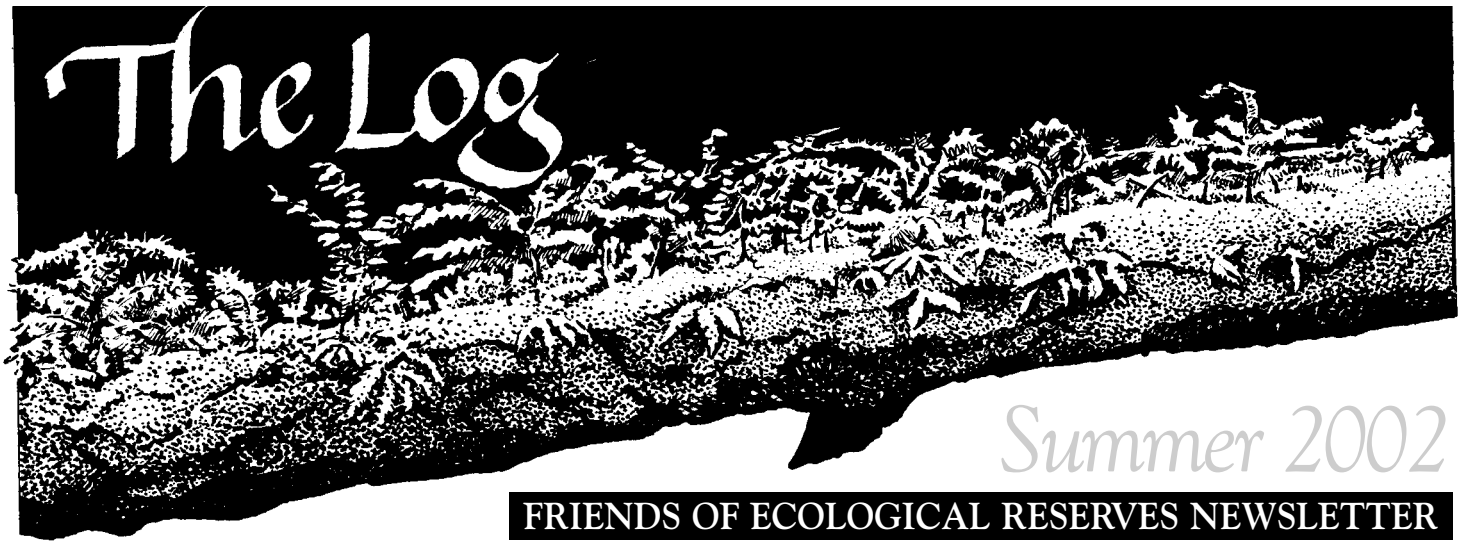

Summer 2002

FRIENDS OF ECOLOGICAL RESERVES NEWSLETTER

Whither Reserves—or Wither Reserves?

British Columbia was extremely fortunate that it had Dr. Vladimir Krajina to seize and run with a proposal originating from the International Biological Program for a system of protected scientific areas, energetically steering the idea over the political hurdles in Victoria to emerge as our Ecological Reserves Program. It was largely his drive and force of character that carried the concept through what could have been a long and difficult gestation period, to a relatively speedy and successful delivery.

Some *ad hoc* wardening developed in the initial years, often by individuals or groups who had suggested candidate areas, and by the late 1970s a proposed framework for a volunteer warden program was put forward resulting in an official system starting in 1980.

For those people involved in those days the memories are good ones. There was strong rapport between the Ecological Reserve Unit of four in Victoria and the individual wardens in the field, many of whom were known to management personally. If there was a problem on the reserve the local warden knew where to go for resolution; if a query arose in Victoria they knew who to talk to locally. The system worked well but, in 1991, despite the admonition not to mend something that 'ain't broke' government planners decided that it made more sense to place ERs under direct management of BC Parks. Wardens were told what a boon it would be having someone close at hand who knew local situations and could give rapid attention and answers to concerns as they arose.

This wouldn't have been the first questionable idea coming down from on high. In this case, weakness was due to its imposing another range of responsibilities onto an agency that was already badly stretched and which was regularly to suffer even more attrition with each passing provincial budget. Naturally, with more than enough in existing parks pressing for management attention there was little inclination to become deeply involved in ERs. In fairness, it must be said that results vary—some districts have been quite diligent in assuming their new responsibility; others seem virtually to ignore their reserves. Imposing further to the load in recent years has been the sudden addition of many more new protected areas emanating from the LRMP process without any offsetting funding.

Surely at times like these of limitations on funded resources the costless Volunteer Wardens would become even more valuable and would be depended on to a greater degree. In at

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Inside . . .

The Log

Summer 2002

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 November 1, 2002

Editor
Cheryl Borris

Design and Production
Indigo Sky Graphic Design

Contributors to this issue:
Cheryl Borris, Peggy Frank, Pam Janzsen, Malcolm Martin, Lynne Milnes, Curtis Rattray, Jane Watson

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PRESIDENT'S MESSAGE

Times—They are a'Changin'

Enormous changes lie ahead for Friends of Ecological Reserves. We are, thanks to the generosity of web-spinner Gordon Harris, about to fully enter the electronic age. You can see Friends of Ecological Reserves on our new website: **www.ecoreserves.bc.ca** (as well as e-mailing us at ecoreserves@hotmail.com). Details about the website are below.

The world is quite different from the days where a group of concerned friends who believed in Ecological Reserves, their value and their importance to the future gathered around kitchen tables and in saunas in the early 80s. Yes, things have changed from the early 80's when Friends of Ecological Reserves was first conceived, when newsletters were written, edited and published by the steady band of volunteers.

And yet the more things change, the more they stay the same. In the early 80s there was a Social Credit government with little interest in ecological values. Through education and lobbying, we were able to convince the government that old growth, grizzly bears, wild water and rare plants were important. Friends of Ecological Reserves worked with researchers, government employees and other environmental agencies and new parkland and ecologically significant areas were protected. Several agencies, including Friends of Ecological Reserves, also worked with landowners and helped protect ecologically important areas that were privately owned. There are always challenges and there are always good people working toward solutions.

In the next few years, Friends face several similar challenges. There are financial pressures within the province and the threat of losing several important Provincial Parks to private ownership is quite real. We, those concerned about ecologically significant areas, need to continually remind government of the importance of Ecological Reserves, undeveloped land and water, and all indigenous plants and animals. We need to remind ourselves and others of the important research that has taken place within Ecological Reserves—like the sea otter and key species research of Jane Watson (see Jane's report on page 4; the marmot research of Andrew Bryant; and the fungi research by Pam Jensen to mention only a few research projects.

We also need to be aware that more research is going on today and through the results of work carried out by Tom Reimchen and his students we will have a better understanding of the web connecting fish, forests and birds. From website (our new little FER electronic spotlight) to Website (the world around us)

We also need to reflect on the importance of ecologically significant areas to First Nations. Ecological Reserves were created in areas that are already recognised by First Nations as important areas. The letter from Curtis Rattray (Tahltan from Deese Lake) in this issue of *The Log* opens discussion to our readers and we want to hear your comments. We need to encourage government to have open and frank discussions with key First Nations representatives. As Friends we need to find out if we are working with similar ecological values, and if so, how can we work with the First Nations in the areas around each Ecological Reserve.

As we face these challenges, we need to reflect on provincial successes and positive observations. Successes like the babies born in marmot colony on Mt. Washington. Positive observations like the Ministry dealing with Ecological Reserves remains committed to protecting the Ecological Reserves despite

(continued on page 3)

("Times—They are a'Changin'" continued from page 2)

devastating cut-backs in staff and program areas. Lynne Milnes and I met with Parks staff and they were very hopeful.

We, positively, know we have some of the best wardens in the world looking after our Ecological Reserves. A Toronto television producer has contacted us about interviewing some of those helping to ensure protection of ecologically significant parts of this beautiful province. And it is a beautiful province. As we travel about this summer and fall, let us reflect on the joys of this good world with its few problems. Let's expand our community of Friends of Ecological Reserves and continue to enjoy rousing discussions, one another's companionship and the fellowship of others committed to a better environmental future. ■

Peggy Frank, President

With a Fanfare of Trumpets: FER Website Launched!

After months of hard work behind the scenes, by volunteer website designer, Gord Harris, and other FER members, we invite you to explore our first venture on the Internet at **www.ecoreserves.bc.ca**. We're delighted with the results and hope you are, too.

