

Guidelines for Human Activity within the Range of Mountain Caribou, Southern Selkirk Mountains



**Donald R. Johnson
Donald R. Miller
James M. Peek**

Forest, Wildlife and Range Experiment Station



Miscellaneous Publication No. 3

January 1977

TO CIRCULATE SEE
LIBRARIAN THIS FLOOR

QH76.5.I2M57 no. 3



0 0206 00372130 8

Johnson, Donal/Guidelines for human ac
University of Idaho Library

**GUIDELINES FOR HUMAN ACTIVITY
WITHIN THE RANGE OF MOUNTAIN CARIBOU,
SOUTHERN SELKIRK MOUNTAINS**

International Caribou Study Steering Committee

Prepared by: Donald R. Johnson
Donald R. Miller
James M. Peek

Department of Biological Sciences
and
College of Forestry, Wildlife and Range Sciences
University of Idaho, Moscow

December 1976

UNIVERSITY OF IDAHO LIBRARY

ACKNOWLEDGMENTS

This publication was reviewed by personnel of the British Columbia Fish and Wildlife Branch, British Columbia Forest Service, USDA Forest Service, Washington State Department of Game, Idaho Department of Fish and Game, Louisiana-Pacific Corporation, and outdoor organizations of southeastern British Columbia, northern Idaho, and northeastern Washington. Their comments are appreciated.

Guidelines

for Human Activity within the Range of Mountain Caribou, Southern Selkirk Mountains

INTRODUCTION

The environment of the mountain caribou (*Rangifer tarandus montanus* [Seton]) inhabiting the southern Selkirk Range of British Columbia and the adjacent United States is subject to increasing human influence. The International Caribou Study Steering Committee¹ deemed it advisable to develop guidelines for timber harvest and for road, pipeline and powerline access and construction within the range of this caribou population, in order to minimize adverse effects of human activities. These guidelines are based upon the best judgments of knowledgeable individuals in public and private organizations familiar with these caribou, plus review of existing information pertinent to this population of approximately 30 animals (see reference list). They are intended to identify existing

and potential conflicts, not to replace the recommendations for specific locations developed by Freddy (1974a). These guidelines should be revised as we acquire additional knowledge and experience with the Selkirk caribou population.

AREAS OF EXISTING AND POTENTIAL CONFLICT

We have mapped the areas where human activity does, or is likely to, interfere with these caribou (Fig. 1). This sensitive zone in British Columbia is, for the most part, above 1524 m (5000 ft). Areas below this elevation in Upper Bayonne, Carolina, Summit and Monk creeks receive persistent use and are included within the sensitive zone. The presence of caribou as far north as Baldy Mountain was confirmed by D. R. Miller in October 1975.

Within the United States, we have classified only potential winter habitat (Freddy 1974b) as vital at this time, since occupation has been sporadic and less predictable in recent years. One or more movement corridors connecting the disjunct vital region in the eastern Selkirks with the sensitive zone farther north have not been mapped because we are uncertain of their exact locations. Without this information and knowledge of calving sites for these caribou, the vital areas as mapped must be considered tentative.

VITAL HABITATS WITHIN SENSITIVE ZONES


A. Closed-canopied forest (United States, over 40% crown cover; Canada, Class 1). Arboreal lichens found in spruce-fir (*Picea engelmannii-Abies lasiocarpa*) forests above 1524 m are especially critical to mountain caribou as winter forage (Edwards and Ritcey 1960). Cedar-hemlock (*Thuja plicata-Tsuga heterophylla*) forests above 1346 m (4500 ft) may also be used as early winter feeding sites, movement corridors and perhaps as calving sites. These forests provide bedding cover, particularly in late fall, and windthrown trees provide lichen forage. Freddy (1974b) found that the Selkirk caribou preferred sites with slopes of less than 35 degrees and north aspects.

