parker Lake, W of Fort Nelson: Extensive bog habitat with pitcher plant (*Sarracenia purpurea*).

(continued on page 8)

(“...Reserve System” continued from page 7)

- #83. San Juan Ridge, E of Port Renfrew: Protection of rare white avalanche lily (*Erythronium montanum*).
- #100. Haynes' Lease, N end of Osoyoos Lake: Most arid ecosystem in Canada, with numerous rare plants and animals.
- #109. Checleset Bay, NW of Kyuquot: Habitat for BC's prime sea otter population.
- #116. Katherine Tye (Vedder Crossing), SE of Chilliwack: Rare white phantom orchid (*Cephalanthera austiniiae*) and its habitat.
- #117. Haley Lake, SW of Nanaimo: Population of endangered Vancouver Island Marmots.
- #119. Tahsish River, S of Port McNeill: Pristine West coast estuary.
- #132. Trial Island, S of Oak Bay: The most outstanding assemblage of rare and endangered plant species in BC.
- #150. Rolla Canyon, near Dawson Creek: Narrow canyon and site of rare fossils. ■

Chris Pielou

Chris Pielou was the recipient of the George Lawson Medal in 1984 for her contributions in the field of mathematical ecology. For the review of her book *Fresh Look at Water* see *Botanical Electronic News (BEN)* # 205.]

Reprinted, with Chris' permission from a recent issue of *BEN*. For the *BEN* archive, go to <http://www.ou.edu/cas/botany-micro/ben/> online.

Diversity Matters

Scientists have long known that ecosystems, for optimal functioning, need a variety of plants and animals. However, recent research at the University of Georgia has found that this holds true for genetic diversity of species within a habitat.

Ecology doctoral student, Mike Madritch says, “It is not just the quantity of species diversity that matters, it is also the quality of genetic diversity.” Madritch, in studying the release of carbon and nitrogen during the decomposition of leaf litter, found that there was a significant link between nutrient output and the genetic variation within the piles of leaves. Madritch, together with Mark Hunter, associate professor of ecology at UGA, analyzed the decomposition of leaf litter from nine different single trees of the same species and one mixed sample containing litter from all nine trees. There was a notable difference in the amount of carbon and nitrogen released based upon the source of the leaf litter.

“Diversity matters,” said Madritch. “Our study shows that bringing a species population back from the brink of extinction to its original levels would not have the same effect on the environment as if the species never faced being endangered in the first place. When you build back from an endangered population, you

necessarily are building from a limited gene pool, and we found that variety in genetic make-up matters to the system.”

Madritch and Hunter also discovered that loss of genetic diversity reduces the predictability of how ecosystems work. The single-tree litter samples did not always yield less nutrient than the mixed leaf sample—sometimes more nutrients were produced and sometimes less; however, the nutrient production was always significantly dissimilar to the mixed leaf-litter sample.

Hunter said, “The alarming part of this discovery is that you cannot predict the effect that reduced genetic biodiversity will have on an ecosystem.... Therefore, deforestation is like playing Russian roulette with our future. We know that relying upon fewer trees to recycle nutrients will make a difference, but we don't know what kind of difference.”

This research shows that the genetic diversity of one species can affect large-scale ecosystem processes such as nutrient cycling. Deforestation and habitat loss, which affects reductions in the gene pool of plants and animals, could result in even more serious threats to environmental health.

The study is published *Ecology*, the journal of the Ecological Society of America. ■



Visit www.ecoreserves.bc.ca

PHOTO CREDIT: DAVE QUINN

From Wardens' Desks...

From Roz Pojar:

I have just discovered that Parks Branch has contracted out work to put together "management plans" for local ecological reserves for which I am the volunteer reserve warden. I have never been contacted or informed that this was going on—so I have not been given the opportunity for input into the process. I am amazed!! So, immediately, my questions are:

- What is the point of having an ecological reserve warden who volunteers to keep an eye on the reserve/s and gets to know it/them well—but who is not consulted by Parks?
- What is the relationship between Parks and ecoreserve wardens in other parts of the province? Is this lack of communication happening elsewhere?
- What should the relationship be? In the distant past, Parks staff would contact me annually.

