Yukon River Basin Study
Project Report: Wildlife No. 1
Appendix II

An Annotated Bibliography and Information Summary on the Furbearer Resource and Trapping Industry of the Yukon Territory.

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Abstract

Listed are 196 summarized reports dealing with furbearers, the trapping industry and small mammals, pertaining to the Canadian portion of the Yukon River watershed. Some reports dealing with the northern Yukon Territory are also presented. Sources include government and industrial technical reports, periodicals, university theses and books.

Acknowledgements

Brian Slough, Department of Renewable Resources, Whitehorse provided much of the material to be annotated and directed the author to the various research sources. Dr. M. Hoefs, Department of Renewable Resources, Whitehorse; Dr. P.J. Usher, Usher Consulting Services, Ottawa; the libraries of, Department of Zoology, University of British Columbia, Vancouver; Canadian Wildlife Service, Edmonton; National Library of Canada, Ottawa; National Museums, Ottawa; Department of Zoology, University of Alberta, Edmonton; Yukon Archives, Whitehorse, reacted promptly to literature requests. A number of persons allowed their personal libraries to be scrutinized or assisted in other ways in the literature search. They are: D. Russell, D. Larsen, H. Jessup, B. Ereaux, Department of Renewable Resources, Whitehorse and M. Dennington, Canadian Wildlife Service, Whitehorse. ABC Team, Whitehorse, Renee Paquin, Grace Snider and Leslie Cox typed the second edition.

To all these persons and institutions I am most grateful.

Introduction

This annotated bibliography provides a listing of reports dealing with furbearers, the trapping industry, and small mammals, pertaining to the Canadian portion of the Yukon River watershed (exclusive of the Porcupine River). This edition is expanded and includes reports dealing with the northern Yukon Territory.

Sources include government and industrial technical reports, periodicals, university theses and books. Most of these were found in the library of the Fish and Wildlife Branch, Yukon Department of Renewable Resources or the Yukon Archives, both in Whitehorse. A number of reports were obtained from the Canadian Wildlife Service Library, Ottawa and Edmonton; various university libraries; or the authors.

Summaries and key words of the following reports are presented with relevance to this report's title subjects in mind.

The bibliographic information is listed alphabetically by author. A subject index is also provided.

Annotated Titles

#1

Alaska Highway Pipeline Panel. 1977. Biological Environment. In: The transmission of Prudhoe Bay gas to American markets: a preliminary environmental comparison of the Canadian Arctic Gas Pipeline and the Foothills (Yukon) Pipeline in the Yukon and Northwest Territories. Winnipeg. 420 pp.

Abstract

Thirty-eight species or groups of species of the components mammals, birds, fish and vegetation are selected as a representative basis on which to compare the relative effects of the two proposed pipeline projects on the biological environment. With respect to furbearers, it is suggested that the Alaska Highway route is preferable above the Arctic Gas route. Of a number of fubearer species (wolf, wolverine, arctic fox, beaver, muskrat) a short outline of the status is presented along with a discussion of the potential impact of the two proposed pipeline routes on these species.

Key words: (small) mammals, habitat, distribution, management, Yukon Territory.

#2

Anderson, R.M., A.L. Rand. 1943. Variation in the Porcupine (Genus Erethizon) in Canada. Can. J. Res. 21: 292-309.

Abstract

The porcupines of Canada have usually been referred to two distinct species. A survey of material in the National Museum of Canada shows that they actually represent but one species, Erethizon dorsatum, with five geographical races, which are summarized in this paper. Each form is differentiated by a mosaic of external and internal characters, some of

which frequently occur in other forms. There is considerable individual variation. Some overlapping of characters through individual variation occurs in widely separated populations. Where two rather distinct subspecies meet, intergrades occur, but intergradations in skull characteristics do not always occur in the same geographical area as intergradations of pelage characters. (Yukon specimens examined were collected from the vicinity of Teslin Lake, from Parent Creek and Whitehorse).

Key Words: mammals - porcupine, taxonomy, techniques - measurements, southern Yukon Territory.

#3

Anderson, R.M. 1946. Catalogue of Canadian Recent Mammals. Nat. Mus. Can. Bull. 102, Biol. Series 31: 1-238.

Abstract

A list of Canadian recent mammals with information on taxonomy, type locality and distribution.

Key Words: (small) mammals, taxonomy, distribution, Yukon Territory.

#4

Anon. (yearly). Fur Production. Statistics Canada: Agricultual Statistics Division. Ottawa.

Abstract

A report of the number and value of pelts produced, by kind, in Canada.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#5

Anon. (yearly). The fur industry. In: Canada Year Book. An annual review of economic, social, and political developments in Canada. Supply and Services Canada. Hull.

Abstract

Presents statistics on fur harvest's values and marketing across Canada.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#6

Anon. (1932, 1936, 1941, 1947). Fur production of Canada, seasons 1930-31, 1934-35, 1939-40, 1945-46. Fur Statistics Branch. Department of Trade and Commerce. Ottawa. 21 pp, 17 pp, 17 pp, 17 pp.

Abstract

These reports present statistics of raw fur production (kind, number, total value and average value of pelts of fur bearing animals), by province or territory. Statistics of imports and exports are also included in the report.

Key Words: fur, harvest, economics, distribution, statistics, Yukon Territory.

#7

Anon. 1974. The National Atlas of Canada. Department of Energy, Mines and Resources and Information Canada. Ottawa. 254 pp.

Abstract

Atlas. Included are historical data on number, value and origin of raw furs.

Key Words: fur, harvest, economics, statistics, history, Yukon Territory.

#8

Anon. 1976. The Canadian fur garment industry. Textile Apparel Review 8:1-7.

Abstract

This paper is a review of a survey of the fur garment industry by the Textile/Apparel Department. The present structure of the industry, its operating characteristics and performance are outlined.

Key Words: fur, economics, Yukon Territory.

#9

Anon. 1977. Proposal to purchase a trapper owned auction outlet. Prepared for Nor' West Fur Federation. P.M. Associates Ltd. Winnipeg. 77 pp.

Abstract

The study is directed towards assessing the financial viability of purchasing Dominion Soudack Fur Auction Sales (1972) Ltd.

Fur production data are presented, including those from the Yukon Territory.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#10

Anon. 1978. Report on the status of Canadian Wildlife used by the fur industry. Department of Industry, Trade and Commerce, in association with the Canada Fur Council. Ottawa. 66 pp.

Abstract

An account of furbearers in Canada with information on legal and general status, population abundance, conservation methods and management employed, harvest 1975-76, potential harvest (by province or territory). Also included is a table with statistics on numbers and value of pelts produced, by kind, in Canada, of the seasons 1974-75 and 1975-76.

