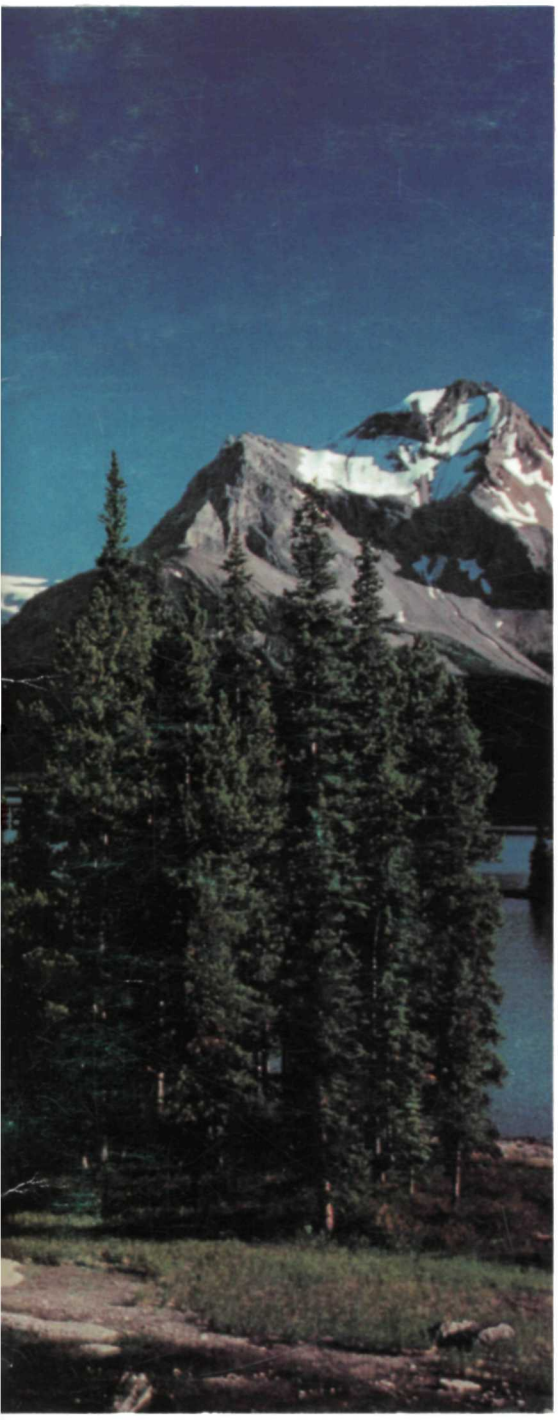
NOMINATION OF THE

# CANADIAN ROCKIES

BY CANADA FOR INCLUSION IN THE

# WORLD HERITAGE LIST

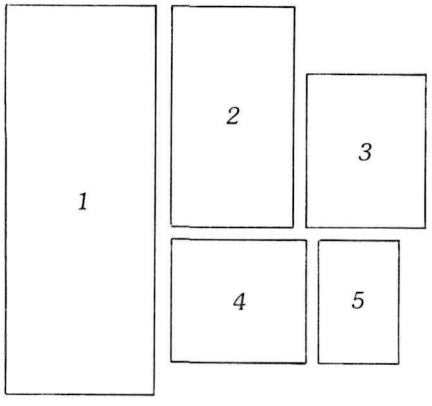
UNESCO UNITED NATIONS EDUCATIONAL, SCIENTIFIC, AND CULTURAL ORGANIZATION



BANFF JASPER KOOTENAY YOHO

National Parks Centennial 1885 1985

November, 1983




*COVER PHOTOGRAPHS*

1. *Maligne Lake and Spirit Island*
2. *Castleguard Cave – Canada's longest cave system*
3. *Freshfield Glacier – part of Freshfield Icefield*
4. *Bighorn Sheep – IUCN vulnerable species*
5. *Trilobite fossil – Burgess Shale*

CONVENTION CONCERNING THE PROTECTION
OF THE WORLD CULTURAL AND NATURAL HERITAGE

# WORLD HERITAGE LIST

## NOMINATION FORM

Under the terms of the Convention concerning the Protection of the World Cultural and Natural Heritage, adopted by the General Conference of Unesco in 1972, the Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, called "the World Heritage Committee" shall establish, under the title of "World Heritage List", a list of properties forming part of the cultural and natural heritage which it considers as having outstanding universal value in terms of such criteria it shall have established.

The purpose of this form is to enable States Parties to submit to the World Heritage Committee nominations of properties situated in their territory and suitable for inclusion in the World Heritage List.

Notes to assist in completing each page of the form are provided opposite the page to be completed. Please type entries in the spaces available. Additional information may be provided on pages attached to the form.

It should be noted that the World Heritage Committee will retain all supporting documentation (maps, plans, photographic material, etc.) submitted with the nomination form.

The form completed in English or French should be sent in three copies to:

The Secretariat
World Heritage Committee
Division of Cultural Heritage
Unesco
7, Place de Fontenoy
75700 Paris

**UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION**

# 1. SPECIFIC LOCATION

## a) COUNTRY

Canada

## b) STATE, PROVINCE OR REGION

Provinces of Alberta and British Columbia

## c) NAME OF PROPERTY

The Canadian Rockies comprising:

Banff National Park
Jasper National Park
Kootenay National Park
Yoho National Park

## d) EXACT LOCATION ON MAP AND INDICATION OF GEOGRAPHICAL CO-ORDINATES

Refer to maps

# 2. JURIDICAL DATA

## a) OWNER

Government of Canada – administered by Parks Canada under the authority of the *National Parks Act*.

## b) LEGAL STATUS

The *National Parks Act* provides the Government of Canada with legal control over all lands contained within the parks. Under this legislation, *"The Parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment... and the National Parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations"* (Section 4). The Schedule of the *National Parks Act* describes the legislated boundaries of Banff, Jasper, Kootenay and Yoho national parks.

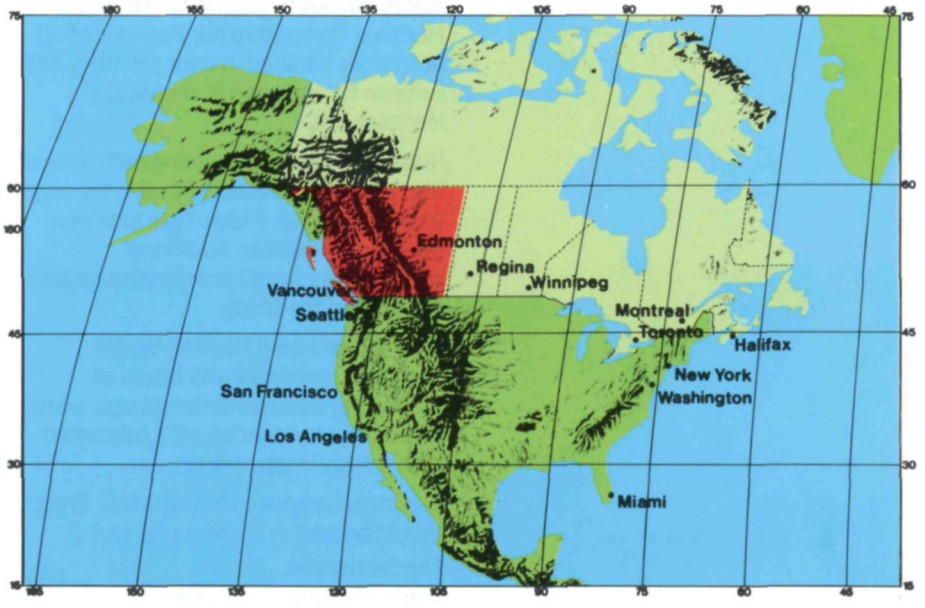
## c) RESPONSIBLE ADMINISTRATION

Regional Director
Parks Canada, Western Region
520, 220 - 4th Avenue S.E.
Calgary, Alberta