There is no excuse for Parks not knowing I am the volunteer warden for my reserves, as I have been doing this for at least 20 years.

*Rosamund Pojar, Volunteer Warden
for Torkelson Lake ER (#73), Morice River
ER (#81), and Burnt Cabin Bog ER (#145)*

*Ed. note: We advised in the Summer 2002 issue of **The Log** that Burnt Cabin Bog ER's warden was "Not Known". Roz has been the volunteer warden for this ER for over a year.*

Calling all wardens?

Eva Durrance writes:

I'm the coordinator for parks and ecological reserves matters for the Federation of BC Naturalists, and also warden for Mahoney Lake ER in the South Okanagan. FBCN is compiling a list of wardens across BC who are also FBCN members. We're at about 25 already and I know there are more to come in. Our idea is, in part, to use this information as a demonstration to government of the volunteer effort of naturalists in protected areas and, if we can, to help support all such volunteers in these times of government cutbacks and program slashing....

*Eva Durrance, Volunteer Warden
for Mahoney Lake ER (#130)*

Wardens: In response to Eva's note below, we would like you to identify yourself to us (via post, e-mail, or telephone) if you are a member of the Federation of BC Naturalists. We will forward your name to Eva, with your permission.

Peggy Frank, President

FIELD NOTES

Hello, I am far away from BC but have been there many times in search of various carnivorous plants. I may have been the first person to document the presence of *Utricularia ochroleuca* in BC, and certainly your own Adolf Ceska has made many contributions to this effort as well. Am curious to know if anyone has been to Parker Lake/Burnt Cabin Bog and could you comment on cps/aquatics thereabouts? Thanks.

*Hawkeye Rondeau,
San Jose, California*



PHOTO: BARRY MEYERS-RICE

*Utricularia ochroleuca;
Yellowishwhite Bladderwort*

The Ecological Reserves of South Vancouver Island

ER 15—Saturna Island

- Located NE of Mt. Warburton Pike, southern ridge of Saturna Island
- Conserves relatively undisturbed, representative stands of coastal Douglas-fir and associated fauna.
- This is one of very few relatively mature stands of Douglas-fir forest having protected status. It is a potentially important site for long-term studies of forest succession and fire history. Small areas near the reserve perimeter have been logged.
- 131 ha
- Warden: Harvey Janszen

ER 16—Mount Tuam

- Located on the southeastern end of Salt Spring Island, 4 km S of Fulford Harbour
- Conserves forest ecosystems representative of the dry subzone of the Coastal Douglas-fir Zone.
- This reserve is on the steep, rugged southeast slope of Mt. Tuam, facing Satellite Channel. It features pure stands of arbutus, probably the best representation of this species in the ecological reserve system.
- Over the years there have been heavy pressures from developers, loggers and landowners.
- 254 ha
- Warden: Paul Linton

ER 37—Mount Maxwell

- Faces Sansum Narrows, on the central west coast of Salt Spring Island

- Protects outstanding Garry oak stands and associated vegetation.
- The reserve is largely forested, but due to its aridity and presence of rocky outcrops, the tree stands are fairly open, giving a parkland appearance. It contains the largest protected stand of Garry oak in BC.
- Some fencing has been done, as grazing by domestic sheep has reduced understory vegetation in the oak woods.
- 65 ha
- Warden: Bob Andrew

ER 67—Satellite Channel

- Located in the centre of Satellite Channel, between the Saanich Peninsula and Salt Spring Island, 5 km NNW of Patricia Bay
- The reserve conserves rich benthic communities typical of fine-grained, level-bottom environments in the southern Gulf of Georgia.
- This is the only completely subtidal reserve in BC. It has a very high diversity and production of benthic infauna.
- At least 67 species occur, of which bivalve and gastropod molluscs, errant and sedentary polychaetes, and echinoderms are particularly diverse. The benthic community supports thousands of organisms per square metre.
- There is trawler damage to the seabed.
- 343 ha
- Warden: Doug Biffard