Key Words: (small) mammals, fur, harvest, abundance, distribution, Yukon Territory.

#11

Anon. 1980. Kluane Indian harvesting rights. Kluane Tribal Brotherhood. Submitted to Minister of Renewable Resources. Whitehorse. 55 pp.

Abstract

A documentation of aboriginal interest in the lands now contained within the Kluane Game Sanctuary with suggestions of means by which native harvesting rights can be formally recognized.

Key Words: (small) mammals, harvest, southern Yukon Territory.

#12

Anon. 1981. Wildlife Ordinance. Chapter 16, Ordinances of the Yukon Territory. Government of the Yukon Territory. Whitehorse. 61 pp.

Abstract

Wildlife Ordinance.

Key Words: (small) mammals, management, Yukon Territory.

#13

Anon. (1981, 1982, 1983, 1984, 1985). Yukon Wildlife Management Projects. Fish and Wildlife Branch, Yukon Department of Renewable Resources. Whitehorse.

Abstract

The section on furbearer management presents an overview of current projects.

Key Words: (small) mammals, fur, management, Yukon Territory.

#14

Anon. 1982. Trapping Regulations. Wildlife Act, sections 155 and 167. Executive Council. Government of the Yukon Territory. Whitehorse.

Abstract

Describes the trapping regulations.

Key Words: fur, harvest, management, Yukon Territory.

#15

Anon. annual. Trapping regulations synopsis. Yukon Department of Renewable Resources. Whitehorse.

Abstract

This brochure provides information on trapping regulations, exchanging pelts, bear hunting, moose hunting, caribou hunting, trapping and land use, humane trapping in the Yukon Territory.

Key Words: fur, harvest, management, Yukon Territory.

#16

Anon. (n.d.). Yukon Resource Vaues - A Perspective. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 15 pp.

Abstract

The report discusses the values of wildlife resources in comparison with forestry, focussing on the Nisutlin River valley.

Key Words: (small) mammals, habitat, economics, southern Yukon Territory.

#17

Anon. (n.d.). Humane vs inhumane taps. Unpubl. Rep. Wildlife Management Branch. Yukon Department of Renewable Resources. Whitehors. 4 pp.

Abstract

This paper discusses the use of the leg-hold trap in the light of the current public debate on humane trapping. Also discussed are practical and pedagogic aspects of the introduction of a human trapping system.

Key Words: fur, harvest, management, Yukon Territory.

#18

Anon. Occasionally Published. Renewable Resources Bulletin. Fish and Wildlife Branch, Yukon Department of Renewable Resources. Whitehorse.

Abstract

This is a newsletter highlighting current management progams or concerns and biological information of wildlife. The following issues regarding the furbearing industry and trapping industry have appeared:

Vol 1, no 9. February 27, 1984. Wolf Management Studies - Southern Yukon. 2 pp.

Vol 1, no 9. March 19, 1984. Trapping - Utilization of a Renewable Resource. 2 pp.

Vol 2, no 10. January 28, 1985. Lynx - in pursuit of the snowshore hare. 2 pp.

Vol 2, no 11. February 18, 1985. Snowshoe or Varying Hares. 1 pp.

Key Words: mammals - wolf/lynx/snowshoe hare, management, harvest, history, education, Yukon Territory.

#19

Archibald, W.R. 1977. The history, development and present direction of the fur industry in the Yukon Territory. In: Proc. Third Ann. W. Fur Managers Conf. Alberta Recreation, Parks and Wildlife. Edmonton. pp. 4-20.

Abstract

The paper presents an overview of trapping in the Yukon Territory. It outlines the utilization of furbearing animals by indigenous man prior to the arrival of whitemen and traces the development of the fur industry to the present. Critical stages in the evolution of trapping in the Yukon are identified and an assessment is made of their impact on the industry today.

Key Words: fur, harvest, history, Yukon Territory.

#20

Archibald, W.R., W. Olson. 1977. 1976/77 Fur report. Unpubl. Rep. Wildlife Management Branch. Yukon Department of Renewable Resources. Whitehorse. 12 pp.

Abstract

This report summarizes the fur harvest of the Yukon Territory of the season 1976/77.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#21

Archibald, R. 1978. Future of trapping in the Yukon Territory. In: Proc. 4th. Ann. W. Fur Managers Conf. Yellowknife. pp. 82-88.

Abstract

Fundamental problems threatening the survival of the Canadian wild fur industry are discussed. The author provides arguments for a continued role in man's future of this renewable form of resource exploitation and suggests changes in attitudes and responsibilities both within the government and within the fur industry itself.

Key Words: fur, harvest, management.

#22

Archibald, W.R. 1978. 1977/87 Fur harvest report. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 17 pp.

Abstract

This report summarizes the fur harvest of the Yukon Territory of the season 1977/78.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#23

Archibald, R. 1978. Yukon Data System. In: Proc. 4th. Ann. W. Fur Managers Conf. Yellowknife. pp. 191-200.

Abstract

The paper describes the computerized fur harvest inventory system for the Yukon Territory, introduced in 1977.

Key Words: fur, harvest, statistics, Yukon Territory.

#24

Archibald, W.R. 1979. 1978/79 Fur harvest report. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 11 pp.

Abstract

This report summarizes the fur harvest of the Yukon Territory of the 1978/79.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#25

Archibald, R. 1980. Forest Fires and Pine Marten. In: Hoefs, M., Russell, D. (eds.). Proc. Workshop "Wildlife and Wild Fire". pp. 190-195. Whitehorse. 1979.

Abstract

The probable effects of forest fires on pine marten and the feasibility of using controlled burns as a management tool for marten habitat manipulation are focussed upon. Marten are opportunistic feeders, but annual staple is redbacked vole. This vole requires mesic sites which are found in association with mature spruce or fir forests. Marten's winter hunting strategy is best adapted to mature spruce forests, as marten need shallow snow conditions or wind falls in order to be able to gain access to the under snow areas. Forests subject to extensive logging lack these conditions. During summer, marten will feed on berries and voles within meadows and even burns. It appears that a mosaic of forest communities will

provide greater food diversity but that such areas must be associated with mature spruce forests to provide winter cover and food. Fire moving through such a forest community should be less destructive owing to the discontinuity of fuel types. If fire is to be used, the following prerequisites would have to be recognized: 1) Pockets of mature spruce should be left for overwintering requirements; 2) It is vital to protect old growth communities; and 3) Islands of mature forest should be connected with corridors to facilitate immigration.

Key Words: small mammals - marten, habitat, diet composition, management, Yukon Territory.