Mailing Address:
P.O. Box 2989, Station M
Calgary, Alberta
T2P 3H8

## WORLD SETTING


## GEOGRAPHICAL CO-ORDINATES




# 3. IDENTIFICATION

## a) DESCRIPTION AND INVENTORY

The Canadian Rockies are of outstanding universal value for their exceptional beauty combined with superlative natural resources of heritage and scientific interest. With an area of 20,160 km$^2$, the four contiguous national parks of Banff, Jasper, Yoho and Kootenay are included in this nomination. These parks comprise one of the largest and best known protected natural areas in the world.

Accessibility allows over nine million visitors annually to appreciate and experience this impressive mountain environment. There are still large areas where man has had little or no influence on the natural landscape. In fact much of the four parks' area is more than 10 km from a public road or park/provincial boundary.

# THE CANADIAN ROCKIES


1 Miette Hot Springs
2 Athabasca River Sand Dunes
3 Maligne Canyon
4 Mt. Edith Cavell
5 Athabasca Falls
6 Columbia Icefields
7 Castleguard Caves
8 Burgess Shale
9 Spiral Tunnel
10 Castle Mountain
11 Vermilion Pass
12 Sunshine Meadows
13 Johnston Canyon
14 Mt. Rundle
15 Cave and Basin Hot Springs
16 Sinclair Canyon
17 Radium Hot Springs
18 Twin Falls
19 Takakkaw Falls

BANFF JASPER KOOTENAY YOHO

### i) THE CANADIAN ROCKIES IN THE NEARCTIC BIOGEOGRAPHICAL REALM

The Canadian Rockies site lies in the northern half of the Rocky Mountains Biogeographical Province of the Nearctic Realm as defined by Udvardy (Udvardy, 1975). This province forms the backbone of North America and is comprised of young mountains with many peaks above 4270 m; great local relief (1525 m to 2135 m); extensive forests and a diverse wildlife population. It is in this province that the national parks systems of two countries – Canada and the United States – began a century ago.

The Rocky Mountain Biogeographical Province can be subdivided into four distinct ecoregions. These are, from north to south: (1) Northern Rocky Mountains; (2) Middle Rocky Mountains; (3) Wyoming Basin; and; (4) Southern Rocky Mountains. The distinguishing characteristics of each ecoregion are summarized in Table 1 along with a listing of those areas within them that have been dedicated as national parks and monuments.

### ii) GEOLOGY

Geological formations in the parks of the nominated area are composed primarily of shale, dolomite, sandstone, limestone, quartzite and slate, spanning time periods from the pre-Cambrian to present. Continental tectonic forces have resulted in faulting, folding and uplifting of these sedimentary layers, to produce mountain ranges which form the continental spine.

The Canadian Rocky Mountains consist of four northwest-southeast trending geological subprovinces, all of which are represented in the parks. These subprovinces are the Western Ranges, the Main Ranges, the Front Ranges and the Foothills. Straddling the Continental Divide of western North America, the four ranges dramatically illustrate tectonic forces, characteristic geology, and erosion. Glacial and climatic processes have played a major role in the development of the area's varied environments. Together, these four mountain national parks provide exemplary representation of the Canadian Rocky Mountains.

The Western Ranges, found in the southern part of Kootenay National Park, are composed of relatively soft shales that folded intricately during the mountain building process.

The Main Ranges occur in all four of the parks. In Kootenay and Yoho, two distinct subprovinces of these ranges are represented: eastern and western. In Banff and Jasper, only the eastern subprovince of the Main Ranges occurs. The eastern main Ranges, underlain by the strong quartzite of the Gog Group and bordered by faults, uplifted as rigid blocks, forming mountains with sharp shoulders and great, banded cliffs. The Main Ranges contain the highest mountains in the four parks and form the Continental Divide. Castle Mountain and Mount Edith Cavell are among the most dramatic examples of the many Main Range peaks.

The Front Ranges, found in Banff and Jasper, are composed of thick layers of limestone and shale. They are separated from the Main Ranges by a zone of faults which runs the length of Banff and Jasper. These mountains often have a tilted, tooth-like appearance and in places the rock layers have been folded. Mountains such as Mount Rundle and Roche Miette characterize these ranges.

The Foothills are the easternmost extension of the Rockies. A small area in the southeastern portion of Jasper, along the Southesk River, provides the only representation of the rounded rolling hills of the Foothills in the four parks.

The sedimentary Rocky Mountains contain an extensive fossil record dating from Precambrian to Recent. Of particular note in the Main Ranges are the exquisitely preserved soft-bodied fossils found in the Burgess Shale layer of the Stephen Formation in the Cathedral Escarpment. This discontinuous layer of highly fossiliferous shales, extends about 20 km southeast of Mount Field in Yoho National Park.

Since 1981, when the Burgess Shale was declared a World Heritage Site, several new fossil locations have been discovered, revealing a distribution pattern for fossils far more varied and complex than previously realized (Collins, 1982). As one of the most significant fossil sites in the world, the Burgess Shale portrays a view of evolution in action during the Middle Cambrian times (Morris and Whittington, 1979).

### TABLE 1: ECOREGIONS, CHARACTERISTICS AND NATIONAL PARK REPRESENTATION IN THE ROCKY MOUNTAIN BIOGEOGRAPHICAL PROVINCE

| ECOREGION | CHARACTERISTICS | REPRESENTATION IN THE NATIONAL PARKS SYSTEM – UNITED STATES OF AMERICA AND CANADA |
|---|---|---|
| SOUTHERN ROCKY MOUNTAINS | A series of mountain ranges and intermontane basins, mostly trending north; high part of the continental divide; altitudes 1,525m to more than 4270m. | Florisant Fossil Beds National Monument (U.S.A.).<br>Great Sand Dunes National Monument (U.S.A.).<br>Rocky Mountains National Park (U.S.A.). |
| WYOMING BASIN | Elevated semiarid basins; isolated low mountains; altitudes mostly between 1,525m and 2135m. | No protected areas. |
| MIDDLE ROCKY MOUNTAINS | An assortment of different kinds of mountains with differing trends and semiarid intermontane basins; features here resemble those of the neighboring provinces; altitudes mostly 1525m to about 3660m. | Dinosaur National Monument (U.S.A.).<br>Grand Teton National Park (U.S.A.).<br>Timpanogos Cave National Monument (U.S.A.).<br>*Yellowstone National Park (U.S.A.) |
| NORTHERN ROCKY MOUNTAINS | Linear blocky mountains with long, straight valleys, including the 800 km long Rocky Mountain trench. Altitudes mostly between 1220m and 3050m. | Glacier National Park (U.S.A.).<br>Waterton Lakes National Park (Can.).<br>°Banff National Park (Can.).<br>°Jasper National Park (Can.).<br>°Yoho National Park (Can.).<br>°Kootenay National Park (Can.).<br>Glacier National Park (Can.).<br>Mount Revelstoke National Park (Can.) |

