A WINTER INTERPRETATION PROGRAM FOR KOKANEE CREEK PARK

BY

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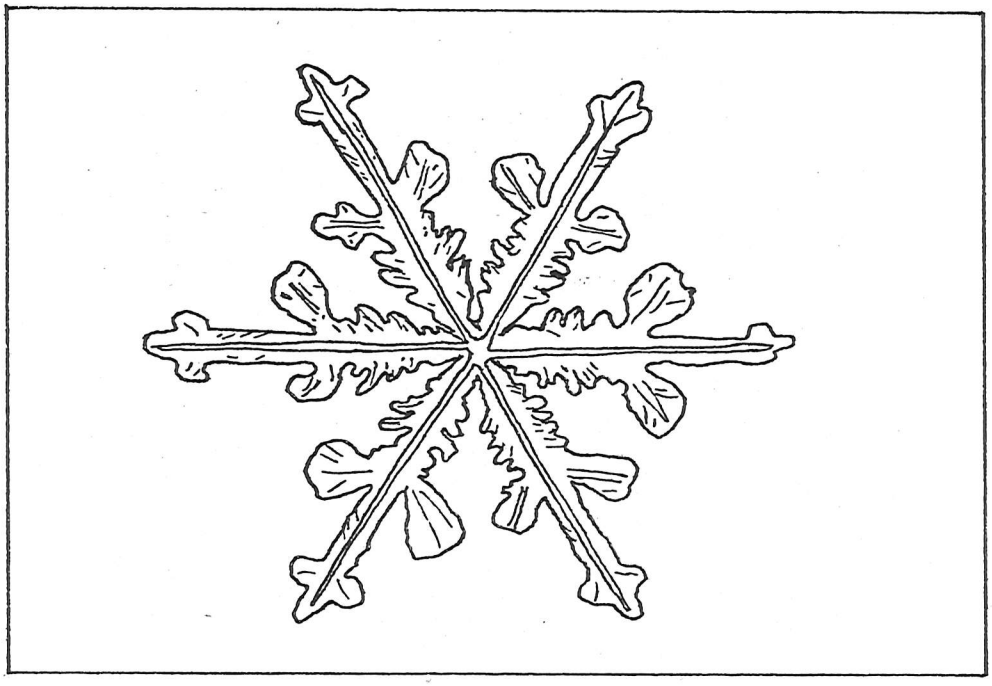
APRIL 14, 1978

A snow crystal . . .

A tiny prism capturing light

A thin ice needle glittering bright



In every flake a unique design

A delicate star with symmetrical line.

FIG. I

Poetic Interpretation

ACKNOWLEDGEMENTS

I would like to thank Ivo Brosterhus for the many hours spent putting together a recorded musical cassette tape; Duane Davis for his assistance in the set-up of the report; and especially Doug Leighton for his help and interest in this project.

SUMMARY

There is a great necessity and many options in the field of winter interpretation. Interpretation is an important factor in park management and needs to be carried out on a year-round basis, especially in the case where there are permanent interpretive facilities.

Some work has been done with winter interpretation and in a few parks there are currently winter programs that are being held. Further planning and promotion is required for winter interpretation programs, so that the public can enjoy parksto the fullest extent.

By taking a look at one particular park, Mokanee Creek Provincial Park, I found that it was obvious more work with winter interpretation needed to be done in that area. With my program and report I planned to accomplish this. Instead of regarding the winter time as a bleak, cold time of the year, programs involving this time of the season could influence individuals to realize that winter holds many little worlds and experiences, especially in a park, where there is an abundance of flora, fauna, and interesting features.

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I. PREFACE

The main intention of this report has been to create a winter interpretation program for Kokanee Creek Provincial Park. Since I am extremely interested in interpretation and I am very excited about the new concept of interpreting a winter environment, through this program I hope to help increase each individual's sensitivity, perception, awareness, enthusiasm and commitment (new insight and approach to life) in the world around us. Poetic interpretation can be used, see Figure 1.

Interpretation is an important factor in park management. New ideas and programs always need to be expanded and worked on. Winter interpretation programs are a whole new field and there are endless ways to interpret a winter environment; yet little has been done.

Thousands of dollars have been spent in building interpretation facilities in British Columbia parks. Many of these buildings unfortunately close during the winter season. One of them, the Kokanee Nature House, has been recently built for the purpose of all-year-round interpretation. This year has been the first winter season it has remained open. Since little has been done in the way of preparing winter programs for the park, I decided to plunge ahead into the task of producing a winter program. I was delighted to find that both Len Dunsford, co-ordinator of the Wildland Recreation Program, and Doug Leighton, naturalist of Kokanee Creek Provincial Park, both agreed that the report that lay ahead would be most useful and valuable for winter interpretation at Kokanee Creek Provincial Park.

II. INTRODUCTION

The purpose of this report has been to outline winter interpretation possibilities at Kokanee Creek Provincial Park and to prepare and conduct an actual winter program at Kokanee Creek Park during the winter of 1977-1978 (actual day given - February 26, 1978).

Full authorization to proceed with this project was given by Len Dunsford, co-ordinator of the Wildland Recreation Technology Program and Rod Loftus, instructor of the Wildland Recreation Technology Program, in partial fullfillment of Wildland Recreation 271.

This report contains a general look at the study area, the necessity and options for winter interpretation, possible themes for winter programs at Kokanee Creek Provincial Park, and an actual winter interpretation program given at Kokanee Creek Provincial Park.

III. LOCATION

A. The Study Area

Kokanee Creek Provincial Park is located on the West Arm of Kootenay Lake, 14 miles east of Nelson, on Highway 3A. Refer to Figures 2 and 3.

It can be described as a forested alluvial fan that straddles Kokanee Creek, with old creek channels and marshy areas. It is a Class A, provincial park that has 643 acres. Refer to folder in Appendix A.

The characteristic uses of Kokanee Creek Provincial Park are: picnicking, boat launching, swimming and camping. The picnic and camping facilities are both heavily used. Camping is usually crowded and most parties stay at least three to four days up to a maximum of fourteen. There is a total of 102 campsites in the park.

B. Interpretation Features Related to the Park

1. West arm sports fishery
2. Kokanee spawning (August - October)
3. Beaver ponds - marsh area - aquatic life
4. Wet interior biotic zone
5. Creek channel dynamics
6. Land and water birds
7. Osprey nesting
8. Bears
9. Geological man induced changes to Kootenay Lake
10. Indian and mining/prospecting history

