



A VISITOR GUIDE TO MOUNT REVELSTOKE AND GLACIER NATIONAL PARKS

IT'S A SMALL WORLD

Did you know that the entire area of Mount Revelstoke National Park — 263 square kilometres — is only about the size of the home range for one adult grizzly bear? Glacier National Park's area is only sufficient for the annual wanderings of about five grizzlies!

This simple accounting underestimates the actual number of bears living in the parks when you include young cubs and overlapping ranges, but Mount Revelstoke and Glacier still represent only a tiny part of the grizzly's world in the North Columbia Mountains — no matter how large the parks may seem from a human perspective.

The fact is that many birds and animals live only part of the year in the rugged landscape that characterizes our parks. Moose and mule deer often roam outside the park boundaries each winter to find low elevation habitat where it's warmer and there's less snow. Birds, such as the barn swallows you see nesting at the Rogers Pass Centre, carry these wanderings to an extreme, annually migrating thousands of kilometres to the tropics.

If you were to look at a series of aerial photographs taken of the Mount Revelstoke and Glacier area over the past several decades, an important ecological fact would

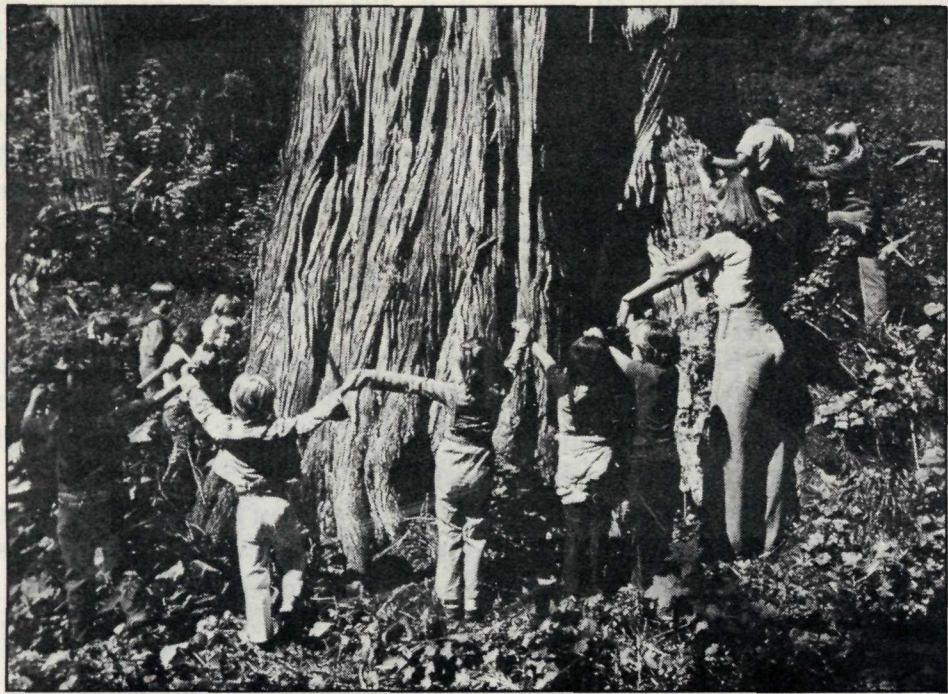
become apparent — the lands outside our boundaries have significantly changed. Huge reservoirs now occupy the valley bottom of the Columbia River, roads have penetrated to our boundaries from every direction, and much of the land which surrounds us has been converted from old-growth forest to commercial forest plantations.

A short stroll around Giant Cedars Trail in Mount Revelstoke will reveal the wonderful complexity of our vanishing old-growth rain forests. Clumps of ancient western red cedar angle from the rich carpet of ferns and mosses. Fallen giants slowly rot away, returning their nutrients to the soil and forming the seed beds for new growth. At twilight, a flurry of activity illustrates the importance of cavities in these old trees as roosting sites for many species of bats, owls, and woodpeckers.

The mosaic of old and new, tall and fallen, living and dead, makes our old-growth Columbia Forest a treasure house of ecological diversity. This ancient mix gives us about one-third old growth and two-thirds younger forests at any one time. Today, although we still have this natural mix within the parks, the commercial forest stands which surround us are based on a harvesting age of 80 to 100 years.

Old-growth forests need about three times as long to develop, meaning that places like Giant Cedars will become increasingly rare as time goes on.

Over the years, Mount Revelstoke and Glacier national parks have become islands of wilderness in the Columbia Mountains. Due to our small size, we now recognize the importance of working cooperatively with other agencies that control the lands surrounding us. For example, the actual population size for grizzlies in our region is unknown, but a minimum viable size may be 200 to 350 animals. When you consider that only a fraction of this number live within park boundaries, you realize the importance of adjacent areas to the survival of this species. The North Columbia ecosystem is indeed a good example of the old saying, "It's a small world!"



SUPERINTENDENT'S MESSAGE

I would like to extend to you a warm welcome to Mount Revelstoke and Glacier national parks. Whether you are a regular visitor, on an extended vacation, or just stopping briefly on your way through, I hope you'll find your stay with us worthwhile.

From a movie in the Rogers Pass Centre to an arduous mountain-top adventure, we have a wide range of experiences to offer. All you need to do is peruse this guide and choose what's right for you. If you need any help, just ask any of our staff and they will be pleased to assist with information, advice, and a smile!

I encourage you to enjoy yourself to the fullest. I would also ask that you leave the park environment untouched for the next person to enjoy. The Selkirk Mountains are rugged, yet they are fragile in many ways. Development outside the parks has an impact on

wildlife which range across our boundaries. Increased access to remote park areas from outside logging roads is exerting new pressures on the wilderness. The values that we are attempting to preserve are being threatened. Your visit, and your experiences while you are here, are critical to our success. We will try our best, therefore, to make your visit a success. We hope, too, that you will help us by commenting on your stay, and by telling others about us.

Only through your support, and the support of others like you, can we be effective in providing service and preserving what is important to you.

Please come back again!

Roger M. Beardmore
Superintendent

CALENDAR OF EVENTS

January 13	Moonlight Ski
February 4	Snowarama
June 3-9	Environment Week
June 9	Parks Day
August 2-8	Wildlife Memorial Week
August 6	Eva Lake Pilgrimage
December 8	Park Open House
December 29	Bird Count

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WHAT TO SEE AND DO

THE ROGERS PASS CENTRE

The Rogers Pass Centre, at the summit of Rogers Pass in Glacier National Park, features an indoor theatre, an information desk, an exhibit hall, and an outdoor, computerized information system. Working models and exhibits featuring topics such as local railway history and natural features make the Centre an intriguing place to visit. The Centre is staffed by information attendants and park interpreters

who are on hand to answer questions on human and natural history.

