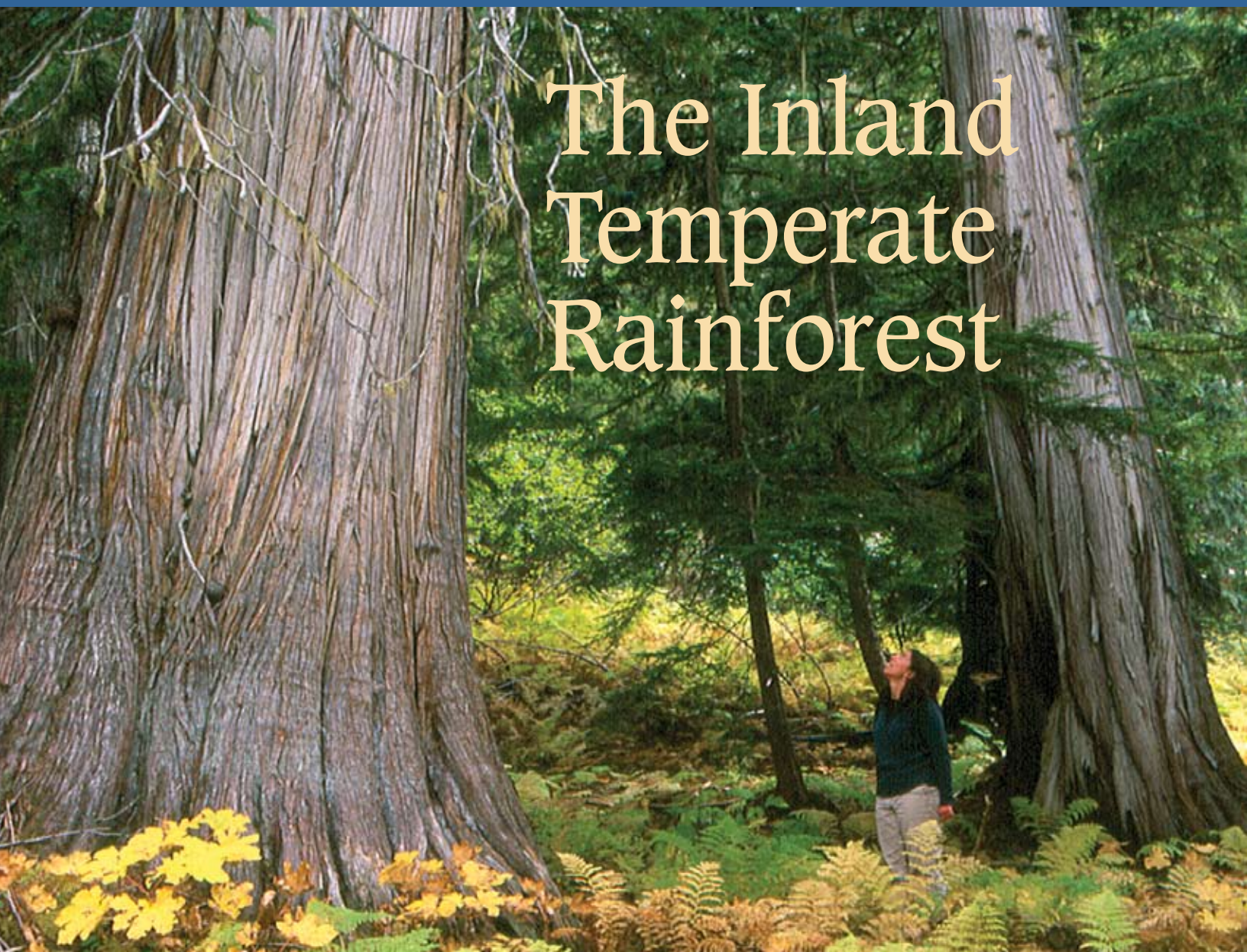
Few nature nuts, tree huggers, or even those marginally interested in nature conservation in North America—or the world for that matter—have not heard of the Great Bear Rainforest. This is particularly true in the wake of a recent agreement between forest activists, First Nations, and timber companies to protect and manage the Great Bear. The historic agreement covers a huge swath of British Columbia's dripping wet, very wild mid-coast, renowned for its huge trees, white bears, and deep fjords.

The agreement garnered world-wide media coverage from as far away as China.