C. Interpretation Methods Used in the Park

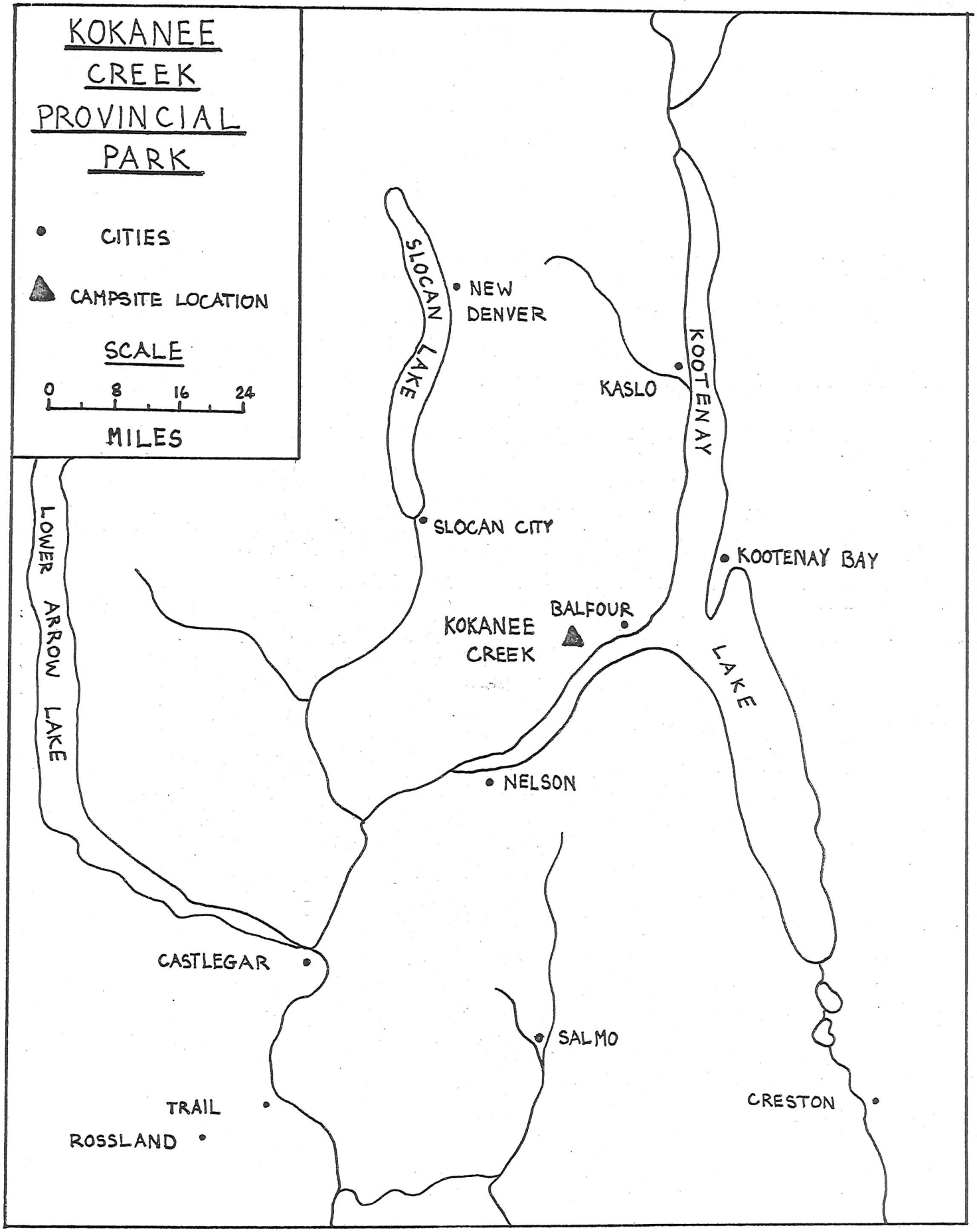


FIG. 2

Area Location

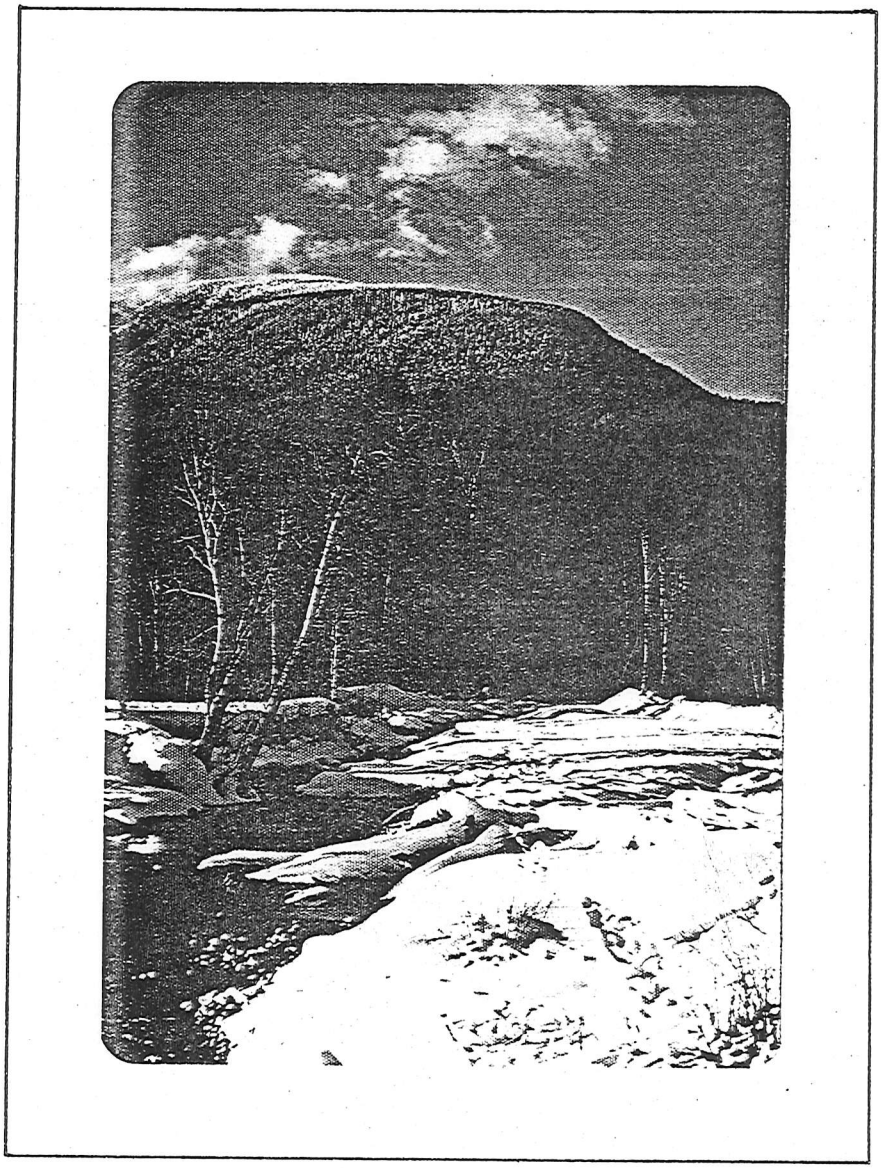


FIG. 3

Kokanee Creek Provincial Park

1. Nature house with displays and living material
2. Full time and seasonal naturalist staff
3. Nature walks and talks
4. Nature trails
5. Notice board display panels
6. Printed materials available as handouts and for sale, on park features
7. Taped messages available for off-site interpretation

The first three items are features in present operation.

Owing to its heavy use and abundance of materials, Kokanee Creek Provincial Park is the most important park in the West Kootenay district interpretation programme.

D. The Kokanee Nature House

In the West Kootenays the headquarters of the interpretation programme is at Kokanee Creek Provincial Park. Here a 3,000 square foot Nature House has been constructed. It contains an exhibition area and office space along with a theatre. From this facility the District Interpretation Officer directs the District Programme. During the summer months he/she is assisted by seasonal staff. Refer to Figure 4.

The Nature House is open daily from May 1st until September 30th, weekends only during October and November and from March through April. During the months of December, January and February the facility is closed. Note: The Nature House remained open all year in 1977. The building was originally meant for all-year-round interpretation but had remained closed in previous winter seasons.

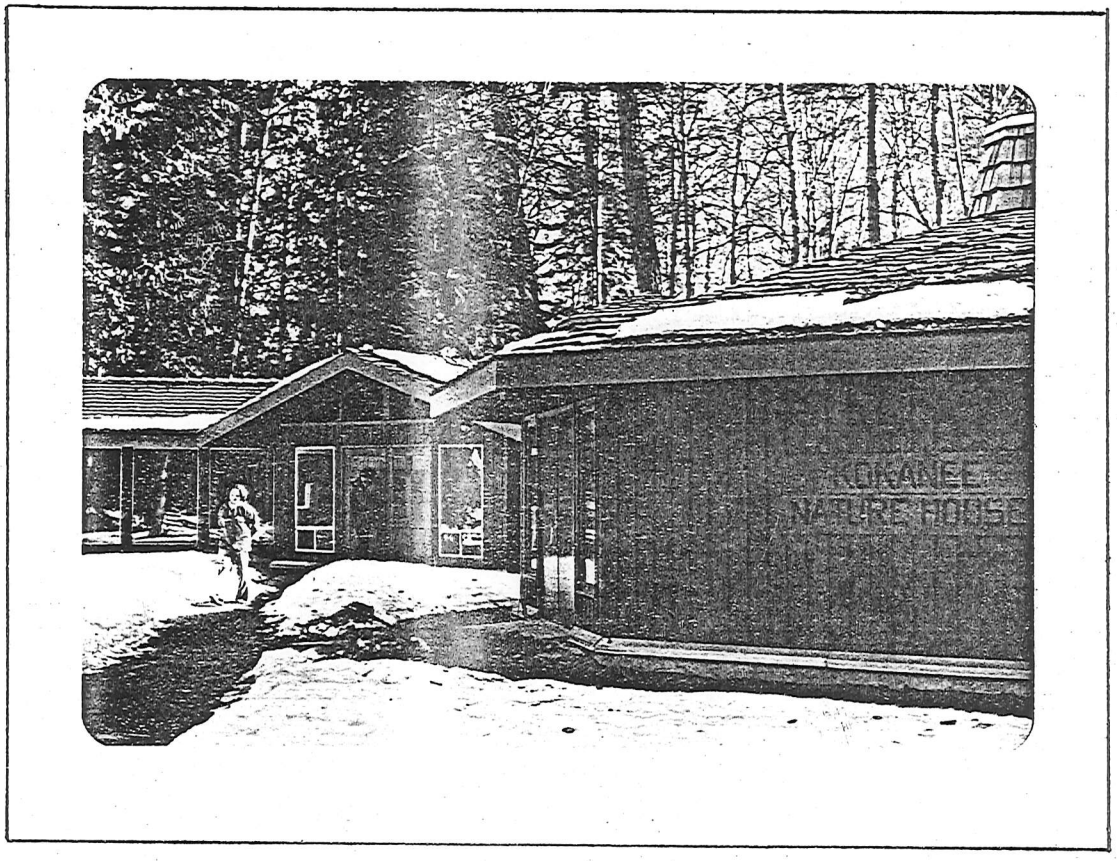


FIG. 4

Kokanee Nature House

In the West Kootenay district, only Kokanee Creek Provincial Park has a permanent facility. Other provincial parks, such as Champion Lakes, Syringa Creek and Stag Leap only have a seasonal naturalist but no permanent structures. Interpretation consists primarily of nature walks and talks with handout printed material available on request. The Nature House at Kokanee provides an excellent facility to use in the set-up of a winter interpretive program. The winter months of December, January and February when it is closed could be open to a new expanded interpretive program. Exhibits and displays of natural features emphasizing winter could be shown in the Nature House. Nature walks and hikes with the use of snowshoes and cross-country skies could be established throughout the winter season.

IV. WHY IS WINTER INTERPRETATION NECESSARY?

A. Special Opportunities Available for Winter Interpretation

Many special opportunities are available for winter interpretation.

1. It gives a chance to learn about a season that is most influencing, especially with the arrival of snow - the variety and beauty of a winter scene.
2. It opens up new opportunities in the interpretive filed where activities usually become dormant - a new world for the park interpreter.
3. Wildlife and their activities may become more evident.
4. Now that outdoor winter recreation sports are increasing, more people are becoming aware of a winter environment, but programs must be given to increase the awareness and perception of winter dynamics.
5. It provides activites at unusual times of year, frequently in unusual setting to reach visitors not ordinarily contacted during the main season.
6. It open up excellent opportunites for working with residents in surrounding communities.

With year-round interpretive programs the positive effects on people, park, and the total environment are continuous. And the secret of success with winter interpretation programs is to fit the activities to the season and conditions rater than trying to make summer-type activities work in nonsummer circumstances.

B. Present Winter Interpretation in National Parks

Winter interpretation like summer interpretation is very important in park management. Interpretation programs encourage public understanding of parks, and leads to proper attitudes to park use. Programs also help en-

plain administration actions to the public and in turn help the administration branch understand what the public needs and what they expect.

Parks Canada has undertaken a winter use study and has issued questionnaire forms throughout National Parks in the Western Parks Region. Refer to Appendix "B". If winter use is known, guidelines for winter interpretation can be established.

During the winter season of 1973-74, Jasper National Park Interpretive Service undertook a winter interpretive program which included field trips on Saturdays and Sundays; as well as slide and film presentations along with talks and discussion each Sunday and Monday evenings - refer to Appendix "C" for Objectives, Assessment of Objectives, The Logistics of a Winter Interpretive Program and Problems.

Mount Revelstoke and Glacier National Parks winter interpretation includes: special group programs - schools, club meetings; conducted cross-country tours - four during the 1973-74 winter. Proposed future programs include: low power radio transmitter talks; winter survival; animal and bird outings on cross-country skies/snowshoes; newspaper articles; local radio broadcasts in winter; and overall planning and promotion of winter interpretive programs.