In the theatre three films are shown regularly in English and French, beginning on the half hour as follows:

May 1 - June 2	9:00 a.m. - 8:30 p.m.
June 3 - July 3	8:00 a.m. - 7:30 p.m.
July 4 - Aug. 29	8:00 a.m. - 6:30 p.m.
Aug. 30 - Oct. 3	8:00 a.m. - 7:30 p.m.

"Snow War" (25 minutes) documents man's battle against snow avalanches along the Trans-Canada Highway in Glacier. "Ungerground Rivers" (27 minutes) features the Nakimu Caves. "Bears and Man" (25 minutes) discusses the bear management program in Canada's national parks.

JOIN AN INTERPRETIVE HIKE

Park interpreters lead guided walks every day during July and August. These all-day walks start at 10:00 a.m. near the bulletin board in the Illecillewaet Campground. These walks present a variety of park features, such as glaciers, wildlife, or history. Bring a lunch, rain gear, and sturdy walking shoes. Further information is available at the Rogers Pass Centre or on campground bulletin boards. These programs are free, and all are welcome.

INTERPRETIVE TALKS

On Monday, Tuesday, Thursday and Saturday evenings, special programs on the park's natural and cultural features will be presented. Check at the Rogers Pass Centre or on the campground bulletin boards for more information. These free programs are open to all.

SCENIC VIEWING

The Mt. Revelstoke Summit Parkway presents the opportunity to drive to a sub-alpine meadow. This drive allows thousands of people each year to see the spectacular transition from the park's valley bottom rainforests to the flower-covered meadows and alpine tundra of the high country. The parkway provides superb views of the Selkirk and Monashee Mountains, the Columbia and Illecillewaet valleys, and the town of Revelstoke.

PICNICING

Mount Revelstoke offers four picnic areas: Monashee Lookout Picnic Area and Balsam Lake Picnic Area on the Mt. Revelstoke Parkway, and Giant Cedars Picnic Area and Skunk Cabbage Picnic Area on the Trans-Canada Highway. Five picnic areas can be found alongside the Trans-Canada Highway in Glacier National Park: Slide Path, Camp West, Sir Donald, Tractor Sheds, and Beaver River.

CAMPING

Camping in Glacier National Park is on a first come, first served basis — no reservations. Flush toilets, kitchen shelters with cook stoves, potable water, and firewood are available at both Illecillewaet and Loop Brook campgrounds. Our campgrounds do not have shower facilities, laundry facilities, or three-way hookups.

Campsites cost \$9 per night, and are open from early June until late September. There are no roadside campgrounds in Mount Revelstoke National Park.

BACKCOUNTRY CAMPING

Visitors planning to camp in the backcountry of Mount Revelstoke and Glacier national parks must register with park wardens (there is no fee for this service). Registration services for travel in Glacier are available at Rogers Pass, at the Glacier Administration Office (second floor), and in Revelstoke at the Revelstoke Administration Office (second floor, 301 Campbell Avenue). Random camping is permitted anywhere in Glacier National Park beyond a point 2 km from the Trans-Canada Highway.

Random camping is also permitted in Mount Revelstoke National Park, with the exceptions of the Miller Lake area and areas within 2 km of the Trans-Canada Highway or Mt. Revelstoke Summit Parkway.

HIKING

Hiking in Mount Revelstoke and Glacier national parks offers a special challenge — the chance to explore the rugged Columbia

Mountains. Mount Revelstoke's 10 trails and Glacier's 18 trails range from short, level valley bottom strolls to steep, tough climbs. Some offer spectacular mountain and glacier views, while others wind through stands of ancient giant trees, or probe the secrets of the abandoned railway over Rogers Pass. Whatever trails you choose, come prepared for travel in a rugged mountain environment and an unpredictable climate. **Footloose in the Columbias** is a publication that gives details on trail length, hiking time, degree of difficulty, elevation gain, and special features. For more information about hiking in the parks, please visit one of the park offices listed in the booklet.

CLIMBING

Glacier National Park is world famous for its recreational climbing opportunities. North American mountaineering got its start in this part of the Columbia Mountains. Climbing requires special skills and equipment, and registration with the park Warden Service is mandatory for this activity. Please consult **Footloose In The Columbias** for information on access routes.

FISHING

Our glacier-fed rivers and lakes do not support a large population of game fish. Eastern brook trout can be found to a limited extent in Mount Revelstoke's Eva, Miller, and Jade lakes and Woolsey Creek. Jade Lake also has rainbow trout. Whitefish and Dolly Varden trout lure fishermen to the Beaver River in Glacier, while the Illecillewaet River in both parks contains rainbow, cutthroat, and Dolly Varden trout. A National Park Fishing Licence is required to fish anywhere in the parks. Licences can be purchased at park headquarters in Revelstoke, 301 Campbell Avenue, and at the Rogers Pass Centre in Glacier. Provincial fishing licences are required to fish in areas outside the national parks. Please contact the nearest B.C. Information Centre.

ACCOMMODATION

Glacier Park Lodge offers the only commercial accommodation in these parks. Located at the summit of Rogers Pass, services at the Glacier Park Lodge include a coffee shop, lounge, licensed dining room, gift shop, gas station, and convenience store.

Accommodation is also available in the town of Revelstoke (adjacent to Mount Revelstoke National Park and 45 minutes west of Rogers Pass) and in the town of Golden (45 minutes east of Rogers Pass).

FEES

All vehicles stopping within national park boundaries are required to have a vehicle permit. These permits are available at any park facility, and the fees are:

Annual Permit*	\$25.00
(Valid in any Canadian national park from April 15, 1990 - May 15, 1991)	
One Day Permit	\$ 4.00
(Valid from day of purchase to noon next day)	
Four Day Permit	\$ 9.00
(Valid from day of purchase to midnight fourth day)	
Charter Buses (Daily)	\$40.00
Non-profit Buses (Daily)	\$ 9.00
Fishing Licences (Annual)	\$10.00
Glacier National Park Campgrounds	\$ 9.00

*Canadian senior citizens can obtain a free yearly pass for a vehicle registered in their name. (Proof of age, citizenship, and registration required.)

GLACIER COUNTRY

Glacier Country is an indispensable 128-page guidebook to Mount Revelstoke and Glacier national parks. It can answer any detailed questions on the parks' heritage resources and recreational opportunities. It also provides a rare insight into the people and events that make this area

special. **Glacier Country** is available at information centres in the parks, and by mail from the Friends of Mount Revelstoke and Glacier, Box 350, Revelstoke, B.C., V0E 2S0. Please enclose a cheque or money order for \$8.95 (Canadian).

ON YOUR OWN TWO FEET

Mount Revelstoke and Glacier national parks have five self-guiding trails where you can relax and set your own pace. Why not try one of these short, easy walks.