* World Heritage Site

° World Heritage Site Nomination

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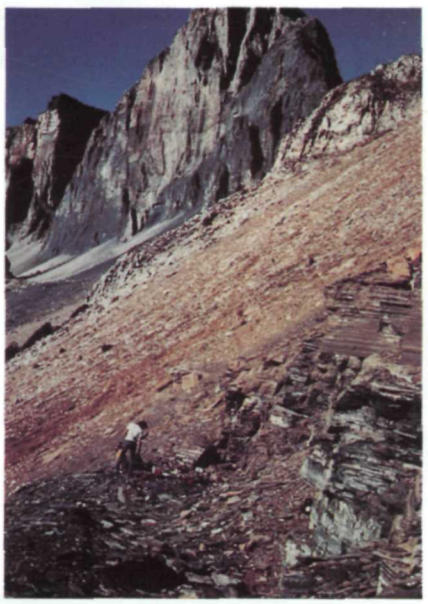

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1. *Burgess Shale – fossils*
2. *Mount Edith Cavell – Main Range – Uplifted mountain with banded cliffs.*
3. *Mount Rundle – mountain of Front Range*
4. *Burgess Shale quarry – slope of Stephen Formation*
5. *Roche Miette – Front Ranges in Jasper*
6. *Hoodoos in Yoho National Park – effects of erosion*

### iii) THE LANDFORMS

Since the folding and uplifting that raised the Rocky Mountain region above sea-level, mountains have been carved in the sedimentary layers; first by rivers, later by glaciers. As the Rockies uplifted, rivers cut a trellis-like pattern which during the recent geological past has been remoulded by major glacial advances and retreats.

Although the last major glacial advance ended about 10,000 years ago, there are still active glaciers throughout the region, particularly in the Main Ranges along the Continental Divide. The most significant area portraying glacial action is the Columbia Icefield. The icefield complex is important due to its combination of beauty and scientific importance in the study of glaciation and karst systems. As one early observer wrote:

> *"The peaks and glaciers around the great Columbia Icefield, the scene of our wanderings in 1898, are entirely new ground; and placed as they are at the sources of three of the largest rivers in the Dominion, they probably constitute the culminating point of the Canadian Rocky Mountain System."*
>
> H. Stutfield, 1903.

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This was an astute observation, since today the Columbia Icefield is recognized as the largest icefield in the Rocky Mountains and the largest in North America's subarctic interior. Covering approximately 325 km$^2$ (Boranowski and Henoch, 1978), it exhibits many classical glacial features, processes and phenomena.

The Columbia Icefield spans the Continental Divide and the boundary between Jasper and Banff national parks. The area serves as headwaters and contributes significant flow volumes to three major river systems: the North Saskatchewan, the Athabasca and the Columbia. Respectively, these rivers flow to the Hudson Bay, the Arctic Ocean and the Pacific Ocean.

The icefield complex is composed of the Columbia Icefield and six major valley glacier basins, each displaying a great diversity of glacial and periglacial landforms. The Athabasca Glacier, part of this complex, is the most accessible glacier ice in North America. Located adjacent to the Icefield Parkway linking Banff and Jasper national parks, it provides unequalled opportunities for visitors to view ongoing glacial processes.

An outstanding natural resource associated with the Columbia Icefield is the Castleguard Cave system. This karst system is internationally significant. Its far-reaching extension below the glaciers of the icefield, and its related karst features, are the foremost examples of a modern subglacial karst system in the world. Although the cave system is located in a remote area of the icefield complex, it is noted as being among the world's finest and most scenic examples of alpine karst topography (Ford, 1983). Part of this significance can be attributed to its value as a model to assess the conditions which existed in temperate caves during past periods of glaciation.

A great variety of small karren (water-dissolved cracks and grooves in limestone) occur at the surface. Subglacial stalagmite precipitates (deposited beneath glaciers) that occur in this area are the best known world examples. There is a greater density of sinkholes in this region than anywhere else in the Canadian Rockies (Ford, 1969; 1979; Ford and Smart, 1979).

The nationally and internationally significant phenomena and features associated with the Columbia Icefield are placed in a setting of exceptional natural beauty, surrounded by 11 of the Canadian Rockies' 22 highest peaks, including the second and third highest peaks in the Main Ranges.

The Maligne Valley complex is also extraordinary in its representation of mountain systems since it contains natural resources characteristic of the region as well as ones of high scientific interest and importance. Almost all the typical mountain landforms are common in the valley, including castellate and sawtooth mountains, cirques and hanging valleys, canyons, talus, avalanche slopes, rock slides and rock glaciers, kames, kettles, and moraines. These representative resources are side by side with resources of exceptional significance from both a scientific and aesthetic perspective.

For example, Maligne Lake at the head of the valley was described by one of its first visitors in 1908:

> *"There burst upon us that which all in our little company agreed was the finest view any of us had ever beheld in the Rockies"*
>
> Schäeffer, 1911.

A view of Spirit Island backed by the lake's deep blue waters and by snow-capped mountains has helped make the beauty of Maligne Lake legendary.

Moving downstream from the lake, the Maligne River enters Medicine Lake. Medicine Lake is drained by one of the largest underground river systems in North America through what may be one of the largest inaccessible cave systems in the world (Brown, 1970; Kruse, 1980). The water from Medicine Lake rises to the surface again in springs in the floor of Maligne Canyon and at lakes 16 km down the valley.

Maligne Canyon, near the bottom of the valley, is a fascinating example of the sculpturing effects of flowing water. For over 10,000 years water has etched a deep, jagged cut into the limestone rock, until today the canyon is over 60 m deep.

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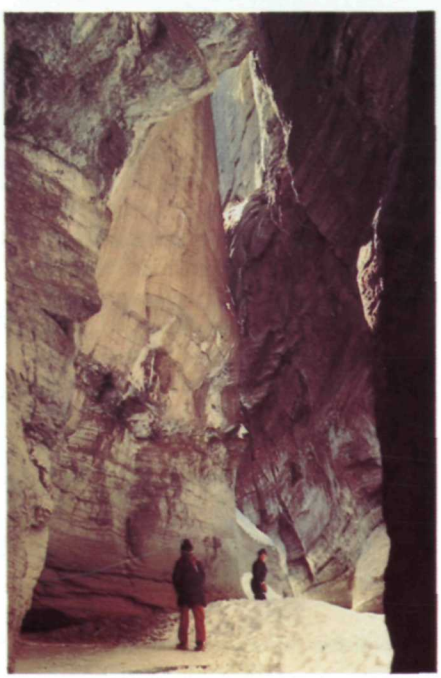