#26

Archibald, R. 1980. Fur management philosophies and objectives in the Yukon. In: Proc. 6th. Ann. Western Fur Managers Conf. pp. 45-66. Whitehorse.

Abstract

The paper presents the territorial policy statements regarding fur management in the Yukon Territory with in addition a set of underlying principals of the Yukon Wildlife Branch which guide program direction.

Key Words: fur, management, Yukon Territory.

#27

Archibald, W.R., R.H. Jessup. 1984. Population dynamics of the Pine Marten (Martes americana) in the Yukon Territory. in: Olson, R. et al (eds.) Northern Ecology and Resource management. pp. 82-97. The University of Alberta Press, Edmonton.

Abstract

Population dynamics of pine marten (Martes americana) were studied on a 14 km sq study area in south-central Yukon from 1978 to 1981. Fall and spring densities for resident marten were .6 and .4 per km sq, respectively. Male home ranges averaged 6.2 km sq; female home ranges averaged 4.7 km sq. Home ranges were exclusive within sexes. There appeared to be two periods of dispersal, one for the young-of-the-year marten and one for overwintering marten. The conception rate for yearling maten (3.3) was significantly different from that of older marten (3.8). Population growth rates in a harvested population appear to be a function of trapping frequency and trapping intensity. Management implications of the results are discussed.

Key Words: mammals - marten, movements, abundance, reproduction, management harvest, techniques - capture/recapture/telemetry/analysis of reproductive tract, southern Yukon Territory.

#28

Armstrong, N.A.D. 1936. Yukon yesterdays. Thirty years of adventure in the Klondike. John Long Ltd. London. 287 pp.

Abstract

Pp. 248: ...Our bag of fur was 28 marten, 1 cross fox, 3 weasel, 7 lynx... also 3 squirrels and 2 mice. Two martens escaped from our traps, each leaving a foot behind, and one was eaten up by some other animal, while two traps were carried off either by a marten or a lynx... (South MacMillan River).

Key Words: (small) mammals, fur, harvest, central Yukon Territory.

#29

Armstrong, N.A.D. 1937. After big game in the upper Yukon. John Long. London. 287 pp.

Abstract

Pp. 55: ...big catch was in 1899 when two white trappers ascended the MacMillan River and put out traplines in the vicinity of what is known as Moose Lake...Their bag of marten alone totalled four hundred and eight, including some beautiful pelts. They also had a big haul of mink and lynx. Pp. 56: ...My record bag of poisoned wolves was nine; they were all found dead and frozen solid within 100 yards of the bait. Pp. 66: ...saw a large lynx along the shore...(of Yukon River, below Pelly River, 1914). Pp. 95: ...saw a good-sized wolverine...(Kalzas Mountains, 1914).

A short section devoted to trapping techniques is presented (pp. 271-279), along with harvest statistics.

Key Words: (small) mammals, fur, harvest, distribution, central Yukon Territory.

#30

Auer, H.A. 1916. Campfires in the Yukon. Stewart & Kidd Co. Cincinnati. 204 pp.

Abstract

Appendix (pp. 204): The wolf is prevalent in the region visited though like the bear he "is hard to see", but his tracks are numerous on the sandbars, indicating his presence. These wolves are quite large, are black, white, gray, and mixed black and white color. They feed upon rabbits, mice, and caribou and moose calves, with an occasional sheep; their habits are those of the timber wolves of other localities.

Red foxes, silver foxes with cross, and black foxes are found in unsual

numbers in this region, and with mink, otter, lynx, and ermine complete the quota of fubearing animals. Ground squirrels, called by the guides "gophers", but being quite different from the true gopher, are very abundant and furnish food for both the Indian native and for the grizzly bears.

Key Words: (small) mammals, distribution, abundance, southwestern Yukon Territory.

#31

Baker, R.H. 1951. Mammals taken along the Alaska Highway. Univ. Kansas Publ. Mus. Nat. Hist. 5(9): 87-117.

Abstract

Mammals from along the Alaska Highway were obtained for the University of Kansas Museum of Natural History in the summers of 1947 and 1948. It is recognized that not al of the kinds of mammals at any one locality were taken. The following species were recorded from the Yukon River basin: Sorex cinereus cinereus Kerr, S. obscurus obscurus Merriam, S. palustria navigator (Baird), Lepus americanus macfarlani Merriam, Tamiasciurus hudsonicus columbiensis A.H. Howell, Citellus parryii plesius (Osgood), Eutamias minimus caneceps Osgood, Peromyscus maniculatus algidus Osgood, P. m. borealis Mearns, Synaptomys borealis dalli Merriam, Clethrionomys rutilus dawsoni (Merriam), Microtus pennsylvanicus alcorni, M. p. drummondii (Audobon and Bachman), M. longicudus vellerosus J.. Allen, M. oceconomus macfarlani Merriam, Mus musculus Linnaeus, Zapus hudsonicus alascensis Merriam, Erethizon dorsatum myops Merriam, Canis latrans incolatus Hall, C. lupus pambasileus Elliot, Vulpes fulva abietorum Merriam, Ursus species, Mustela erminea richardsonii Bonaparte, M. vison energumenos (Bangs), Lynx canadensis canadensis Kerr.

Key Words: (small) mammals, distribution, southern Yukon Territory.

#32

Banci, V.A. 1982. The wolverine in British Columbia: distribution, methods of determining age and status of Gulo gulo vancouverensis. B. Sc. Honours Thesis. Department of Biology, Simon Fraser University. Burnaby. 125 pp.

Abstract

A systematic study of wolverine was carried out using cranial measurements from samples collected from the British Columbia mainland, Vancouver Island and the Yukon Territory. No significant correlations between cranial dimensions and absolute age were evident. Several measurements distinguish juveniles from adults in pooled samples although variability was high. The enamel-line age determination technique was examined. The method is not recommended for aging wolvering due to high variability and difficulty in application. The value of cementum analysis for aging wolvering is discussed. Inter-sex and inter-regional comparisons were carried out using multivariate technique, discriminant analysis. Correct classification of 85.7%, 100%, and 100% was achieved for Mainland, Island and Yukon sexes, respectively. 94.1%, 100% and 42.9% of males, and 87.5%, 100% and 85.7% of females were correctly classified for Mainland, Island and Yukon regions respectively. Both inter-sex and inter-regional differences are not consistent and cannot be applied to the species as a whole. Differences between regions are not as great as for sexes. Males display greater variability than do females. The mainland sample displays the greatest variation among the three, indicating there may be more than one regional population on the Mainland. Inter-regional differences are slight and interpreted as a result of environmental modification. Results do not support subspecific classification for Gulo gulo vancouverensis. Wolverine in British Columbia are of general distribution. Wolverine on Vancouver Island are rare and occur mainly in the central mountainous regions. Habitat requirements and population characteristics need to be determined for Gulo in British Columbia.