Glacier National Park

Abandoned Rails Trail: Explore the history of Rogers Pass by walking on the abandoned rail grade between the Rogers Pass Centre and Summit Monument (past the remains of old snowsheds). Wheelchairs must bypass the section behind the centre and join the trail just beyond the service station. The trail is 1.2 km, one way.

Loop Brook: Railway history is featured on this 1.6 km round-trip trail that leaves from the viewpoint just east of the Loop Brook Campground. The trail highlights the stone pillars that once carried the railway track across the valley. The Loop Brook Trail has short, steep sections.

Mount Revelstoke National Park

Giant Cedars Trail: This award-winning trail takes you into the heart of a stand of 800-year-old cedars. The one-half kilometre long boardwalk takes you to the park's old rainforest, where signs identify some of the plants. Benches are provided so you can relax and drink-in the serene forest atmosphere. The trailhead is at the Giant Cedars Picnic Area.

Skunk Cabbage Trail: About 1.2 km of trail and boardwalk lead you over a swamp inhabited by muskrats, beavers, skunk cabbages, and a host of birds. "Naturalist Notebook" signs help you identify the plants and animals you'll see and hear along the way. This fascinating place is at its best from May through July. The trailhead is at the Skunk Cabbage Picnic Area.

Meadows in the Sky Trail: One kilometre of paved trail takes you through a sub-alpine meadow. Notebook-style signs tell you about this fragile area where winter lasts for up to nine months of the year. A point of interest is the Icebox, a shaded rock cleft where snow persists throughout the summer. This trail is at its best in late July and early August when the wildflower blooming season is at its peak. The trailhead is at the summit of Mt. Revelstoke, a 26 km drive from the town of Revelstoke, along the Mt. Revelstoke Summit Parkway.

STALKING THE WILD MAIDENHAIR

The ancient fern family is alive and well in Mount Revelstoke and Glacier national parks. Twenty-three different kinds of fern grow here, some among the commonest plants in the world and others among the rarest. No trail is without its representatives of the family, and a hunt for ferns through the two parks will take you to nearly every habitat, from valley bottom to alpine.

Ferns vary greatly in their size and appearance — from the tall, coarse, leathery fronds of the Bracken Fern (one of the world's most widespread plants) to the translucent-leaved Northern Maidenhair Fern, the epitome of a "blue-blood" rainforest plant.

Ferns prefer rainforests because they are unable to reproduce without abundant ground moisture. The fragile-looking maidenhair survives by storing nutrients in its fleshy root (or rhizome) from year to year. In winter, the deep insulating blanket of snow over the Columbia Forests protects the roots from killing frosts.

Especially "ferny" trails include the Great Glacier Trail (leaving from the Illecillewaet Campground) and the Inspiration Woods Trail at the base of Mt. Revelstoke. Keep an eye out for the park's real rarities: Anderson's Holly Fern, Moonwort, Adder's Tongue, and Rattlesnake Fern. The park interpreters would be happy to help you learn more about maidenhair and other ferns that are typical residents of the Columbia Mountains.

RAINY DAY ROGERS PASS BLUES

It's raining, it's pouring... So, what else is new? In the Columbia Mountains, and especially in Rogers Pass, it rains (or snows) an average of three out of every five days. But without the metre-and-a-half of precipitation that falls each year, the dense forests, tall trees, and glaciers that we all enjoy would not be here.

Unfortunately, the conditions that make this magnificent mountain scenery possible also mean that you may have rainy days to contend with. When you get tired of reading in the tent, and you've got a really good case of the "Rainy Day Rogers Pass Blues," why not try one of these things to do in the rain?

- Come out on a guided walk with a park interpreter. Hikes go rain or shine and last from 3½ to 5 hours depending on the destination. Bring a lunch and, of course, rain gear to experience the true climate of the Columbia Mountains. You could end up walking inside a cloud! Check at the Rogers Pass Centre for hike schedules.
- If you'd like to get outside for a shorter hike, try one of the park's self-guiding trails. These include Abandoned Rails and Loop Brook in Glacier, and Skunk Cabbage, Giant Cedars, and Meadows in the Sky in Mount Revelstoke.
- Go for an early morning drive and look for wildlife. Moose and deer are often seen in the Beaver Valley on Glacier's east side, and you can look for mountain goats on the slopes of Mt. Tupper, just east of Rogers Pass. Try driving up to the Mt. Revelstoke summit, stopping at the viewpoints and reading the interpretive signs that tell you about Mount Revelstoke National Park.
- Come in out of the rain! The Rogers Pass Centre features exhibits on the natural and human history of the park. Sit by a cosy fire and leaf through a reference book, or lean back and watch one of several different movies and videos on subjects such as wildlife, avalanches, local history, or the Nakimu Caves. Then come back in the evening for an interpretive program. Check at the centre for details.
- Done it all? Why not write a poem about the rain? You'd be following the precedent set by an anonymous poet over 80 years ago, who left this sad commentary in the Glacier House scrapbook:

First it rained, and then it snow
and then it friz, and then it thew
and then it fogged, and then it blew
and very shortly after then
it rained and snow and friz and thew
and fogged and blew again.



Red Backed Vole

INTRODUCING THE FRIENDS

Do you wish there was some concrete way you could show your support for Canada's national parks? Do you think there should be more information available about parks, or more ways to learn about park animals, plants, and history? Do you think our national parks need more money for certain projects? If so, you're not alone.

With these common ideals in mind, in 1987 a group of Revelstoke citizens founded a non-profit society, the Friends of Mount Revelstoke and Glacier.

As their first major undertaking, the Friends opened the Glacier Circle Bookstore at the Rogers Pass Centre. It features a large selection of books about the Columbia Mountains, and is the main outlet for the Friends' recent publications. These include checklists for flora and