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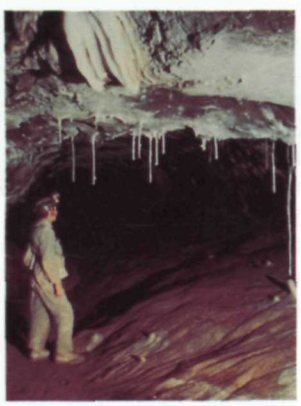

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1. *Columbia Icefield – headwaters of three major river systems*
2. *Icefield Parkway – a scenic route linking Banff and Jasper national parks.*
3. *Glacier Ice – a place of recreation*
4. *Saskatchewan Glacier – easily accessible glacier ice*
5. *Maligne Lake – historic view of Spirit Island*
6. *Maligne Canyon – sculpturing effect of water*
7. *Castleguard Cave – grotto*
8. *Talus slopes – Front Ranges*

### iv) HYDROLOGY

The mountain parks lie at the head of major Canadian watersheds. Within the parks, the Continental Divide is formed by the Main Ranges. Waters in Yoho and Kootenay on the west side of the Divide flow to the Pacific; those in Jasper and Banff flow east and north into the Hudson Bay and the Arctic Ocean. Easterly flowing waters supply a significant portion of the Saskatchewan River system, the primary water source for the Great Plains region of Canada (Hansen, no date).

Spectacular waterfalls plummet and cascade over the sharp cliffs of the typically high and rugged ranges, and in particular the rugged eastern Main Ranges. Takakkaw Falls and Twin Falls in Yoho National Park are breath-taking examples of such mountain waterfalls.

The interface of water and mountains in the Canadian Rockies is evident in other ways as well. Hundreds of lakes act as settling basins for the many streams and rivers. The suspended material selectively reflects parts of the light spectrum, resulting in a beautiful blue-green color. Lakes with this characteristic color, surrounded by rugged mountains, the slopes of which are covered with fallen rock, coniferous trees and remnants of the glacial age are unforgettable highlights of many mountain visits. Lake Louise, Peyto Lake and Emerald Lake are but a few of the easily accessible lakes of unsurpassed beauty.

*1.*

River and stream systems of the Canadian Rockies are also numerous and extremely varied in character. For example, the deeply incised walls of Johnston Canyon in Banff, and the power of Athabasca Falls in Jasper, each portray the force of moving water in their own way. Some rivers are navigable by canoe or kayak, but the majority are strewn with rocks and impassable falls and rapids. The Athabasca River is navigable for much of its length as it braids its way through the landscape of Jasper National Park. Over one of its reaches, post-glacial wind-formed sand and silt deposits are up to 25 metres thick. This is the only location in the four parks that dune formations of this type and magnitude occurs.

Underground springs are common in the parks. During the early stages of settling the Canadian west, the construction of the transcontinental railway through the Front Ranges led to the discovery of hot springs, now known as the Cave and Basin Springs, and later to designation of Canada's first national park in 1885. Other major hot springs occur in the Miette area of Jasper, and the Radium area of Kootenay national parks. These developed springs continue to be major visitor attractions.

### v) CLIMATE

A continental climate prevails in all the parks, with great seasonal and annual variation in precipitation and temperature. Generally winters are long and the summers cool and short, with occasional hot spells. Macro and microclimatic differences are pronounced both within and between the parks.

The Front Ranges and Foothills help to block the flow of cold Arctic air from the prairies into Banff and Jasper national parks. Outbreaks of cold in these parks are not usually as severe or prolonged as on the prairies to the east. In the same way, the Main ranges along the Continental Divide generally prevent Arctic air from entering Kootenay and Yoho national parks; consequently, they are not as cold on average as Banff and Jasper. Although several mountain ranges intercept Pacific moisture carried by the prevailing westerly winds, the climate of the western side of the Continental Divide is influenced by the milder maritime climate of the Pacific. The mountains act as a barrier causing Pacific air masses to rise which results in heavier precipitation on the west slopes. In some locations in Kootenay and Yoho parks, vegetation species such as western hemlock, western cedar and devil's club are found at the eastern limit of their ranges, reflecting the moister conditions of these locations. Annual precipitation in the parks ranges from less than 380 mm at lower elevations to greater than 1250 mm in regions along the Continental Divide (Janz and Storr, 1977.)

Mountain topography has a strong effect on climate. The northwest-southeast orientation of the mountains and main valleys is almost at right angles to the prevailing winds aloft, causing rain shadows (dry areas) in main valleys. Air masses rise as they move eastward, losing their moisture, resulting in greater precipitation on higher, west-facing slopes than on lower areas of east-facing slopes.

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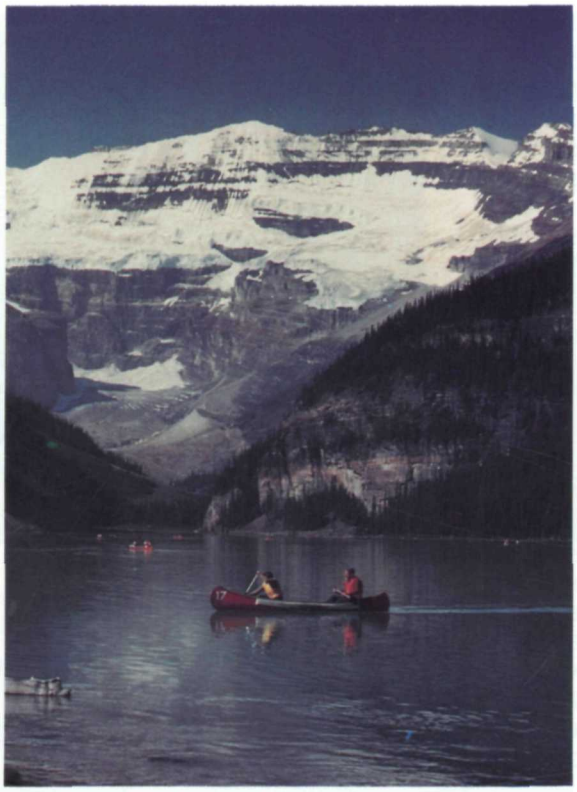

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1. *Takakkaw Falls – Canada's highest falls, with a drop of 380 m*
2. *Johnston Canyon – an easily accessible canyon in Banff National Park*
3. *Lake Louise – a resource with unsurpassed beauty in Banff National Park*
4. *Twin Falls – an impressive falls in the Main Ranges*
5. *Radium Hot Springs Pool – a popular visitor attraction in Kootenay National Park*
6. *Devil's club – at its eastern extremity in the Canadian Rockies*
7. *Athabasca River valley – sand dune*

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### vi) VEGETATION

Vegetation in Banff, Jasper, Kootenay and Yoho national parks is an obvious indicator of many environmental factors. It strongly reflects climatic conditions both on a geographic and topographic basis. In addition, vegetation is intimately linked to soil development and stability, and to wildlife habitat.

The vegetation of the four Canadian Rockies parks is typically Cordilleran, with the three major ecoregions (montane, subalpine, and alpine) identified largely by differences in vegetation. The elevations characteristic of each ecoregion are influenced by factors incuding latitude and slope aspect.

The montane ecoregion is lowest. Examples of montane vegetation uncommon in the context of the parks occur in the extensive wetland areas of Vermilion Lakes near Banff Townsite. In Jasper National Park, the sand and silt dune area of the Athabasca River also harbours montane plants not commonly found elsewhere in these parks. Otherwise the montane areas generally contain characteristic flora such as lodgepole pine, white spruce and Douglas fir. The montane ecoregion also includes much of the grassland in the park, as well as the major land uses by humans.