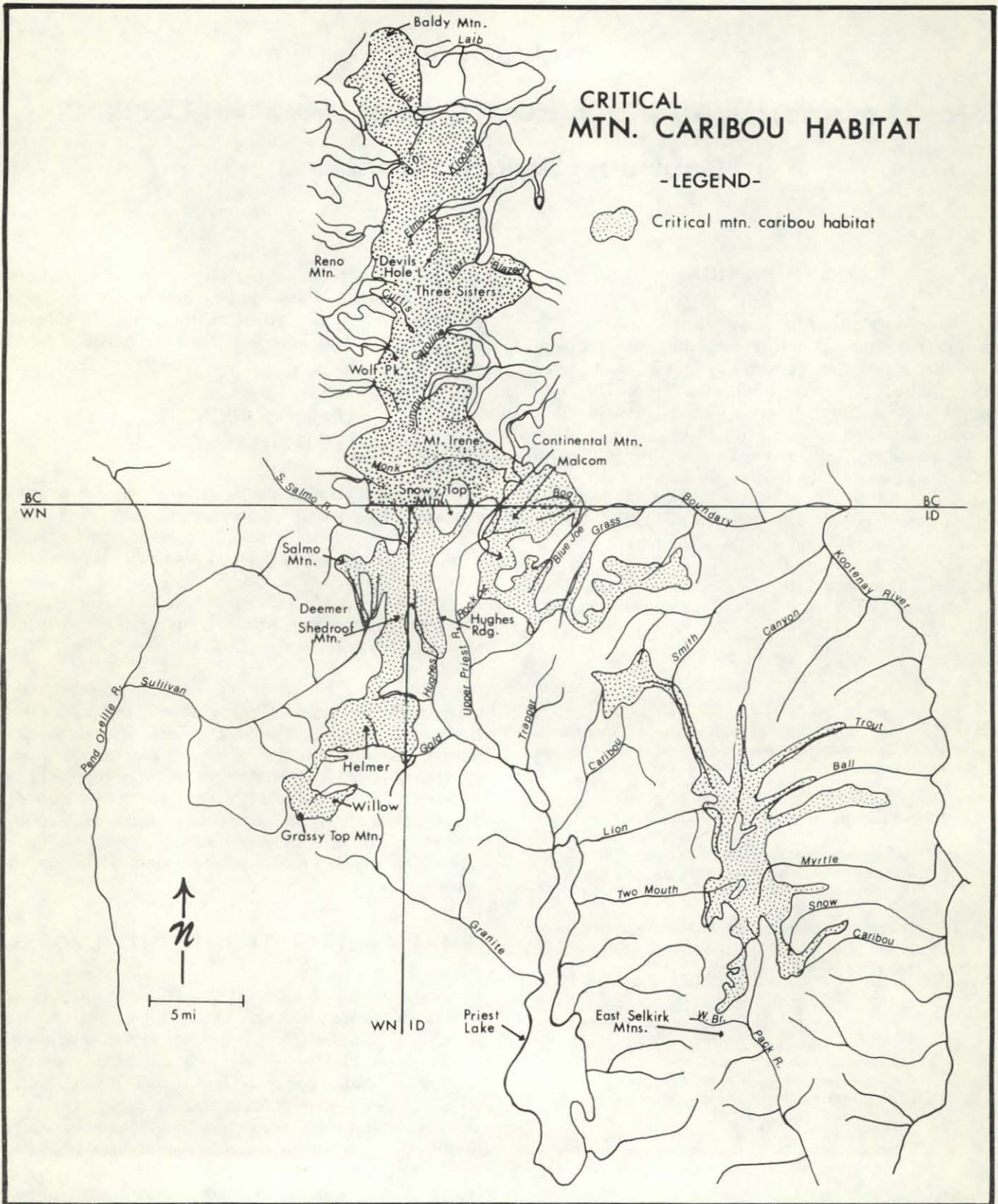
¹ The International Caribou Study Steering Committee, founded in 1971, is currently composed of representatives from the British Columbia Forest Service, British Columbia Fish and Wildlife Branch, Idaho Department of Fish and Game, U.S. Forest Service, University of Idaho, Washington State Department of Game and West Kootenay Outdoorsmen. Its purposes are to:

1. Assist management agencies in both the United States and Canada in long-term planning for the protection of the Selkirk mountain caribou herd.
2. Develop informational materials (slides, tables, maps, etc.) for use in educational meetings to apprise industry, professional organizations and the general public of the status and management of the herd.
3. Continue and extend herd dynamics studies, including
 - (a) identification of vital areas of forage, travel and calving within the range;
 - (b) determination of current numbers, sex ratios and age ratios;
 - (c) identification of factors causing mortality and harassment.

CRITICAL MTN. CARIBOU HABITAT

-LEGEND-

 Critical mtn. caribou habitat



Recommendations:

1. Small clearcuts, less than 40 acres in size and irregular in shape, are permissible, but not more than one-third of the original closed-canopied forest should be removed from any one drainage within the sensitive zone. Roads to new sales should be closed after forest operations are completed, to preclude access by public motor vehicles. Leave-strips at least one and one-half times the length of the tallest tree are essential on both sides of streams for protective caribou cover.
2. Cedar-hemlock stands which are not used for calving, for fall feeding or as travel routes can be cut with a minimum of adverse consequences to these caribou.

