

# The Valhalla Wilderness Society

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## BRITISH COLUMBIA'S RARE INLAND RAINFOREST AND ITS ENDANGERED SPECIES



Robert Summerfield

The world's only Inland Temperate Rainforest and the world's only mountain caribou are found in southeastern BC. The old-growth rainforest has trees up to 1,500 years old or older. Some people say that forests such as these are the cathedrals of Canada.

Sadly, this rare ancient rainforest is disappearing because of clearcut logging. The caribou that live in these mountains are unique and rare. But these shy and gentle creatures are on the verge of extinction because logging has destroyed too much of their old-growth habitat.

The BC Species At Risk Coordination Office is asking for public input on whether five of the remaining 13 herds should be allowed to die out. The spotlight of blame is being focused upon wolves and cougars, and the killing of these predators is receiving far more attention than maintaining and restoring habitat. Predator extermination would only keep the caribou herds propped up long enough for the timber industry to cut the rest of their habitat. Eventually, the Inland Rainforest Region could have no caribou and no wolves or cougars either. Please read the information we've provided and take some time to send SaRCO your input.

In 1998 the Valhalla Wilderness Society (VWS) launched a conservation project for the Inland Rainforest and its wildlife. The boundaries of the project area, shown in dark green below, correspond approximately to BC's Interior Wet Belt and mountain caribou habitat. VWS calls this 14.3-million-hectare project area the Inland Rainforest Region.



In 2004, a six-year effort to map the clearcuts, roads, remaining intact forest and highest quality wildlife habitat of this region was completed. VWS, other grassroots environmental groups in the region, and some First Nations are now studying the maps. The goal is to develop a new conservation vision for the re-

gion, with new and expanded protected areas and special management zones for forestry. The focus will be on conservation of old-growth ecosystems.

Maps of the clearcuts and roads show a shocking amount of fragmentation throughout the region, especially in the southern portion. Logging has been concentrated in low-elevation, old-growth forest on relatively gentle terrain. After 40 years of clearcutting and overcutting, only 3.2% of the project area is low-elevation, intact old-growth, including parks and unprotected areas. Over many decades of creating parks, forest has been systematically excluded. Our parks are mostly rock, ice, alpine meadows and subalpine forest. Alpine tundra makes up 15% of the BC land base, but 39% of our parks.

Most of the forest of the Interior Wet Belt is cedar-hemlock with spruce and subalpine fir at higher elevations. The mountain caribou are dependent upon these forests. This animal is an indicator species for old-growth ecosystems. By preserving more of its habitat, we would be preserving habitat for hundreds of species associated with old-growth forest.

The Inland Rainforest contains the upper reaches of three major BC river systems: the Columbia, Fraser and North Thompson. The Fraser and the North

Thompson are major salmon rivers. Logging in this region has done much damage to fisheries, but one can still see grizzly bears fishing for salmon.

VWS believes it is now reasonable, feasible and urgent to stop logging all old-growth cedar-hemlock/spruce-subalpine fir over 160 years old in the project area. Perhaps it was once thought that our loggable forest was endless, but the maps show it is not. Huge areas have been extensively clearcut and depleted of their best, most accessible forest.

Caribou recovery programs could create hundreds of new forest jobs. Logging roads can be corridors of death for mountain caribou, because heavy roadside brush and debris hem them in if they are chased by predators, including poachers. Clearing out roadside brush and thinning young forest can help rehabilitate caribou habitat that has already been logged.

The maps show that there are still key areas of old-growth forest left that compose the only support base for resident caribou, grizzly bears and other species. To go on logging such forests would be to knowingly push these animals off the face of the Earth as we plunder our own life support system. To see the maps and to receive more information, please visit the Valhalla Wilderness Society's website at [www.vws.org](http://www.vws.org).