Gord has organized over 450 printed pages of photographs and text into an attractive and easy-to-navigate site. While you're there, browse through the 160-picture Image Gallery, glance through back issues of *The Log* to 1998, take an on-line tour of the ERs of the Skagit River area, find information about BC's ecological reserves, the warden system and our society—The Friends of Ecological Reserves. And, don't forget to leave us a note on the Field Notebook! ■

Cheryl Borris, Editor

Visit www.ecoreserves.bc.ca

Public Identity Change for British Columbia Assets and Land Corporation

The name of the British Columbia Assets and Land Corporation has officially become Land and Water British Columbia Inc. (LWBC)

With the integration of the water licensing and allocation functions with the delivery of access to Crown land, the new name better reflects the Corporation's new mandate.

Other changes to the corporation include establishing an integrated regional service centre structure, eliminating the backlog of Crown land applications, reducing the water application backlog by 30%, and streamlining the application process.

In 2002/03, LWBC is acting to reduce the backlog in water applications by 90%. New applications and reasons for corporate decisions will be posted on the internet. For more information, visit their spiffy new website at http://www.lwbc.bc.ca. ■

("Whither Reserves…" continued from page 1)

least some cases it has been quite the opposite: not only is there little time to spend on ERs, there is equally little time for the wardens.

It would be of interest to learn how satisfactory the situation is overall throughout the province. Perhaps FER should consider a 'State of the Union' review periodically to gauge whether the collaboration between volunteer workers and a government agency is performing as it should from the viewpoint of both, and whether this arrangement is serving the reserves well. It may be that a particularly well-regarded procedure in one district should be recommended to others or that a dysfunctional arrangement in another district can be remedied. Perhaps the whole administration needs rethinking.

At times it does seem that parks management at a local level is almost synonymous with 'people management' and is therefore less attuned to the purposes of ERs. When the ecological reserves concept was discussed originally it envisaged a scientific panel whose function would be to provide the scientific insight to planning and management that may be less readily forthcoming from bureaucratic sources. However, governments tend to be disquieted by the idea of giving up any powers to an independent body and the scientific panel idea was dropped. Perhaps there is now reason to consider whether there is any reason for ER administration to be 'contracted out' to another entity (under the aegis of the appropriate ministry) that would be solely responsible for reserves. Certainly periodic reconsideration of such matters cannot be other than constructive. ■

Malcolm Martin

Malcolm Martin has been the warden of Cougar Canyon ER (#108) since February 1983.

The Subtidal Communities of Checleset Bay ER (#109): New research

Researcher Dr. Jane Watson shares some of her latest scholarship with the Friends:

For the last sixteen years, co-workers and I have monitored permanent plots we established on the seabed in Checleset Bay ER (#109) in 1987-88. These plots have allowed us to follow changes in community structure associated with the reintroduction of sea otters to the Bay. In addition to keeping track of sea otter abundance in Checleset Bay and our ongoing kept studies, we have recently been looking at the effects of sea otters on a species of snail known as the red turban snail (*Astrea gibberosa*).

Before being hunted to virtual extinction, sea otters probably limited the size, abundance and distribution of many subtidal invertebrate populations. When sea otters were removed invertebrate populations flourished, increasing in abundance and size. This abundance coupled with developing markets and the invention of SCUBA led to the development of invertebrate fisheries, fisheries that may not have been possible if sea otters had remained common. In fact, the decline of commercially harvestable densities and sizes of invertebrates often coincides with the expansion of sea otters.

However, invertebrate stocks have also declined in the absence of sea otters. The best know example of this is the northern abalone. Even in the absence of sea otters, abalone stocks along most of the west coast of North America have collapsed. These declines are due to a variety of factors, but mostly over-exploitation. In 1990, fishing for northern abalone in British Columbia was closed to protect dwindling stocks. The northern abalone is listed as threatened by COSEWIC, and intense efforts to restore abalone stocks are underway. This creates an ironic situation; recovery of sea otters almost certainly means that the recovery of abalone stocks to recent historic levels is impossible.

Studying the interaction between sea otters and abalone is difficult, because in the presence of otters abalone are small and occur in crevices. In 1998, coworkers and I started a study designed to examine the ecology of abalone in areas with and without sea otters by using a surrogate or model species. We chose the red turban snail because is it ecologically similar to the abalone, it is abundant in both areas with and without sea otters, and it is not commercially or recreationally harvested. Some of our results have been surprising.

Sea otters only eat turban snails bigger than 40mm. This means that turban snail populations in areas with sea otters are composed of individuals less than 40mm. In contrast, snail populations in areas without sea otters contain individuals up to 80mm (Figure 1). This is not surprising, since sea otters generally reduce the size of their prey species. What was surprising was that although the turban snail biomass (gms per square metre) in areas with sea otters was lower than in areas without sea otters, the abundance of turban snails between the two areas was not statistically different. This means that the small snails are more abundant in areas with otters compared to areas without sea otters.

In fact, in areas without sea otters, red turban snails have a bimodal size distribution, with two peaks in the size frequency distribution (Figure 1). Biologists have two explanations for such patterns. Small snails may be very abundant because of good settlement, in which case the cohort (or age class) of small snails should move through the population (sort of like the baby boomers in a human population). In contrast, the dip may be explained by size-specific predation, a predator selectively removing small snails, but unable to eat the larger ones. Since we have followed these snails for three years, we are reasonably sure that good settlement alone is not the cause of this bimodal pattern.

These preliminary results suggest that in areas without sea otters, small snails (<30mm) may be subjected to higher levels of predation than similar-sized snails in areas with sea otters. One explanation for this is that sea otters, by preying on invertebrate predators such as crabs, reduce the mortality of newly settled snails. Thus after settling in otter-free areas, small snails maybe eaten by other invertebrates, whereas in otter-occupied areas the greatest level of predation occurs after they reach 40mm. This also means that small snails should be more abundant in areas with sea otters, compared to areas without sea otters.

This is what we will be working on this year, trying to determine if predation on small, red turban snails is higher in areas without sea otters than in areas with sea otters. We will examine predation on small snails in Checleset Bay (with sea otters) and compare this to predation on snails in Barkley Sound (without sea otters). The results will be interesting. If our ideas are right, it will further emphasize how the removal of a single species can have unexpected effects on a biological community. ■