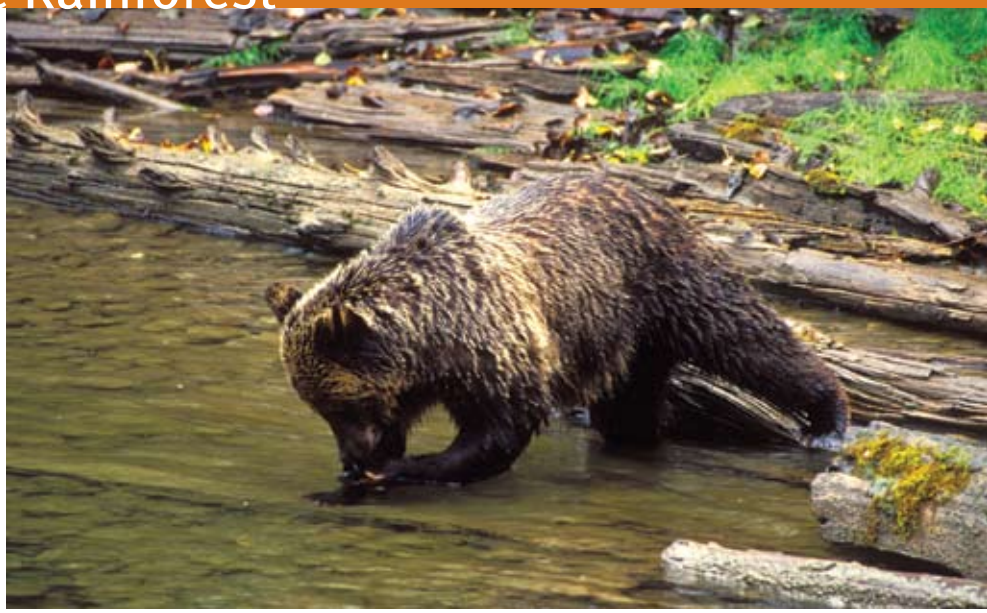
Even fewer still have heard of BC's other Rainforest, this one 400 miles east of the fabled Great Bear. Yet for an increasing number of nature nuts, tree huggers, and plain old folks, the Inland Temperate Rainforest is emerging from the rain shadow of its celebrity sister mountain ranges to the west.

In the Shadow of the Great Bear: British Columbia's Other Rainforest



The Inland Temperate Rainforest

Joe Scott International Conservation Director, jscott@conservationnw.org



(above) Grizzly bear fishing in the Lardeau River, north of Kootenay Lake. © Jakob Dulisse

(below) The waters of the Inland Temperate Rainforest supply rivers such as the Adams, which host world-class sockeye salmon runs. © Murphy Shewchuk

(facing page) Ancient cedars are signature to the Inland Temperate Rainforest. © James Johnston

Local residents and recreation enthusiasts of all stripes, and scientists, of course, have known about the Inland Temperate Rainforest for a long time. Unfortunately, so have the industrial logging companies and the motorized recreation set. Word is only recently starting to filter out of the mists to the rest of us.

But like the awkward teenager who slowly gains confidence, the Inland Rainforest is starting to get noticed. Most of the notoriety is the result of the precarious state of mountain caribou, a rare variety of woodland caribou that has carved out a special niche in these unusually wet inland forests.

According to Dave Quinn the attention is long overdue. Quinn is a wilderness guide, teacher, and biologist who grew up in these mountains and has traversed both the Purcell and Selkirk Ranges. "Most people have no idea this place even exists. Even many of the folks who live here don't appreciate its value. But when people come here for the first time they get it. It's really nothing short of magical."

Ironically, most of us have heard of many of the places that are part of the Inland Temperate Rainforest, we just haven't placed them in context. There isn't a skier in the West who hasn't had powder dreams of the Bugaboos, or an angler who hasn't envisioned a fishing line in the Bowron Lakes, or a boater who hasn't pondered a peaceful week on Kootenay or Quesnel Lakes. Helmken Falls in Wells Gray Park is higher than Niagara. The salmon runs of the Adams, Horsefly, and Quesnel Rivers are legendary.

Anyone out there who hasn't heard of the Fraser and Columbia Rivers? The two mightiest rivers in the west and two of the largest in North America are born in the Columbia Mountains, their respective headwaters a mere stone's throw from each other. These mountains roughly form the skeleton of the Inland Temperate Rainforest and provide the topography that makes these unique forests possible.

Globally significant

There are eight regions worldwide that accommodate "coastal" rainforests, but to put it simply, there is only *one* Inland Temperate Rainforest in the world.