*1.*

The subalpine ecoregion occurs above the montane. The lower subalpine areas support closed coniferous forests dominated by Engelmann spruce, subalpine fir and, in its younger successional stages,lodgepole pine. Open meadows are found where environmental conditions have not favoured the development of forests. A location of interest is the Vermilion Pass area which was burned by a fire in 1968. It is a convenient and useful scientific benchmark for the study of the effects of fire on vegetation and wildlife. The upper subalpine ecoregion has greater snowfall and a shorter growing season and is characterized by open forests with stunted trees (krummholz). Engelmann spruce and subalpine fir are common, but lodgepole pine is not.

The alpine ecoregion is devoid of trees, reflecting the cold harsh climate of the higher elevations. Alpine meadow areas such as those near the Sunshine Meadows area in Banff and above Lake O'Hara in Yoho, display a complex fine-scale mosaic typical of high country vegetation. About one-third of the mountain park land area is unvegetated exposed rock, colluvial material, or glacial and permanent snowfields (Holland and Coen, 1982).

### vii) WILDLIFE

The four contiguous national parks possess an interesting and varied wildlife population (Holroyd and Van Tighem, 1982). Fifty-six species of mammals are represented, ranging in size from the impressive moose to the tiny pigmy shrew. The ungulates (moose, wapiti, mountain goat, bighorn sheep, woodland caribou, white-tailed deer and mule deer), are often seen in their natural habitat by visitors. A population of about 200 grizzly bear (Parks Canada Warden Service, 1983) inhabits the parks.

Two species noted as being vulnerable in the IUCN Red Book, bighorn sheep and grey wolf, are found in the parks. A population of approximately 2500 bighorn sheep (Parks Canada Warden Service, 1983) resides in the parks and grey wolves are resident, particularly in the large tracts of undisturbed land in Jasper.

Over 280 species of birds have been identified in the parks. Many different habitats exist in these parks because of the great range of elevation and landforms. Tracts of grassland, deciduous and mixed forests, wetlands, alpine meadows, bare rock, and snowfields provide a diversity of environments, each populated or visited in season by characteristic birds.

Relatively few are year-round residents, with most species present only during the summer months. Some bird species occurring in these parks are of particular interest. Two of the parks' raptors, golden eagle and bald eagle, occur high in the food chain and because of their sensitivity have undergone serious population declines across the continent.

Amphibians and reptiles are limited in their distribution and abundance in the parks because of the relatively severe climate. One species of toad, three frog species, one salamander species and three species of snakes have been recorded.

Fish occur in all major watersheds in the four parks. In general, the lakes and rivers of the parks are relatively cold, have low nutrient supply and are not highly productive. In fact, many water-bodies were originally fishless until fish stocking was initiated in the early 1900s to improve sport fishing (Ward 1974).

2.

1. *Western Red Cedar – found in areas of milder climate*
2. *Moose – the parks' largest ungulate*
3. *Wood Lily – 8 cm wide blossoms*

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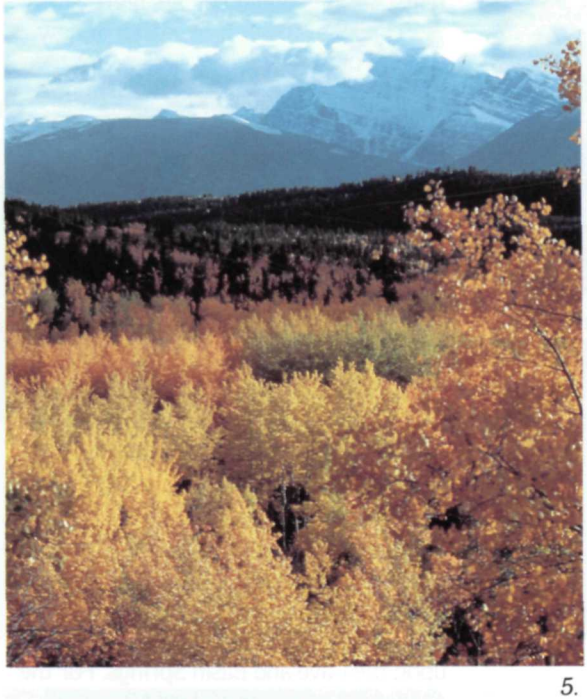

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*Grizzly Bear – good habitat exists in large tracts of the parks*

*Aspen – in autumn colours*

*Pileated Woodpecker – the parks' largest woodpecker*

*Alpine meadow – a spectacular display of nature's colour*

*Pika – rock-pile resident*

*1.*

## b) MAPS AND/OR PLANS

Maps and plans are included in the text of the nomination form as appropriate.

## c) PHOTOGRAPHIC AND/OR CINEMATOGRAPHIC DOCUMENTATION

Photographs are included in the text of the nomination form as appropriate.

## d) HISTORY

Although only limited archaeological investigations have been conducted to date, the artifact evidence indicates that the Canadian Rockies have been occupied by man for about 10,000 years (Christensen, 1971). For most of this period, native groups entered into the Rockies in search of sources of food and clothing. In certain places in the parks, natives quarried for tool materials. In others, they collected ochre or iron oxide for decorative use. There is also some evidence of native use in the vicinity of the parks' hot springs.

European exploration, exploitation and settlement in the eighteenth and nineteenth centuries brought a new importance to the mountains. The Rockies were viewed by early explorers as a major obstacle in the effort to find a western route to the Pacific Ocean. With the assistance of native guides familiar with passes through the mountains, early explorers such as Mackenzie, Thompson, McGillivray and Simpson overcame this obstacle. Later the Fur Trade era of the mid 1800's brought traders and merchants to the area in search of new sources of furs and new markets for their European goods. Traders also sought a transmountain fur trade link to reap the harvest of Pacific furs.

Transcontinental transportation, however, has had the most significant influence on these four Rocky Mountain parks. In order to ensure that Canada stretched from the Atlantic to the Pacific, and as a condition for British Columbia's entry into Confederation, the Government of Canada sponsored construction of a transcontinental railway. By 1883 the Canadian Pacific Railway (CPR) extended to Lake Louise, Alberta.

The coming of the railway also marked the beginning of the National Parks System of Canada. In that same year (1883) three CPR employees chanced upon the Cave and Basin Springs. For the enjoyment and healthful benefits of all Canadians, the hot springs and an area around them were set aside by the Canadian Government in 1885 as a park reserve. Two years later, the federal government formally established "Rocky Mountains Park" as Canada's first national park (later to become known as Banff National Park). Now a national historic site, the Cave and Basin Springs area will provide a major focus for the National Parks Centennial in 1985.

Yoho and Jasper national parks have also been closely associated with railway construction. A small reserve around Mount Stephen, British Columbia, was set aside near the CPR railway line in 1886, marking the beginnings of Yoho National Park. The construction of the Spiral Tunnels in Yoho was undertaken in 1908-1909 to reduce the steep grade resulting from the rapid drop in elevation from the Continental Divide to Field. Two spiral tunnels resembling a stretched-out figure eight reach about a kilometre each inside a mountain. They represent a remarkable engineering feat and a masterpiece of railway construction. As well, they are the only spiral railway tunnels in North America. Jasper became a national park in 1907 in association with the construction of Canada's second and more northerly transcontinental railway.