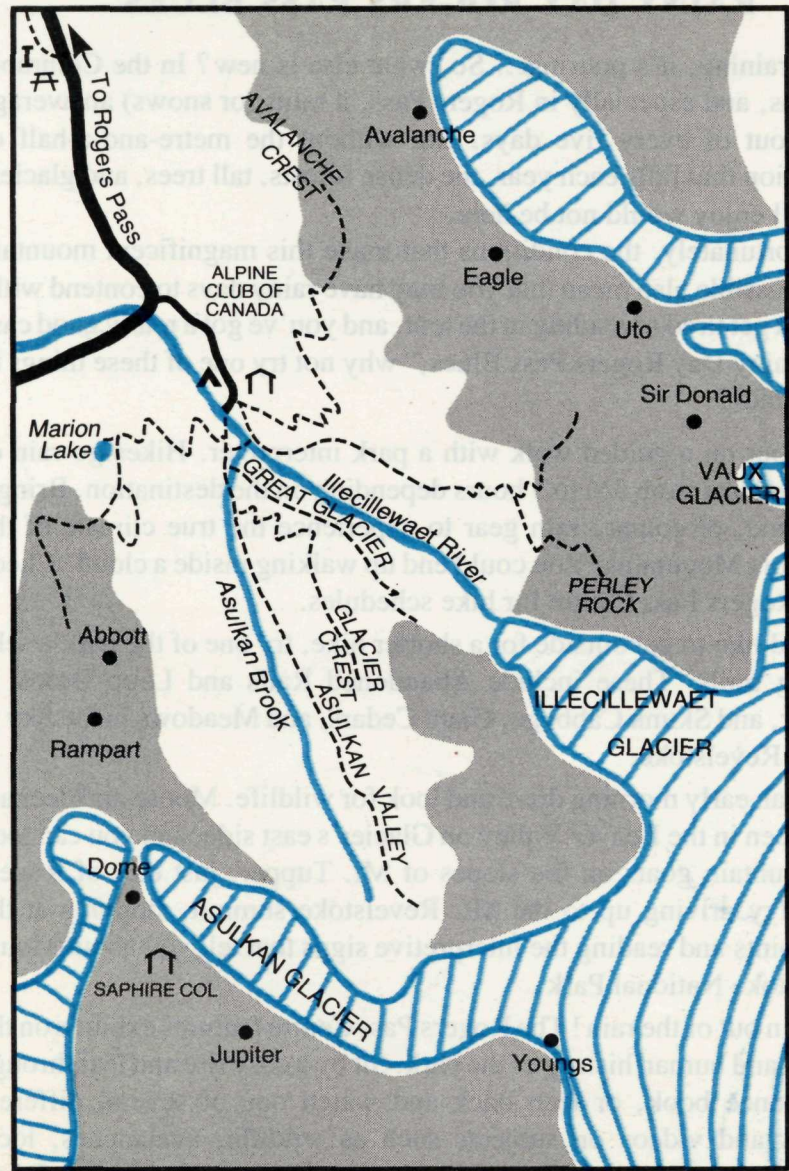
wildlife, and reproductions of historic Canadian Pacific Railway posters.

The Friends also host guest speakers and special events. Wildflower identification walks to the summit of Mt. Revelstoke, and parents and tots walks on easy hiking trails are examples of events they have offered.

Some of the funds raised by the group will go toward converting an old ski chalet in Mount Revelstoke National Park into an environmental education centre. Other funds will go toward developing new publications.

For membership information or other enquiries, please stop in at the bookstore in the Rogers Pass Centre, or contact the Friends' office in the Revelstoke Post Office Building (837-2010). You can write to the Friends of Mount Revelstoke and Glacier at Box 2992, Revelstoke, B.C., V0E 2S0.

Illecillewaet Campground and Trails



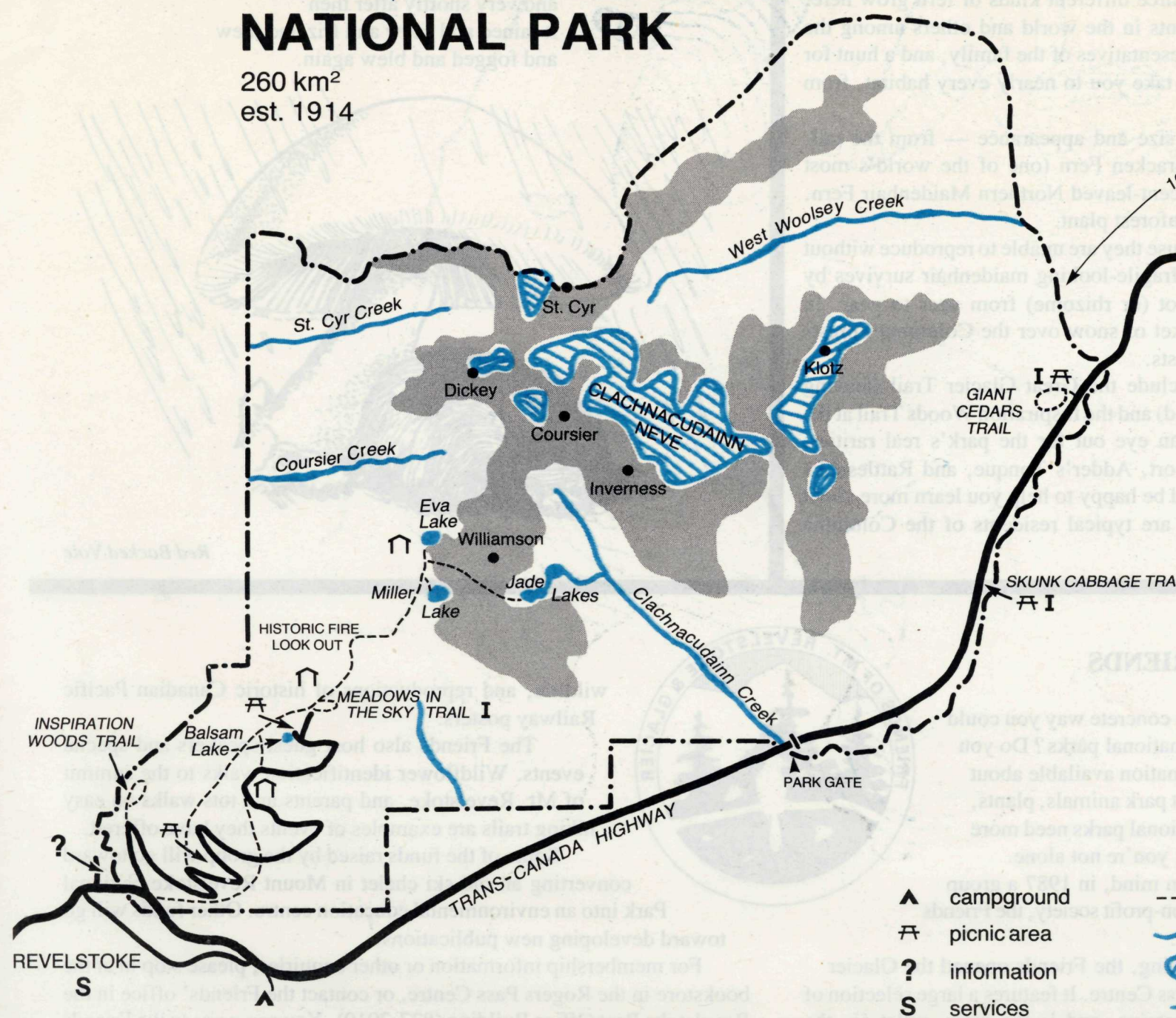
GLACIER NATIONAL PARK

1350 km²
est. 1886



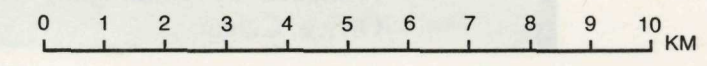
MOUNT REVELSTOKE NATIONAL PARK

260 km²
est. 1914



LEGEND

- ▲ campground
- ⌘ picnic area
- ? information
- S services
- I interpretive trails
- trails
- rivers
- ▨ glaciers
- lakes
- alpine area
- highway
- - - park boundary
- ⌘ shelter
- varden station
- summit