ER 94—Oak Bay Islets

- The reserve has three units: Great Chain Island and Chain Islets, located 2 km E of Oak Bay; Jemmy Jones Island, located 2.5 km N of Great Chain Island in Baynes Channel; and Griffin and Alpha Islets, which are part of the Chatham-Discovery Group, 5.5 km E of Oak Bay
- This reserve protects vulnerable nesting seabirds, uncommon meadow communities, showy and rare early spring wildflowers, and representative shallow-water marine habitats. Great Chain Island is one of the three largest seabird rookeries in the Gulf of Georgia.
- The islets in this group are treeless, and support a fairly continuous herbaceous cover interrupted occasionally by shrub thickets and bedrock outcrops. The natural meadow communities in this reserve have very limited occurrence in BC and contain species that are very rare in the province. These meadows, restricted to the Gulf of Georgia area, have been severely disturbed or eliminated in most other locations.
- The terrestrial plant communities are sensitive to trampling damage and have a low carrying capacity for recreational use.
- 205 ha
- Warden: Marilyn Lambert

ER 97—Race Rocks

- Located in the Strait of Juan de Fuca, 17 km SW of Victoria, 1.5 km off the extreme southern tip of Vancouver Island

(continued on page 11)

(“...South Vancouver Island” continued from page 10)

- Protects intertidal and subtidal communities that are extremely rich as a result of strong tidal currents.
- The reserve is almost entirely subtidal, but includes 8 islets that comprise, in total, less than 1 ha.
- This reserve has a highly productive and diverse subtidal life and is in an area of high demand by researchers, educators and recreational divers. Diving conditions are frequently dangerous.
- This is an important teaching site for Lester B. Pearson College of the Pacific.
- 220 ha
- Warden: Garry Fletcher

ER 121—Brackman Island

- Located on the north side of Shute Passage, adjacent to Portland Island Marine Park, 3.5 km NNW off Schwartz Bay
- Protects forest and wildflower stands on a pristine island in the Gulf Islands area and adjacent marine habitats.
- Though representative of nearshore forest environments in the dry Gulf Islands, this site is outstanding in that livestock grazing, logging or settlement has not adversely affected it. 80 species of land plants have been recorded to date, of which 13 are rare in BC.
- Plant communities, particularly wildflower stands, are vulnerable to trampling damage by boater/kayaker visitors. Broom is the predominant invasive species.
- The island was purchased jointly by the BC Government, the Nature Conservancy of Canada and the Nature Trust of BC. It is under a 99-year lease from the Nature Trust of BC.
- 35 ha
- Warden: Paul Linton

ER 128—Galiano Island

- Located 2 km SE of the settlement of North Galiano in the Gulf Islands
- Preserves a unique bog in the Coastal Douglas-fir Zone.
- The bog is about 900 m long and 125 m wide. Some surrounding lands have been logged, but the bog and its forested buffer are in a natural state.
- Ten species of rare plants have been identified in the reserve, nine of which are in the categories of least rarity. Beaver are present and periodically dam the outlet stream, causing variations in water levels in the bog.
- This is an excellent site for study of wetland wildlife and insects, although some of the inventoried plants may not longer be here as beaver have flooded most of the reserve.
- 30 ha
- Warden: Risa Smith

ER 132—Trial Islands

- Located 1 km south of Anderson Hill, Oak Bay
- Protects the most outstanding known assemblage of rare and endangered plant species in BC.

- The reserve comprises two elongated rocky islands and associated islets. Marine waters are not included.
- 28 species of vascular plants listed as rare in BC are present in the reserve, 15 of which are in the categories of greatest rarity in the province. The latter are mostly plants of a more southerly distribution, centred in northern California and in Oregon. Here in the Victoria area, they are at, or near, the northern limit of their range.
- This reserve supports more species of rare vascular plants than that of any known area of comparable size in BC. There are showy stands of spring flowers.
- The lighthouse on South Trial Island and a local radio transmitter are excluded from the reserve, as is BC Hydro's submarine and underground power transmission cable.
- There is some incursion of broom. The terrestrial plant communities are sensitive to and have a low capacity for trampling damage.
- 23 ha
- Wardens: Shane Ford, Matt Fairbairn

FIELD TRIP • Spring 2003

Saturday April 26, 2003

TRIAL ISLAND ECOLOGICAL RESERVE

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, a lunch

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Strait of Georgia Marine Conservation Action Plan Earns Applause

The Southern Strait of Georgia National Marine Conservation Area (NMCA), announced in early October in Ottawa, will add significant protection for the marine environment of British Columbia's south coast, according to a leading BC marine conservation group.