Visit www.ecoreserves.bc.ca

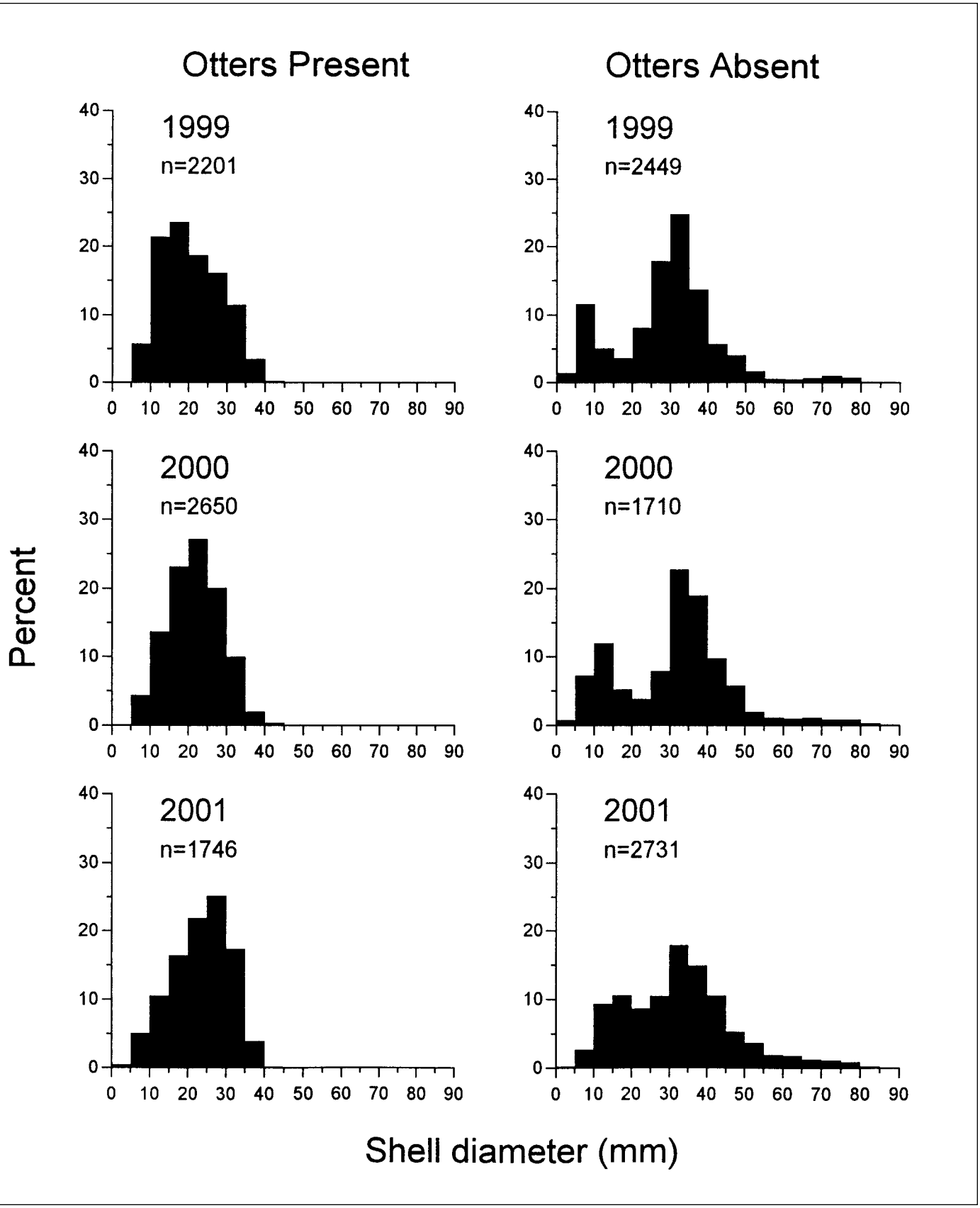

FIGURE 1. The size frequency distribution of red turban snails at eight sites with sea otters (Checleset Bay) and at seven sites without sea otters (Barkley Sound) measured over three years. Sea otters eat red turban snails measuring 40 mm or less, whereas in areas without sea otters red turban snails may grow as large as 80 mm. The reason(s) for the bimodal (two-peaked) distribution of turban snail size, in areas without sea otters, is the subject of current research.

Long-Term Study of the Fungi of ER #15 on Saturna Island

Close-up of Russula decolorans

Another year has passed and my Inventory and Long-Term Study of the Fungi of Ecological Reserve #15 on Saturna Island continues. This year has presented more difficulties than most. My work was interrupted in February and March when I seriously re-injured my right knee. This led to visits to specialists and eventually to surgery last October to replace my anterior cruciate ligament. The good news is I was able to go on my first cross-country hike in the Reserve last week. Nor many mushrooms were out; they don't seem to respond to this cold spring any better than the rest of us.

The bad news is that I missed out on what looked like a phenomenal season last fall. Like most things in nature, fungal fruiting appears to be cyclic and every 5 to 7 years there seems to be a fall that is particularly rich in fungal types and abundance. In fact, one of the goals of my research is to verify this and attempt to find the reason behind it. Rainfall and temperature are obvious suspects, but it will take many more years of collecting data to verify this statistically.

The other bad news is that ER #15 is being transferred to the Federal government as a piece of the new Pacific Marine Heritage Legacy Park. The latest word is that this transfer might happen this fall, but in the meantime, the Reserve is now shown on the PMHL signage as public land. While it has been unofficially indicated that I will be able to continue my research once the transfer is complete, the fact that this land is now open to the public diminishes it viability as a research area.

However, in spite of my knee and the frustration of the political changes to the land status, and working full time at my landscaping business, I did get out into the Reserve for 10 hikes last year and found 30 fungi new to the Reserve, 14 of which have not been found elsewhere on Saturna Island. One of the more interesting finds was what appeared to be an *Inocybe geophylla*, a very common brown spored mushroom, but this one had white spores. After consulting with an *Inocybe* expert who assured me such things are possible, although he had not seen one of this particular species. I labelled it a *Leucoinocybe geophylla* and will now have to look at *Inocybe geophyllas* a little more closely. Were the white spores were a single mutation or a new genus?

In fact, it has been a year for puzzlers. I found a cluster of medium sized mushrooms, once again with white spores, that I have not been able to identify, even to genus, but I have pictures and the dried specimens so someday someone will be able to help.

But all finds aren't that hard. I found *Nolanea fructufragrans*, a small pink-spored fungus in genus that can often

Some characteristics of Inocybe geophylla

be quite difficult to sort out. *N. fructufragrans*, on the other hand—and I quote from a field guide—smells like tooty-frooty gum. And there was *Russula decolorans*, a beautiful medium size mushroom with a reddish-orange coppery coloured cap and white gills, stem and spores whose white flesh quickly turns red and then grey when it is bruised. I had found them in abundance in the Mount Washington area one year and was taken by their beauty and ease of identification. It was a treat to find them on Saturna Island.

And so it goes, the surprises, the mysteries, the beauty and the peculiarities. Thank you once again for your support, both financially and morally, for encouraging me to continue my research and for listening with interest to the results. Most of all, thank you for continuing to battle for the preservation and integrity of the Ecological Reserves of British Columbia, a resource of incalculable value. ■

Pam Janszen

Finding Hope

At our last Friends' board meeting, we shivered in Peggy's backyard, pretended it was summer, and wondered collectively how to remain hopeful in these times of profound change.

We are all overworked middle-aged individuals who watch, in horror, as BC's health care system, parks branch, and crown corporations are being dismantled, shut down and sold. "It is all too much," we declare.

How can we intelligently respond to and fight this onslaught? While change is necessary, inevitable and often a kick-start for innovation it can also be stressful, destructive and damaging. So how does one find peace in this present atmosphere of post 9/11 paranoia and provincial government rape and pillage?

My first place for refuge in good times and bad is in a book. I am presently finding solace with Edmond O. Wilson, the Pulitzer prize-winning American entomologist, whose beautiful prose on everything from slime molds to Darwinian theory makes my heart sing. His newest book, *The Future Of Life*, is a hopeful look at the earth's biosphere and the protection of biodiversity. Wilson begins his book with a quote from John Sawhill, the former president of the Nature Conservancy in the US, who said, "In the end our society will be defined not only by what we create, but by what we refuse to destroy."

Wilson strongly supports non-governmental organizations (NGO's) such as the Friends of Ecological Reserves and says in the US there is one paid membership in some environmental organization for every 20 Americans or one membership for every citizen of Denmark. He advocates for the establishment of reserves to protect species vulnerable to human activity; the enlargement of reserves to protect re-growth of natural habitat and finally speaks out for conservation corridors linking parkland to reserves for future viability. This is not rocket science. It is a simple sane solution for the future of life.

> *…our society will be defined not only by what we create, but by what we refuse to destroy.*

It is inspiring to read Wilson's description of the endangered Vancouver Island Marmot. The marmot's breeding program has turned the corner and the first litters are getting ready to be released into the wild. It was with hope and a tremendous sense of pride for all those involved that the Board of the Friends of Ecological Reserves sent off a cheque last month to the Marmot Recovery Centre now located on Mount Washington, Vancouver Island. Bit by bit, species by species it is possible to save some endangered species.

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On my pre-dawn walk by the sea (another refuge in times of stress) I met Dr. Tom Reimchen, a Friends' grant recipient. He told me that Katie Stewart, his research student who is also supported by the Friends, spoke with him from the north coast where she was studying salmon nitrogen in songbird wings. The serendipity of my sleepy body determined to experience the outside before being stuck inside for the rest of the day trying to protect BC's vanishing habitat and the vision of Katie tromping around in the bush in the rain on the north coast netting song birds made me marvel at the world's wondrous twists and turns of fate.

Our lives are made up of "doing" and "having done" and "still to do's". Sometimes even a morning walk is too much and the luxury of sleeping in is called for. In order to keep despair at arms length we must feed our bodies and our souls. Elisabeth Simpson, a friend who is fighting a terminal illness called this process, *The Perfection of Hope*. Her book (of the same name) describes her process of not letting the hysteria of future uncertainty get to her. She not only worked on perfecting the 1960's theory of "be here now" but she set up a system of support and limits that suited her needs. Rest, exercise, nutrition, creative work, and loved ones were the priorities. Her partner described their process of hope in the Leonard Cohen lyric, "we are looking for the cracks where the light shines in."