FEATURES

WE NEED YOUR HELP

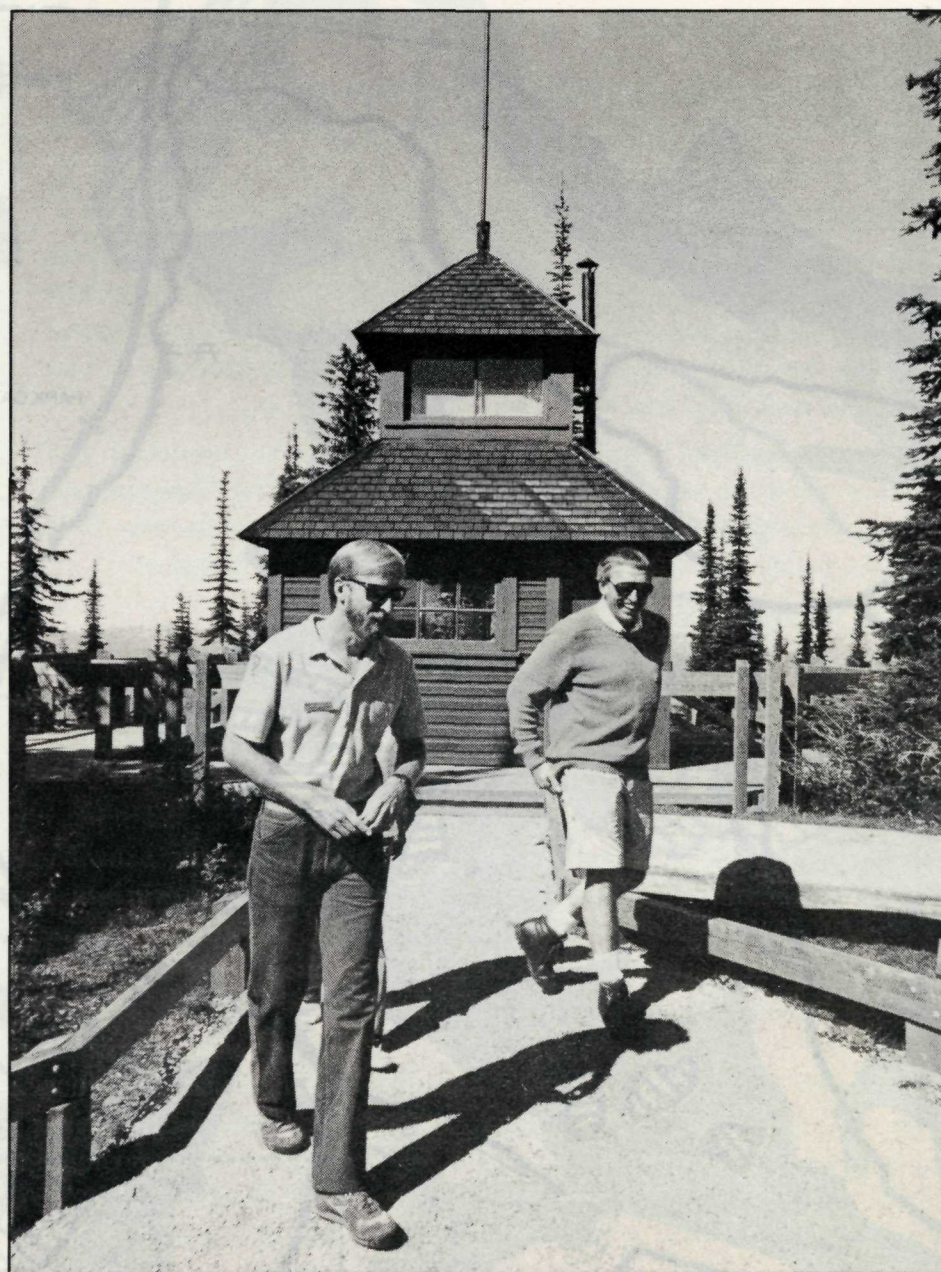
Visitors to the summit of Mt. Revelstoke this summer will see many improvements to park facilities. The road has been hard-surfaced, there is a new deck protecting the area around the historic fire tower, and many new signs are in place explaining the special features of the high country. The signs will also remind you that it takes special care to visit this beautiful, but fragile, environment.

The summit of Mt. Revelstoke is one of only a few areas in Western Canada where alpine meadows are easily reached by vehicle. Large numbers of people visiting a fragile alpine area can result in erosion and damaged plants, and the summit area was in this state about 15 years ago. Since then, significant efforts have been made to rehabilitate and protect the meadows by setting up trails and viewpoints, and by re-establishing native vegetation. Despite these efforts, recovery has been slow in some places, such as near the upper parking lot. Compare the sparse plant cover here with the lush flower meadows found below the fire tower along the road between Balsam Lake and Heather Lake.

The long-term preservation of the summit requires a high degree of co-operation from visitors. Studies show that as few as 25 people walking off a trail in any one area can severely damage alpine plants. About 20,000 people visit the summit of Mt. Revelstoke every year, many not realizing the potential for damage to alpine areas simply from the impact of many pairs of feet in one small, sensitive area.

Why the need for this degree of ecological sensitivity? Growing conditions in this high-elevation environment are severe. In spite of their small size, the stunted sub-alpine fir trees fringing the meadows at the summit are over a century old in some cases. Similarly, an individual flower may take an entire decade to store enough energy to produce a bloom and set seed. Once vegetation is damaged, the underlying soils are subject to extreme erosion, resulting in permanent deterioration and long periods before vegetation will re-establish itself naturally.

Because of the delicacy of alpine plants and the large number of visitors to the Mt. Revelstoke summit, it's essential that everyone stays on the trails and refrains from picking the flowers. Your co-operation will ensure that the summit area remains beautiful for others to enjoy.