Key Words: mammals - wolverine, distribution, taxonomy, techniques -

measurements/age-determination, Yukon Territory.

#33

Banfield, A.W.F. 1951. Investigation of Wildlife Conditions Klunae Game Sanctuary, Y.T., 1951. Unpubl Report, Canadian Wildlife Service, Edmonton. 32 pp and App.

Abstract

The object of the survey was to investigate the representations of the Department of Citizenship and Immigration for a portion of the Kluane Game Sanctuary to be declared a fur management area in which local Indians may hunt and trap under supervision. To this end, past and present use of the area and its animal resources by native people are investigated. Against this background and based on current distribution and abundance of game in the area and the feasibility of border enforcement it is recommended that the boundary of the area in the Kluane Game Sanctuary to be used for an Indian fur management block be limited to the area south of the highway between Edith Creek bridge and the White River and south to the crest of the first range of mountains.

Pp. 11: ...All observation and reports indicate that wolves are scarce in the Sanctuary and of little importance in controlling sheep populations under present conditions. Pp. 13: ...the Koidern Valley provides an excellent site for a beaver-muskrat fur management area...Beaver food, in the form of trembling aspen, willows and alders, is abundant along the streams. Muskrat food, in the form of sedges, pondweeds, duck weed and pond lily, is also abundant. The rhizomes of these plants would be available for winter food. Pp. 15: ...Beaver dams are visible in the Koidern Valley...

The attached annotated list of mammals includes the furbearers and small mammals: Cinereus Shrew, Timber Wolf, Coyote, Red Fox, Pine Marten, Arctic Ground Squirrel, Short-tailed Weasel, Mink, Otter, Wolverine, Lynx, Hoary marmot, Yukon Chipmunk, Red Squirrel, Beaver, White-footed Mouse, Dawson's Red-backed Vole, Long-tailed Vole, Muskrat, Porcupine, Collared Pika, Varying Hare.

Key Words: (small) mammals, fur, harvest, management, distribution, abundance, southwestern Yukon Territory.

#34

Banfield, A.W.F. 1961. Notes on the mammals of the Kluane Game Sanctuary, Yukon Territory. Nat. Mus. Can. Bull. 172, Biol. Series 65: 128-135.

Abstract

An annotated list of mammals recorded in the Kluane Game Sanctuary in June 1951 and May 1955. They are as follows: Cinereus Shrew, Grizzly Bear, Black Bear, Timber Wolf, Coyote, Fox, Pine Marten, Short-tailed Weasel, Mink, Otter, Wolverine, Lynx, Hoary marmot, Ground Squirrel, Yukon Chipmunk, Red Squirrel, Beaver, White-footed Mouse, Red-backed Vole, Long-tailed Vole, Muskrat, Porcupine, Collared Pika, Varying Hare, Moose, Osborn Caribou, Stone's Sheep.

Key Words: (small) mammals, distribution, abundance, southwestern Yukon Territory.

#35

Banfield, A.W.F. 1974. The mammals of Canada. University of Toronto Press. Toronto. 438 pp.

Abstract

Account of Canada's mammals, with information on phylogenetic relationships, physical characteristics, habits, population densities, home ranges, food habits, reproductive patterns, economic importance, distribution.

Key Words: (small) mammals, taxonomy, behaviour, abundance, diet composition, reproduction, economics, distribution, Yukon Territory.

#36

Beare, S.S. 1983. Diversity and habitat preference of small mammals in southern Yukon. In: Prox. 34th Alaska Science Conf. Whitehorse. pp. 68.

Abstract

During a study of small mammals near km 42 on the South Canol road, south-central Yukon Territory, 1142 animals of 14 species were captured in 23940 trap nights in 1979, 1980 and 1981. The Northern Red-backed Vole (Clethrionomys rutilus), which inhabited five habitat types, constituted 82.3% of the total catch and was clearly the numerically dominant species. The Meadow Vole (Microtus pennsylvanicus), second in abundance, accounted for 3.6% of the total captures, with 12 species comprising the remaining 14.1%. Clethrionomys rutilus abundance showed variation among seasons, years and habitats, but there was little evidence of multiannual cycle. Various demographic paremeters were examined in an attempt to determine the habitat preferred by Clethrionomys rutilus. Although abundances of this vole differed among habitats, body weight, body length and condition showed no significant differences among habitats. Young of the year voles were predominantly in age class I in 1979 and age class II in 1980, presumably as a result of an earlier onset of breeding in the second year. Otherwise age structure was similar across habitats. Overwintered females had more and significantly larger litters than young of the year females but there was significant difference in reproductive output per female between habitats.

Key Words: (small) mammals, distribution, abundance, demography, reproduction, habitat, techniques - capture/recapture, southern Yukon Territory.

#37

Beare, S.S. 1984. Relative abundance and habitat relationships of Clethrionamys rutilus in the south-central Yukon Territory. M. Sc. thesis, University of Alberta. Edmonton. 195 pp.

Abstract

During a study of small mammals near km 42 on the South Canol Road, south-central Yukon, 1142 animals of 14 species were captured in 23,940 trap nights in 1979, 1980 and 1981. The northern red-backed vole (Clethrionomys rutilus), which inhabited five habitat types, constituted 82.3% of the total catch and was clearly the numerically dominant species. The meadow vole (Microtus pennsylvanicus), second in abundance, accounted for 3.6% of the total captures, with 12 species comprising the remaining 14.1%. Clethrionomys rutilus abundance varied among seasons, years and habitats, but there was little evidence of a multiannual cycle. Various demographic paremeters were examined in an attempt to determine the habitat preferred by C. rutilus. Although abundance differed among habitats, body weight, body length and condition showed no significant differences among habitats. Young of the year voles were predominantly in age class I in 1979 and age class II in 1980, presumably as a result of an earlier onset of breeding in the second year. Otherwise, age structure of the samples was similar across habitats. Overwintered females had more and significantly larger litters than young of the year females, but there was no significant difference in reproductive output per female between habitats.

Two of the 5 habitats (Habitats II and III) appeared to be the most favourable with reference to both animal abundance and quality, as measured by the various demographic parameters. Protection from predation is assumed to be the primary reason for greater vole abundance in sites with more cover. Habitats II and III possessed much debris and the plant species afforded ground cover for the resident voles.

Key Words: small mammals, abundance, habitat, demography, reproduction, techniques, - capture/age determination/analysis of reproductive tract, southern Yukon Territory.