Transportation was also the spark leading to the establishment of Kootenay National Park in 1920. The Province of British Columbia began construction of the Banff-Windermere Road in 1910 but ran out funds before its completion. To obtain the federal government funds to finish it the province agreed to the establishment of this park in 1920.

The transportation theme dominated the history of the parks, and continues to play an important role. There are now two transcontinental highways and two major parkways passing through the parks, as well as the two railway routes. Banff and Jasper townsites were allowed to develop in the early days to service the railway, and to provide essential services to the many park visitors. These transportation routes and townsites and other visitor facility and service centres, continue to play an important role in serving the national interest and Canadian and international visitors to these parks.

Some mineral and forest exploitation was allowed in the parks until about the turn of the century. Since then the parks have been virtually free from resource extraction.

## e) BIBLIOGRAPHY

A list of principal references used in this nomination is set out in Appendix One. This appendix also includes references to other bibliographies including works on the four Canadian Rockies national parks.

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1. *Town of Banff – bridge and park administration building*
2. *North American Indians – early residents*
3. *Railway construction camp bake oven – Kicking Horse Valley*
4. *1907 Alpine Club of Canada campers – above Paradise Valley, Banff National Park*
5. *Canadian Pacific Railway locomotive – Yoho National Park*

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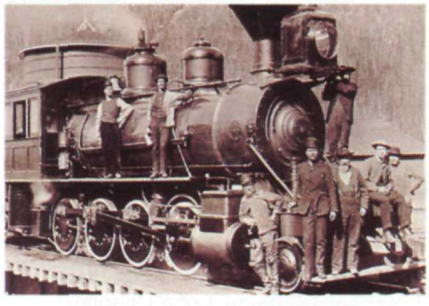

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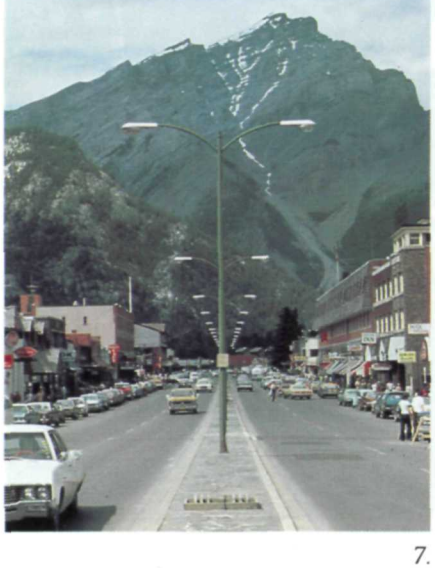
6. *Car caravan – the opening of the Banff – Windermere Parkway, 1920*
7. *Modern-day Banff Avenue – Town of Banff*
8. *Early days of the spiral tunnels, – Yoho National Park*



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# 4. STATE OF PRESERVATION/ CONSERVATION

## a) DIAGNOSIS

All lands nominated are under the control of the Government of Canada and protected under the *National Parks Act* and Regulations.

Most of this extensive area is in its natural state. Exceptions are due primarily to facilities and services provided to allow visitors to enjoy the natural environment, or to the existence of national transportation corridors which traverse the parks.

All new proposed activities are subject to the Federal Environmental Assessment and Review Process which ensures that all environmental impacts are evaluated and that development proceeds only when suitable mitigation measures are employed.

## b) AGENT RESPONSIBLE FOR PRESERVATION/ CONSERVATION

Parks Canada, Western Regional Office,
520, 220 - 4th Avenue S.E.
P.O. Box 2989, Station M
Calgary, Alberta
T2P 3H8

through Park Superintendents at
(1) Box 900, Banff, Alberta TOL 0C0
(2) Box 10, Jasper, Alberta T0E 1E0
(3) Box 220, Radium Hotsprings, British Columbia, V0A 1M0
(4) Box 99, Field, British Columbia V0A 1G0

## c) HISTORY OF PRESERVATION/ CONSERVATION

The national parks system of Canada began in the Canadian Rockies almost a century ago. In many ways, the history of conservation in the four contiguous parks making up this nomination reflects the history of conservation in Canada. Much progress has been made, and today there are 29 national parks in Canada with a combined area of about 130,000 km$^2$, and parks in every province and territory.

### BANFF NATIONAL PARK

The Cave and Basin mineral hot springs and a 26 km$^2$ area around them were set aside in 1885 for their advantage to the public. This reserve was the birthplace of Canada's system of national parks, and was the third such area to be set aside in the world. In 1887, the reserve was enlarged to 673 km$^2$ through passage of the *Rocky Mountains Park Act* which set apart the land *"as a public park and pleasure ground for the benefit, advantage and enjoyment of the people of Canada..."* (Lothian, 1981).

The Canadian Pacific Railway (CPR) Company was one of the strongest supporters of parks, and assisted in getting areas set aside. They saw the tourism benefits of parks along the CPR line and lobbied actively for their protection. Landmarks such as the Banff Springs Hotel and Chateau Lake Louise in Banff National Park are testaments of the CPR's close links with the conservation, and tourism movement in the Rockies.

Lake Louise and an area of 130 km$^2$ around it were set aside in 1892 to preserve its alpine splendour. Then, in 1902 the *Rocky Mountains Park Act* was amended to allow the addition of Lake Louise and other areas to the park. The park's area changed four times until passage of the *National Parks Act* in 1930. With this act, this park became known as Banff National Park and contained 6,695 km$^2$. The deletion of 54 km$^2$ in 1949 left a total of 6,641 km$^2$, the present size of the park.

### YOHO NATIONAL PARK

Interest was aroused in other park proposals due to the Cave and Basin Springs reservation. As was the case with the Cave and Basin reserve, the CPR played an important role in setting aside other reserves along their line.

In 1886, a reserve of 26 km$^2$ surrounding the base of Mount Stephen was set aside. This area was enlarged in 1901 to 2,153 km$^2$ when Yoho Park Reserve was established. Part of the reason for its establishment was that the scenic wonders of the area were viewed by the CPR as a tourist attraction. From 1901 to passage of the *National Parks Act*, the park area was reduced to its current size of 1313 km$^2$.

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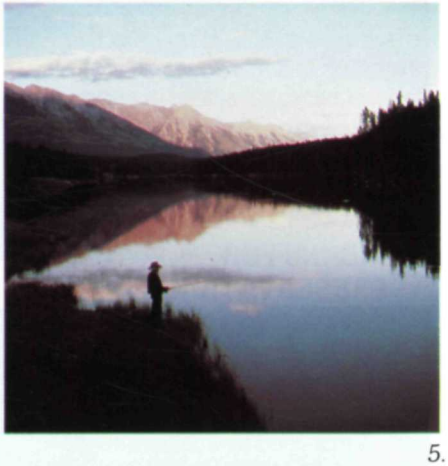

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1. *Cave and Basin Springs – being restored to this 1930's period for the National Parks Centennial of 1985.*
2. *Opabin Plateau – Yoho National Park*
3. *Kayaking – a popular white water sport*
4. *Banff Springs Hotel – present building completed in 1928.*
5. *A fisherman – enjoying the solitude of a mountain lake.*
6. *A cycling excursion – growing numbers travel along the Icefields Parkway.*

### JASPER NATIONAL PARK

Plans for construction of a second transcontinental railway across the Canadian Rockies led to the establishment of Jasper Forest Park in 1907. Jasper was set aside initially for the preservation of forest trees on the crests and slopes of the Rocky Mountains and for the proper maintenance of the volume of water in the rivers and streams. The park originally had an area of 12,950 $km^2$, but in 1930, the area became 10,878 $km^2$. The parks area has not changed since then.