Banff National Park has been giving programs in winter since 1969. They have not differentiated between "summer" and "winter" programs; but have had a scheduled (summer) program for the general public; and special programs for any organized groups. The special programs have been given at any time of the year. The conducted events that have mainly been

special programs are walks for school groups; and programs and films at Sunshine Village, Banff Springs Hotel, and the Banff Centre.

Winter programs in Pacific Rim National Park have consisted of slide talks, films and guided walks given to local and visiting groups, chiefly school children, but also to service clubs and Chambers of Commerce. These have been chiefly in answer to requests for a program, but occasionally have been offers from the park when a particularly interesting subject has been available.

C. The Need for Winter Interpretation Programs at Kokanee Creek Provincial Park

There is a definite need for winter interpretation programs at Kokanee Creek Provincial Park. A visitor increase to the park in winter months has occurred over the past few years. Many cross-country skiers and snowshoers come to the park each winter to pursue their recreational interest in this area.

Winter trails do not necessarily have to ~~built~~ cleared and built since roads running through the campground and alongside the beach are good for winter travel. But there is a need to encourage centralized routes so that tracks do not lead through the park in every direction. Refer to Figures 9 and 10 at end of report. A more appealing aesthetic winter scene in the park would be obtained. There is a need for a designated winter interpretation trail and possibly signs or displays throughout the park. This simplified version of self-interpretation could help carry many messages to the park visitor, especially to those who are un-

familiar with the park. Programs are especially needed on weekends when an increased number of vistors come to the park.

V. Options For Most Winter Interpretation Programs

A. Desirable Program Goals

Normal summer techniques can not be employed for winter interpretation. For example, unaided walking in deep snow is difficult to impossible; similarily, driving to and from trail heads or interpretive sites is hazardous to impossible. This all results in the necessary employment of specialized, winter-adapted equipment, techniques, and most importantly, a change in attitude towards the winter as another prime period for outdoor interpretation.

There are several options available to the park interpreter to make outdoor winter interpretation a viable proposition. Special fields such as "outdoor education, environmental education, conservation education, outdoor recreation, and physical education" can coincide or be substituted for winter interpretation. But in order for interpretation to carry out its main purpose - to help create a greater awareness in park visitors about the environment and their own more personal role within it - some of the special fields quoted, do not lend themselves to interpretation's overriding purpose.

Maybe only "outdoor recreation" can be related to winter interpretation because it provides, quite naturally, all of the following: -

1. It is the vehicle best suited to move the interpretive message with, through the use of outdoor living skills.
2. It allows park visitors to bring, or develop, the proper frame of mind to get pure enjoyment out of the activity, in addition to the interpretive value.

3. It gives park visitors the opportunity to come in direct contact with the winter scene, learn about its very special beauties and dangers.

4. It is also of direct value to the interpreter himself, as it gives him the opportunity to learn and experiment with an entirely new aspect of field interpretation, it keeps him in contact with nature and what the parks are all about, and it keeps him in touch with people during a season still largely ignored by most interpreters.

This does not mean that park interpreters will now teach park visitors how to snowshoe, ski, or camp, but that they use these basic outdoor living skills to enhance the interpretive experience for the park visitor, assist him with improving those skills, where they in turn promise to increase safety factors, park preservation, and an attitudinal shift from the self-defeating "pioneer" land-use ethic, to the development of a forward-looking "21st Century" oriented land-use ethic.

There is another advantage to be gained from this approach. Park interpreters are thus required to up-grade or up-date their own, often limited knowledge and experience about winter outdoor living skills. This brings them in closer contact with the most modern of skills, equipment, techniques, and furthermore, will cause them to seek more advice and training from our sister organization, the Park Warden Service and Skiing Specialists. This then in turn brings about a search for and exchange of the best information available, a very necessary updating of attitudes and skills, better communication all around, and hopefully,

in improvement in staff morale.

Other options include: -

a) The development of winter interpretive programs for the blind or otherwise handicapped, the aged (outdoor and indoor).

b) Teacher, youth leader training programs of outdoor winter interpretation, for the purpose of making the "multiplier effect" work for interpreters.

c) Prepare for, advertise and conduct special outdoor activities and events.

d) Prepare, print and distribute a winter-oriented park interpretive brochure for those who want to go on it alone.

e) Establish winter interpretive nature trails with pamphlets and guides.

f) Generally advertise to would-be-users the special aesthetic values to be gained from seeing parks in the winter months, especially with the aid of enlightened park interpreters.[1]

1 From "Winter Interpretation - An opportunity for the taking!" by K. E. Seel, Interpretive Specialist.

B. Dependence on Winter Weather Conditions

Programs and excursions that are carried outdoors in the season of winter are effected by the prevailing weather conditions. Leadership and winter safety measures are imperative. The winter interpreter must make every effort to understand local weather patterns, be able to read them, and take the measures resulting. For longer trips (overnight, plus), experienced winter recreationists should contact weather offices at air-

ports to obtain information on larger airmass movements. Radio and television forecasts are sometimes useful, but usually too unreliable in mountain regions where conditions can and do occasionally differ from valley to valley.

Sunny and warm weather during the winter season can aid in your audience's spirit while conducting an outdoor program. Attendance possibly increases and your program becomes well supported and in turn more enjoyable. When conducting a winter program with prolonged outdoor activities, intense cold weather can lend its hand to cause frost bite, snow blindness, and hypothermia. It is essential that the winter interpreter recognize these factors as well as be capable in applying first aid measures should these conditions occur.

VI. POSSIBLE THEMES FOR WINTER INTERPRETIVE PROGRAMS AT KOKANEE CREEK PROVINCIAL PARK

Any interpreter that knows his field can conjure up all sorts of themes and ideas for a particular park. Whether or not they are worthwhile or useful for an interpretive program is another question. With help from Doug the following list of themes could be incorporated into winter programs at Kokanee Creek Provincial Park.

1. Snow - The different kinds of snow, and the physical nature of each variety. Insulating qualities and life under the snow. Its effect on wildlife and plants.

2. Winter Adaptations - Hibernation/dormancy of animals/plants. Seed adaptation for a cold season. Animal food storage and alternate food sources. Adaptations for cold.

3. The Lake in Winter - Stratification of the water. The life of a fish.

4. The Creek in Winter - Running water attracting wildlife. A year in the life of a creek. Refer to Figures 5 and 6.

5. Wintering Waterfowl - On the lake, creek, and delta. Other birds in winter: dippers, winter wren, ravens, creepers, chickadees, bald eagles.