#38

Beaver, R. 1978. An evaluation of the impact on furbearers of the Alaska Highway realignment. Prepared for Department of Public Works and Yukon Game Branch, Government of the Yukon Territory. Wildlife Management Branch. Yukon Department of Renewable Resources. Whitehorse. 26 pp.

Abstract

A ground based survey of the proposed realignments to the Alaska Highway, conducted in July and August of 1978, revealed six areas of potential conflict between furbearer populations found in such areas and the activities associated with reconstruction. Rationale for the delineation of such areas is given and encompassed the concerns of: 1) habitat destruction or alteration, 2) disturbance, 3) increased public access. Recommendations for alternate construction timing and/or routings are presented. Mapping of forest tree and shrub species on conjunction with evidence of furbearer presence was not sufficient to allow definitive predictions of impact to be made from habitat maps alone, however, trends are noted and discussed. Maps are presented also to assist in the orientation of field personnel. Investigation of known borrow pit sites is conducted but more sites are anticipated and deserve similar treatment as they become known. Aditional survey work, as proposed in the agreement, is supported in specific impact areas as outlined.

Key Words: (small) mammals, habitat, distribution, management, techniques-survey, southern Yukon Territory.

#39

Bond, J.H. 1948. From out of the Yukon. Binfords and Mort. Portland. 220 pp.

Abstract

Pp. 188: ...This was about the largest wolf I had ever seen...(along

the Beaver River, Mayo). Pp. 201: ...and as we drifted closer I saw that it was a large lynx...(Stewart River).

Key Words: mammals, distribution, central Yukon Territory.

#40

Boutin, S. 1979. Spacing behaviour of snowshoe hares in relation to their population dynamics. M.Sc. Thesis. Department of Zoology, University of British Columbia. Vancouver.

Abstract

The importance of spacing behaviour on snowshoe hare population dynamics was studied in the Kluane Lake, Yukon area from May 1978 to July 1979. Two study sites, each consisting of a 9.29 ha live-trapping grid, were used to capture and tag animals. Numbers were increasing over the study with May breeding densities going from 8 in 1978 to 20 in 1979. The increase was a result of higher than average (12.25 young caught per female) natality rates. Yearly juvenile and adult survival rates were equal at 20%.

A total of 116 hares were equipped with radio-transmitters during the study. These were monitored to determine home range locations and invididual movements. Home ranges overlapped by at least 30% between and within sexes throughout the year. Home ranges averaged larger for males (4-8 ha) than females (3-5 ha). During periods of birth, females contracted the size of their home range but not significantly. Fourteen radio-tagged individuals dispersed during the study. They moved an average of 1045 m and were from all age and sex classes with the exception of adult males.

To determine the importance of spacing behaviour on breeding females' home ranges and movements I removed a small group of individuals from a much larger group of radio-tagged animals. The initial removal was done 10 days before the birth of the first litters and was then repeated 10 days before birth of the second litters. Home ranges were monitored before and after

each removal and compared to a control area. Females did not increase their use of the removal area nor was it colonized by individuals from beyond the ring of radio-tagged animals. This suggests that breeding female densities were not limited by spacing behaviour. Females did shift use of their home range after the removal by spending up to 30% more time on the removal side of their range. This suggests that females use their range in a manner that avoids interaction.

Adult females were removed from one of the study areas during the late breeding season to assess their influence on juvenile movements and survival. There were no significant differences in these aspects between the manipulated area and control. However, telemetry showed that juvenile and adult female home ranges overlapped little on the control area during September. The movements to create this situation were done by juveniles at a time before they could be trapped or radio-tagged. This suggests that some juveniles may leave their parents' home ranges at a time prior to which is detectable by conventional trapping and telemetry. The need for further investigation in this area is stressed.

Key Words: small mammals-snowshoe hare, behaviour, movements, techniques-telemetry/ capture, southwestern Yukon Territory.

#41

Boutin, S. 1980. Effect of spring removal experiments on the spacing behaviour of female snowshoe hares. Can. J. Zool. 58(12): 2167-2174.

Abstract

On an area in the southern Yukon four adult female snowshoe hares were removed in May 1979, 10 days before birth of the first litter. For the next 35 days, movements of the surrounding females were monitored by livetrapping and telemetry, and compared with those of females on a control area. The experiment was repeated in June 1979 by removing six more females. Animals adjacent to the removal areas did not shift their home ranges to cover the

vacated area, nor did immigrants come in from further outside. Females did spend significantly more time on that portion of their range nearest the removal areas. Females use their home range in a manner that would be expected to avoid interaction. Spacing behaviour following first litter conception did not limit breeding density.

Key Words: small mammals-snowshoe hare, behaviour, movements, techniques-capture/re-capture/telemetry, southwestern Yukon Territory.

#42

Boutin, S. 1980. Spacing behaviour of snowshoe hares and its effect on population density. Ph.D. Thesis. Department of Zoology. University of British Columbia. Vancouver.

Abstract

If spacing behaviour of snowshoe hares limits juvenile survival and recruitment during summer, removal of this behaviour should produce an increase in these parameters. During the summers of 1980 and 1981 I removed all adults from an 8 ha trapping grid and all first litter juveniles from another. Experiments were conducted in the southwestern Yukon during a period when hare populations were at peak densities. The experimental removals did not increase survival, but recruitment relative to control areas was higher to the adult removal grid in 1980 and to both the adult removal and juvenile removal grids in 1981. To determine whether juveniles trapped for the first time were residents or immigrants, I implanted adult females with calcium-45. This was passed to nursing young and could be detected by scintilation counting of a sample of bone tissue taken from new recruits. Any juvenile without radioactive calcium was classed as an immigrant. The increase in recruitment on the removal areas was due to increased immigration. The number of resident recruits was equal on all study areas. Results support the hypothesis that spacing behaviour limits juvenile immigration but not survival. However, immigration to control

areas was also high with immigrants making up 70% of the total number of juveniles present on the areas in October.

If food limits showshoe hare numbers, addition of food should lead to increased numbers through higher survival and immigration. If food supply influences spacing behaviour of hares, home range size should decrease with food addition. I supplied peak (1980) and declining (1981) hare populations on 8 ha grids (one in 1980 and 2 in 1981) with laboratory rabbit chow for 1-4 months during March through June. Population size was determined by live-trapping and movements of animals were monitored by radio telemetry. Food addition decreased weight loss and improved survival of hares in both years. Onset of breeding was advanced in males but not females. In 1980 the number of males on the food addition area was 1.4 times higher than those on the control area while the number of females did not differ. In 1981, numbers of males and females were up to 3.6 and 3.2 times higher respecitvely on the food addition area as compared to those on the control area. The differences were due mainly to increased immigration. Residents responded to food addition by decreasing home range size in 1980 but not in 1981. Movement of immigrants, as monitored by telemetry, to the food addition area indicated that some established home ranges there while others returned to their old home ranges. Results support the hypothesis that hare densities are limited by winter food supply during the early phase of the cycle and possibly during the peak phase as well. A decrease in home range size was not necesary for immigration to occur.