Mount Revelstoke Fire Look-out

PARK ETIQUETTE

Visitors planning to travel in Mount Revelstoke and Glacier national parks should be aware of the following:

- **DO NOT DISTURB OR COLLECT NATURAL OR HISTORIC OBJECTS.** All such objects in a national park must be left as you found them for others to discover and enjoy. This includes plants and flowers.
- **DO NOT FEED OR APPROACH WILDLIFE.** Giving human food to wildlife may adversely affect their health and lead to animals associating humans with food. If this becomes a continuing problem the animal may have to be destroyed. Read the free brochure, **You Are In Bear Country**, for advice on avoiding bears.
- **KEEP PETS ON A LEASH AT ALL TIMES.** We do not recommend bringing pets to any national park in Canada. If you do, they must be kept on a leash to prevent encounters with wildlife and other visitors.
- **FIREARMS MUST BE KEPT OUT OF SIGHT, UNLOADED, AND ENCASED, WRAPPED OR DISMANTLED.**
- **OFF-ROAD USE OF SNOWMOBILES, AUTOMOBILES, MOTORCYCLES, ETC. IS PROHIBITED.**

IN THE BACKCOUNTRY...

- **PACK OUT ALL GARBAGE.** In addition to the obvious aesthetic concerns, your garbage may be seen as food by animals and result in injury to them. It also promotes the association of humans with food.
- **STAY ON THE TRAIL.** Shortcuts and side-trips cause destruction to vegetation. Our growing season is short and it is difficult for plants to recover. Traveling off the trails will result in soil erosion and scars to the landscape.
- **CARRY ADDITIONAL WARM AND WEATHER-PROOF CLOTHING.** Mountain weather can change rapidly. Several layers of light clothing will keep you warmer than one heavy sweater or jacket. A first-aid kit and water-proof matches are also recommended.
- **DISPOSE OF WASTE PRODUCTS SAFELY.** To ensure mountain water remains pure, dispose of all human wastes and dirty water at least 100 metres away from any water source. Solid human wastes should be buried.
- **USE CAMPSITES AND FIRE PITS ESTABLISHED BY PREVIOUS CAMPERS.** There are no designated camping areas on our trails, but following this rule will minimize environmental damage and ensure everyone enjoys a natural wilderness experience.

YOU ARE REQUIRED TO REGISTER FOR THE FOLLOWING ACTIVITIES:

- Backcountry camping
- Backcountry fire pits (Prohibited in Mount Revelstoke and in alpine areas of Glacier)
- Mountaineering (route descriptions and photos available)
- All winter activities (with the exception of groomed cross-country ski trails on Mt. Revelstoke)

Registration services are available at:

Glacier Administration Office at Rogers Pass
(Open 24 hours a day, 7 days a week)
Revelstoke Information Office
301 Campbell Avenue in Revelstoke
(Open Monday to Friday, 8 am to 4 pm)

MOUNTAIN CREEK CAMPGROUND CLOSED

Glacier National Park's largest campground, Mountain Creek, was closed for the summer in 1989 after park wardens identified a potential hazard to campers. Fungus infections among the campground's trees have weakened their root and stem systems, making the trees liable to fall without warning. The Mountain Creek Campground remains closed today as foresters and park staff work to find the best solution to this difficult problem.

The death of a tree from a fungal infection is a normal event in the forest. Fungus can enter the tree through a scar or wound. If the infection kills the tree it will eventually fall, but others will replace it and the forest goes on. In the case of Mountain Creek, damage to tree roots from campground facilities has opened the way for these otherwise natural fungi to become unnaturally common.

The obvious solution (cutting down the infected trees) is not that simple. Dead roots can harbour infectious fungi and cause them to spread even more. To eliminate the source of infection, the tree and its roots must be completely removed. This is expensive and unsightly, and could result in a campground where few people would want to camp. Moreover, this campground is known as an important wintering area for moose. Thick forest cover in the valley bottom results in a shallower snowpack in the campground area, making it easier for moose to feed and move around. Moose have few areas like this to choose from in Glacier National Park.

"We are currently considering alternatives for the site, as well as investigating possible locations for a new campground. Mountain Creek Campground will not re-open unless it can be made safe for people to camp there," park superintendent Roger Beardmore said.

The Selkirk Summit is made possible by contributions from Roger Beardmore, Bob Brade, Brenda DeMone, Pat Dunn, Les Gyug, Susan Hall, Jackie Morris, Michael Morris, Brad Punt, Keith Webb, and John Woods. Produced by Community Affairs, Western Regional Office, Calgary.

THE ZEN OF RAINFORESTS

When you step into a rainforest, you are stepping into the most established of neighbourhoods. This forest is older than any human city — many of its residents count their ages in hundreds of human generations! Some belong to ancient lineages that saw the dinosaurs come and go.

Tropical rainforests have long held our imagination as the mysterious home of a myriad of exotic plants and animals, and right here in Canada a northern counterpart to the Amazon jungle exists in B.C.'s extensive coastal and interior rainforests. Mount Revelstoke and Glacier national parks protect a small portion of the great wedge of interior, or Columbia, rainforest found roughly within the arch of the Columbia River.

The earliest forests on the planet were rainforests. The descendants of the first forest plants still live in rainforests today. Fossil ferns and horsetails were distinct plant families some 350 million years ago. British Columbia rainforests contain Canada's oldest and largest trees, whose lives have spanned centuries of human history. Some of the cedars along the Giant Cedars Trail were seedlings when the Vikings first came to North America. They are living monuments to a millennium — and still growing.

What makes a rainforest? Ample rain, certainly! More than 1600 millimetres fall in the Columbia Mountains of Mount Revelstoke and Glacier national parks every year. With mild temperatures and a relatively long growing season, you have a climate that fosters luxuriant growth. Add a long inventory of trees, shrubs, and flowers; of birds and small animals; of fungi, lichens, mosses, and moulds; and, most importantly, the time needed for all of these things to learn to survive together. Stir well, and you'll have a rainforest!

For all of our modern science, we are only beginning to learn about some of the mutual dependencies and ingredients necessary to the health of old forests and especially rainforests. For instance, what could a very small mammal have to do with the lives of thousand-year-old cedars?



Giant Cedars Trail

Well, red-backed voles (which look like large, plump mice and are very common in old forests) are a link to the successful establishment of seedling trees. One of their favourite foods is truffles (the fruit of a fungus which lives underground). When they eat the truffles, they spread the spores of the fungus around the forest through their droppings. Many underground fungi cells grow adjacent to cedar root cells and help the cells to absorb minerals found in the soil. In return, the fungi receive some of the products of photosynthesis produced by the tree. Most trees and many species of plants require this alliance with

a fungus in order to do well in their competitive environment. Without the voles to spread the fungus spores young plants are handicapped. Where forest soil has been extensively disturbed or destroyed by the removal of trees, few of these underground fungi are found. Without truffles to feed on, voles cannot live in the area, and it may become very difficult for the forest to re-establish itself.

New evidence suggests that voles, underground fungi, and trees have evolved together in a co-operative system that works for the good of each. It's just one example of the complex relationships between living things in this ancient ecosystem. Many animals depend on old rainforests for their very lives. Bats and Vaux's Swifts live in tall, dead trees, and black bears like to den in hollow cedar logs. Caribou winter in old forests, their large splayed hooves allowing them to walk on top of snow to feed on the hanging Old-man's-beard lichens brought within their reach by snow depths of two metres or more.