6. Wintering Wildlife - White-tail deer, coyotes; their feeding habits.

7. Animal Tracks and Signs - Identification of paw and hoof prints, animal scats and pellets.

8. Indians - What Indians did in the winter during the hardest time of survival. Trapping.

9. Human History - how pioneers coped with winter. The adaptations miners and pioneers made in the winter season.

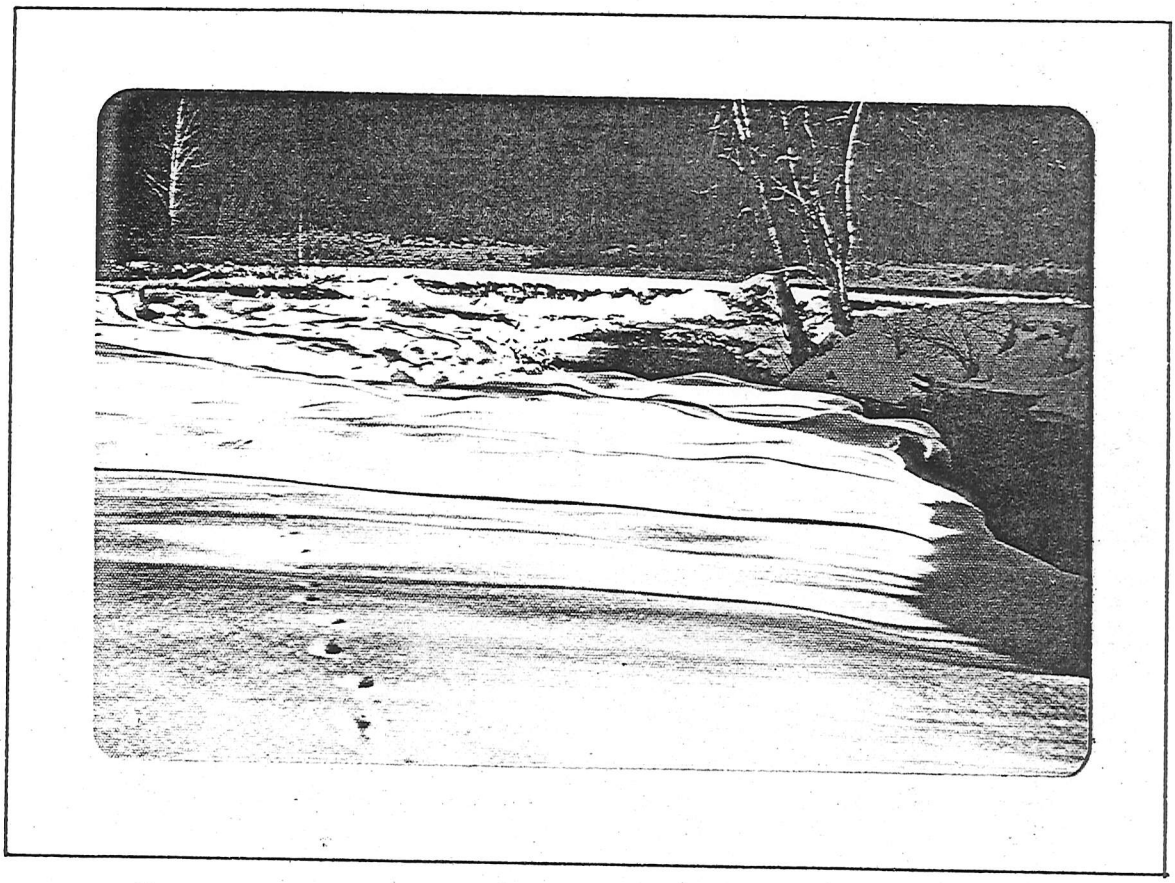


FIG. 5

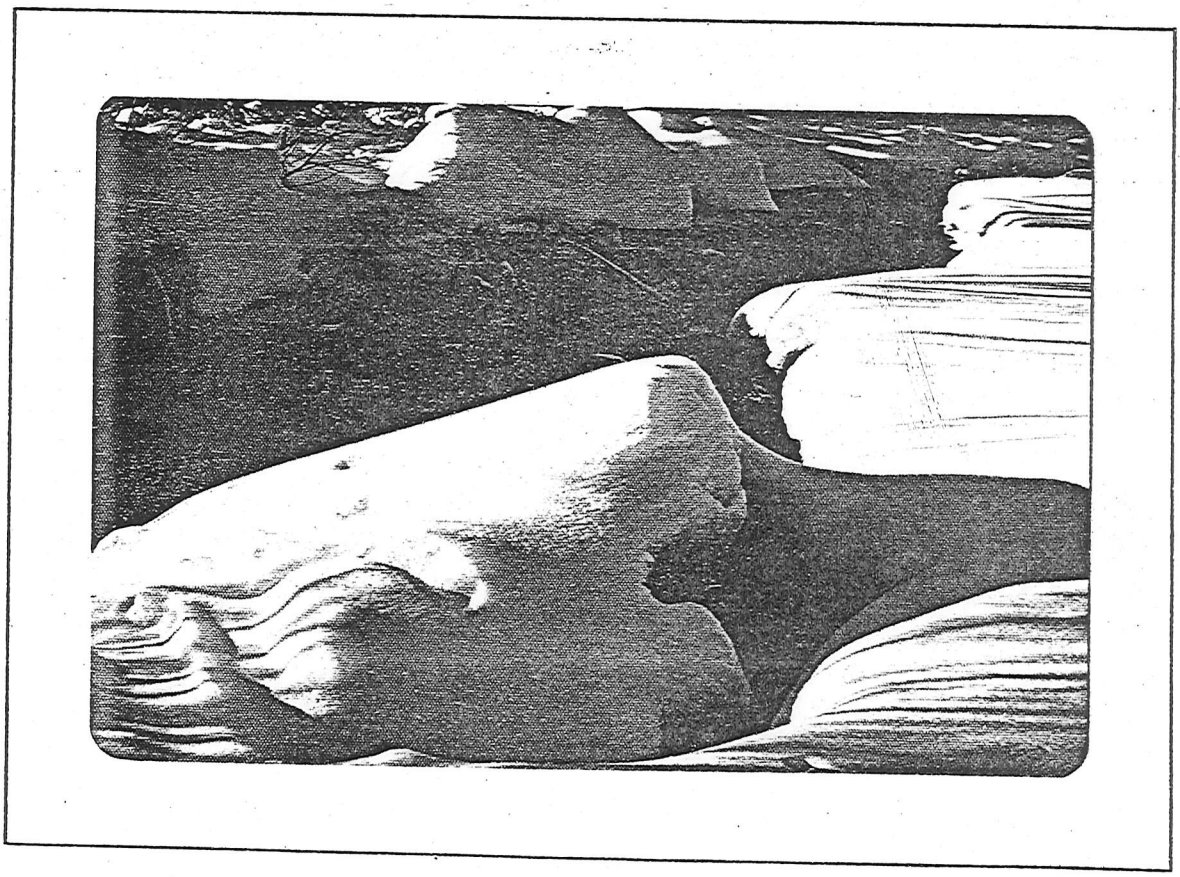


FIG. 6

Kokanee Creek

10. Winter Weather - Local climate and how it is affected by the mountains, the lake and other local conditions.

The following list of major tree species and wildlife found in and around the park could also prove to be some help when establishing winter programs.

a) Western Red Cedar
b) Western Hemlock
c) Douglas Fir
d) Grand Fir
e) Western White Pine
f) Western Yew
g) Western Larch
h) Ponderosa Pine
i) Lodgepole Pine
j) Black Cottonwood
k) Paper Birch
l) Trembling Aspen
m) Sitka Alder
n) Douglas Maple
o) Black Hawthorn
p) Willow

Mammals - * Hypothetical

1) Cinereus Shrew
2) Wandering Shrew
3) Navigator Shrew
4) Little Brown Bat
5) Snowshoe Hare
6) Columbian Groundsquirrel *
7) Northwestern Chipmunk
8) Red Squirrel
9) Northern Flying Squirrel
10) Beaver
11) Deer Mouse
19) Wolf *
20) Red Fox *
21) Black Bear
22) Grizzly Bear *
23) Marten
24) Fisher *
25) Short-tailed Weasel
26) Long-tailed Weasel
27) Mink
28) Wolverine *
29) Striped Skunk

12) Pack Rat
13) Boreal Redback Vole
14) Mountain Heather Vole
15) Meadow Vole
16) Muskrat
17) Porcupine *
18) Coyote
30) River Otter *
31) Mountain Lion
32) Bobcat
33) Lynx *
34) Mule Deer
35) White-tail Deer

Birds - This is a partial list that is also hypothetical but most of these probably frequent the park.

1) Canada Goose
2) Mallard
3) Redhead
4) Canvasback
5) Ring-necked Duck
6) Lesser Scaup
7) Common Goldeneye
8) Barrow's Goldeneye
9) Bufflehead
10) Common Merganser
11) Goshawk
12) Marsh Hawk
13) Rough-legged Hawk
14) Red-tailed Hawk
15) Bald Eagle
30) Pileated Woodpecker
31) Hairy Woodpecker
32) Downy Woodpecker
33) Northern Three-Toed Woodpecker
34) Gray Jay
35) Steller's Jay
36) Clark's Nutcracker
37) Common Raven
38) Black-capped Chickadee
39) Dipper
40) Red-breasted Nuthatch
41) Brown Creeper
42) Winter Wren
43) Golden-crowned Kinglet
44) Bohemian Waxwing

16) Peregrine Falcon
17) Ruffed Grouse
18) Great Blue Heron
19) Ring-billed Gull
20) Herring Gull
21) Great Horned Owl
22) Long Eared Owl
23) Short Eared Owl
24) Barred Owl
25) Great Gray Owl
26) Saw-whet Owl
27) Pygmy Owl
28) Belted Kingfisher
29) Common Flicker

45) Northern Shrike
46) Starling
47) Evening Grosbeak
48) Pine Grosbeak
49) Gray-crowned Rosy Finch
50) Common Redpoll
51) Pine Siskin
52) Red Crossbill
53) Dark-eyed Junco
54) Tree Sparrow
55) Song Sparrow
56) White-crowned Sparrow
57) Lapland Longspur
58) Snow Bunting

VII. ACTUAL WINTER INTERPRETATION PROGRAM CONDUCTED AT KOKANEE CREEK PROVINCIAL PARK (WINTER 1977-78)

A. Program Overview

(a) Objectives

1. To plan and design an actual winter interpretation program to be utilized at Kokanee Creek Provincial Park.

2. To expand on one particular theme "1. Snow" - Refer to VI. Possible Themes . . . , page 17, and develop it into a winter interpretation program.

3. To encourage year-round use of a park facility, namely Kokanee Nature House.

The interpretation program "Star Crystal Magic", and slide show "Snowscapes", was designed for the purpose of creating more awareness of snow varieties and increasing perceptiveness of a snowy, winter environment.

(b) Rationale For Content and Methods

The script of "Star Crystal Magic" has been typed out in note form so that any other naturalists using this information can interpret it to an audience in his/her own style. While giving my program I used a blackboard to spell out the different kinds of snow to aid people in remembering each type and to give myself a guideline while speaking.

The slide show itself consists of two trays of slides; left tray - L numbers, and right tray - R numbers. Two slide projectors were used to enable the use of a dissolve unit. A cassette tape with musical

background, "The Homecoming" by Hardy, and the poem "Snowscapes" by me, was recorded with synchronized pulses to automatically regulate the two slide projectors.

Props that I used included: a lynx paw, browsed pine needles and twigs by a snowshoe hare, "The Complete Guide to Cross-country Skiing and Touring", and "The Snowshoe Book".

Reasons for using these items are as follows. The lynx paw illustrated how well adapted this animal or chionophile was suited for a winter environment and heavy snow conditions. Browsed pine needles and twigs by a snowshoe hare were shown in case some people had never seen or had not noticed the how or what a snowshoe hare ate during the winter. The two books mention above were to introduce available literature on some popular, passive outdoor winter sports. This could help the winter recreationist in getting around in a winter environment, especially while attending winter interpretive programs!

Finally, I feel that in all interpretive programs props are necessary since people are always interested in coming up after the program to look at and handle any interesting items you have brought along. This encourages more personal contact between individuals in the audience and the naturalist.

I must add that any naturalist using this program could substitute any of the items mentioned or certainly add items to this list of props.

(c) Actual Program

STAR

CRYSTAL

MAGIC

(1) Talk - Star Crystal Magic

To many of us we consider snow only as a passing phenomenon, sometimes giving us pleasure on ski slopes, or creating a hazard on the highway. In the north, however, snow is the dominant force, and its impact is so great that the study of snow as a separate environment interests scientists. They are learning more about how it harbours and buries life and the transformations it works on animals of the north and their forest habitats.

Snow has definitely an environment all of its own as it adjusts the lives of people, plants, and animals. In all animals, the coming of snow triggers reactions to change their mode of living. Some flee southward, others to the deathlike sleep of hibernation, and still others change their food, habits, coats and colouring.

Certain animals are classified by zoologists with the prefix chion, or Greek word meaning snow. Chionophobes cannot tolerate snow at all. These are the groundfeeding birds and waterfowl, that migrate at the first hint of winter. Other animals, chioneuphores, such as moose, wolves, and small mammals like shrews and voles, make adjustments to the snow. Wolves hole up in soft snow banks to conserve body heat when cold becomes unbearable. Moose wade through soft snow, on long stilt-like legs. Voles and shrewslive in crystal tunnels beneath the snow cover where it is much warmer. Finally there are chionophiles or snowlovers, which have physical adaptations to winter conditions. The broad feet of the lynx enables it to move swiftly and surely across fluffy snow. The snowshoe

hare has well adapted hind feet and a pelt that changes from brown to white in the winter.