Craig Pettitt

# BC's Inland Rainforest: A Global Biodiversity Treasure



Gene Parker



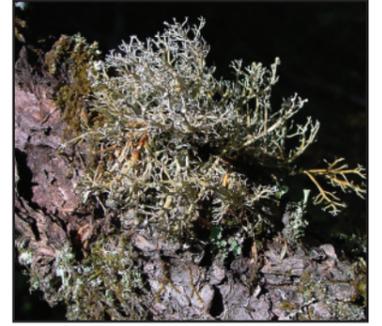
Craig Pettitt

Lung Lichen, *Lobaria pulmonaria*, common in coastal and inland r.f.



Craig Pettitt

The yellow lichens are the Cryptic Paw Lichen, a Species At Risk



*Sphaerophorus globosus*, Coral lichen, common rainforest lichen

## Rainforest Lichens As Weather Stations

Large quantities of moss and lichens on the branches of trees are a sign of rainforest or near-rainforest conditions. Coastal Temperate Rainforest is noted for an unusual abundance and diversity of lichen species.

Lichens have very narrow and species-specific requirements for temperature and humidity levels. Scientists use lichens as indicators of rainforest and to compare inland rainforest to its coastal counterpart. So far, true Inland Rainforest has only been found between 51° N and 54° N latitude — approximately

between the Incomappleux Valley south of Glacier National Park and the northern Robson Valley near Prince George.

The determining factor is not total precipitation, but how moist the forest stays during the hottest month of July. Forty percent of the lichen species on BC's coast are also found in the Inland Rainforest. Lichens come in many shapes and have many functions in the forest, including food for wildlife and nitrogen fixation that is important for healthy forests.

## The Greater Inland Rainforest Ecosystem

In the southeastern quarter of British Columbia, a series of high mountain chains stretches north to south. These are the Cariboo, Monashee, Selkirk, Purcell and central Rocky Mountains. Their western slopes capture moist air as it moves inland from the Pacific Ocean. The result is a climate of rain and snow. Scientists know this area as the "Interior Wet Belt." It extends into northern Washington, Idaho and Montana.

The low and middle elevations are cloaked in rich forests of cedar and hemlock. Local residents may believe these forests are common, but most cedar-hemlock is found on the coast in North America and the Far East. Western Redcedar and Western Hemlock do not occur together inland anywhere else in the world. This forest is called Interior Cedar-Hemlock (ICH). Although the BC ICH zone covers a huge area, the old-growth forest within that area is being decimated.

The Interior Wet Belt is the home of grizzly and black bears, mountain caribou, wolves, cougars, wolverines and many other species. Many of these animals roam over a large area and use all elevations of their home range, including the Engelmann Spruce and Sub-alpine Fir (ESSF) forest at higher elevations.

In the southern part of the Inland Rainforest Region,

the Interior Cedar-Hemlock forest is dry and may have natural rates of forest fires of every 10-25 years. The climate grows wetter as one moves north. In the northern half of the Wet Belt, there are forests that have rarely, if ever, had forest fires. At what point do we call a forest rainforest? See the box above. Many cedar-hemlock forests that aren't classified as true rainforest are nonetheless lavishly lush with moss, lichens, ferns, devil's club and, in the wettest areas, skunk cabbage.

## The Inland Rainforest

**Rainforests** grow only in wet climates that maintain moist growing conditions throughout the year. Rainforests are among the most biologically rich forests in the world.

**Temperate Rainforest** grows in the moderate climate zones. In these temperate latitudes, rainforest usually occurs only near the ocean, at eight locations around the world. It is rare. Half of all the Coastal Temperate Rainforest in the world is in a narrow strip from Alaska down to Oregon.

**Inland Temperate Rainforest** is even more rare. It occurs nowhere else in the world but in the central and northern Interior Wet Belt. It is the wettest form of Interior Cedar-Hemlock. It is not as wet as coastal rainforest, but wet enough to support many coastal plants, fungi and lichens. It is the only rainforest in the world where a

major part of the precipitation falls as snow. This makes for a unique mixture of plants that includes species from coastal, interior and boreal zones.