Rainforests are excellent, though challenging, subjects for photography with their complex shapes and lush colours. You will need fast film or a tripod to catch their shadowy interiors. Watch for spectacular effects, like a spotlight of sun on a patch of fern or Devil's Club. Good trails through the rainforest include the first kilometre or so of any of the Illecillewaet Valley trails, or the Beaver River Trail in Glacier National Park. In Mount Revelstoke National Park, visit the Inspiration Woods Trail and the Giant Cedars Self-guiding Trail.

SELKIRK MOUNTAINS IN WINTER

Glacier National Park is located in the middle of one of the world's premier ski destinations. The area's legendary snowfall and ideal terrain combine to make the Selkirk Mountains a backcountry skier's paradise.

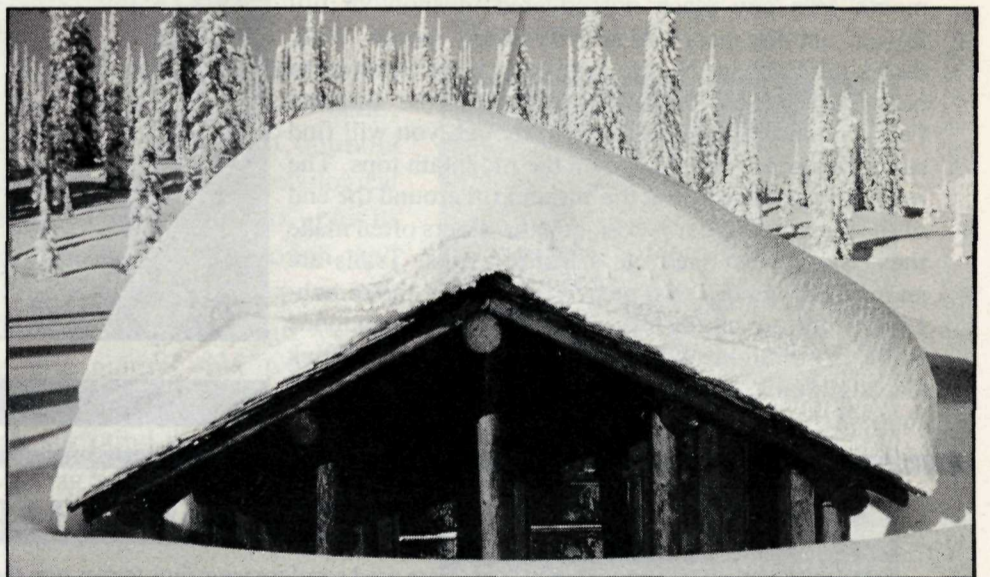
Because the prevailing weather pattern is from the southwest, this area receives a steady flow of weather systems from the Pacific Ocean. When these wet air masses reach the Coast Mountains they are forced to rise, causing the clouds to cool, condense, and release much of their moisture. Continuing inland, these air masses again are forced to rise above the even higher Selkirk Mountains. This results in a two metre snowpack in Rogers Pass. Because snowfall increases with elevation, a four metre snow cover at the treeline is not uncommon.

The combination of great amounts of snow and steep slopes create a number of avalanche paths throughout the area. Avalanche slopes that can effect the highway are closely monitored and controlled by Glacier's Snow Research and Avalanche Warning Section. The section is responsible for the world's largest mobile control program — a story well documented in the film "Snow War."

All slopes adjacent to the highway are closed to skiing because of the need to be able to stabilize them with artillery. But most of the backcountry trails enjoyed by summer visitors are open to winter skiers. Information on which areas are open is shown on a map at the Glacier Administration Office in the Rogers Pass compound, where skiers are required to register for any backcountry trip.

The most popular ski runs are the relatively moderate terrains of Balu and Asulkan valleys. The adjacent side valleys provide expert skiers with near limitless opportunities for untracked snow, either on open slopes above treeline or on steep gullies through the trees where the snow is deepest.

Backcountry skiers heading farther afield can find rudimentary shelter for overnight trips at Sapphire Col on Asulkan Ridge and at Glacier



Balsam Lake Picnic Shelter

Circle, situated in a bowl between the Illecillewaet and Deville Névés. These destinations require knowledge of, and equipment for, glacier travel. Check with the Warden Service for information on these huts before heading out.

All ski destinations in the park require knowledge of travel in avalanche terrain. An avalanche hazard forecast is available when registering. Skiers are urged to wear avalanche transceivers and be proficient in their use. Experienced skiers will also carry a shovel, avalanche probe, spare clothing, first-aid supplies, basic repair equipment, food, and drink. These pack-sack items make for a safer and more enjoyable day out.

After sampling the snows of the Selkirks drop by the Rogers Pass Centre, sit by the fireplace, and check out our books and movies. If you've visited Glacier National Park in summer, you'll find it a very different place in the crystal cover of winter.

FOR A DAILY AVALANCHE HAZARD FORECAST, CALL 837-MTNS

GLACIER COUNTRY ALMANAC

JANUARY

Heavy snowfall and lots of avalanche activity mark this cold month. This is a month of beginnings — the days are getting longer and ravens (the earliest to nest of all our birds) begin their aerial courtship displays. Bears give birth to cubs in their winter dens. In Mount Revelstoke National Park, park staff host a moonlight ski trip up the summit road at the full moon.

FEBRUARY

No point in celebrating Groundhog Day here — the burrows of hibernating rodents are buried under two to five metres of snow! The lengthening days and rising temperatures make this a good month for ski touring.

MARCH

On March 4, 1910, 62 men were killed by an avalanche in Rogers Pass. The first day of spring may see two metres of snow on the ground and skiers exult in long days and good snow conditions at high elevations. But by the end of the month, warm valley bottom locations begin to glow with the first Skunk Cabbages as spring begins its slow return to the Columbia Mountains.