### KOOTENAY NATIONAL PARK

The construction of the Banff-Windermere Road provided the impetus for establishment of Kootenay National Park. A road linking the attractions of Banff to those in the Windermere area was seen as a valuable commercial link and a spectacular tourist route. Because the road could not be completed by the Province of British Columbia, the federal government agreed to complete it in exchange for establishment of Kootenay Dominion Park, an area eight kilometres in width along each side of the road. In 1930 the park's area became 1,520 $km^2$. The area was subsequently reduced to its present size of 1,378 $km^2$.

### LEGISLATION

When originally established, these parks were to be preserved as public parks and pleasure grounds and were designed to become the focus of a tourist industry. This was the goal even though lumbering and mining had modified the landscape of accessible portions of the parks. In 1911 the *Dominion Forest Reserves and Parks Act* was passed to differentiate between the many types of parks and reserves established in the Rockies and elsewhere in Canada. The primary objective became one of conserving the sources of water supply by the protection of timber. When the *National Parks Act* was passed in 1930, the term national park came into offical use, and the protection mandate of national parks was stated. The act confirmed the parks as game sanctuaries, made no provision for mineral exploration or development, and limited the use of green timber to that essential for park management purposes.

Policies for national parks were first approved in 1964 and then revised in 1979 when the Parks Canada Policy was approved by the federal Cabinet.

Regulations to ensure the effective protection and management of the national parks have been in effect since those first approved under the *Rocky Mountains Park Act* in 1889. There are now general regulations, and ones specific to each national park in Canada.

## d) MEANS FOR PRESERVATION/ CONSERVATION

Enforcement of the *National Parks Act* and Regulations is by national parks' staff who operate throughout the parks. Each park is managed by a Superintendent who is assisted by both full-time and seasonal staff. In total, the four parks have approximately 750 person years assigned to them. The staff work with an annual operating budget of over $21 million. A regional office located in Calgary, Alberta, provides specialized management, direction and assistance.

*1.*

## e) MANAGEMENT PLANS

The direction for long term management for resource conservation and visitor use is developed in park management plans. Management plans are presently being prepared for each of the four parks covered in the nomination. These are scheduled for completion by 1985. The plans will reflect the direction given by the National Park Policy and the Park Purpose and Objective Statements (Refer to Appendix Two for the Park Purpose and Objective Statements).

Certain areas of these parks which are subject to high levels of visitor use or contain resources with particular sensitivity have been subject to specific land use and resource management plans. Conservation plans for the parks and specific resource management plans have been completed or are currently underway.

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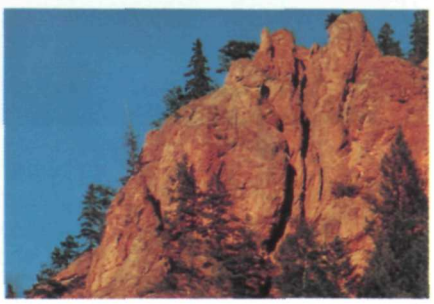

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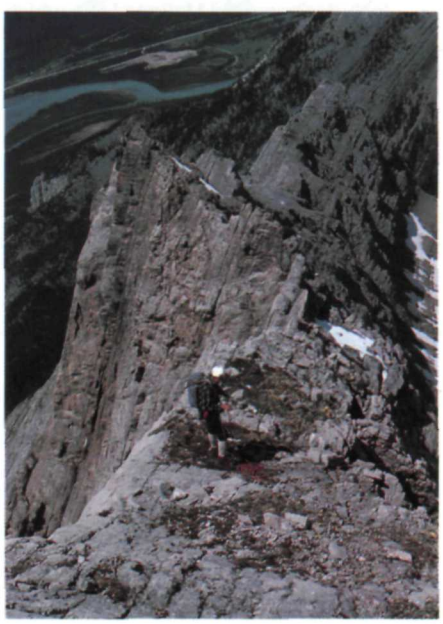

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1. *Floe Lake – Warden on duty*
2. *Tenting – a welcomed activity*
3. *Spruce forest – dappled with sunlight*
4. *Medicine Lake – known for its karst features*
5. *Red Wall Fault – Kootenay National Park·*
6. *Meisner Ridge – high above the Athabasca River*

# 5. JUSTIFICATION FOR INCLUSION IN THE WORLD HERITAGE LIST

## a) CULTURAL PROPERTY

Not applicable

## b) NATURAL PROPERTY

The Canadian Rockies being nominated to the World Heritage List include portions of all four of the geological sub-provinces of the Rocky Mountains in an outstanding natural setting of exceptional beauty. This, coupled with the internationally significant Burgess Shale complex, and the scientific and educational importance of both the Columbia Icefield complex and the Maligne Valley, give this area substantial world value as a natural property. With an annual visitation of over 9.2 million, the area offers unparalleled opportunities for experiencing nature and for communicating the message of conservation and protection of Canada's natural heritage.

This area meets all four criteria required for designation as a World Heritage Site natural property.

### i) EARTH'S EVOLUTIONARY HISTORY

The area contains the Burgess Shale, an outstanding site containing fossils representing a major stage in the earth's evolutionary history.

THE BURGESS SHALE:

- was declared a World Heritage Site in 1981;
- contains one of the world's finest deposits of soft-bodied fossils of the Middle Cambrian times;
- has been found to contain a far more varied and complex distribution pattern for fossils than previously realized; and
- is considered to be one of the world's most significant fossil sites, even without reference to recent discoveries in the area.

It is proposed that the Burgess Shale World Heritage Site be incorporated into this nomination as a major feature of the Canadian Rockies site.

### ii) ON-GOING GEOLOGICAL PROCESSES

The Canadian Rockies site includes the Columbia Icefield complex and Maligne Valley, outstanding examples of combinations of features which represent significant geological processes.

THE COLUMBIA ICEFIELD COMPLEX:

- is the largest icefield in the Rocky Mountains and the largest in North America's subarctic interior, covering a total of 325 $km^2$;
- is composed of the Columbia Icefield and six valley glacier basins with a diversity of glacial and periglacial landforms;
- includes the Athabasca Glacier, the most accessible glacier ice in North America;
- is important as a source of water for river systems on both sides of the Continental Divide;
- includes the internationally significant Castleguard Cave system which extends below the glaciers of the icefield and includes subglacial karst features – the finest examples in the world;
- contains some of the most scenic alpine karst topography known anywhere; and
- is located in a broader setting of exceptional natural beauty.