To examine the relationship of dispersal to changes in showshoe hare numbers, I monitored dispersal of hares during a population increase, peak, and early decline (1978-1982). Two methods were used: 1) a conventional removal grid in which all animals caught each trapping session were removed; and 2) telemetry monitoring of radio-collared individuals. The number of animals caught on the removal area was correlated with density on the control area but per capita dispersal rate was not. Both the number of dispersers and the per capita dispersal rate were highest during the period of peak densities on the control area. Dispersal, as measured by the removal grid, was not density dependent.

Only 23 of 265 radio-collare animals dispersed during the study. Dispersal accounted for an average of 11% of the losses of radio-collared

animals during the population decline. Results from both telemetry and the removal grid indicated that the decline in hare numbers was not due to dispersal. The amount of dispersal as determined by the removal grid was much higher than that determined by telemetry. The difference was more pronounced during the population peak and early decline. This was due to the removal grid over-estmating the average amount of dispersal that was occurring because it attracted animals to it. These results point to the need to be more critical of the underlying assumptions of the removal grid method as a way of monitoring dispersal.

Key words: small mammals-snowshore hare, behaviour, reproduction, movements, techniques-capture/recapture/telemetry, southwestern Yukon Territory.

#43

Boutin, S. 1984. Effect of late winter food addition on numbers and movements of snowshoe hares. Oecol. (Berl.) 62: 393-400.

Abstract

Peak (1980) and early decline (1981) populations of snowshoe hares were supplied with extra food in late winter to test the hypothesis that snowshoe hare populations are limited by food supply. Food supplemental populations increased through immigration in both years but the response was more pronounced in the early decline population. Animals supplied with extra food lost less weight, had higher survival in some cases, and males began to breed earlier. Immigrants to the food addition area were of two types: those that established home ranges on or near the area and those that spent only a brief time there before returning to their initial range. The possibility that these latter individuals were prevented from remaining on the food grid by residents is discussed. Results indicate that food supply is one factor that can limit peak and declining populations of snowshoe hares but the relation of spacing behaviour to food supply and numbers must also be considered.

Key Words: mammals-snowshoe hare, abundance, movements, reproduction, techniques-telemetry/capture/recapture, southwestern Yukon Territory.

#44

Boutin, S. 1984. Home range size and methods of estimating snowshoe hare densities. Act Zool. Fennica. 171: 275-278.

Abstract

Telemetry was used to produce density estimates of snowshoe hares (Lepus americanus) in the southwestern Yukon, Canada. These estimates were compared to complete enumeration (minimum number alive-MNA) and boundary strip density estimates as determined by conventional live trapping. MNA density estimates were 3.2 to 8.6 times higher than those generated by telemetry. The addition of a boundary strip equal to the mean home range radius still produced estimates 1.5-2.7 times higher than those from telemetry data. I found that MNA estimates were insensitive to changes in effective trapping area caused by changes in mean home range size. The result was that MNA did not reflect actual changes in density on the study areas. These problems are discussed in terms of designing experiments in which absolute density is a critical variable.

Key Words: mammals-snowshoe hare, abundance, movements, techniques-telemetry/capture/recapture, southwestern Yukon Territory

#45

Boyer, P.C. 1981. East Kluane land use plan. Draft final. Prepared for: Resource Planning Branch, Yukon Department of Renewable Resources. Whitehorse. 47 pp.

Abstract

Pp. 11: ...With the exception of wolverine, which is rare, a much greater harvest of all other furbearers could be sustained in the planning area. Translated into economic terms per trapper this could mean a 3-7 fold incease in economic return assuming a buoyant fur market. The high usage of traplines, combined with the predominance of native people trapping suggests the importance of the fur resource to the pursuit of a traditional land based lifestyle. The recommended policy for the planning area recognizes trapping as an important contributor to the lifestyle of the area and designates the lowland areas where the priority species (e.g. squirrels, muskrats, and beaver) are largely harvested as secondary uses.

Key Words: (small) mammals, fur, harvest, management, southwestern Yukon Territory.

#46

Bunnell, F.L. 1980. Fire and Furbearers. Report to Forest Resources Division, Department of Indian Affairs and Northern Development. Unpubl. Rep. Wildlife Management Branch, Whitehorse. 60 pp.

Abstract

The report deals with the effects of fire on northern furbearers. Nonextensive and infrequent fires should benefit beaver muskrat and mink. Fire should have no detrimental effect on arctic fox and little on red fox. Lynx probably require mature forests as winter cover; their maor prey species recovers within two years of burning. Squirrel will decline dramatically following an intense burn and will not recover within 20 to 25 years. Marten require mature forests as winter cover. They will benefit from small burns if winter cover exists within their home range.

Obvious gaps in available information regarding potential impact of fie on furbearers appear to be: 1) Patterns of vegetation succession in boreal

forest; 2) Effects of fire on aquatic resources; 3) Effects of fire on small mammal species; 4) Empirical evidence of fire's effect on furbearers; and 5) Biology of the major furbearers.

Key Words: (small) mammals, habitat, management, research, Yukon Territory.

#47

Cameron, A.W. 1952. Notes of mammals of Yukon. Nat. Mus. Can. Bull. 126: 176-184.

Abstract

A faunal survey of southern Yukon Territory was made in the summer of 1949. This paper is a report on the taxonomy of this collection with annotations regarding numerical status, distribution, and other pertinent data drawn from notes maintained by the field collectors. Included are: Cinerous Shrew, Mountain Water Shrew, Little Brown Bat, Black Bear, Grizzly Bear, Short-tailed Weasel, American Wolverin, Fed Fox, Coyote, Timber Wolf, Hoary Marmot, Yukon Ground Squirrel, Yukon Chipmunk, St. Elias Red Squirrel, Yukon Flying Squirrel, Deer Mouse, Dawson Red-backed Mouse, Meadow Vole, Macfarlane's Tundra Vole, Muskrat, Snowshoe Hare, Moose, Dall's Sheep.

Key Words: (small) mammals, distribution, abundance, southern Yukon Territory.

#48

Campbell, R. 1958. Two journals of Robert Campbell (Chief Factor Hudson's Bay Company) 1808 to 1853 (early journal - 1808 to 1851); later journal - September 1850 to February 1853) Ltd. edition, Seattle, Washington. 151 pp. Yukon Archives, Whitehorse.