We come to understand that there is a double life for every forest animal - one of spring, summer, and fall and one completely fitted for the survival of winter cold. What causes this changeover from one life to the other? It is the onset of snow. And the fascinating thing about it is that in snow, prints of hoofs, paws, wings, tiny feet and whole small bodies not only betray the passing of living creatures but reveal much about their habits and methods of survival in winter.

Snow itself is not found to be merely simple white stuff, but of different kinds. There is a developed vocabulary to distinguish varities, originating from the language of the Eskimo, Indian and Lapp. The following is a description of each kind of snow and the role it plays in the drama of winter.

<u>qali</u> - snow that is on the trees, refer to figure 7

<u>apj</u> - snow that is on the ground, refer to figure 8

<u>pukak</u> - bottom layer of snow, provides winter habitat for a host of small mammals

<u>upsik</u> - hard-packed, wind-driven snow of open spaces such as large lakes and bogs

<u>sinoctoaq</u> - crusty snow whose top layer has thawed and refrozen

<u>qali</u>

-snow clinging to trees merely picturesque but. . .

-creates major changes in a forest

-vital role in cycle of plant succession

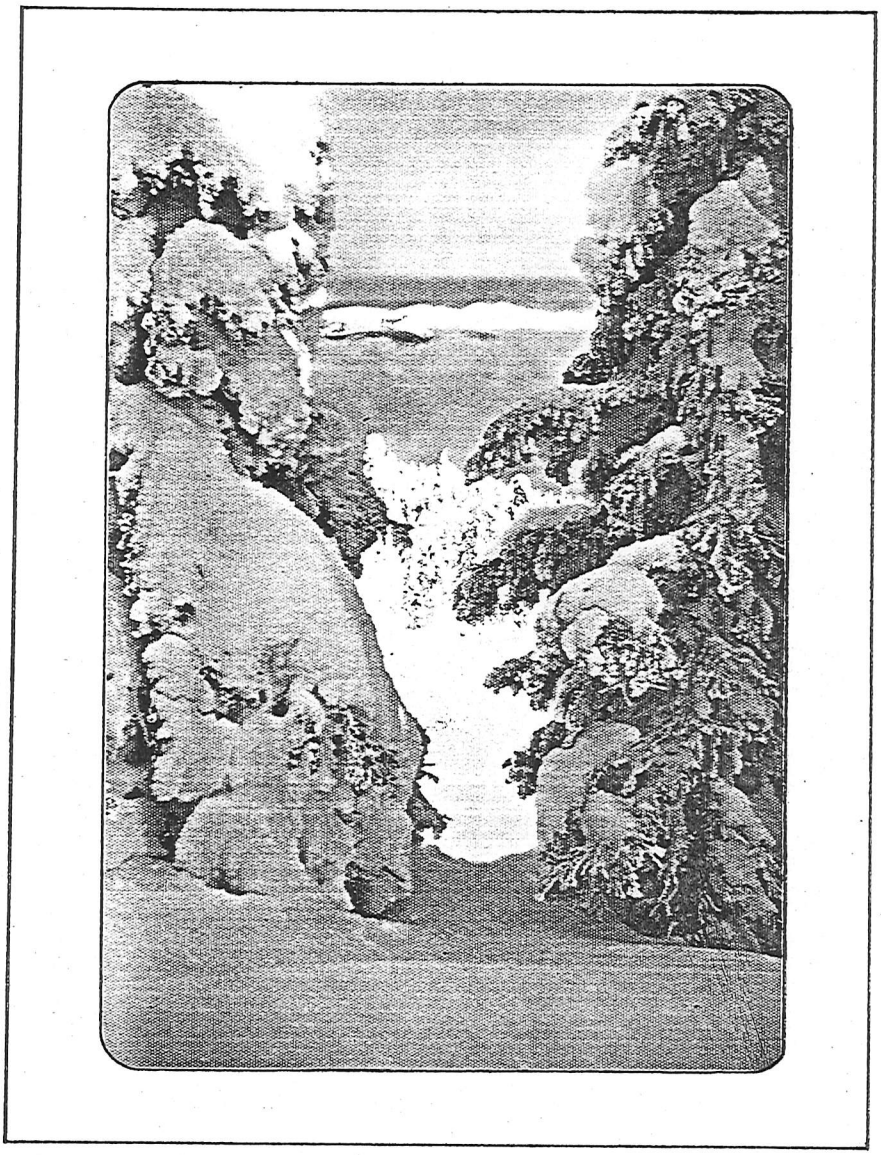


FIG. 7

Qali

-based simply on the fact snow is too heavy a burden for the trees

-break in forest canopy, "forest window" created, beginning of forest glade

-changes ecological balance of area

-more sunlight reaches standing trees, branches grow larger on that side, more qali on larger branches, tree falls

-this story repeated and glade grows (sub-arctic forest)

-qali breakage stops after glade reaches certain size, since wind sweeps qali away, no longer heavy accumulations

-. . . important things happening on the ground, dead and broken trees shed needles, choking moss carpet

-deciduous shrubs and trees invade, and provide litter, then humus, then soil, is created for seeds of spruce which takeover and become mature coniferous forest and cycle of plant succession repeats

-qali plays crucial part in denying or giving access to food for winter animals

-if heavy, tree dwellers - squirrels, chickadees, cross-bills can't reach spruce cones

-squirrels dig under snow to food cache, birds fly to windy hilltops where trees are free of qali

-help to snowshoe hare since tender tips of birches and alders more available as trees readily bend

-provide hare with shelter, beneath bent branches during extreme cold

-hare leaves pellets of fertilizing manure to later nourish the trees

and

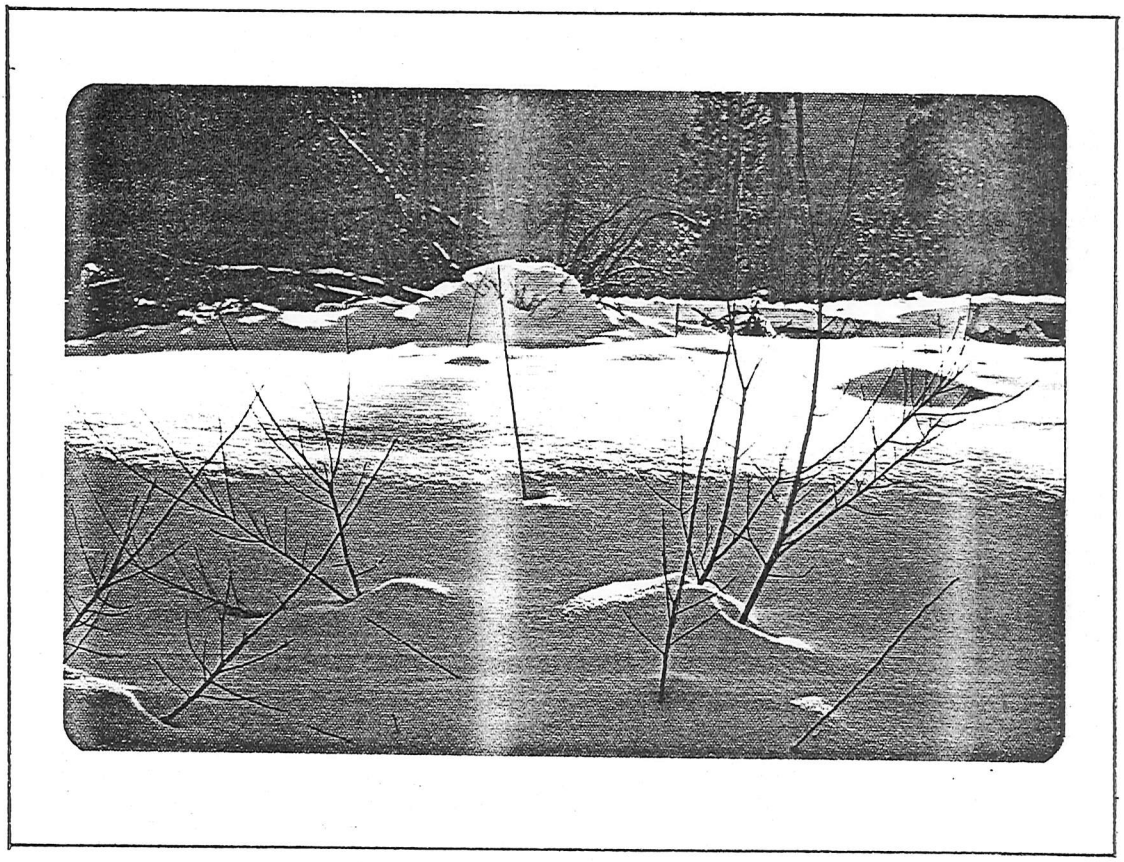


FIG. 8

Api

-hares suited for winter woods, camouflage superb, brown and gray coat turns to snow-white winter coat except thin rim of black on tips of ears

-also has snowshoelike hind feet

-when hare can't reach branch tips, feeds on birch and willow bark by raising on hindlegs

-api, snow on ground helps hare to reach higher, since hare doesn't sink in snow

-api important for the survival of small forest mammals and invertebrates

-its presence allows these animals to survive, warmly sheltered underneath the snow

-to understand, we examine what happens when snow falls

-before mosses, lichens, small plants and needle litter, now insulating blanket covers forest floor

-snow, one of the best insulators of the natural world, actually emulsion of air and ice crystals

-six-sided stars, not able to nestle closely, first fall - light and fluffy

-layer falls upon layer and snow matures, changes occur in its makeup

<u>pukak</u>

-first change, most important to small animals, occurs on bottom layer, the pukak

-factors involved in change - warmth and moisture from earth

-in summer warth and moisture radiate into air and disappear, now trapped beneath insulating cover

-warmed by earth, bottom most flakes melt and water molecules attach them-

selves to colder crystals above

-gradually open space formed between delicate crystals of ice and different in shape - hollow pyramids hanging together in interlocking columns

-pukak latticework may be several inches thick

-temperature seldom more than few degrees below freezing, no matter what temperature above

-voles, mice, and shrews would freeze quickly above, since bodies not big enough to generate enough heat to keep alive

-but in warm bioclimate of pukak, they live, breed and reproduce

-like a fairyland - air warm, moist and still, pale bluish white light filters through snow cover, the only sounds are scamper of tiny feet, occasional tinkling of ice crystals falling from roof of pukak, and footsteps of predators above