THE MALIGNE VALLEY

- includes beautiful Maligne Lake which at 27.5 km long, is the largest glacier-fed lake in the Canadian Rockies;
- includes almost all the common mountain landforms found in the Rocky Mountains;
- contains the Maligne River/Medicine Lake karst phenomena, with Medicine Lake draining through one of the world's largest sinking rivers and inaccessible karst systems; and
- ends in Maligne Canyon, a spectacular narrow canyon cut over 60 m deep into limestone rock.

### iii) EXCEPTIONAL NATURAL BEAUTY

The Canadian Rockies landscape is one of exceptional natural beauty, as is exemplified by the number and diversity of different environments and scenic places dispersed throughout the four parks making up this nomination. Protection of the varied natural resources and processes in this large area is assured for this and future generations.

### iv) HABITATS

Vegetation in this Canadian Rockies site displays an impressive variation due to the area's large size and diversity of altitudinal, geographic and topographic influences. Undisturbed habitats of many species of wildlife typical of the Rocky Mountains are wholly contained in the parks. Wildlife populations are a noted and popular attraction. As well there are species which are considered as vulnerable species in the IUCN Red Book. These include the grey wolf and bighorn sheep. Other species of note due to threats to their habitat are the grizzly bear and woodland caribou.

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Each of these criteria in isolation has a significant natural resource value. Combined, their significance is greatly enhanced, giving the area global significance.

The Canadian Rockies nomination meets the conditions of integrity required of a World Heritage Site. All key interrelated and interdependent elements of a Rocky Mountain ecosystem are included. Examples of the major processes which formed the landscape (glacial, hydrological, colluvial and eolian) and the vegetation and wildlife which inhabit it, are found in the Canadian Rockies. The nominated area is of sufficient size and diversity to contain self-perpetuating ecosystems where human impact is limited.

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Beginning in 1885 with the establishment of Banff National Park, the Canadian Rockies formed the backbone of Canada's conservation system. Areas of outstanding beauty such as Maligne and Peyto lakes are protected along with areas of scientific interest such as the Castleguard Caves and the karst features of Medicine Lake. This extensive area with its large tracts of wilderness is dedicated as a World Heritage Site for the benefit and enjoyment of all nations.

Signed (on behalf of State Party) _____

Full name A. T. Davidson

Title Assistant Deputy Minister, Parks Canada

Date November 23, 1983

# APPENDIX ONE

## SELECTED REFERENCES

The bibliographic references below are but a small portion of over 1000 documents which make up the reference collection for Banff, Jasper, Kootenay and Yoho national parks. Most of these references are contained in an annotated bibliography by Scace, 1973, noted below. Approximately 150 references have been added since the bibliography by Scace was completed.


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# APPENDIX TWO

## PURPOSE AND OBJECTIVES STATEMENT

### 1. PURPOSE FOR THE FOUR MOUNTAIN PARKS

Banff, Jasper, Kootenay, and Yoho national parks contain and protect a representative cross-section of the eastern system of the Canadian Cordillera – the Rocky Mountain natural region – for the appreciation, understanding, and enjoyment of present and future generations of Canadians and other visitors.

### 2. PARKS OBJECTIVES

#### 2.1 PROTECTION AND PRESERVATION OF HERITAGE RESOURCES AND PROCESSES

NATURAL HERITAGE RESOURCES AND PROCESSES

a) To protect and preserve the natural resources and processes of Banff, Jasper, Kootenay, and Yoho national parks associated with the Rocky Mountains Natural Region.

b) To provide the highest level of protection or, where appropriate, preservation to resources and processes which are:

i) nationally or internationally significant;
ii) unique, rare, or endangered;
iii) good examples of the natural resources and processes of the Canadian Rocky Mountains; and
iv) important for the retention of the parks' wildland character.

HUMAN HERITAGE RESOURCES

a) To protect, preserve, recognize, or restore, in an appropriate manner,human heritage resources of Banff, Jasper, Kootenay, and Yoho national parks.

b) To give the highest level of attention to those resources which are:

i) nationally significant;
ii) good examples of man's interaction with the landscape of the Canadian Rocky Mountains.

#### 2.2 PARKS USE, FACILITIES AND SERVICES (APPRECIATION, UNDERSTANDING, AND ENJOYMENT)

a) To provide year-round opportunities for the appreciation, understanding, and enjoyment of the parks' natural and human heritage resources while maintaining the wildland character of Banff, Jasper, Kootenay, and Yoho national parks.

b) To provide a range of facilities and services for day-use and extended stays in the parks for persons of varying skills, knowledge, economic means, and interests.

c) To provide a range of information, orientation and interpretative services and facilities to enable the parks' users to better understand, protect and enjoy safely the parks' resources.

d) To continue to provide visitors with the essential facilities and services required to meet their needs and to meet park operational requirements through the towns of Banff and Jasper, the visitor service centre at Lake Louise, and the community of Field.

e) To allow for the provision of services and facilities to meet normal community requirements of the residents of the towns of Banff and Jasper.

#### 2.3 REGIONAL INTEGRATION AND CONSIDERATIONS

a) To coordinate the protection and management of Banff, Jasper, Kootenay, and Yoho national parks with those of provincial governments and agencies and private interests having control over lands and resources and their use in areas adjacent to the parks.

b) To coordinate the social and economic activities of the parks where feasible with programs in the adjacent regions.

c) To coordinate the parks' roles in recreation and tourism in a manner complementary to programs in adjacent regions and to national programs.

d) To coordinate the management of existing developments associated with transportation and utility corridors and scientific and educational facilities in a manner that minimizes their impact on the natural and human heritage resources of Banff, Jasper, Kootenay, and Yoho national parks.

e) To provide opportunities for the public of adjacent regions to become involved in the planning and on-going plan implementation for these parks.

# APPENDIX THREE

## COMMON AND SCIENTIFIC NAMES OF VEGETATION AND WILDLIFE REFERENCED IN THE TEXT

### VEGETATION

| | |
|---|---|
| Douglas fir | Pseudotsuga menziesii var. glauca |
| Subalpine fir | Abies lasiocarpa |
| Lodgepole pine | Pinus contorta var. latifolia |
| Englemann spruce | Picea engelmannii |
| White spruce | Picea glauca |

### BIRDS

| | |
|---|---|
| Bald eagle | Haliaeetus leucocephalus |
| Golden eagle | Aquila chrysaëtos |

### MAMMALS

| | |
|---|---|
| Grizzly bear | Ursus arctos |
| Woodland caribou | Rangifer tarandus var. caribou |
| Mule deer | Odocoileus hemionus |
| White-tailed deer | Odocoileus virginianus |
| Mountain goat | Oreamnos americanus |
| Moose | Alces alces |
| Bighorn Sheep | Ovis canadensis |
| Pigmy shrew | Microsorex hoyi |
| Wapiti | Cervus elaphus |
| Grey Wolf | Canis lupus |

*Report prepared by Parks Canada Staff.*

*Directed by: J. Hartley*
*Writers: B.L. Beswick, B. Olsen*
*Design: S. Flynn, M. Yeo*
*Maps: M. Hayne*

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*R.R. Howie – p. 13, #8*
*P.D. McTavish – p. 13, #4*
*B.L. Beswick – p. 5, #4,5; p. 7, #2,8; p. 17, #6*

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