**Antique Inland Temperate Rainforest** - These forests rarely burn. Cedar and hemlock trees first colonized the Interior 2,000-3,000 years ago. With cedar trees 1,500 years and older, the Incomappleux and Robson Valleys may still be harbouring the first or second generation of cedars since the Ice Age. The forest itself may have been growing uninterrupted far longer.

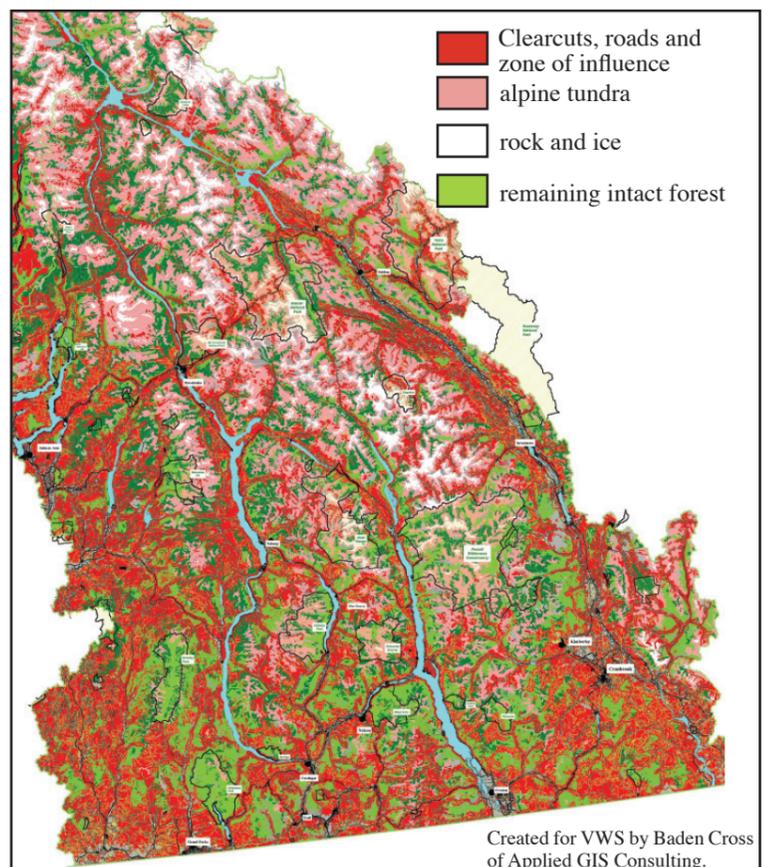
The great age of antique forests has allowed hundreds, probably thousands of years for colonization by rainforest-dependent species. This has allowed time for the full development of the interactions of hundreds of plants and fungal species with thousands of poorly known invertebrate organisms.

The fragmentation of such forests represents a direct and immediate threat to many species whose distribution is limited to short distances, and for whom a clearcut represents an immense migration barrier. Fragmentation creates canopy gaps allowing valley winds to penetrate into the heart of forest canopies that have been sheltered and humid for over a thousand years, drying out the habitats of species, such as the federally listed Species of Concern *Nephroma occultum*, a lichen whose existence depends on very stable humidity and constant, undisturbed conditions.