———

Writing these words in my garden my daughter sits beside me collecting camas seed from the dried pods of the long stalks of dried *Camassia quamash* and *Camassia leichtlinii*. We will pass the seeds on to friends and native garden enthusiasts. One has to be an optimist to be a gardener. Despite death, damping off and other dire dilemmas gardening is a hope-filled pursuit. The cherries are delicious this year. They liked the micro-nutrients I fed them in the early spring. The peaches are ripening nicely and last night's salad of freshly harvested greens was sublime.

> *Rest, exercise, nutrition, creative work, and loved ones were the priorities.*

In Diane Ackerman's latest book *Cultivating Delight* she says she "plans her garden like she wishes she could plan her life." I plan areas of my garden and in between it is chaos, which is pretty much like life. Ms. Ackerman is a sensualist nourished by the fecundity

(continued on page 8)

("Finding Hope" continued from page 7)
of the growing world around her. She follows the seasons, the flora and the fauna, and sometimes the riotous colours of her perennial border. Describing the smell of one of my favourite roses "Abraham Derby" she says, "What was it exactly? Candied lemon peel, apple, cinnamon and chocolate…" while Georgia O'Keefe, the American artist renown for her flower paintings, says, "Nobody sees a flower really—it is so small it takes time—and to see takes time, like having a friend takes time." Today I take time to watch the oily black camas seeds ping into the plastic container in the heat while my daughter grows and grows before me.

———

Time is often the bane of an environmentalist's life and the antithesis of hope. We say, "Time is running out to save a critical habitat" or "more time is needed for another environmental campaign". My husband always says I jump from one problem to another rarely giving time for the problem to sort itself out without my divine intervention. He is right. Sometimes (doing) less is more. For long-term stewardship, it is sometimes necessary for those in charge to bow out in order to allow involvement from the grassroots.

When I am not gardening (professionally as well as at home) I raise funds for the Land Conservancy of British Columbia (TLC)—an appropriate acronym if there ever was one for all those involved do so with tender loving care. TLC is 5 years old and has raised $15 million dollars protecting over 86,000 acres in that short time, an impressive achievement for an organization that still does not have an office! As part of my work last week I met with Joe Saysell of the Steelhead Society who has been working for decades to protect a wildlife corridor along the Cowichan River. To date, the province has purchased several parcels along the river in cooperation with the federal government (and TLC's help) for the Trans Canada Trail. However, there is one strategic private parcel left bordered by the provincial park.

Logged selectively 80 years ago, this 170-acre parcel has lofty Douglas-firs and enormous hemlocks untouched by a chain saw. Mammoth cottonwoods still give off their Balm of Gilead scent. Three of us hiked along the river while talking over the sounds of the river's rapids. We watched brown trout camouflaged among the rocks in the deeper pools while ospreys preyed overhead. Kingfishers chattered along the shore and the twinflower was in bloom on the forest floor. Our day was made observing a pileated woodpecker mother in the dappled forest light teach her teenage chick how to get insects. The mom would patiently demonstrate and the chick would whine and chatter at her but not follow her directions. She rat-a-tatted a fallen log and found insects to demonstrate again, but the chick lost concentration and chattered on and on. The natural world repeats itself while we laughed, remembering our teenaged selves. It was great day and we left feeling replenished.

I will work to raise money for this perfect bit of forest along the Cowichan River so that it is protected for all time. I owe it to the Pileated woodpecker's mother and to Joe Saysell who has the Cowichan River in his very being. I plan to take my own family to the Cowichan to hike. I can't wait to show them the brown trout and, if we are lucky, maybe the Pileated woodpecker. I will still write my letter to the government protesting the sale of BC Hydro, the demise of our health care system and the loss of the Parks Branch. I will still go to the next Friends Board meeting and I will teach my daughter to reduce, re-use and re-cycle. Therein lies my hope in times of change. ■

Lynne Milnes, Vice-President

10 Instructions for Life from the Dalai Lama

Follow the 3 R's—Respect for Self, Respect for Others and Responsibility for your actions.

Take into account that great love and great achievement involves great risk.

When you lose do not lose the lesson.

Remember that not getting what you want is a wonderful stroke of luck.

Spend time alone everyday.

A loving atmosphere at home is the foundation of your life.

Remember that silence is sometimes the best answer.

Be gentle with the earth.

Once a year go somewhere you have never been before.

Live a good and honourable life then when you get older and think back, you'll be able to enjoy it a second time.

■

Orchids and Congratulations

On May 9, 2002, the Lieutenant-Governor Iona Campagnolo held a reception at Government House, in Victoria, to honour well-known BC ecologist **Dr. Vernon "Bert" Brink**. Over 200 invited guests, including representatives of the federal environment ministry and the provincial minister of water, lands and air protection, the Hon. Joyce Murray attended.

The Lieutenant Governor read the following letter from Len Marchand, a former BC environment minister, as part of the tribute to Dr. Brink:

Mr. Brink has many well-deserved honours accorded him during his most distinguished career. Personally, as with those of you present here tonight, I too have long been and admirer of Bert Brink, both the man and his devotion to a sustainable British Columbia. In 1994 at our then-brand new University of Northern British Columbia, Dr. Brink was honoured with a Scholarship in his name dedicated to Biodiversity…later, with the Fraser River Coalition, Dr. Brink received a Fraser Basin Council Sustainability Award.

As I welcome you all to this very happy occasion, let me remind us all that the man we honour tonight has dedicated his entire life to the goals that are now encompassed in the Habitat Conservation Trust Fund. We all count ourselves distinguished by knowing you Dr. Brink. Here tonight you will find representatives from a host of British Columbia Organizations, all of which are devoted to goals to which you have given your splendid support. I do not believe that we could have come together in a more important cause than to simply say "Thank You" Bert Brink, we know you are not finished, but that you remain fully engaged in your work.

The generations that follow ours will continue to benefit from the work that you have begun far into tomorrow. There can be no greater credit than that which is earned for selflessly providing for those whom we will never know. On behalf of British Columbians who may not have as we do the privilege of knowing you, I offer our profound respect for the integrity, honesty and forthright intellectual radiance that you have brought to your cause.

Dr. Brinks is an honorary director of FER.

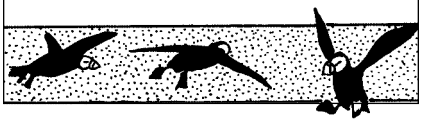
PHOTO CALL

Thank you to everyone who has sent photos to illustrate our new website.

Please continue to scour your personal archives for photographs of ecological reserves and activities in reserves and to send them to us—or, alternatively, if you have the technology, scan them and forward them to us as a .jpg file via e-mail.

Please take the time to identify any people in the photogragh(s), as well as who took the photograph (if you can remember)—so that we can offer proper credit. And, give us your name and phone number so that we may contact you if we have questions. If you want the photograph(s) returned, remember to include your own address.

Again, if you have already sent us photos, thank you! ■



FER Board Director **Mary Rannie** and long-time FER supporter **Jerry Lang** were married, in a small and intimate ceremony, under the old pear tree in Mary's yard in early July. A family party and celebration followed in early August.

Our heartfelt thanks to members **Jane Francis** and **David Skilling**, both of **Jane Francis Design**, who assisted with the Interior Grassland placemat and have donated digital images of flora on the placemat to the new FER website.

Many many thanks to **Gord Harris** and several FER members for their hundreds upon hundreds of volunteer hours over the past several months in planning and producing our new website. Gord, we could not have done it without you!