The Columbia Mountains, which hug the west flank of the Rockies in a broad cradling arc from just east of Prince George, BC, to parts of Idaho, Washington, and Montana, conspire with prolific Pacific weather systems to create the special conditions that give the place its name.

The forests of the Columbias are characterized by heavy precipitation, mostly snow—snow accumulations of 2-5 meters isn't unusual in some areas—as well as heavy spring rains. The climate and topography result in low levels of forest disturbance, which together with the soils result in very old forests dominated by very large western red cedar and hemlock in lower elevation, wetter valleys. Many of these valleys haven't seen major disturbance such as fire for centuries. The upper slopes are clad in big, old, gray-barked Englemann spruce and subalpine fir forests.

In a recent study sponsored by the Columbia Basin Fish and Wildlife Compensation Program in the Incomappleux Valley in the Central Selkirks, forest ecologists Rachel Holt and Deb McKillop documented many trees over 1,000 years old. The oldest they found was estimated at over 1,500 years. The scientists speculate whether these forests could be what are referred to as "ancient" or "antique," where the age of the forest stand is older than the oldest individual tree.

"Most people have no idea this place even exists. Even many of the folks who live here don't appreciate its value. But when people come here for the first time they get it. It's really nothing short of magical."

Photo contest

The Mountain Caribou Project is sponsoring a "one of a kind" contest for an image that best captures the spirit of the Inland Temperate Rainforest. Go to www.oneofakindrainforest.com to submit your photos. You could be a prize winner!

In the Inland Temperate Rainforest are found lichens that normally grow only in coastal rainforests, including hair lichens such as old man's beard (*Alectoria sarmentosa*—light green) and witches' hair (*Bryoria spp.*—dark brown), critical winter food sources for mountain caribou. © Darwin Coxson

A cyanolichen, lungwort (*Lobaria pulmonaria*). Lichens like this and those above are collectively called "oceanic," a reference to their preference for maritime conditions. They are predominantly found in very old stands. © Darwin Coxson

In old-growth forests, the air is humid and soils are moist. Such a microclimate supports animals like the Rocky Mountain tailed frog. © Paul Bannick

"The 'age' aspect is an important feature because it contributes to the irreplaceability of these very, very old forest types," Holt says dryly. "A 1,000-plus year old forest cannot be 'replaced' without waiting for 1,000-plus years."

The infrequent disturbance intervals (potentially thousands of years) also contribute to high rates of biodiversity. Healthy populations of large mammals and complete predator/prey relationships can still be found in these mountains.

According to Holt, "Although many of the low elevation types have been lost to logging and hydro-electric development, the complete food chain still exists in most of these forests."

Grizzly bears are plentiful; packs of wolves still hunt moose and deer. Mountain goats scramble on craggy slopes. Northern goshawks swoop purposefully under the forest canopy. A skier who is intrepid enough to get up on one of the endless ridges can follow the solitary tracks of the wolverine in its relentless long distance travels. Thousands of clear, glacier-fed mountain streams tumble down to either the Fraser or Columbia Rivers.

On their way to the sea these molecules will have passed through some of most dramatic country in the world.

Lichen hotspot

But other scientists look at the Inland Temperate Rainforest through a different lens. Renowned Canadian lichenologist Trevor Goward sees the forest for the trees and, of course, the lichen. Goward and others are struggling to document the extent to which these inland rainforests resemble their coastal cousins "from the lichen's eye" view before they're gone. According to Goward and his colleagues, valleys like the Incomappleux "are one of the northern hemisphere's 'hotspots' for cyanolichens growing on conifers." Cyanolichens are a group of old-growth forest dependent lichens that are generally considered to be threatened across their range.

However, there is no Great Bear-like agreement in process to protect this global jewel. In fact, unlike the coastal forests where logging costs are among some of the highest in the world, the Inland Temperate Rainforest is relatively accessible and less precipitous and thus has a long history of exploitation.

Much of the 16.5 million hectare Inland Temperate Rainforest has already been impacted by logging and roadbuilding, most of which is concentrated in the lower elevation valleys. But as companies exhaust those high value forests, they're setting their sights on higher elevation

As companies exhaust the high value forests, they're setting their sights on higher elevation spruce/fir stands.

spruce/fir stands. The decline of the aforementioned mountain caribou, which is dependent on large tracts of low and high elevation old-growth forests, is reflected in the fragmentation of their habitat.