Courtesy Glada McIntyre

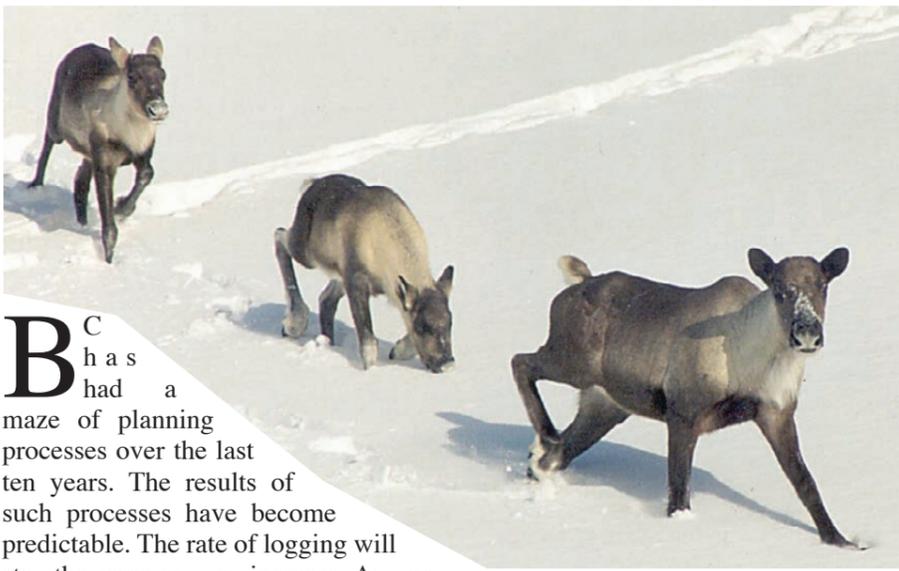
The Singing Forest (above) was logged by Meadow Creek Cedar in spite of a public outcry. The next giant trees to be logged are in the Upper Incomappleux River Valley and its tributary, Boyd Creek. The photo on the front page is from the Upper Incomappleux, just south of Glacier National Park. Pope and Talbot, Ltd, wants to log this forest even though it contains a meager 1,000 hectares of commercial forest. It is both one of the oldest and one of the largest contiguous blocks of old-growth rainforest in inland BC. Field surveys have already identified over 350 species of plants, lichens and mushrooms – an assemblage of rainforest species that has no immediate parallel. The Incomappleux harbours a high proportion of species that are globally in decline. Numerous oceanic species and/or rare species have been found there.



Created for VWS by Baden Cross of Applied GIS Consulting.

This is the southern half of the Inland Rainforest Region. The red is areas fragmented by development. The larger green forested areas are in parks. But because of clearcutting up to the boundaries, the parks are becoming "islands of extinction."

# Mountain Caribou: Death by Planning Process



**B**C has had a maze of planning processes over the last ten years. The results of such processes have become predictable. The rate of logging will stay the same or even increase. Any new parks will contain very little commercial forest, and clearcutting will go on as usual. Watch any BC planning process, and from the beginning you will see the whole context of the debate start to bend towards this result. Under incessant pressure and manipulation of facts, everything and everybody, including government and industry scientists, media and some environmentalists, starts to lean in that direction. Let's not forget that a science panel was managing the Atlantic Cod fishery when it crashed.

Need we say that current efforts to create a recovery program for mountain caribou are falling into the mold? We're now hearing a familiar chorus: "Tis moose that are displacing the caribou, and wolves that are killing them. The problem is where and how to kill these varmints. Caribou are critters of the alpine, therefore we need not worry about setting aside low- and mid-elevation forest for them. The herds closest to extinction are impossible to recover after we've waited so long, so let's write them off." In the department of quick jingos, the slogan "Kill a moose, save a caribou," has been heard in logging communities.

Any lay person can dip into the many scientific reports available on the mountain caribou, and find numerous references to the fact that logging and logging roads are the chief problem. The twice yearly migration from the valleybottoms to the mountaintops is widely recorded. The use of low-elevation Interior Cedar-Hemlock is well recognized.

Clearcutting removes large, old trees that grow hair-like lichens, a critical survival food in winter. The trees also shelter the ground from snow so the caribou can get around and find food in early winter. Clearcuts draw moose and deer into caribou habitat; these species like to browse in young forests and are followed by wolves and cougars. Patchworks of many large clearcuts are giving the caribou less space to run and hide. Yet none of these recovery agencies or planning groups have mentioned reducing the allowable annual cut, or an end to clearcutting in mountain caribou habitat.

It is a sad fact that BC's Species At Risk Coordination Office (SaRSCO) has been circulating a survey asking industry reps, First Nations and selected "stakeholders" (whoever they are) whether five caribou herds should be abandoned to extirpation. The background report states: "Because predation has been identified as the most important, direct threat currently facing mountain caribou, many of the possible management actions are aimed at reducing mortalities caused by predators." It warns that, to be successful, this option would require killing predators over "extensive areas both within and adjacent to mountain caribou range."