■

Visit www.ecoreserves.bc.ca

The Ecological Reserves of Skeena District

ER 9—Naikoon – Tow Hill

- Located 22 km E of Massett, northeastern Graham Island
- Protects a sand beach, dune ecosystem and inland moor bog on the Queen Charlotte lowland.
- Characterized by plant communities associated with sand dunes, coniferous forests and bogs. Sand-binding grasses and herbs growing in patches on the reserve include several rare species to BC—notably sea mertensia (*Mertensia maritima*), found only in the Queen Charlotte Islands; big-headed sedge (*Carex macrocephala*), American glehnia and western dune daisy. The reserve is bounded on the west, east and south by Naikoon Provincial Park, which was created to help preserve the natural diversity of the Queen Charlotte coastline.
- 514 ha
- Warden: Al Midnight

ER 10—Naikoon – Rose Spit

- Located at the northeast point of Graham Island, 35 km NE of Massett
- Conserves a sandy coastal marine environment and the associated flora and fauna

- This is a unique spit, largest of its kind in BC. It was created by sand and gravel deposited by prevailing southeast winter winds and wave action in Hecate Strait. Large dunes, of up to 10 m high, have formed. Naikoon Provincial Park borders the reserve on the south.
- This is part of the Pacific Flyway for migrating birds travelling south. Upwelling currents produce much food along the spit, attracting pelagic species rarely seen from the shore. Sandhill cranes gather here after nesting in the park bogs and shorebirds abound.
- This fragile environment is vulnerable to damage by all terrain vehicles, which destabilises the dunes.
- 170 ha
- Warden: Al Midnight

ER 25—Dewdney & Glide Islands

- Located in eastern Hecate Strait, 150 km ESE of Sandspit
- Provides a research area containing bog and fen ecosystems representative of outer islands along the northern mainland coast.
- Most of the reserve is made up of Dewdney Island, which has an indented shoreline of over 60 km that ranges from rocky headlands and coves to boulder, sand and shingle beaches and muddy lagoons.
- The outstanding features of this reserve include extensive and diverse coastal bogs and fens containing several rare plants; a very isolated beaver population; wetland birds having a restricted breeding range in the province; and a breeding colony of Cassin's auklet. Marine waters are not included in the reserve.
- This reserve has been closed to the public since 1977, by Order-in-Council, to protect nesting birds and their habitat.
- 3845 ha
- No Warden

ER 45—Vladimir J Krajina

- Located on the middle west coast of Graham Island, Queen Charlotte Islands, 35 km W of Juskatla
- Protects representative ecosystems, rare genetic resources and outstanding biological phenomena in a remote coastal setting.
- Outstanding features include exceptional park-like stands of Sitka spruce, interesting blanket bogs and a complete estuary. The liverwort and moss flora is exceptionally diverse and several rare and/or endemic species or varieties of vascular plants and bryophytes occur. Faunal features include spawning runs of four species of salmon, large seabird colonies, nesting peregrine falcons, a sea lion haul-out and the presence of all endemic races of birds and mammals known to occur in the Queen Charlotte Islands.
- This reserve also includes Hippa Island, a site of global significance for Ancient Murrelets, as well as other congregatory species and colonial waterbird/seabird concentrations. This site is vulnerable to potential oil spills, introduced predators and human trampling.
- 9834 ha
- Wardens: Rick Burns, Lynn Prestash & Frank Stoney

ER 52—Drizzle lake

- Located 10 km SSE of Massett on Graham Island.
- Maintains undisturbed lake and bog ecosystems on the Argonaut Plain, Queen Charlotte Islands, for

research on unique stickleback populations and their predators.

- This reserve features a complex mosaic of plant communities that vary according to wetness. Aquatic habitats cover nearly 20% of the reserve, including Drizzle Lake itself and its upstream drainage. Seventy-five species of vascular plants, 37 mosses, six liverworts and 24 mushrooms have been recorded.
- 837 ha
- Warden: Tom Reimchen

ER 57—Chickens Neck Mountain

- Located adjacent to Highway 37, 53 km N of Dease Lake village.
- Preserves an excellent stand of nature spruce-subalpine fir forest in the Boreal White and Black Spruce Zone.
- This reserve is on relatively steep north-facing slopes in the Dease River valley and contains rounded summits that are outliers of Chickens Neck Mountain. Four spruce-dominated forest communities have been identified. This is one of the few unburned and accessible stands of spruce forest in this area.
- 680 ha
- Warden: Dave Zevick

ER 58—Blue/DeaseRivers

- Located 32 km W of Lower Post; 2.5 km W of Highway 37
- This reserve establishes a research area containing a variety of communities in the Boreal White and Black Spruce Zone.
- The reserve lies on a plain of low relief in the Liard River drainage. While it has little elevational relief, it displays a variety of habitats, which is attributable to various slope exposures on landforms such as eskers, an array of moisture conditions from lakeshores to gravelly drumlins and the historical occurrence of wildfire.
- 777 ha
- Warden: Dave Zevick

ER 59—Ningunsaw River

- Located 105 km N of Stewart, beside Highway 37.
- Preserves an elevational sequence of three biogeoclimatic zones in a transition between coastal and interior climates.
- The reserve encloses a rounded mountain on the interior flank of the Coast Mountains. Wide elevation range, a variety of slope exposures, and frequent snow avalanches result in considerable habitat diversity.
- The reserve provides excellent year-round habitat for grizzly bear and good summer through fall range for moose.
- 2046 ha
- Warden: Dave Zevick

ER 63—Skeena River

- Located 50 km W of Terrace
- This reserve sets aside unlogged floodplain islands for research on succession in black cottonwood communities.
- Skeena River ER comprises three large and four small islands in a low-gradient reach of the Skeena River where reduced river velocities allow sediments from upstream to settle out, forming many bars and islands. It is an ideal site to study natural regeneration of black cottonwood, natural succession on unlogged floodplain islands and relationships between alluvial processes and floodplain vegetation along a large, unregulated river.
- The islands have moderate capability for moose production and are believed to be important calving sites for moose.
- 91 ha
- Warden: Dennis Horwood

ER 68—Gladys Lake

- Located on the Spatsizi Plateau in the Eaglenest Range, 65 km ESE of Iskut

- Established primarily for conducting long-term research on unharvested large mammal populations in an alpine-subalpine area. Protects Spruce-Willow-Birch and Alpine Tundra ecosystems.
- This is the largest ecological reserve in BC and it is completely surrounded by Spatsizi Wilderness Park. Gladys Lake, 60 ha in size, is the central feature of the reserve, with streams draining five major valleys converging on it. There are resident mountain goat and Stone sheep herds, as well as seasonal habitat of importance to caribou and moose.
- Over 370 species of vascular plants have been identified, making this one of the floristically best-known reserves in BC.

(continued on page 12)

("…Skeena District" continued from page 11)

- 48560 ha
- Warden: Dave Zevick

ER 73—Torkelsen Lake

- Located 50 km NE of Smithers; 4 km W of the north arm of Babine Lake
- Retains an accessible northern bog-forest complex for research and educational purposes.
- The reserve comprises a mosaic of open bog, sparsely treed bog woodland, and dense forest on the floor of a broad northeast-southwest trending valley flanked by mountains.
- 182 ha
- Warden: Rosamund Pojar

ER 81—Morice River

- Located on the W side of Morice River, 24 km SW of Houston
- Established to preserve, for research purposes, forest ecosystems representative of the western edge of the Sub-Boreal Spruce Zone.
- Vegetation in the reserve was incompletely described prior to a forest fire which burned almost its entire area in May 1983. The Ministry of Forests has used this reserve to study forest regeneration following fire.
- 358 ha
- Warden: Rosamund Pojar

ER 93—Lepas Bay

- This reserve is an unnamed island in Lepas Bay, 3 km SE of Cape Knox, NW corner of Graham Island
- Preserves nesting seabird colonies, mainly petrels, and their habitat.
- This reserve is a small, low, oval-shaped island with steep—sometimes vertical—cliffs. It has a lush covering of grasses and forbs under an open stand of wind-swept, stunted Sitka spruce. There are no beaches.
- The reserve is a nationally important nesting site for storm petrels, which are burrow-nesting seabirds.
- Potential oil spills, and the spread of introduced predators (raccoons and rats) from the adjacent shore are the primary threats to the site and the seabirds that nest there. The islet is also vulnerable to damage from human trampling.
- 3.6 ha
- Wardens: Rick Burns, Lynn Prestash and Frank Stoney

ER 102—Charlie Cole Creek

- Located near the S end of Teslin Lake, 150 km NW of Dease Lake
- Preserves three cold-water mineral springs, associated landforms and vegetation, on the Kawdy Plateau.
- This reserve, the only one located in the Yukon River basin, features three cold-water mineral springs, a rather unique phenomenon in northern BC. One of the springs has formed a unique water-filled crater approximately 20 m in diameter.
- The reserve is remote with access only by helicopter or by boat, followed by a 7 km. walk. The reserve is in a completely natural state.
- 162 ha
- Warden: Dave Zevick