-frigid winds may roar above; down in the pukak they are never heard

-food plentiful, stored in forest floor during summer months, seldom any need to visit world above

-once in a while they do, which shows balance of winter world's ecology

-warm front, drizzle of rain, thaws top layer and refreezes to form tough crusty layer of ice

-ice impedes exchange of gases between forest floor and air

-carbon dioxide formed by decomposition of leaf litter becomes high, tiny mammals build ventilator shafts to come up for air

-opportunity for birds of prey, owls, since single layer of icy crust benefits by bringing small mammals within their reach

-only other predator weasel, may penetrate pukak corridors

-or fox catches scent, hears tinkling below, and jumps in air to come down hard and break snow cover, usually ends up in snowslide and struggles out

-or moose or deer break cover with hooves, avalanche of snow, blocks pukak corridors

-soon process which bottom snow layer yields up water molecules to colder layers above and pukak becomes snug habitat once again

upsik

-frozen lakes and open bogs, different maturation process, brought about by wind

-wind blows surface of snow, picks up snowflakes, whirls them, tumbling over and over

-change shape as they move, elongated rays break off, become needle-shaped instead of star-shaped

-form side by side patterns, much denser than possible with star-shaped snowflakes

-they settle behind a protuberance, crack in ice of lake, rocky outcrop protruding through peat of bog and drifts form

-where winds blow fiercely and constantly, drifts amazingly hard, piled up five feet or more

-snow achieves cement-like toughness, when struck with an axe, rings like a bell

-solid enough to support foot of man or hoof of caribou and running wolf barely leaves a footprint on it, this is snow called upsik

sigoutoq

-when upsik melts and refreezes into crust (after warm front) the tough icy layer is known as siqoqtoaq

-upsik and siqoqtoaq crucially affect winter lives of large mammals of the north woods - sometimes it is good, sometimes bad

-moose, stiltlike legs keep bulk of beast above snow level, too heavy to walk on snow

-deep snow means trouble, heavily crusted snow causes moose to crash through and be trapped

-to avoid siqoqtoaq, migrates to region of thinner snow or stays in "yard" where food is plentiful, moving as little as possible

-if bark and twigs used, it raises on hind legs and bends tree to reach higher food

-tree may break, moose's yard in springtime usually marked by broken branches and tree trunks and if crusty snow, bloody leg holes

-the two varieties of snow, upsik and siqoqtoaq, are determining factors in the strange, erratic migrations of woodland (northern Canada) and barren ground caribou (Alaska)

-once caribou wandered from tundra to forest and back again in herds numbering hundreds of thousands, now such fewer follow the same course

-chief influence of direction of wandering are "fences" of snow

-summer caribou food - sedges, grasses, lichens, and leaves of willows, birches and aspens

-winter caribou food - no deciduous food, lichens and sedges only

-to get these, migrate to woods and paw out "feeding craters"

-light, fluffy api of the deep forest makes feeding easy

-dense, wind-blown upsik or icy-crusted sigoqtoq makes feeding difficult

-caribou's migration double aim, to get them to places where they will find food and to avoid areas where snow makes feeding difficult or impossible

-studies show animals most numerous in light and flufiy snow enough to get food

-maybe not same place next winter since while food there, may be inaccessible because of dense or crusty snow

-or ideal snow but no food

-with warming trends that might expect them to go southward toward warmer weather, caribou head north instead, as if to stay longer in wintry climate

-so caribou seem to wander aimlessly, but actually guided by snow conditions or "fences" (like erected fences)

-when warmer and topmost layer thaws and refreezes, crust is so thick, cuts skin of caribou's legs, great discomfort and feeding impossible

-caribou head north, to soft, fluffy snow

-as spring nears, sometimes they are squeezed between fence of crusted snow building from south and open tundra where deciduous plants - main source of summer food, still buried two weeks away from budding

-most difficult time of winter for caribou - if these conditions severe, may wipe out entire herds

-when wandering north or south caribou rest on frozen lakes

-they chew cuds, loaf, and sleep

-can also spot principal predators, wolves

-they bunch together and run with easy, swinging trot wolves can't match

-wolves must follow caribou, primary food

-they then too migrate from tundra to forest and establish hunting bases under snow laden branches of large spruces

-single file trails in snow, usually to lake, caribou's resting ground

-wolves don't stalk like lynx or mountain lion, straight forward approach of finding and killing prey

-spot band of caribou and advance

-when within sight one caribou gives danger signal, hind leg thrust out sideways

-band springs up and in tight-packed bunch, explode into clumsy gallop and settle down to distance-eating trot they can keep up for hours

-when caribou flee in tight bunch, with no stragglers, wolves seldom follow instictively knowing they have little chance of success

-but let one caribou hesitate or falter because of age, sickness, or injury, it is doomed

-such behaviour instantly triggers in wolves stimulus to kill

-old saying "wolf catchs any animal it chases", only if it thinks it can bring animal down

-must test caribou or moose before finding one who reacts from normal, wolves cull herds

-by killing weak and infirm, help maintain quality of herd and establish fitness of caribou to survive

-form of interdependence between wolf and caribou is no less essential to both as between the spruce and gali

(3) Poem * ~~Snowflakes~~

by Lebbi Hlady

A world of beauty, seen only by eyes that look,
no words can express the form, shape and pattern
found in every cranny and nook.

Images are reflected by each tiny crystal star,
swirling, twirling; flying freely and far.

Behold this world of whites, grays and blues
sometimes untouched, sometimes with clues.

Signs, tracks, always look back into time. . .
A hardening image, but if creative, a pantomime.

With the awakening of a crisp, clear winter morn;
a stage has been set, activities soon to be born.

Winter residents adapt to this harsh environment,
the constant search for food, is how most time is spent.

Daily survival is a seemingly endless quest,
all energies funnelled for this purpose, no wasted zest.

Tracks and trails of predator and potential prey,
attest to their perilous search for food
that will enable them to survive, to see another day.

On top is the crispness of the icy cold,
but underneath there is a story that is rarely told.
A maze of tunnels, corridors like crystal halls,
with air chimneys, filtering pale bluish light
down to a moss carpet and along subway walls.

Streams no longer burble, they are silenced since the cold of fall.
Here and there, where a creek's current is too swift to freeze
a whisper of movement may be heard,
but that is all. . .

Lakes and ponds now frozen hard,
display a wide, vast spendid "yard".
Here large mammals rest and sleep,
feeding spots wherever snow is not deep.

Wind-driven snowdrifts crested like waves,
snowclumps of unique contour, almost shaped into caves.

Alongside a mountain, a snow blanket smooths out each rough shape.
To become a rolling, gentle, single form, flowing like a cape.

The silvery magic of the moon plays upon the slopes against the
whiteness of the snow.
Moonlight reflects on the delicate traceries of every tree silhouette
and its branches below.

Frozen droplets shine like miniature crystal balls,
a remarkable latticework which is awed by all.

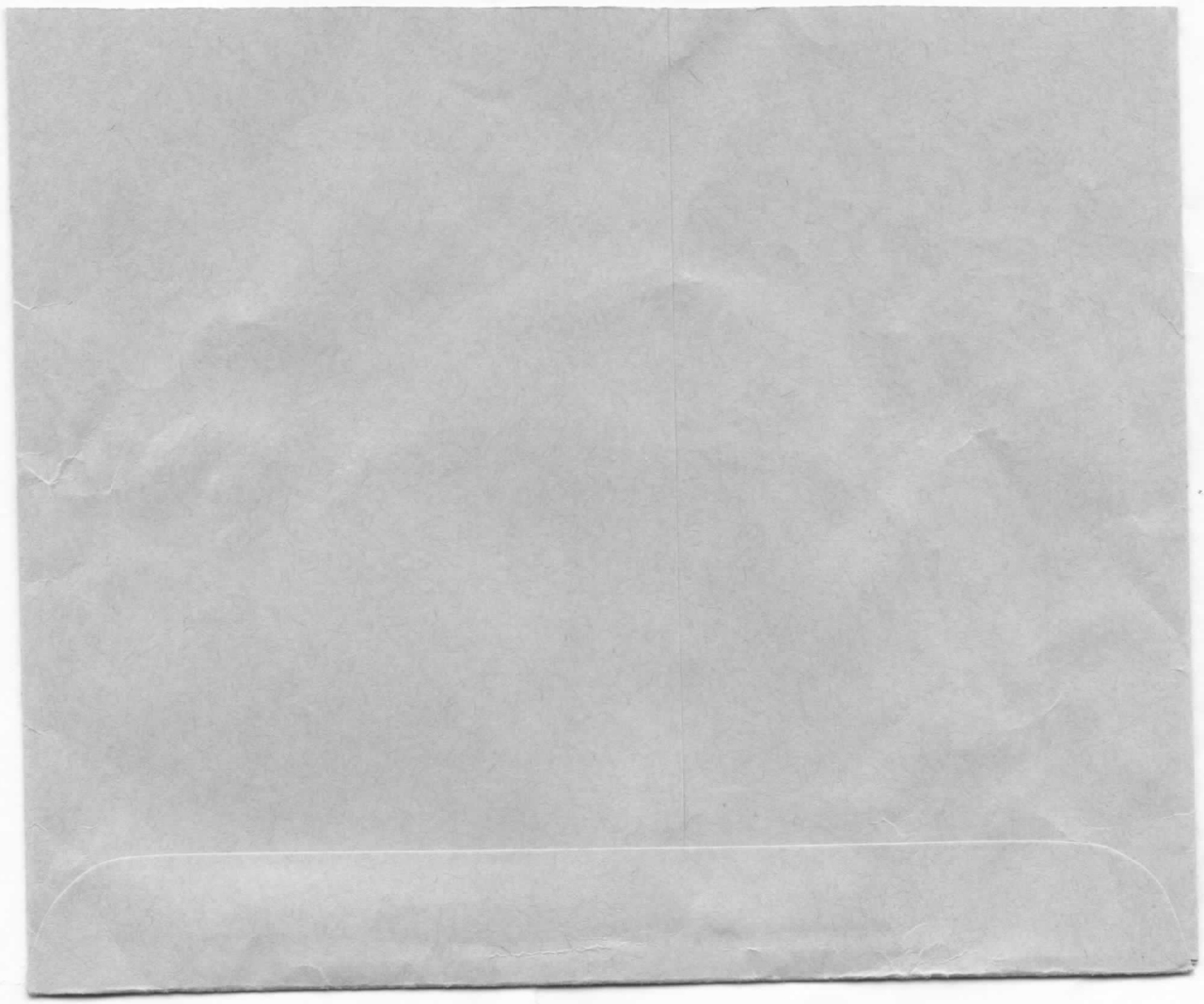
The magical stillness of the white-clad forest, meadow and marsh,
is strangely eerie and beautiful, and not really all that harsh.