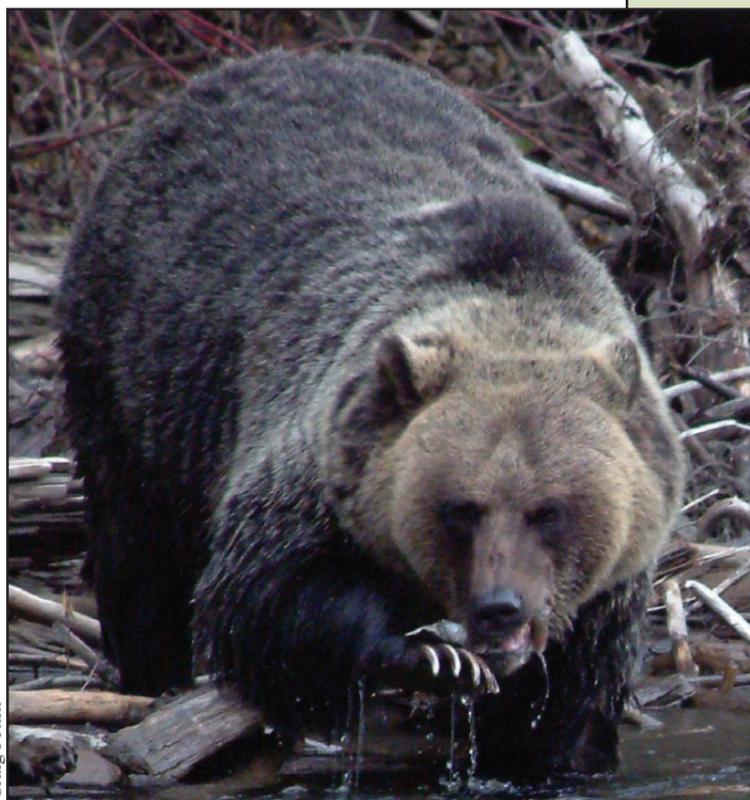
This option would mean a wolf and cougar extermination program and greatly increased hunting of moose. But some scientists question whether there are many caribou mortalities from wolves, saying that we have no sound evidence for it. Some others point out that caribou mortalities by predation may be the result of a few individual predators making multiple hits. They say individual predators responsible for the kills should be targeted. They point out that, with a broadcast killing program like this, we would have to kill hundreds of wolves and cougars to bring an end to the few that eat caribou.

Lastly, the reports from various recovery groups and agencies, do not auger any significant control of heli-skiing, heli-hiking and snowmobiling. The view is that these industries and groups will control themselves.

## After 20 years of scientific reports, it doesn't take a rocket scientist to see what is needed to save caribou

- **No more clearcutting in caribou habitat.**
- **Selection logging that leaves 70% of the old, intact forest may work.**
- **Permanent, legislated protection of large areas of old-growth forest.**
- **Habitat recovery programs on existing clearcuts and along roads.**
- **A commensurate reduction in the rate of logging.**
- **Winter Seclusion from helicopters and snowmobiles.**
- **Targetting of individual predators.**

Because the damage to caribou habitat has already gone too far, it is of utmost importance that extensive habitat recovery programs begin immediately. If we fail to implement these measures, we are not trying hard enough. If we do not try hard enough, and we abandon the smallest herds, where does that lead except that *all* the herds will keep declining until they, too can be written off? Shockingly, that's what we've been doing throughout at least ten years of planning processes. We must try to save the smaller herds, if only to start learning how to save the others.



Like the mountain caribou, grizzly bears use all elevations of their range and need large roadless areas to provide the seclusion from humans. Logging roads enable many of their mortalities through hunting and poaching. Grizzly bears have been provincially listed as "vulnerable." This one is having a meal of Kokanee, a land-locked salmon, in the southern project area.