The Georgia Strait Alliance applauded Prime Minister Jean Chretien and Heritage Minister Sheila Copps for setting in motion Canada's action to establish a protected marine zone in the southern Strait of Georgia. Complementing the new Gulf Islands National Park Reserve, the Southern Strait of Georgia NMCA will extend environmental protection into the marine realm. Parks Canada has called the Strait of Georgia the most at risk natural environment in Canada.

"This is a major milestone in the protection of British Columbia's exceptionally diverse marine ecology," said Peter Ronald, Marine Habitat Coordinator of the Georgia Strait Alliance. "This area is extremely rich biologically, but it is under increasing stress from population growth, transportation and other development pressures."

The sheltered, inland waters of the southern Strait are in dire need of protection:

Ronald points out that the southern resident orcas are endangered in Canada and currently number just 79 whales—representing a 20% decline in the last six years. Puget Sound and Strait of Georgia Harbour seals and orcas are amongst the most contaminated marine mammals in the world. Lingcod and rockfish are at historically low levels and Fisheries and Oceans Canada managers have imposed severe restrictions on commercial and recreational catches in the Strait of Georgia. The entire US west coast groundfish fishery is closed from California to Washington State. Eel grass, kelp beds, rocky reefs and other critical habitat have little real

protection despite their important role as nursery, nesting and feeding areas for myriad ocean species.

Legislation passed this summer will enable Parks Canada to pursue a feasibility study for the area, which may extend from Gabriola to Discovery Islands, taking in some of the most heavily used waterways on the Pacific coast. This area is not only the primary shipping route to and from Vancouver but is a recreational paradise for

pleasure boaters, kayakers, divers, whale watchers and nature lovers of all kinds.

"The Southern Strait of Georgia National Marine Conservation Area will contribute significantly to the vision of the Orca Pass Stewardship Area, a large, international, zoned area specially managed for protection of aquatic habitat and species of the Strait of Georgia and northern Puget Sound," said Ronald. ■

Gone—Almost. But Not Forgotten

Both Saturna Island and Brackman Island Ecological Reserves lie within the newly created Southern Strait of Georgia National Marine Conservation Area. Peggy Frank interviewed Pam Janszen, who does research in Saturna Island ER (#15, to explore how this new status might affect the ERs.

When I asked about her research within the Ecological Reserve Pam reported, "nothing much has changed yet". She said a steering, or liaison committee had been formed to address community concerns and look after the transition. She suggested I call local residents Susie Washington or Hughie Graswick.

I spoke with Hughie, who had no immediate fears, but stated that his interests are with the Community on Saturna Island. He feels that the Parks employees will become valuable members of the community. Susie was also comfortable with the new Park and was comforted by the ecological goals of National Parks—habitat protection. She suggested that I talk to the people at Parks Canada, in Victoria.

The woman I spoke to at Parks Canada was adamant that ecological integrity is the primary goal for the new National Park. She informed me that although several announcements have been made and federal commitment is assured, the Park has not been signed over to Parks Canada and the lands are currently being managed by BC Parks. This explained Pam's observation that nothing had changed.

Once the federal government assigns money for managing the new National Park (the federal budget is expected in February 2003), the land will be signed over and management plans initiated.

Management planning will involve public consultation and both Parks Canada and the steering committee are aware that Friends of Ecological Reserves would like to participate in that process. A complete biophysical inventory will also be undertaken and we have asked, and will continue to advocate, that the research done in the Reserves by Pam Janszen and others will form part of this inventory.