ER 114—Williams Creek

- Located on the S side of Williams Creek, 20 km SE of Terrace
- Conserves terraced bogs and representative forests of the Coastal Western Hemlock Zone in northwestern BC.
- While most of the reserve contains steeply sloping terrain, an area of moderate relieve occurring at the western end of the reserve contains terraced bogs. Fossil pollen found in these bogs could reveal forest succession since the last glaciation. The reserve is in a natural state.
- Spruce trees, up to 60 m tall and 500 years old can be found here. Research plots have been established by the Ministry of Forests. The reserve was identified by ecologists in the Ministry of Forests, in 1985, and was created with that Ministry's collaboration.
- 700 ha
- Warden: Dennis Horwood

ER 115—Gingietl Creek

- Located 35 km upstream from the mouth of the Nass River; 85 km NNW of Terrace
- Established to conserve an undisturbed coastal watershed of wide elevational range for forest ecology, vegetation, wildlife ecology and hydrology studies.
- The reserve includes the entire drainage system of Gingietl Creek and an elevational sequence of three biogeoclimatic zones. It is an excellent location to study wildlife species adapted to mature, coastal coniferous forests. The reserve is in a natural state.
- The reserve was identified by ecologists in the Ministry of Forests, in 1985, and was created with that Ministry's collaboration.
- 2873 ha
- Warden: Dennis Horwood

ER 133—Gamble Creek

- Located 23 km SE of Prince Rupert
- Protects representative north-coastal forest stands and bog vegetation for research on tree species and ecosystem classification.
- The reserve is at the western edge of the granitic Kitimat Range and mountain slopes facing all compass directions are present. Low elevation forest represents the very wet hyper-

maritime subzone of the Coastal Western Hemlock. Extensive subalpine forests cover all high-elevation terrain and extend down to the 270 m level on north-facing slopes where snow persists until early summer. Specimens of amabilis fir over 300 years old grow here at the northern limit of the species range.

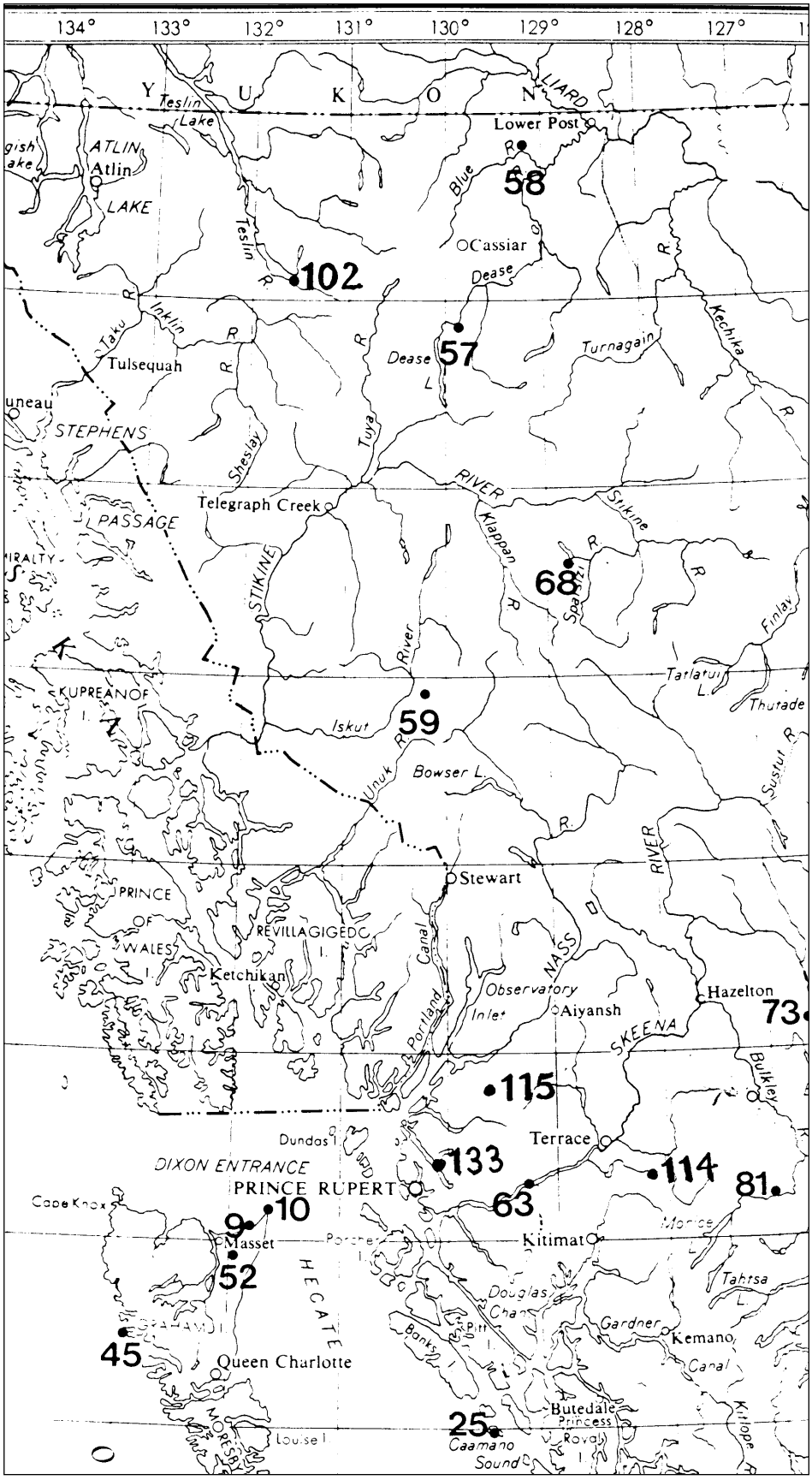
- The reserve is in a natural state. Forest stands in the reserve are not of commercial quality.
- The vertebrate fauna has not been surveyed and more detailed floral inventory and community descriptions are needed.
- 1026 ha
- No Warden

ER 145—Burnt Cabin Bog

- Located 15 km SE of Smithers
- Protects a large wetland complex with a variety of bog, fen, swamp and shallow water habitats; resident beaver and moose
- 670 ha
- Warden: not known

ER 146—Catherine Creek

- Located S of Hazelton
- Protects a stand of old growth western red cedar in the moist cool Interior Coastal Hemlock (ICH) subzone
- 45 ha
- Warden: not known ■



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Facing Critical Choices

The world is at an environmental crossroads where the choice between greed and humanity will decide the fate of millions of people for decades to come the United Nations has said recently in a comprehensive overview of the state of the global environment.

The **Global Environment Outlook-3** (GEO-3) report depicts an increasingly volatile world in which ever more severe natural disasters and environmental degradation will endanger millions of humans as well as plant and animal species. The report points out that in the 10 years following the world earth summit in Rio de Janeiro one mammal, one bird and 58 fish species have become extinct. One-quarter of the world's mammals and one in eight birds are on the critical list and could face extinction within 30 years.

> *…as much as 30 per cent of species diversity will be erased by the middle of this century.*

The report, released by the United Nations Environment Program in advance of this summer's UN World Summit on Sustainable Development Aug. 26—Sept. 4 in Johannesburg, is based on contributions from more than 1,000 scientists collaborating with the Nairobi, Kenya-based UN agency and is intended to urge world leaders into action ahead of the summit in late August.

The study takes unique look at the policies and environmental impacts over the past 30 years and looks ahead to the next three decades in four policy areas, comparing and contrasting the likely impacts on people and the natural world. The report says the world's biodiversity is under threat, with 1,130 of the more than 4,000 mammal species and 1,183 of the 10,000 bird species regarded as globally threatened—meaning they could become extinct but are not necessarily under immediate threat of extinction. Much of the threat is man-made, with industry, mining, farming and the introduction of non-native species eroding habitats in many parts of the world.

> *"…generally there has been a steady decline in the environment, especially across large parts of the developing world."*

In addition, almost one-third of the world's fish stocks are ranked as depleted, overexploited or recovering as a result of over fishing.

Dr. Michael Novacek, provost of science at the American Museum of Natural History, said the UN figures are in line with projections that have been made on the basis of land loss and degradation of the oceans. Those projections say as much as 30 per cent of species diversity will be erased by the middle of this century, he said. He continued, "We don't know what the threshold is for total ecosystem chaos. "We don't know how many species we can afford to lose before the whole ecosystem breaks down."