China has 1,600 giant pandas.  
Africa has 3,610 black rhinoceroses.  
East Asia has 4,500-7,350 snow leopards.  
Canada has only 1,670 mountain caribou.

The mountain caribou is a unique and rare ecotype of the woodland caribou. It is dependent upon old-growth forest for food, shelter and protection from predators. For at least 20 years, scientific reports have stated that clearcutting and logging roads are the chief reasons why the mountain caribou are disappearing. A secondary cause is snowmobiles and helicopters. Fragmentation of the forest has divided the mountain caribou into 13 separate herds. Most are shrinking rapidly, 6 of the 13 have fewer than 50 animals, and one appears to now be extirpated. The mountain caribou is provincially listed as endangered and federally listed as threatened.

"All regional efforts at habitat protection are, in the final analysis, merely stalling tactics, for in the end, all economic old-growth will be harvested unless it is removed from the allowable annual cut — an action that must be taken in Victoria."

"Provincial approach by Min. of Environment to Caribou Habitat Management," Ritcey 1985.

"The habitat requirements of mountain caribou, as they are understood today, are incompatible with most current forest management practices ... Forests managed under any silvicultural system that eventually eliminates, or substantially reduces, the number of large, old, lichen-bearing trees will not provide winter habitat for caribou."

Caribou in managed forests: Recommendations for managers," Stevenson *et al.*, 2001

"When complete, the recovery action plans will provide discretionary advice to forest managers. The Board's experience is that discretionary policy is not consistently applied, increasing the risk that mountain caribou will not survive in BC."

Forest Practices Board, September 2004

"Today the primary threat to mountain caribou appears to be fragmentation of their habitat. Associated with this fragmentation are potential reductions in available winter food supply, increased human access and associated disturbance, and alteration of predator-prey relationships. For these reasons, forest practices are currently considered to be the greatest habitat management concern. Increasing interest in mechanized backcountry recreation poses a more recent potential threat to caribou."

Mountain Caribou Technical Advisory Committee

"Snowmobile use of caribou habitat poses a serious threat to caribou; impacts range from displacement from occupied or preferred areas to increased energy costs with subsequent body condition and reproduction consequences, accidental injury and mortality.

Dr. Brian Horesjsi, RPBio

"When I consider that the nobler animals have been exterminated here — the cougar, panther, lynx, wolverine, bear, moose, deer, the beaver, the turkey, etc, etc, I cannot but feel as if I lived in a tamed and, as it were, emasculated country ... Is it not a maimed and imperfect nature that I am conversant with? ... I take infinite pains to know all the phenomena of spring, for instance, thinking that I have here the entire poem, and then, to my chagrin, I hear that ... my ancestors have torn out many of the first leaves and grandest passages, and mutilated it in many places. I should not like to think that some demigod had come before me and picked out some of the best of the stars. I wish to know an entire heaven and an entire earth."

Henry David Thoreau

# International Committee to Save the Inland Rainforest

**The Inland Rainforest Region is becoming known internationally for its rare contribution to global biodiversity. The following scientists, legislators, artists and activists are coming out publicly to support increased conservation of these precious biological legacies:**

**Charles Caccia** - Federal Minister of Environment, 1983-84; Head of the Parliamentary Centre for Environmentally Sustainable Development, 1989-2004; Chair - Standing Ctte on the Env. & Sustainable Development, 1993-2004.

**William Newsom** - a retired Appeals Court judge, Newsom is a prominent friend of the environment in California.

**Robert Bateman** - a world-famous wildlife artist, Bateman's art has been a powerful force in raising public awareness and funds to protect BC wildlife.

**David Suzuki** - producer and host of the TV show, *The*

*Nature of Things*. Founder of the David Suzuki Foundation.

**Bristol Foster** - a prominent BC biologist. Dr. Foster served as Director of the Royal BC Museum and of the province's Ecological Reserves Program.