Let not the land be bleak and cold,
for in every scene a story can be told,
and to the artist and the poet, creativeness will unfold.

A snow crystal. . .
A tiny prism capturing light
A thin ice needle glittering bright
In every flake a unique design
A delicate star with symmetrical line.

Sliding, prancing,
skiing, dancing,
touring, skating,
and patiently waiting,
for . . . snow!

(4) CASSETTE TAPE



(5) Props

1. Lynx Paw - Borrowed from Biology Department, Selkirk College, Castlegar

2. Browsed Pine Needles and Twigs by Snowshoe Hare - Obtained from Nancy Green Recreation Area. Positive identification since snowshoe hare tracks and pellets were found adjacent to these items.

3. "The Complete Guide to Cross-country Skiing and Touring", by A. Tokle and M. Luray, 1973 - Selkirk College library, Castlegar

4. "The Snowshoe Book", by W. Osgood, 1975 - Selkirk College library, Castlegar

(6) Walk

The winter walk was conducted on snowshoes. Trails followed are illustrated on the map of the folder found in Appendix A and on the map separate from the report. A snow shovel was used to dig a snow pit and study the layers of snow as well as observe the pukak. Tracks were found on the beach and were identified as mule deer prints. "A Field Guide to Animal Tracks" was used for this purpose. Other winter features were noted and talked about, especially the siqoqtoaq qualities since snowshoes were not necessary because the snow was so crusty and hard that day. The duration of the walk was approximately an hour and a half during the later hours of the afternoon. Refer to Figures 9 and 10.

FIG. 9

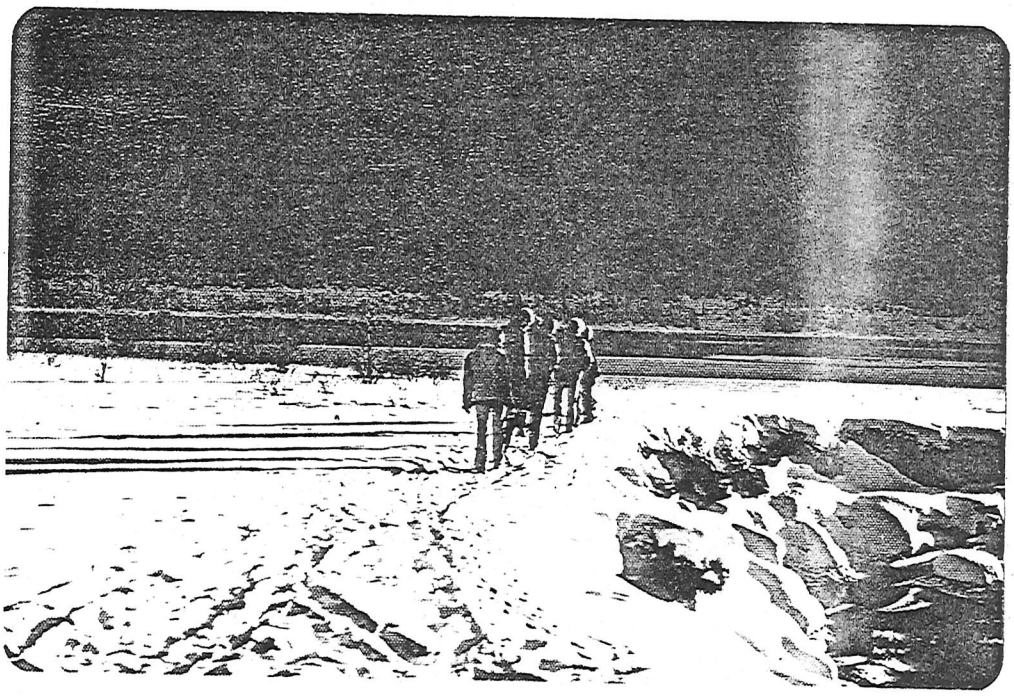


FIG. 10

Winter Trails

VIII. CONCLUSIONS

There definitely needs to be more work accomplished in the field of winter interpretation. This will help establish year-round use of park interpretive facilities, particularly for Kokanee Creek Provincial Park. Exhibits and displays along with nature walks and hikes need to be established for the winter season. There is a considerable wealth of information on the topic of winter, but little information is readily available on the art of winter interpretation. Hopefully this report will be used to expand programs at Kokanee Creek Provincial Park and illustrate some ideas that go into forming a winter interpretation program.

H. RECOMMENDATIONS

1. Mohawk Creek Provincial Park should offer an annual winter interpretive program from October 1 to April 1 in addition to the present summer interpretive program.

2. At least two Park Naturalists are required during the winter months (October 1 - April 1) in order to present a varied and interesting winter program of summer quality.

3. In order to provide such a year round program there should be at least one permanent Park Naturalist and one seasonal Park Naturalist in addition to the one permanent Park Naturalist already on staff.

4. Funding should be arranged for an extension program to be carried out within a 200 kilometer radius of this park.

5. Winter interpretive staff should be issued with proper winter uniforms and equipment.

6. Radio and newspaper advertising should be adopted year round.

7. Winter wildlife activity should be encouraged in the park by hanging a bird feeder at the Mohawk Nature House and establishing salt licks for the wintering deer.

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Larry Halverson, Naturalist

Kootenay National Park

P.O. Box 220, Radium Hot Springs

Radium, B.C.

Doug Leighton, Naturalist

Kokanee Creek Provincial Park - Nature House

Nelson, B.C. 825-4723

Bob Schoer, Naturalist

Creston Valley Wildlife Centre

Box 1848, Creston, B.C. 428-9383

XI. APPENDICES

Appendix "A" - Kokanee Creek Provincial Park Folder, 1977

Appendix "B" - Winter Research Program Questionnaire

Appendix "C" - Objectives, Assessment of Objectives, The Logistics of a Winter Program, and Problems (Jasper National Park)

Appendix "D" - Map Overlay of Zones in Kokanee Creek Provincial Park and Winter Trail System

Appendix "E" - Aerial Photographs BC5348-170 and BC5348-171 of Kokanee Creek Provincial Park

APPENDIX "B"

PARKS CANADA
WESTERN REGION PLANNING RESEARCH

WINTER USE STUDY

This questionnaire is part of the Planning Division's Winter Research Program investigating backcountry use in the Mountain National Parks. Your co-operation in completing this questionnaire is essential to the identification of the expectations and needs of the winter backcountry user.
Please note: YOUR NAME IS NOT REQUIRED - NO IDENTIFICATION IS NECESSARY.

Your may return the questionnaire when you return your Warden Registration Slip OR you may mail your completed questionnaire directly to PARKS CANADA using the stamped, self-addressed envelope provided.

ONLY ONE PERSON FROM EACH PARTY NEED ANSWER THESE QUESTIONS : PLEASE PRINT.

1. Where do you live?
   ( ) Banff or Lake Louise
   ( ) Calgary
   ( ) Edmonton
   ( ) Other Alberta
   ( ) B.C.
   ( ) Other. Please specify .....

2. Please indicate the number of people in your party in each of the following age categories.
   ( ) 14 and under
   ( ) 15-19
   ( ) 20-29
   ( ) 30-39
   ( ) 40-49
   ( ) 50-59
   ( ) 60 and over

3. Are you staying overnight in Banff National Park this trip?
   ( ) No
   ( ) Yes, in a townsite hotel or motel
   ( ) Yes, in a public campground.
   ( ) Yes, winter camping in the backcountry
   ( ) Yes, in a backcountry hut
   ( ) Yes, in a Youth Hostel

   What was your destination and route on this trip? .....
   .....

5. How long was your party on this trail? (total time)
   ( ) less than 2 hours
   ( ) 2-4 hours
   ( ) 5-7 hours
   ( ) 8 hours or more (but not overnight)
   ( ) 1 night
   ( ) 2 nights
   ( ) more than 2 nights

6. On this trip were you using:
   ( ) Cross-country skis ( ) Ski touring or mountaineering skis ( ) Snowshoes

7. Did any member of your party have any problems with their equipment today?
   ( ) No ( ) Yes. Please specify .....

8. Did you register with the Park Wardens on this trip?
   ( ) Yes
   ( ) No. If not, could you indicate a reason why not? .....
   .....

9. Which, if any, of the following items did you carry with you on this trip?
   ( ) Extra cold weather clothing
   ( ) map and compass
   ( ) stove and fuel
   ( ) matches or firestarter
   ( ) basic first-aid kit
   ( ) emergency food
   ( ) sunglasses
   ( ) ski-tip
   ( ) ski-repair kit
   ( ) knife
   ( ) flashlight or candles
   ( ) survival blanket
   ( ) avalanche cord or beeper
   ( ) avalanche probes & shovel
   ( ) sleeping bag
   ( ) other. Please specify .....
   .....

(Please turn over)

10. What is the maximum number of people you could encounter on a single day on this trail before you began to feel crowded?
( ) under 5
( ) 5-10
( ) 11-15
( ) 16-20
( ) over 20

11. In terms of backcountry skiing experience, do you consider yourself
( ) a beginner ( ) an intermediate ( ) advanced.

12. Please indicate in the boxes below the number of backcountry ski trips you took in Banff, Yoho, or Kootenay National Park each month so far this year.

	Nov'73	Dec'73	Jan'74	Feb	Mar	Apr	May
No. of trips							

13. Are you a member of a ski club or outdoor club?
( ) No.
( ) Yes. Name of club .....

14. How many other people did you encounter on this trail today?
( ) under 5
( ) 5-10
( ) 16-20
( ) over 20

15. Did you feel that the trail was too crowded?
( ) Yes ( ) No ( ) No opinion

16. Which one of these phrases best describes the snow conditions on the trail today?
( ) unpacked fresh snow
( ) well packed track
( ) hard packed track with some icy patches
( ) rough bumpy
( ) very icy
( ) soft and slushy
( ) other .....