The UN report notes progress in some areas. Air and water quality has improved in the past 30 years in North America and Europe, and the amount of land protected as national parks and reserves has quadrupled since 1970. The UN also says there could be deep cuts in the emission of greenhouse gases linked to global warming if governments show the will to enforce international agreements such as the 1997 Kyoto Protocol. "GEO-3 is neither a document of doom and gloom (nor) a gloss over the acute challenges facing us all," said Klaus Toepfer, executive director of the UN Environment Program.

Toepfer adds, "This is an eye opener. The figures are not a nightmare prognosis for the sake of making a nightmare prognosis. Decisive action can achieve positive results. Our motto for Johannesburg is planet, people, prosperity," he said, hoping that the meeting will set clear, achievable and effective targets to tackle poverty and deprivation without destroying the environment.

But the bad news outweighs the good. The report notes that "generally there has been a steady decline in the environment, especially across large parts of the developing world." Weather-related hazards such as cyclones, droughts and floods appear to be increasing in strength and frequency and are affecting more people, 211 million a year in the 1990s compared with 147 million a year in the 1980s. Some attribute the increase to global warming.

The report says depletion of the ozone layer has reached record levels, with the ozone hole over Antarctica covering more than 29-million square kilometers in September, 2000. Fifteen per cent of the world's land has been degraded by human activity such as cattle overgrazing, while half the world's rivers are seriously depleted or polluted. Many problems are likely to get worse. The report predicts that roads, mining and other infrastructure developments could affect more than 70 per cent of the world's surface in the next 30 years.

The report does not prescribe environmental solutions, but offers a range of future scenarios, from one in which market forces drive development, to another in which development is governed by sustainability, the pace of deterioration slows and improvements are seen in some areas. ■

2032: CHOICES FOR THE FUTURE

We are at a cross roads with the future in our hands. The decisions taken today and tomorrow will define the kind of environment this and future generations will enjoy. **GEO-3** in its Outlook chapter outlines four policy approaches leading to different outcomes over the next 30 years. Here we highlight two of the most contrasting scenarios: **Markets First** vs. **Sustainability First**. One envisions a future driven by market forces; the other by far reaching changes in values and lifestyles, firm policies and cooperation between all sectors of society.

	MARKETS FIRST SCENARIO	SUSTAINABILITY FIRST SCENARIO
LAND	By 2032, nearly 3% of the Earth's surface has been built. The extent of cities and other built-up areas, at over 5%, is highest in Asia and the Pacific region. It is lowest in Europe, at around 2%. There are also big rises in Africa and West Asia. While the actual percentage may appear small, the increase in roads, power lines, airports and other infrastructure developments has much wider impacts on wildlife (see biodiversity).	The area of built up land continues to rise but falls slightly in North America and Europe—to below 2%—as policies lead to more compact cities and better planning.
FRESH WATER	The number of people living in areas with severe water stress—both in absolute and relative terms—increases in virtually all parts of the globe. An estimated 55% of the global population is affected, up from over 40% in 2002. The highest proportions of people living with severe water stress are in West Asia, with over 95%, and Asia and the Pacific, with over 65%.	Most regions see the area under water stress remaining more or less constant or even falling as more efficient management of water reduces water withdrawals, especially for irrigation. In West Asia, the number living in areas of severe water stress is kept at around 90% of the population; in the United States, the figure halves to around a fifth of the population and in Europe, it drops from around a third now to just over 10% by 2032.
FORESTS & BIODIVERSITY	The rapid expansion of infrastructure foreseen in the *Markets First* future is likely to lead to ever increasing destruction, fragmentation and disturbance of habitats and wildlife. Over 70% of the land could be affected globally—with the highest impacts in Latin America and the Caribbean, nearly 85%, and the lowest in West Asia, just over 50%.	Impacts from infrastructure continue to rise with around 55% of the land affected, although the situation is stabilizing by 2032. Just less than 60% of the land in Latin America and the Caribbean is impacted by 2032 and just over 40% in West Asia.
MARINE & COASTAL AREAS	Nitrogen loading, an indicator of a wide range of land-based pollution rises sharply in Latin America and the Caribbean, Asia and the Pacific and West Asia. While the rise in Europe coastal waters is generally less severe, the Mediterranean coast comes under special pressure through a combination of urban growth, inadequate waste water treatment works, tourism and intensively farmed crops. Other areas of special concern include the mouths of large rivers like the Mississippi and the Nile.	Better management of sewage and run off leads to only small increases in coastal pollution except for in West Asia.
ATMOSPHERE	Emissions of carbon dioxide from the burning of fossil fuels continue to rise reaching around 16 billion tonnes a year by 2032. By the same date, concentrations in the atmosphere are over 450 parts per million and on track to reach 550 parts per million, double pre-industrial levels, by 2050.	Emissions also rise but radical shifts in behaviour allied to the vigorous introduction of more energy efficient technologies leads to falls. By 2032, global carbon dioxide emissions are below 8 billion tonnes annually. However, because of time lags in the climate system, concentrations in the atmosphere only begin to level off around 2050.

For more information about **Global Environment Outlook 3 (GEO-3)**, go to http://www.unep.org/GEO/geo3

Ecological Reserves and Aboriginal Rights

My name is Curtis Rattray. I am Crow clan of the Tahltan. I also work as a backcountry ranger with BC Parks in the Stikine Area, which is Tahltan traditional territory. This article has its origins in the discussions with FER members in the cookhouse at Cold Fish Lake last summer. At that time, it appeared to me that there was a lack of understanding of aboriginal rights from FER members and the Crown. So, they asked me to write about Ecological Reserves and Aboriginal Rights.

Aboriginal rights have not been extinguished in the Ecological Reserves (ER) of BC. Aboriginal peoples still can practice aboriginal rights in ER and aboriginal title still exists in BC. The Supreme Court of Canada (SCC) defines Aboriginal title as "the right to exclusive use and occupation…for a variety of purposes, which need not be aspects of those aboriginal practices, customs and traditions" (SCC, 1997, p. 59). Aboriginal rights to the land encompass more than just hunting, fishing, and gathering—there is an 'inescapable economic component'. The SCC explains:

> The manner in which the fiduciary duty operates with respect to the second stage of the justification test…standard of scrutiny and…[the] form that the fiduciary duty will take—will be a function of the nature of aboriginal title. First, aboriginal title encompasses the right to exclusive use and occupation of land; second, aboriginal title encompasses *the right to choose* to what uses land can be put…third, that lands held pursuant to aboriginal title have an inescapable *economic component* (*emphasis added*; SCC, 1997, para 166).

The federal and provincial governments can infringe upon Aboriginal rights for compelling reasons. One such compelling reason is conservation. However; the governments have a fiduciary obligation to First Nations. A fiduciary obligation is a 'trust like responsibility'. One of the requirements of full filling the government's fiduciary obligation is the consult with Aboriginal peoples. The creation and passage of the *Ecological Reserve Act* infringes upon Aboriginal Rights because the Crown has failed to live up to its fiduciary obligations by not consulting with the First Nations. The second stage of the test of infringement the SCC has ruled as law in Canada is not met. The SCC discusses fiduciary obligation and consultation:

> the fiduciary relationship between the Crown and aboriginal peoples may be satisfied by the involvement of aboriginal peoples decisions taken with respect to *their* lands…. *There is always a duty of consultation*. …failure to consult an aboriginal group with respect to the terms by which reserve land is leased may breach its fiduciary duty at common law: *Guerin*. *The nature and scope of the duty of consultation will vary with the circumstances*. *…the minimum acceptable standard is consultation, this consultation must be in good faith, and with the intention of substantially addressing the concerns of aboriginal peoples*…In most cases, it will be significantly deeper than mere consultation. Some cases *may even require the full consent of an aboriginal nation*…(*emphasis added*; SCC, 1997, para 168).

The above legal interpretation exists today from the fact of prior occupation of Indigenous Peoples. We have Indigenous sovereignty equal to and in parallel with Crown sovereignty. I introduce the term Indigenous sovereignty here, instead of aboriginal rights, because this is exactly what it is—sovereignty, which includes, in part, aboriginal rights. Aboriginal rights are used to hide the real nature of what Indigenous rights are, our sovereignty is deemed to be inferior. The SCC writes in the Calder case:

> Indian title…cannot owe its origin to the Proclamation of 1763, the fact is that when the settlers came, the Indians were there, organized in societies and occupying the land as their forefathers had done for centuries. This is what Indian title means and it does not help in the solution of this problem to call it a 'personal or usufructuary right'. What they are asserting in this action is that they had a right to continue to live on their lands as their forefathers had lived and that this right has never been lawfully extinguished. There can be no question that this right was 'dependent on the good will of the Sovereign' (SCC, 1973, p.103).