**Patrick Stewart** - Director of McLean Foundation and administrator for the Stewart Fund of the Vancouver Foundation; chair of the Belfry Theatre in Victoria, and governor of the National Theatre School of Canada.

**Farley Mowat** - one of Canada's best known authors. His books include *Never Cry Wolf*, *A Whale for the Killing*, and *Sea of Slaughter*. Some have been made into major films.

**Pat Morrow** - has climbed the highest peak on all 7 continents; author of numerous books on his adventures. He co-authored *Exploring the Purcell Wilderness*.

**Ian Mackenzie** - author and photographer of *Ancient Landscapes of British Columbia*, and several books and

films on the plight of aboriginal peoples.

**Karen Wonders** - Research Fellow at the Institute for the History of Science, Göttingen University. Her research concerns the interactions between people and the environment.

**Charles Baillargeon** - a community activist for salmon spawning runs, watershed rehabilitation and land use in close proximity to urban population growth in Puget Sound.

**Paul George** - co-founded Western Canada Wilderness Committee and was a director for many years.

**Rick McGuire** - has worked extensively to protect wilderness areas and forest in Washington State.

**Elizabeth May** - Executive Director of the Sierra Club of Canada since 1989.

**Colleen McCrory** - Executive Director of the Valhalla Wilderness Society.

## RECOMMENDED SOLUTIONS

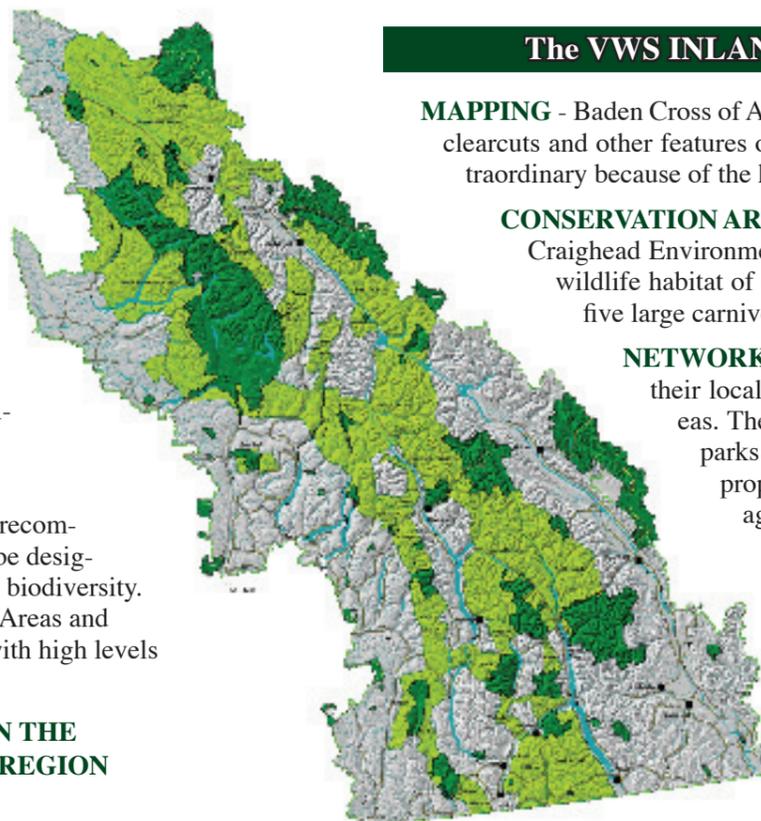
★ **IMMEDIATE MORATORIUM ON LOGGING CARIBOU HABITAT.**

★ **A TRULY INDEPENDENT MULTI-DISCIPLINARY SCIENCE PANEL FOR THE INLAND RAINFOREST.**

★ **NEW AND EXPANDED PARKS** The Craighead Environmental Research Institute recommends that 55% of the Inland Rainforest Region must be fully protected to save large carnivores, caribou and salmon.