Ancient forests

The old-growth forests of the Incomappleux have been heavily logged in the lower valley, and Rachel Holt and her colleagues wonder how much of the valley's biological treasures have already been lost. Conservationists are struggling to protect the remainder of the Inland Temperate Rainforest's ancient forests.

They aren't the only ones who are worried. According to the BC Forest Practices Board, "There appears little time left before options for mountain caribou conservation are ultimately forfeited."

In the final analysis, caribou need old forests. There aren't any other options.

Conservation Northwest is working side by side with our allies ForestEthics, Wildsight, and other grassroots groups in BC to ensure that mountain caribou get a provincial recovery plan that is science-based and conserves all the herds across their current range.

We are conducting intensive community outreach throughout the region—and citizens are responding, calling on government officials to protect the Inland Temperate Rainforest. We are also meeting with individual logging and recreation companies in an effort to gain voluntary withdrawals from caribou habitat. So far, that effort has met with some good results. Companies like Tembec have agreed to stop logging caribou habitat and to certify their operations under the Forest Stewardship Council, and we hope for more to come.

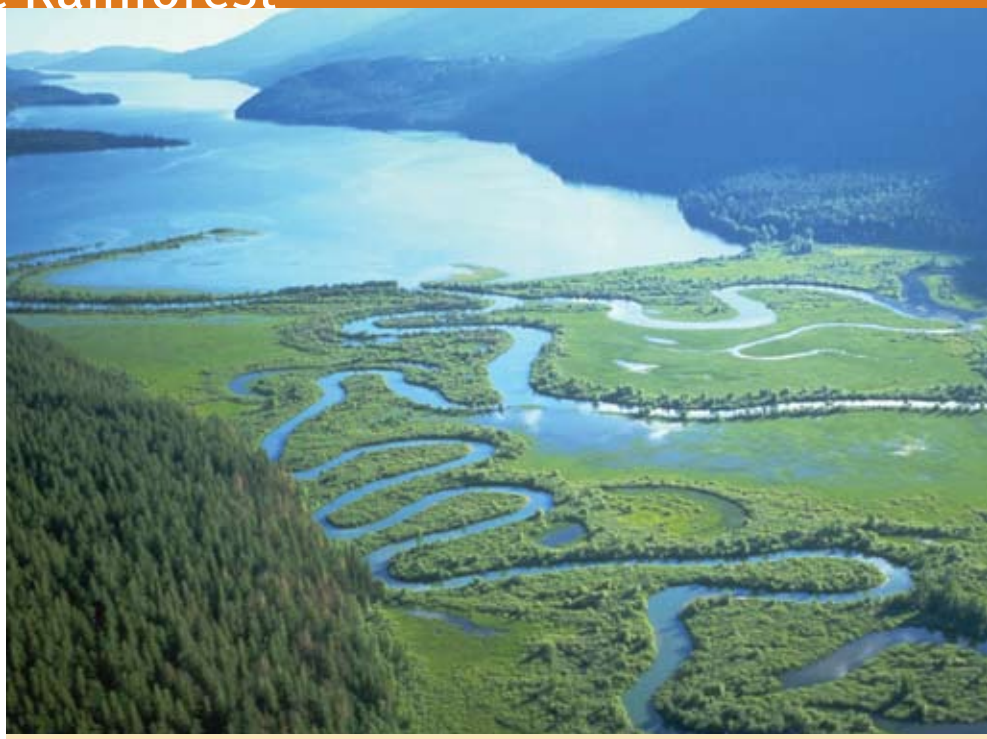
It wasn't so long ago that the Inland Temperate Rainforest and its old-growth dependent mountain caribou were virtually unknown beyond the conservation and science klatches. That's starting to change as pressure mounts on British Columbia to protect this unique animal. Mountain caribou may not only be keys to Inland Temperate Rainforest notoriety, but also to protecting this globally unique ecosystem.

PREVIOUS PAGE

(above left) Gutted Cameron Creek valley in the Purcells, Inland Temperate Rainforest. © Dave Quinn

(below left) The incomparable old forests of the Incomappleux Valley, threatened with logging by Pope and Talbot. © Jakob Dulisse

(above right) The Mitchell River wetlands flow into Quesnel Lake in the Cariboo Mountains © Ian Mackenzie



The Rainforest through a Different Lens

Dr. Rachel Holt is a nerd. Not one of the high-tech mavens who roams cyberspace, but one who gets dirt under her fingernails and carries pepper spray on her belt in the eventuality of a rare encounter with a bear.