APRIL

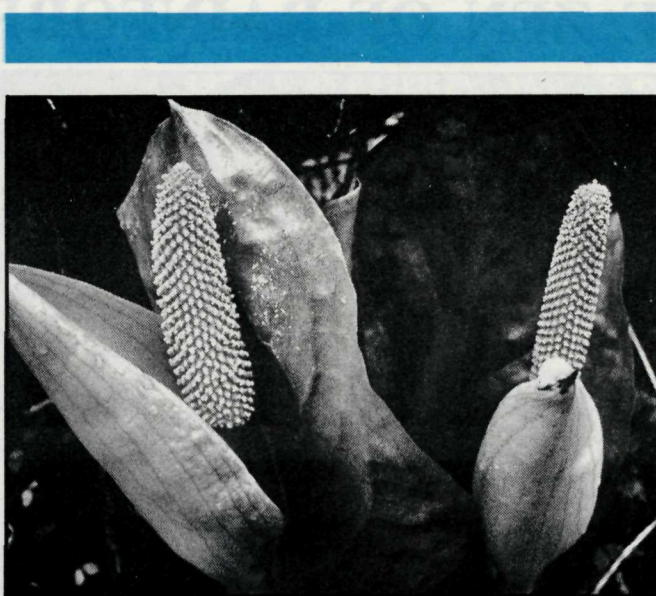
Spring is in sight! Skunk Cabbage has come up like candle flames in valley bogs. Listen for the flute-like song of varied thrushes on damp mornings. By the end of the month most bears are out of their winter dens. Use binoculars to look for grizzly bears on avalanche paths, where they explore the edge of the melting snow for the year's first green plants. Read the free brochure, **You Are In Bear Country**.

MAY

The avalanche season is not yet over, as huge, wet snowslides lay avalanche paths bare to the dirt. This is the best month for wildlife viewing. It is the most likely month to see bears as well as mountain goats, who follow the new growth on the mountain sides. Watch for mountain goats on the slopes of Mt. Tupper above the snowsheds on the east side of Rogers Pass and on rock cliffs beside the highway at the park's east gate. By the end of the month, you may be lucky enough to see the year's first mountain goat kids. Glacier lilies and Spring Beauty bloom on slide paths. The Skunk Cabbage trail hums with bird activity and the Skunk Cabbages themselves are at their best in the early part of the month. Steller's Jays are active at the Skunk Cabbage and Giant Cedars trailheads. Flowers bloom to the edge of the snow.

JUNE

June offers no rest for the naturalist! This exciting month sees any place not covered in snow in full flower, and the most bird activity of any month. Walk the Skunk Cabbage Nature Trail early in the morning to be serenaded by birdsong. Drive up the Summit Parkway looking at wildflowers, though you will find summer has not yet arrived on the mountain tops. The road is buried in snow at the summit till around the end of the month. Die-hard cross-country skiers often make their way up for the year's last ski trips. Trails are snowbound above 2000 metres throughout the month. Limber up your hiking legs on Loop Brook, Abandoned Rails, Inspiration Woods, Giant Cedars and Skunk Cabbage trails, and on the first few kilometres of the longer trails.



JULY

All park services are open by the first of July. By mid-month, all trails will be largely free of snow and the summer hiking season will be fully underway. At and above the treeline, meadows build up their flower displays. Winter wrens sing along the Giant Cedars Trail, but by mid-month most birds have become very quiet. Skunk Cabbage plants reach their maximum size and height.

AUGUST

The height of summer! Normally this is one of the drier months of the year, but in the summer of 1989 we had 247% of the normal rainfall in Rogers Pass. On the summit of Mt. Revelstoke, wildflower displays reach their peak early in August. Each year, on the August long weekend, a park interpreter leads the Eva Lake Pilgrimage, a six to seven hour return walk through the flowering meadows. Walk the Meadows-in-the-Sky trail on the summit for an introduction to the ecology of these sub-alpine meadows. Although August often comes in on a wave of hot weather, autumn is evident by the end of the month. Columbia ground squirrels begin to hibernate in mid to late August.

SEPTEMBER

Days are still warm though the nights are cold. When the weather co-operates, September can offer the year's best hiking. Many birds are gathering in flocks to migrate south. Naturalists find a multitude of mushrooms to photograph along some trails — the Selkirk Mountains have approximately 1000 different kinds. Look for Touch-me-nots (Jewelweed) along the Skunk Cabbage Trail.

OCTOBER

If the weather is clear, hiking may still be good for part of this between-seasons month. But by the end of October, the snows of winter have usually arrived to stay. The Illecillewaet Campground access road may be closed by snow, but hike-in camping is possible all winter. Steller's jays gather along the roadsides, providing cheerful spots of colour in the brown autumn landscape. Bears enter their winter dens around the end of the month.

NOVEMBER/DECEMBER

These dark and stormy months see the beginning of the avalanche control season. The first avalanches of the year to affect the highway have happened as early as November 8. In a good snow year, skiers can hit the trails in early November. In the nearly constant snowfall, the song of the Water Ouzel provides a cheery note along the Illecillewaet River. Few wild animals are about in December, but November usually sees good waterfowl watching in Revelstoke, while the mountain goat rutting season gets underway in the high country. Around Christmas, Revelstoke residents and their friends get together for the annual Christmas Bird Count that determines the populations of wintering birds.

GLACIERS ON THE GO

The Illecillewaet is the largest and most visible glacier in Glacier National Park — and it's on the move!

For the past 17 years, Glacier National Park interpretive staff have measured the lowest edge of the Illecillewaet (pronounced ill-a-sill-a-way-et) Glacier, and the figures show that this enormous ice mass is advancing steadily — an average of six metres per year since 1972.

Measuring an entire glacier is an immense job that requires a team of glaciologists, but not all parts of a glacier need to be measured to find out if it's growing or shrinking. With only a tape measure, a compass, and some known reference points on the rock in front of the glacier, the lowest edge can be measured and compared to previous years.

Originally, six brass pins were placed in the bedrock in front of the Illecillewaet Glacier to be used as reference points, but all of these pins have now been covered over with ice. Today, prominent boulders

are used as reference points to measure the moving ice. Although only a tiny part of the glacier is measured, the steady advance indicates that the entire glacier is growing.

There are, of course, more sophisticated ways to measure glaciers than with a tape and a reference point. In 1985, Environment Canada's National Hydrology Research Institute used a computer to map and compare aerial photographs of Glacier National Park taken in 1952 and 1978. Not only did they find that most of the 422 glaciers in the park are growing, but they also found 68 new "baby" glaciers. The new glaciers are forming in the same positions where previous glaciers had melted completely away.

The institute also compared the present health of Glacier National Park's glaciers with a reconstruction of them as they existed in 1850. The park has fewer and smaller glaciers today because of massive melting in the early part of this

century. At that time, a long-term study was undertaken by the Vaux family of Philadelphia, Pennsylvania, which documented the retreat of the Illecillewaet Glacier from its maximum advance in about 1887. This glacier is slowly gaining back lost ground, and is now in about the same position as it was in the mid-1940s. If the trend continues, the Illecillewaet will once again be known as the "Great Glacier."

As it advances, the glacier thickens and steepens. Ten years ago it was safe to walk anywhere along the ice edge. Now, blocks of ice bigger than automobiles occasionally fall 100 metres from an ice cliff, making it safe to approach the toe of the glacier at only two points.

There is no immediate cause to worry that the Illecillewaet Glacier will advance too far. At the present rate, it will not cross the Trans-Canada Highway and close Rogers Pass until the year 2641 A.D.



We would like to hear from you.

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