B. Lightly stocked stands, both seral and mature (United States, less than 40% crown cover; Canada, Class 2). These forests are considered prime caribou habitat in the study region, particularly when they are interspersed with lakes, bogs and fens. Most caribou movement occurs through lightly stocked stands. These forests provide the major lichen forage during the winter months and a palatable shrub-forb understory during other seasons. Lightly stocked stands on steep slopes with southerly exposures are particularly vulnerable to fire.

Recommendations:

1. Logging should be prohibited within lightly stocked stands of the sensitive zone, even on those few sites where it is economically feasible.
2. Road-building through lightly stocked stands within the sensitive zone should be limited to those instances in which no other access to closed-canopied stands is available.
3. Fire prevention should be emphasized.

C. Permanent lakes, bogs and fens. Within the sensitive zone, poorly drained sites adjacent to lakes, as well as bogs (sphagnum present) and fens (sphagnum absent), are used for feeding and bedding, particularly in late summer and fall.

Recommendations:

1. Lakes, bogs and fens within the sensitive zone should be preserved in their present state. There should be no disturbance by logging or roading within a distance of 20 chains of the peripheries of these habitats.
2. There should be no further campground development in the sensitive zone.

BARRIERS TO MOVEMENT

A. Highways and utility corridors. An especially difficult issue involves rights of way for highways, power transmission lines and gas pipelines. A single corridor through the sensitive zone would localize impacts, but such a corridor would be too wide and busy to allow caribou crossing. Development of a minimum number of separate east-west corridors appears to be the only acceptable alternative.

Recommendations:

1. No new permanent roads, pipelines, powerlines or other potential barriers or disturbances should be planned within the sensitive zone without consultation with the state or provincial wildlife and land management agencies.
2. The existing Salmo-Creston highway should not be rerouted through the sensitive zone, as is presently proposed. Improvement of the existing highway, including construction of snowsheds, tunnels, rumble strips and warning signs at caribou crossing points, is preferable to yet another barrier to caribou movement.
3. Within the sensitive zone, powerline construction should be permitted only under the following conditions: (a) alignment should be located to minimize disturbance to critical habitats as described above; (b) clearing of rights of way should be kept to a minimum; (c) access to towers outside the existing road network, as planned in conjunction with wildlife agencies, should be by helicopter only; and (d) construction activity should be limited to the period from May to mid-October.

B. Other hazards to movement. Steep banks and debris from right of way clearings hamper caribou movement. Bridges with grid-like surfaces discourage caribou use.

Recommendations:

1. Debris should be cleared from roadsides and rights of way at caribou crossing points on British Columbia Highway 3.
2. At locations where steep banks extend for more than 91 m (300 ft), small spurs should be constructed to facilitate crossing of the natural gas pipeline right of way.

3. Protective cover should be retained or restored at crossing points along Highway 3. Spruce plantings along approach routes, such as those at the highway compound on Kootenay Pass, would provide protective cover.
4. In those areas where continuous access is mandatory, bridges with solid rather than grid-like surfaces should be established, since these provide easier movement routes for caribou.

ACCESS

Improved access invites poaching and harassment of wildlife at all seasons.

Recommendations:

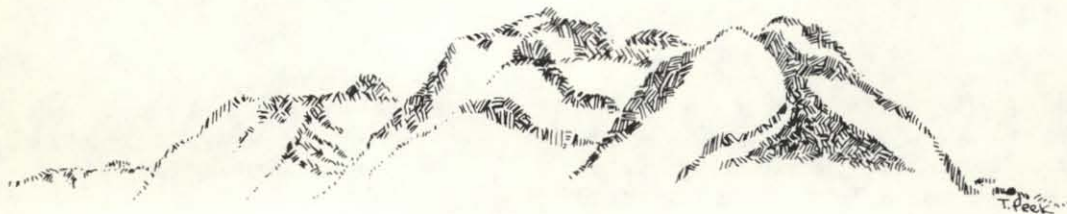
1. Side roads should be closed within the sensitive zone whenever possible. Access by permit might offer a suitable alternative to complete closure.
2. The quality of roading within the sensitive zone should be kept to minimum standards in most instances, anticipating closure of most of the road network.
3. Snowmachine travel should not be permitted within the sensitive zone.
4. A public information program, enlisting the support of all-terrain vehicle and snowmobile organizations, should be initiated to illuminate the positive side of controlled access within the sensitive zone.