Holt is a forest nerd. Like her counterparts who prowl the silicon jungles, she sees things in forests which elude the rest of us. From under furrowed brows her wide green eyes scrutinize the towering cedars and the riot of understory plants in this wildly damp valley deep in the Central Selkirk Mountains of southeast British Columbia. She constantly scans the maps she drags with her which show the wear of repeated field trips.

Holt is one of only a handful of forest ecologists who have become practiced at the science of identifying so-called Endangered and High Conservation Value Forests (or EHCVF) and using the process to make recommendations for their conservation. The exercise relies on a complex system called bio-geoclimatic zone classification, which originated in Canada with some of her colleagues.

The criteria for determining whether a particular forest stand qualifies as EHCVF include such things as rare plant communities and associations, the presence of wetlands, and representation of a certain forest type in regional protected areas.

In the final analysis the determination of the conservation value of a given forest stand comes down to some very basic stuff, as Holt says with determination as she looks skyward at some towering cedars...like the presence of a rare animal such as a mountain caribou, or a stand of 1,000 year-old trees, or a centuries-old grizzly bear trail. It doesn't get any more valuable than this.

Rachel Holt with her daughter, Magali

Mountain Caribou at Home

Mountain caribou continue to decline throughout most of their range. That was the take home message from "Multidisciplinary Approaches to Recovering Mountain Caribou in Mountain Ecosystems," a conference held in Revelstoke, British Columbia, in May. A parade of scientists made presentations on the details of caribou decline, from predation caused by habitat fragmentation to the very ominous and capricious effects of climate change.

Despite a steady rendition of bad news for caribou survival, BC government representatives announced that a provincial mountain caribou recovery plan would be delayed until fall at the earliest. Yet the province has no plans for interim measures to stop the fragmentation of caribou habitat and disturbance from motorized recreation.

There were a couple bright spots: according to biologists the overall number of mountain caribou was revised upward to about 1,900 animals after more animals—and higher calf survival—were discovered in the Hart Ranges herd. This herd includes the northernmost population of mountain caribou; not coincidentally they also have the most intact old forest habitat. Every other herd in the province, however, has either declined slightly or remained stable. The transboundary South Selkirks herd remains steady at around 41 animals. The North Purcells herd has disappeared entirely without a trace.

Trevor Goward, one of the foremost authorities on lichens, presented a particularly sobering forecast. He predicted another caribou crash in the next decade as a result of a combination of continuing habitat destruction and climate change. Wildly fluctuating snow packs created difficult conditions for mountain caribou, who depend on the compacted snows to reach tree borne lichens, their only late winter food source.

Goward went on to say that any logging of their habitat—even that which was intended to minimize logging effects—would negatively affect the animals because it leads to less resiliency in forests that haven't evolved with disturbance. Unusually heavy snow years, for example, push the lichens higher on trees by killing off the lowest plants. If a light snow year follows, caribou can't reach their only late winter food source.

Caribou evolved in low densities in large tracts of undisturbed forests relatively free of predators such as wolves and cougars. But logging also creates a patchwork of young and old forests which leads to increasing numbers of moose, deer, and elk and a commensurate increase in predators, which then also prey on caribou.

Human activities, from the micro to the macro, are having profound effects on mountain caribou, whose survival strategies are based on a delicate balance of conditions that have prevailed in the Inland Temperate Rainforest for thousands of years.

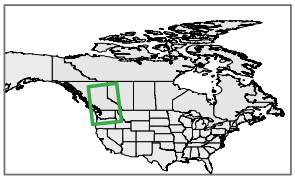
British Columbia is hosting the 2010 Olympics—but will there be any caribou left for the big day?

The biggest threat to mountain caribou is logging of their habitat; and the largest logging companies operating in mountain caribou habitat today are West Fraser Timber, BC Timber Sales, Tolko, Federated Cooperatives, Louisiana Pacific, Pope and Talbot, and Springer Creek.

(above) © Wayne Sawchuck (below) Joe Scott

North America's Inland Temperate Rainforest

The inland rainforest is comprised of many different forest types and ecological communities, and thus is home to a great variety and abundance of plants and animals. It is also the only place on earth where mountain caribou are found, an animal whose decline reflects the fragmentation of the Inland Temperate Rainforest's once vast and contiguous old forest habitat.



Map © Sierra Club of Canada, BC Chapter, 2005. Rainforest boundary by G. Utzig, Kutenai Nature Investigations