★ **SPECIAL MANAGEMENT AREAS** The Craighead Environmental Research Institute recommends that 30% of the Inland Rainforest Region be designated for harvesting techniques that will maintain biodiversity. This should include Mountain Caribou Recovery Areas and harvesting techniques such as selection logging with high levels of old-growth retention.

★ **NO MORE OLD-GROWTH LOGGING IN THE ICH-ESSF OF THE INLAND RAINFOREST REGION**



## The VWS INLAND RAINFOREST PROJECT

**MAPPING** - Baden Cross of Applied Conservation GIS has mapped forest cover, clearcuts and other features of the Inland Rainforest Region. The maps are extraordinary because of the huge area they cover based upon satellite photos.

**CONSERVATION AREA DESIGN (CAD)** - Dr. Lance Craighead, of the Craighead Environmental Research Institute, mapped and analyzed the wildlife habitat of the project area to show what is needed to protect five large carnivores, mountain caribou and salmon.

**NETWORKING** - Grassroots environmental groups added their local knowledge to the CAD map to identify study areas. These are shown in light green on this map. Existing parks are dark green. The groups are now identifying proposed new and expanded parks and Special Management Areas.

**BIODIVERSITY RESEARCH** - VWS's botanical consultant is Toby Spribille of the University of Göttingen, Germany. Spribille has travelled up and down the Inland Rainforest Region sampling for rainforest lichens and has published his research. Botanists Oluna and Adolph Caska, Curtis Bjork and Viktoria Wagner have generously contributed their field work.

## WHAT YOU CAN DO TO HELP

You have a critical role to play. You are the basic building block of democracy. No scientist, no environmental group can do what you can do.

**WRITE, WRITE, WRITE LETTERS** - letters to your local newspapers are extremely important. Decisionmakers need to hear from you.

**JOIN VWS** - more members give VWS a larger voice.

**MAKE A GENEROUS DONATION** - When you contribute to VWS, you help to fund scientific work as well as experienced activism. All the scientists who work with VWS contribute a large part of their time free of charge. This combination of funding and volunteerism enables positive work that could never otherwise happen. At this time, VWS is desperately in need of funds.

**SUPPORT GRASSROOTS GROUPS** - Please support local environmental organizations that have been working in the Inland Rainforest Region for many years. These groups have proven dedication and likely have very little funds or help.



Craig Pettitt

Other grassroots groups in the Inland Rainforest Region include Cariboo Mts Wilderness Coalition, Fraser Headwaters Alliance, Granby Wilderness Soc., Grand Forks Watershed Coalition, Perry Ridge Water Users Assoc., Purcell Alliance for Wilderness, Quesnel River Watershed Alliance, Save-the-Cedar League, West Kootenay EcoSociety and Western Canada Wilderness Committee.

## ADDRESSES

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Pope and Talbot  
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You can receive contact numbers for the MLA or government agency of your choice by calling 1-800-663-7867, or online at <http://www.gov.bc.ca>.

## Valhalla Wilderness Society Membership and Donations

All donations are tax creditable, Charitable Tax # 119260883 RR

Please sign me up for membership (\$10.00) \_\_\_\_\_.

I would like to make a one-time donation of \_\_\_\_\_.

I would like to become a Sustaining Donor at the rate of : \_\_\_\_\_/month.

Please make an automatic withdrawal from my credit card. The withdrawal should occur on the  1st day of each month or the  15th day of each month, beginning the month of \_\_\_\_\_, 2005/6.

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_ E-mail \_\_\_\_\_

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VISA  MASTERCARD  # \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Fax: \_\_\_\_\_



"The resources of the earth do not exist just to be spent for the comfort, pleasure or convenience of one generation or two who first learn how to spend them; some resources exist for saving, and what diminishes them diminishes all mankind; one of these is wilderness, wherein the flow of life, in its myriad forms, has gone on from the beginning of life, essentially uninterrupted by man and his technology; this wilderness is worth saving for what it can mean to itself, a saving which is imperative to civilization and all mankind, whether or not all persons know it.

— David Brower  
Sierra Club, Friends of the Earth