Abstract

Pp. 76:... Toward spring the Indians killed a great number of deer and brought in fur and meat which enabled us to better our condition and also to make a good trade. Pp. 81:...an Indian handed me a large parcel of furs as a present or token of reconciliation. Pp. 85:... and though there were plenty bears, beaver foxes, marten, wolves etc., the Indians had hitherto done little in the way of hunting except to meet their own wants of food and clothing, the latter being entirely made of skins.

Key Words: mammals, fur, harvest, history, central Yukon Territory.

#49

Carr, D.W. 1968. Hunting, trapping and fishing in the Yukon Territory. In: D.Wm. Carr & Associates Ltd. 1968. The Yukon economy. Its potential for growth and continuity, Pp. 175-202. Prepared for Department of Indian Affairs and Northern Development and the Government of Yukon Territory, Ottawa.

Abstract

Fur production in the Yukon has declined absolutely since 1945. In 1966 and 1967 the value of fur output in the Yukon was below $100,000. In 1965-66, a total of 395 trappers were licensed in the Yukon. Incomes from trapping were mostly low and in recent years averaged less than $400.00 per license. The number of trappers is expected to decline as more attractive employment opportunities increase in the Yukon. Because the fur purchasing services in the Yukon have been declining with the decline in trapping, it is recommended that some public support for a fur auction or other suitable marketing agency be provided to serve these native trappers until support is no longer warranted (harvest statistics for the period 1946-1966 are listed).

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#50

Clarke, C.H.D. 1946. Biological reconnaissance of lands adjacent to the Alaska Highway in northern British Columbia and the Yukon Territory. Lands, Parks and Forests Branch. Department of Mines and Resources. Ottawa. 41 pp.

Abstract

Included is a list of mammals reported along the Alaska Highway. Pp. 30:... With respect to fine fur in the Yukon the situation is not so encouraging. In many areas there is a depletion of long standing, but remaining stocks are still well enough distributed to provide the basis for general rehabilitation. Pp. 31:...when first discovered there was a good supply of fine fur. Now marten and beaver are very scarce...Lynx are more common but still do not contribute nearly as much to the fur crop of the region as some much cheaper species. Foxes, wolves, coyotes, muskrats, and mink, have remained common. So far as records go fox has always been the leading fur of the region. A list of certain mammals with notes on status and distribution is provided.

Key Words: (small) mammals, distribution, abundance, fur, harvest, Yukon Territory.

#51

Cottrell, T.J. 1975. An evaluation of the National Park planning process with implication for wildlife: a case study of Kluane National Park. M.A. Thesis, Faculty of Environmental Studies, University of Waterloo. 241 pp.

Abstract

The planning process for new National Parks has become more significant as recreational pressure increases and users influence development of Parks.

This study outlines that process and evaluates it in relation to Kluane National Park. The study also shows how data on wildlife resources, specifically canid predators and their prey, may be used to correlate the planning process with park ecosystems, and determine management programs for compatible uses.

The following is a summary of material relevant to furbearers. Slightly over 50 wolves in three groups use the park although the boundary does not enclose the total range of any pack. Two active dens were found; one adjacent to Kathleen Lake, the other south of Onion Lake. Both areas are critical to the wolves and contain some of the most important habitat for prey species of any areas within the park. Slightly over 50 percent of the wolves' diet during the spring was moose. Other foods were mainly small mammals. There were significant differences in the foods eaten by the adults and pups at both dens. During the denning period, the wolves may require small mammals as food near the den due to the restrictive influences of the pups on the pack's ability to catch large prey away from the den.

Key Words: mammals-wolf, diet composition, techniques-faecal analysis, southwestern Yukon Territory.

#52

Cruikshank, J. 1974. Through the eyes of strangers: a preliminary survey of land use history in the Yukon during the late nineteenth century. Report to the Yukon Territorial Government and the Yukon Archives. Whitehorse. 154 pp.

Abstract

This report is a summary of what has been written about Yukon Indian history and land use up until the early decades of this century. It surveys some of the evidence which geography, biology, archaeology, history and ethnography could contribute to a comprehensive study of historical land use. A brief account of fur animals and of the history of the fur trade is provided.

Key Words: (small) mammals, fur, harvest, economics, history, Yukon Territory.

#53

Dagg, A.I., C.A. Campbell. 1974. Historic changes in the distribution and numbers of wolverine in Canada and northern United States. Unpubl. Canadian Wildlife Service Report. Ottawa. 21 pp.

Abstract

Pp. 8:...In the Yukon, Rand (1945) recorded wolverines from the southern border to the Ogilvie Mountains. Mountains and glacial areas may be strongholds locally (Murray & Murray 1969)...

Key Words: mammals - wolverine, distribution, abundance, history, Yukon Territory.

#54

Dawson, G.M. 1887. Report on an exploration in the Yukon District, N.W.T. and adjacent northern portion of British Columbia. Geological Survey of Canada. Ottawa. 244 pp.

Abstract

Included are some fur harvest statistics.

Key Words: harvest, fur, statistics, Yukon Territory.

#55

Deems, Jr., E.F., A. Pursley. 1978. North American Furbearers. Their Management, Research and Harvest Status in 1976. International Association of Fish and Wildlife Agencies in cooperation with Maryland Department of Natural Reources. Maryland. 157 pp.

Abstract

A survey of the management, research and harvest status of furbearers in North America during 1976.

Key Words: (small) mammals, fur, management, research, harvest, Yukon Territory.

#56

Deems, Jr., E.F., D. Pursley. 1981. North American Furbearer Research Conducted in 1979/80. International Association of Fish and Wildlife Agencies in cooperation with Maryland Department of Natural Resources. Maryland. 62 pp.

Abstract

A survey of furbearers research conducted in North America, during 1979.

Key Words: (small) mammals, fur, research, Yukon Territory.

#57

Deems, Jr., E.F., D. Pursley. (eds.). 1983. North American Furbearers. A contemporary reference. International Association of Fish and Wildlife Agencies in cooperation with Maryland Department of Natural Resources. Maryland. 217 pp.

Abstract

This book discusses the management, controversy and economic values associates with wild furbearers, and it details the general status of 30 of North America's major terrestrial, semi-aquatic and aquatic furbearers. Of each species, information on description, habitat, feeding habits, behaviour, reproduction, population status and utilization status, as well as management status is provided.

Key Words: (small) mammals, fur, management, economics, statistics, habitat, diet composition, behaviour, reproduction, harvest, abundance, Yukon Territory.