MORTALITY AND OTHER CONFLICTS

Use of a sand-salt mixture in winter maintenance of British Columbia Highway 3 attracts caribou to the road, increasing the danger of vehicle-caribou collision. Vehicle collision is the major documented cause of caribou mortality in recent years, although unintentional hunter kills and poaching may cause some mortality also. There is no evidence that predators exert a significant influence on this caribou population (Freddy 1974b). Summer and fall cattle grazing in the upper Priest River watershed represents a potential conflict because of the opportunity for disease transmission to caribou using the area (Freddy and Erickson 1975).

Recommendations:

1. Interpretive signs should be established to inform the public of the presence and condition of the caribou population in the area.
2. High visibility warning signs should be installed at suitable locations within 0.8 km (0.5 mile) of caribou crossing points on Highway 3 to alert the public to the danger of caribou on the road.
3. Successful prosecution of persons violating game laws protecting caribou should be given wide publicity, as a public education tool.
4. The salting program in areas away from the periphery of Highway 3, designed to keep caribou off the highway, should be continued and periodically evaluated as a management tool for reducing vehicle collisions with caribou.
5. A salt distribution program should be initiated to discourage the use of the upper Monk Creek drainage by range cattle.
6. The ramifications of joint use of range by cattle and caribou should be investigated.



REFERENCES

- Anderson, R.C. 1971. Neurologic disease in reindeer (*Rangifer tarandus tarandus*) introduced into Ontario. *Can. J. Zool.* 49:159-166.
- Broughton, E., L.P. Choquette, J.G. Cousineau, and F.L. Miller. 1970. Brucellosis in reindeer *Rangifer tarandus* and the migratory barren ground caribou *Rangifer tarandus groenlandicus* in Canada. *Can. J. Zool.* 48:1023-1027.
- Dorrance, M.J., P.J. Savage, and D.E. Huff. 1975. Effects of snowmobiles on white-tailed deer. *J. Wildl. Manage.* 39:563-569.
- Edwards, R.Y. 1954. Fire and the decline of a mountain caribou herd. *J. Wildl. Manage.* 18:521-526.
- Edwards, R.Y., and R.W. Ritcey. 1959. Migrations of caribou in a mountainous area in Wells Gray Park, British Columbia. *Can. Field-Nat.* 73:21-25.
- _____. 1960. Foods of caribou in Wells Gray Park, British Columbia. *Can. Field-Nat.* 74:3-7.
- Edwards, R.Y., J. Soos, and R.W. Ritcey. 1960. Quantitative observations of epidendritic lichens used as food by caribou. *Ecology* 41:425-431.
- Evans, H.F. 1964. An investigation of woodland caribou in northwestern United States. *Trans. N. Am. Wildl. Conf.* 29:445-453.
- Freddy, D.J. 1974a. Management guidelines for timber harvesting in caribou winter habitat in the southern Selkirk and Purcell mountains. B.C. Forest Serv., Nelson. 8 pp.
- _____. 1974b. Status and management of the Selkirk caribou herd, 1973. M.S. thesis. Univ. of Idaho, Moscow. 132 pp.
- Freddy, D.J., and A.W. Erickson. 1975. Status of the Selkirk mountain caribou. Pages 221-227 in J.R. Luick et al. (eds.). *Proc. First Int. Reindeer and Caribou Symp., Spec. Rep. No. 1*, Univ. of Alaska Biol. Papers, Fairbanks.
- Johnson, D.R. 1976. Mountain caribou: threats to survival in the Kootenay Pass region, British Columbia. *Northwest Sci.* 50:97-101.
- Klein, D.R. 1971. Reaction of reindeer to obstructions and disturbances. *Science* 173:393-398.
- Layser, E.F., Jr. 1974. A review of mountain caribou of northeastern Washington and adjacent northern Idaho. *J. Idaho Acad. Sci., Spec. Res. Issue No. 3.* 63 pp.
- Severinghaus, C.W., and B.F. Tullar. 1975. Wintering deer versus snowmobiles. *Conservationist* 29:31.
- USDA Forest Service. 1975. Draft environmental statement: Smith Creek Planning Unit. Idaho Panhandle Nat. Forest, Coeur d'Alene, Idaho. 230 pp.
- _____. 1975. Upper Priest Lake Planning Unit. Kaniksu Nat. Forest, Coeur d'Alene, Idaho. 67 pp.