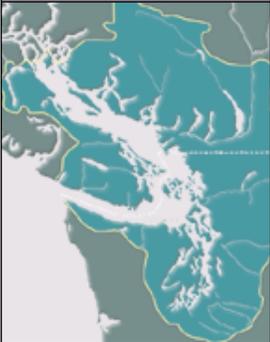
Brackman Island will also need to be watched carefully by the wardens and Friends to ensure that the ecological integrity is strengthened (i.e. the broom is pulled), and that it doesn't become a haven for boating traffic. We will want to be part of the management planning for our old Ecological Reserves as they move into their new place in the world. ■

Peggy Frank, President



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PUGET SOUND
WATER QUALITY
ACTION TEAM



2003 Georgia Basin/Puget Sound Research Conference

March 31–April 3rd, 2003
Westin Bayshore Hotel,
Vancouver, BC

This conference will build upon the successes of five previous Puget Sound research conferences and the significant transboundary work underway in the Georgia Basin/Puget Sound ecosystem. The Puget Sound Research Conference has been the Action Team's largest and most visible effort to communicate research results among the region's scientists and natural resource managers.

The Puget Sound Water Quality Action Team the partner agencies of the Georgia Basin Ecosystem Initiative (GBEI), and co-sponsors in Canada and the United States are working together to develop a top-quality conference to communicate research findings of importance to help ensure the sustainability of the Georgia Basin/Puget Sound ecosystem.

In 2003, the GBEI will present scientific information from its first five years of activity. This truly international conference will set the stage for future collaboration in the Georgia Basin/Puget Sound ecosystem and provide the Puget Sound and Georgia Basin community of scientists and natural resource managers with the opportunities and value they have come to expect from Puget Sound research conferences. At the same time, it will enhance Canadian participation in the conference and expand the technical program to include additional aspects of ecosystem research, including atmospheric interactions with the land and water.

For more information go to http://www.wa.gov/puget_sound/Publications/2003research/RC2003.htm or contact **Greg Ambrozic**, Georgia Basin Ecosystem Initiative Coordination Office, 604 713-9532 [greg.ambrozic@ec.bc.ca] ■

Important Bird Areas of BC

In 1985, the Important Bird Area (IBA) program was initiated by BirdLife International to identify, protect and monitor a network of vital habitats for the conservation of bird populations and biodiversity around the world. Since then, over 100 countries have joined to build this global network of IBAs. (www.birdlife.net)

The program was introduced to Canada by the Canadian Nature Federation (www.cnf.ca) and Bird Studies Canada (www.bsc-eoc.org) in 1996, and since then 600 sites in Canada have been identified and recognized as Important Bird Areas. Each site is evaluated in the context of specific global criteria, resulting in classifications of global, national and regional importance. For a complete list of sites, visit the IBA Canada website at www.ibacanada.com

In British Columbia the BC Important Bird Areas Program is administered jointly by the Federation of BC Naturalists (FBCN) and Wild Bird Trust of BC. Site selection process in British Columbia is near completion and 70 sites have been formally recognised as meeting the stringent criteria as an Important Bird Area. Of the 70 sites that have so far met the criteria for Important Bird Areas in British Columbia, 36 are islands with seabird colonies, 23 are wetland and inland sites, 7 are marine sites, 2 have heron rookeries and 2 are shorebird migration sites.

More information on this important program can be found by following the links to "Special Projects" at <http://www.naturalists.bc.ca> ■



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Visit www.ecoreserves.bc.ca

True Value of Nature: The Economic Sense of Conservation

According to a recent study by a team of US and British researchers, published in the journal *Science*, an undeveloped ecosystem is worth an average of 82% more than the same land paved, clear-cut, drained or developed in some other way, especially when economic benefits to the general population, as opposed to private interests, are measured.

The difference between converting and conserving is enormous in many cases. For instance, the researchers found that the overall benefit-to-cost ratio of an effective global program to avoid the conversion of the world's remaining wild ecosystems could be 100 to 1, meaning that, in most cases, it is 100 times better to conserve than develop.

The researchers studied published literature examining the economic impact on forest, wetland, grassland, freshwater, and marine ecosystems, and the services these ecosystems provide in their natural state. These services all have assessable economic value. For example, forests and wetlands provide water supply and regulation, natural flood protection, and maintenance of carbon stocks and endangered species.

Cited as an example of economic losses suffered as a result of natural land conversion is the conversion of a natural hillside to urban settlements in Honduras. When Hurricane Mitch hit in 1998, lack of substantial ground cover caused mud and landslides that wiped out villages and killed thousands of people, creating widespread economic and social disaster.