17. Please comment on any changes or improvements in the design of this trail that you think would make skiing more enjoyable .....
.....

18. Did you notice any signs of environmental damage or over-use on this trail
( ) NO ( ) Yes ... please tell what signs and where .....
.....

19. What was the most enjoyable experience of this trip? .....
.....

20. What was the least enjoyable? .....
.....

21. Please use the additional space to make any comments or suggestions you might have. .....
.....
.....

THANK YOU FOR YOUR CO-OPERATION

APPENDIX "C"

Appendix "C" - Objectives, Assessment of Objectives, The Logistics of a Winter Program, and Problems

OBJECTIVES

1. To make available to the public, both visiting and resident, a winter program interpreting the natural and human story of Jasper National Park.

2. To encourage participation in 'natural' winter sports in the interests of the national concern for improved physical fitness.

3. To demonstrate to the local teachers and to students and their parents the potential for involving Park Naturalists in the school curriculum.

4. To improve public safety regarding outdoor activities through education and practical experience.

5. To increase the public's awareness, especially that of the town's people, of the existence of the Interpretive Service and more importantly its functions.

6. To increase the public's awareness of the responsibilities of a national park, with special reference to the role of the Warden and Visitor Services.

7. To guage the potential for interpretation of National Parks philosophy in communities and schools located outside the park boundaries.

ASSESSMENT OF OBJECTIVES

1. A winter interpretive program of walks and evening shows was made available to the public, both visiting and resident. Those attending left with some increased knowledge and appreciation for the natural and human story behind Jasper National Park.

2. Guided snowshoeing and cross country skiing tours and winter hikes (with explanation and demonstration of equipment techniques) encouraged participation in 'natural' winter sports in the interests of the national concern for improved physical fitness.

3. The demand for Park Naturalist involvement in the local school curriculum has increased 30 - 50% since November 1973 and there is every reason to believe this will continue. As a bonus an increasing number of appreciative parents accompanied their children on our scheduled walks and evening programs.

4. Walks and special lectures on winter safety were given in the hope that experience and knowledge gained would encourage those involved in outdoor activities to become more safety conscious. Whether these programs have been beneficial is difficult to assess.

5. It became apparent that many of the town's people were not aware of the Interpretive Service or its functions. It was concluded therefore that our summer advertising methods (i.e. through brochures and at walks and evening programs) were of limited success. To remedy the situation advertising for the Winter Program was also done through the local newspaper and radio.

It is our hope that local entrepreneurs who attended our winter programs will also help to promote the Interpretive Service functions this summer.

6. The role of Warden and Visitor Services personnel was elaborated during the Winter Program (usually by those staff) to help clarify some of the responsibilities and problems involved in managing a national park.

7. National Parks, as we know them today can exist only as long as an informed public can justify the need for such preserves. It is a responsibility of the Interpretive Service to inform the public, both inside and outside the park boundaries, of the philosophy behind park policies. The potential for this kind of interpretation in communities and schools located outside park bounds is becoming evident (as revealed in part by the increasing number of requests by Alberta teachers as a result of Park Naturalist involvement in a Teachers' Conference at Jasper Park Lodge in February 1974).

THE LOGISTICS OF A WINTER INTERPRETIVE PROGRAM

Advertising

The importance of advertising the new Winter Interpretive Program was immediately recognized. Financial restraints however, necessitated an economical approach. Copies of schedules were therefore made with the Park's gestetners (at cost of materials). Signs were designed and drawn up by Interpretive staff and displayed at local commercial establishments (at cost of materials). As a public service Radio CKYR and the Jasper Booster carried advertisements (at no cost).

Walks and Talks

Three Park Naturalists were needed to give an enthusiastic and varied program. It was the major responsibility of one of these three to co-ordinate this endeavour. A weekly plan included:

1. two scheduled winter walks
2. two scheduled evening programs
3. up to two school programs and/or walks
4. up to one program or walk for the local youth hostel or other special group.

It was decided that the scheduled winter walks and evening programs would be given on week-ends to take advantage of the visiting public, predominantly skiers. An estimated 25% of our attendance however were town's people and most of these came to more than one event, thus creating a demand for new programming every week.

1. Winter Walks

Walks were held every Saturday and Sunday at 12:30 in the afternoon. Advertisements indicated what winter footwear would be needed (i.e. snowshoes, skis or boots); local sports stores rented such equipment. The public was met at the Jasper Information Centre and travelled by car cavalcade to the advertised destination. Those without transportation were always able to make arrangements with others present.

The Park Naturalist and government personnel used government vehicles.

Before embarking on any walk, clothing and equipment were checked to see that they were suitable for the winter weather conditions. The Park Naturalist usually carried along a pack with extra clothing, gloves, food and a first aid kit. Those present were advised that the walk would take three and one-half to four hours, weather permitting. A summary of what could be enjoyed on the trip was given.

During the walk, sights and sounds of interest were pursued briefly so the people would not get unduly cold. The need for precautionary equipment and a knowledge of woodlore pertinent to safe winter travel was emphasized to each group. Some time was also spent explaining and demonstrating winter equipment techniques.

The Wardens of Jasper National Park were invited to share their knowledge (through walks) of snow study and avalanche control (Mr. Bob Haney and Mr. Lawrence Baranuik, of the winter habits of large mammals (Mr. Mac Elder) and of winter woodlore (Mr. Bob Barker). Mr. Pat Rousseau of Visitor Service offered his interpretation of winter in a park.

It was found that our winter walks offered a viable alternative to downhill skiing and were enthusiastically supported especially by those living in Jasper and Hinton.

2. Evening Programs

Evening programs were presented on Sunday and Monday so that they did not compete with Saturday night social activities. The Sunday program was at the Jasper Information Centre at 8:00 p.m. and the Monday program at 9:00 p.m. at Jasper Park Lodge. This difference in times did lead to some confusion and a common time may be called for in the future. These presentations were usually forty-five minutes to one hour in length and included slide programs, informal lectures and occasional 16 mm films. All audio-visual equipment belonged to the Jasper Interpretive Service and included slide and movie projectors, screens, reel to reel tape recorders, amplifier and speakers for stereo sound reproduction and appropriate props. The slower winter pace allowed numerous opportunities for experimentation with audio-visual devices.

Program topics included natural and historical features of Jasper National Park, park philosophy and concerns and winter woodlore and safety.

Due to a 25% returning audience (as stated previously) each program required the use of new material. This necessitated a considerable work load for at least one Park Naturalist and probably more for all concerned. It also caused us to tap the wealth of knowledge available from neighbouring park services and the general public.

Guest Speakers

Guest speakers presented a show of their own design with introductory and technical support by at least one Park Naturalist. Winter safety and equipment use was discussed by Alpine Specialist, Mr. Willie Pfisterer. Mr. Sid Marty (Park Warden, Banff National Park) read from his recent book of poems. Valuable information on birding was offered by Mr. Roy Richards (CN Trainman) through both an evening program and field trip. Mr. Duane Martin (Park Warden, Jasper National Park) on two occasions elaborated on the increasingly complicated role of the Warden Service. (Mrs. Peterson, the local historian supplied the Interpretive Service library with well documented historical background on Jasper National Park.)

Audience support at evening programs improved as guided walk attendance increased thus contributing to our over-all success.

3. Local Schools

During the early part of the Winter Program the Interpretive Service approached the local elementary and secondary school staff to whom was given a short presentation of the different types of programs offered. These included:

1. prop talk
2. slide show with or without music
3. informal lecture on a variety of subjects from astronomy to zoology
4. a combination of the above

It was also demonstrated how these programs could be adapted to the different age groups. This presentation slowly resulted in increased requests for classes on geology (including morphology), geography, ornithology and interpretation of English nature poetry.

As the winter season progressed snowshoe classes were arranged, a pattern which became more apparent as spring approached.

The majority of our school events have been for the elementary students but this spring we are endeavouring to organize more field trips for the secondary levels.

An important side effect of this school program has been to increase our attendance at public events, the result of students telling their parents of our scheduled programs.

Future Opportunities for Park Naturalist Involvement

1. Local Conferences

This winter a teacher's conference was held at Jasper Park Lodge at which our Park Naturalists made several presentations. The result of this well received program has been an unending series of requests for programs at schools throughout the province, a demand that due to limited finances we have not been able to satisfy.

2. Chamber of Commerce

There is a program being developed for presentation to the local Chamber of Commerce which will mark the first direct interaction between the Interpretive Service and that community club.

3. Hospital

It is hoped that the next Winter Interpretive Program will involve Park Naturalists at Jasper's Seton Hospital. The idea was conceived too late this year to develop.

PROBLEMS

Advertising Costs

Limited funds for advertising posed the greatest problem to this new program offered by Jasper National Park. The solution was to advertise through the following media at little or no cost to the government:

1. the local newspaper
2. the local radio station
3. signs and schedules
4. word of mouth

It was the hope to attract people of all ages for programs and almost all ages for guided walks. The public was made aware that the walks were not too strenuous and were of short duration. They were also encouraged to experiment with new forms of winter sports on our short walks and benefit from our experience.

Supplying Equipment for Walks

Initially the demand was felt to supply people with equipment they did not own. Eventually though, this was resisted and people were encouraged to rent equipment from the local sports shops at reasonable rates. (It was found that people were attending our walks as a result of sports store concessionaires advertising these events.) This has proven to be the most practical solution and we have had no complaints.

Obtaining a Suitable Hall for Evening Programs

It is always difficult to arrange for a hall to be used on a weekly basis, especially when funds for this are limited or non existent. One solution was to use (at no cost) the foyer at the Jasper Information Centre, a convenient location for the town's people. Jasper Park Lodge also provided their Pyramid Room weekly without cost as they had done the previous summer.

Providing Transportation to and from Walks

There was never any problem in getting people to use their own vehicles and the few that did arrive without transportation were readily accommodated by the others attending.

No other problems arose during the course of the Winter Interpretive Program and future problems are not anticipated.

APPENDIX "D"

Appendix "D" - Map Overlay of Zones in Mohawk Creek Provincial Park and Winter Trail System

APPENDIX "B"

BC5348-170


BC5348-17