I have, herein, laid out the general principles of aboriginal rights and title in relation to ER. There are court cases that are more specific in regards to aboriginal rights in protected areas. This is a complex legal issue. Therefore, I have begun with the general principles of aboriginal rights and title because it attempts to lay the groundwork for the definitions of section 35 (aboriginal rights) of the *Constitution Act*, 1982. ■

Curtis Rattray, Counselor,
Tahltan Band Council

Aboriginal Use in BC's Park and Ecological Reserve System

Ed. The following is an excerpt from the Conservation Program Policies of BC Parks Conservation Management Program

Aboriginal Rights and Treaties

An important consideration for effectively managing natural and cultural values in parks and ecological reserves is the recognition of aboriginal peoples' legal and constitutionally protected rights to harvest. It is the policy of BC Parks not to unjustifiably infringe the exercise of any aboriginal rights or treaty rights in parks and ecological reserves.

The application of strategies and policies outlined in BC Parks Conservation Program Policies will be undertaken with full consideration of aboriginal and treaty rights to harvest.

Interim Measures Agreements

The province has approved a policy that allows for the establishment of interim measures agreements between its agencies and First Nations. The terms and conditions of these agreements may include items on harvesting.

BC Parks will strive to carry out the spirit and intent of any and all interim measures and agreements that apply to lands under its jurisdiction.

Treaty Negotiations

The federal, provincial, and First Nations governments have established the BC Treaty Commission to facilitate the negotiation process of modern-day treaties in British Columbia. BC Parks recognizes that it may play a role in carrying out treaty settlements.

As a government agency, BC Parks will seek to gain certainty on the nature and extent of aboriginal harvesting within parks and ecological reserves.

Note: For further guidance on ensuring that Aboriginal rights are not infringed, refer to the [former] Ministry of Environment, Lands and Parks Procedures for Avoiding Infringement of Aboriginal Rights.

The procedures address the [former] Ministry of Environment, Lands and Parks policy to avoid, mitigate, or justify infringement on aboriginal rights when carrying out its mandate responsibilities, in a manner that is timely and considerate of the rights of all British Columbians. These procedures stem from the Cabinet-approved *Crown Land Activities and Aboriginal Rights Policy Framework* (1996), which applies to all provincial ministries overseeing activities and decisions on Crown land. ■

FIELD GUIDE TO FOREST DAMAGE IN BRITISH COLUMBIA

This joint MOF/CFS publication was updated in March 2001 as a 2nd edition of this popular field guide. The field guide contains reference to insects, diseases, mammals and abiotic factors that cause damage to both conifers and deciduous trees significant to forest management in B.C. Each forest health factor has text descriptions of its distribution, hosts, basic biology, signs and symptoms, damage and listing of other forest health factors that may cause similar damage. The text is supported with over 400 photographs and drawings.

http://www.for.gov.bc.ca/hfp/forsite/pest_field_guide/index.htm

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Profitable Parks?

Recently, as part of the government restructuring strategy, the Ministry of Water, Lands, and Air Protection is examining ways to profitably manage parks and protected spaces in BC. A Recreation Stewardship Panel has been established to make recommendations to improve the management of British Columbia's fish, wildlife and parks recreation services and to allow greater public involvement in decision-making. Its mandate includes developing options for improved management models and funding sources for park recreational services, hunting, freshwater fishing and the provincial trout hatchery program. To do this, the Panel is meeting with groups around the province and will produce its recommendations by Sept. 16. The panel will then invite public input, through survey forms, a website and written submissions. A final report will be given to WLAP Minister, Joyce Murray, by Nov. 29.

Those who want to receive panel information and provide input can sign up on the website **(http://wlapwww.gov.bc.ca/esd/recpanel/recpanel.htm)** or call toll-free (1 877 882 1284). You can also e-mail the recreation panel at: RecPanel@praxis.ca or write the Recreation Stewardship Panel, c/o Praxis Pacific, 3848 St. George Ave, North Vancouver, BC V7N 1W5. ■

In the meantime, ***what a concept!***

Two summers ago, Zion National Park in Utah became the first national park in the continental U.S. to ban automobiles during peak visitor season. Before the ban, over 2,000 cars and tour buses competed daily for just 400 parking spaces. Today, three dozen eco-friendly propane buses drop off visitors at eight different trailheads in the park every 5-10 minutes.

It cost more than $29 million to make the park car-free, but everyone seems to agree the money was worth it. Visitors say it's less hassle, more vacation; local entrepreneurs say the six shuttle stops in town have boosted area business; local residents benefit because they can take the shuttles for free; and the environment benefits from the drastically reduced impact of 2.5 million annual visitors. Since the auto-ban, visitor numbers to the park have increased by more than 20 percent. A $20 entrance fee pays for the upkeep of the system, including a visitor centre and driver salaries. For the park, the change has been dramatic: fresh air, peace and quiet, the sounds of nature, and the return of wildlife. ■

EARTHWATCH INSTITUTE (EWI)

Earthwatch Institute (EWI) is an international nonprofit organization founded in 1971 that supports scientific field research worldwide by offering members of the public unique opportunities to work alongside leading field scientists and researchers. The Institute's mission is to promote sustainable conservation of our natural resources and cultural heritage by creating partnerships between scientists, educators, and the general public. EWI sponsors approximately 140 projects in 50 countries each year and recruits international volunteers via offices in the US, UK, Japan and Australia to support the projects.

EWI annually supports approximately 250 scientists with US$3 million in field grants. Since 1971, EWI has provided grant monies to 46 Canadian researchers, 23 of whom have conducted their research within Canada. In 2001, EWI supported support six Canadian scientists, five of whom were working in Canada.

Earthwatch is currently interested in expanding its support of field research projects in Canada, particularly in the Y2Y Corridor. It invites scientists interested in applying for funding through Earthwatch Institute to visit the website for more information. **http://www.earthwatch.org/** ■

Visit www.ecoreserves.bc.ca

Websites of Interest

With a mandate to provide leadership and encourage partnership in caring for the environment by inspiring, informing and enabling nations and peoples to improve their quality of life without compromising that of the future generations, the **United Nations Environment Programme (UNEP)**, established in 1972, works to encourage sustainable development through sound environmental practices. Its activities cover a wide range of issues, from atmosphere and terrestrial ecosystems, the promotion of environmental science and information, to an early warning and emergency response capacity to deal with environmental disasters and emergencies. **http://www.unep.org**

A new interactive website designed to support shoreline residents and groups with an interest in shorelines of all kinds with information, services, and networking assistance, **The Living by Water Project** was initiated in 1997 by two shoreline residents from British Columbia. The mission of the Project is "working towards healthier human and wildlife habitat along the shorelines of Canada". The Project is committed to helping shoreline residents of oceans, lakes, rivers and streams obtain information to protect property, prevent problems like erosion, and protect water quality, fish and wildlife habitat. The project also assists groups with materials, services and support to develop and deliver outreach and awareness-raising programs about community shorelines. *The Living by Water Project* is a national partnership initiative, with regional co-ordinators in several centres across the country. **http://www.livingbywater.ca**

Oceanic Resource Foundation is a non-profit, scientific research organization based in San Francisco, California dedicated to the preservation of the global marine environment and marine biological diversity. At this informative site, read about studies on coral bleaching, reef species biodiversity, new methods of eliminating ocean disposal of sewage, the long term effects of trawling in coastal zones, the continuing effects of DDT on waterfowl and wetland habitats, and effective and accurate measurements of fish stocks along with the development of new analytical models to improve fishery management. **http://www.orf.org**

Online atlas of the oceans—the United Nations has launched an online atlas of the oceans aimed at pooling knowledge about the marine environment and halting damage being done by overfishing and pollution. The website was launched on World Environment Day. It is an Internet portal that provides information relevant to the sustainable development of the oceans. It is designed for policy-makers who need to become familiar with ocean issues and for scientists, students and resource managers who need access to databases and approaches to sustainability. The UN Atlas can also provide the ocean industry and stakeholders with pertinent information on ocean matters. It includes contributions from experts and media as well as an encyclopaedia of the oceans. Material contained in the UN Atlas is copyrighted but can be freely used for any personal and non-commercial purpose provided that the UN Atlas of the Oceans is cited. **http://www.oceansatlas.org**

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