While the authors maintain that even as development is essential to human well-being, "our relentless conversion and degradation of remaining natural habitats is eroding overall human welfare for short-term private gain". They estimate that the current rate of habitat loss is costing the world, conservatively, approximately \$250 billion annually, simply because the loss of benefits provided by nature—flood control, climate regulation and nutrient recycling—is far more critical than short term vision that supports economic development at the expense of conversion of natural ecosystems. ■



Visit www.ecoreserves.bc.ca

FIELD NOTES

A couple of weeks ago (Oct. 16, 2002) I visited the Honeymoon Bay Ecoreserve with a group of lichen enthusiasts including Dr. I.M. Brodo, author of *Lichens of North America*. While this reserve does not contain many macrolichens (the trees are generally bryophyte-dominated), there were several small crustose species, some even living on the scale-leaves (the living ones!) of *Thuja plicata*. We did not make collections, but may still be able to put a bit of a preliminary lichen list together if there is an interest.

As we were leaving we noticed that someone had dumped a half-truckload of potting soil adjacent to the parking area with a single specimen of *Canabis sativa* amid the discarded material. It probably will not have any terribly deleterious effects on the Ecoreserve, but it is still a little disheartening that thoughtless people use wildlands such as this as a dump, regardless of the material. Also, the signs indicating that this was indeed an Ecoreserve were missing.

In the spring this area must be a riot of Trilliums and Erythroniums! I'll bet it is amazing! ■

Patrick Williston,
Smithers, BC



FRIENDS OF ECOLOGICAL RESERVES MEMBERSHIP FORM

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Websites of Interest

Defenders of Wildlife is dedicated to the protection of native wild animals and plants in their natural communities, focusing programs on what scientists consider two of the most serious environmental threats to the planet: the accelerating rate of extinction of species and the associated loss of biological diversity, and habitat alteration and destruction. *Defenders of Wildlife* also advocates approaches to wildlife conservation that will help keep species from becoming endangered, encouraging the protection of entire ecosystems and interconnected habitats while protecting predators that serve as indicator species for ecosystem health. www.defenders.org

Turn the Tide is a powerful, interactive program of nine actions we can take in our daily lives to protect the environment and provides a way to see the impact right away. *Turn the Tide* automatically calculates the environmental benefit of each action you take and instantly shows the impact. Participation is free. When you sign up, you'll receive a personal workspace to use to track your action and impact over time. *Turn the Tide* is offered by The Centre for a New American Dream, a non-profit organization dedicated to helping people change the way they consume to improve quality of life, protect the environment, and promote social justice. <http://www.newdream.org/turnthetide/>

Journey North/South: A Global Study of Wildlife Migration and Seasonal Change. This website provides a tool for

over 395,000 students—from all 50 US states and 7 Canadian provinces—to track the journeys of a dozen migratory species on their journeys south and north. Noting changes in daylight and temperatures, students share their own field observations with classrooms across the continent. Students are also linked with scientists who provide their expertise directly to the classroom. Several migrations are tracked by satellite telemetry, providing live coverage of individual animals as they migrate. Registration is free and program information is also delivered by e-mail. The site also provides educator and interpretive kits to complement the on-line offering. <http://www.learner.org/jnorth/current.html>

Silicon Valley Clean Computer Coalition. Do you wonder about what to do with your computer when you upgrade? Are you concerned with electronics waste problems and recycling of computer parts? Silicon Valley Toxics Coalition (SVTC) is a diverse grassroots non-profit coalition that, for almost 20 years, has engaged in research, advocacy, and organizing associated with environmental and human health problems caused by the rapid growth of the high-tech electronics industry. SVTC's goal in addressing these problems is to advance environmental sustainability and clean production in the industry and to improve health, promote justice, and ensure democratic decision-making for communities and workers affected by the high-tech revolution in Silicon Valley and other high-tech areas of the US and

the world. **The Clean Computer Campaign** targets escalating electronics waste problems. Launched in 1997, this campaign is working to clean up the life-cycle of computer manufacturing and promote environmentally sustainable development, extended producer responsibility, and corporate and government accountability. Go to this site to find out what you can do to help the problem. <http://svtc.igc.org/cleancec/>



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