#58

Dome Petroleum Ltd., Esso Resources Canada Ltd. and Gulf Canada Resources Inc. 1983. Beaufort Sea-MacKenzie Delta environmental impact statement, zone summary Beaufort Sea-MacKenzie Delta region.

Abstract

Pp. 17:...Although Arctic foxes usually spend most of their time on land, they are discussed here because the coastal populations may move onto the nearshore landfast ice during winter. On the sea ice they are known to scavenge on the leftovers of seals killed by polar bears, and they hunt seal pups in the spring. During spring and summer the foxes that went out on the ice go unto the land, where they feed on lemmings and other small animals. They also den on the land. The most important known denning areas along the coast for Arctic foxes occur between Demarcation Point and King Point. Other important denning areas are located between Kay Point and Shingle Point. Arctic foxes are trapped on the sea ice by residents of the coastal communities and provide a major source of money for many people.

Key Words: mammals-arctic fox, distribution, abundance, diet composition harvest, fur, northern Yukon Territory.

#59

Donaldson, I. 1971. A report on the Yukon River, Yukon Teritory. Wild River Survey. National Parks Service. Department of Indian Affairs and Northern Development. Ottawa. 18 pp.

Abstract

Pp. 5:...Fauna along the river consists of ...Lynx, fox, wolf, porcupine, beaver, muskrat...(between Whitehorse and Lake Laberge). Pp. 6:...wolf, lynx, eagles, hawks, geese, ducks, and a wide assortment of small game and birds inhabit the area...(Lake Laberge).

Key Words: (small) mammals, distribution, southern and central Yukon Territory.

#60

Elson, M.S., L.W. Steigenberger. 1976. An environmental assessment of the Sixty Mile River in summer. Submitted to Cogasa Mining Corp. by Northern Natural Resource Services Ltd., Vancouver. 115 pp.

Abstract

This report presents the results of our survey conducted in June 1976 of the Sixty Mile River on behalf of Cogasa Mining Corp. Preliminary information was collected to form a data base with respect to renewable resources in the valley from which to predict the effects of proposed large scale mining activity. Emphasis was placed on the collection of fisheries data.

(Included is a note of observations on wolves and other furbearers).

Key Words: (small) mammals, distribution, northern Yukon Territory.

#61

Envirocon Ltd. 1977. An environmental comparison of alternative pipeline corridors in the Yukon Territory; Volume 1 and 2. Submitted to the Environmental Assesment Panel Alaska. Highway Pipeline Project. Envirocon Ltd. Vancouver. 214 pp.

Abstract

A comparison of the environmental implications of major alternative gas pipeline corridors through the Yukon Territory. A program was designed to achieve an overall integration of potential environmental impacts. The impact values were computed and the corridors compared. The preference rankings conflicted, with the conclusion that a meaningful overall ranking of these alternative corridors cannot be derived. It is concluded that factors other than environmental ones should be considered to arrive at a definitive decision regarding pipeline corridors in the Yukon Territory (Aquatic furbearers are included as one of the eight parameters of the wildlife component).

Key Words: (small) mammals, habitat, management, Yukon Territory.

#62

Fancy, S.G. 1981. Daily movements of Red Squirrels, Tamiasciurus hudsonicus. Can. Field-Nat. 95(3): 348-350.

Abstract

This study of the daily movements of Red Squirrels (Tamiasciurus hudsonicus) near Atlin, British Columbia, in 1978 showed that the shortest movements were in the pre-breeding season (averaging 34.3 m, females; 88.1 m, male). Males made the greatest movements (mean to 169.9 m) during breeding and gestation whereas females made long movements (mean to 190.1 m) during lactation and postweaning. Both the breeding cycle and the availability o food supplies influence the daily movements.

Key Words: small mammals - Red Squirrels, movements, reproduction, techniques - capture, northwestern British Columbia.

#63

Farnell, R. 1982. Investigations into the status of the Finlayson Lake caribou herd, March 1981 to October 1982. Interim report, Fish and Wildlife Branch, Yukon Department of Renewable Resources. Whitehorse. 50 pp.

Abstract

Inventory efforts from March 1981 to October 1982 in the east central Yukon identified the Finlayson Lake caribou herd as the dominant population in the region. Demographic data gathered during this study indicate that the Finlayson herd, population maximum 2,500 caribou, is declining due to negative recruitment and heavy hunting pressure. Wolves are considered to be abundant, and the probable cause of poor recruitment. A management program is discussed.

Key Words: mammals-wolf, abundance, distribution, eastern Yukon Territory.

#64

Foothills Pipe Lines (Yukon) Ltd. 1978. Klondike Highway summer-fall ungulate and furbearer studies 1977. Prepared by Beak Consultants Ltd., Calgary. 419 pp. and app.

Abstract

Summer and fall investigations were conducted on ungulates and certain furbearers along the proposed Klondike Highway gas pipeline route. Ecological requirements of moose, woodland caribou, Dall's sheep, beaver and

muskrat were identified by means of a literature review. These requirements were then used in designing field studies directed at providing information on the seasonal distribution and relative abundance of these mammals. Data on the species studied were collected by means of aerial surveys, literature review, and by interviews with biologists working within the study corridor, Conservation Officers, and local hunters and trappers.

Aquatic furbearer concentrations are highest along southern portions of the route (Carmacks to Whitehorse) with the greatest relative abundance of beaver and otter having been documented between Little Braeburn Lake and Twin Lakes. The Reid Lakes area was identified as being of particular local importance in terms of numbers of muskrat.

Key Words: Mammals, distribution, abundance, techniques-survey, Yukon Territory.

#65

Foothills Pipe Lines (Yukon) Ltd. 1978. Summer-Fall (1977). Proposed Alaska Highway Gas Pipeline Route. Prepared by Beak Consultants Ltd. Calgary. 30 pp & app.

Abstract

In terms of aquatic furbearers, the majority of active beaver colonies were located in the Haines Junction-Ibex Pass area, the Mount Michie-Squanga Lake region and in the vicinity of the Rancheria River. Of those areas utilized by muskrats, the greatest amount of muskrat activity (as evidenced by the presence of push-ups) was observed at the Enger Lakes, Pickhandle Lakes, the Donjek River area and Mendenhall Marsh. Along the eastern section of the proposed pipeline route, muskrat push-ups were widely dispersed and occurred in low numbers. Few observations of terrestrial furbearers were made during the course of the study. Those observations which were made include two grizzly bears in the Slims River Valley and seven wolves in the vicinity of Mount Michie - Squanga Lake. An active wolf den was found north of Mount Michie.

Key Words: (small) mammals, distribution, abundance, habitat, techniques-survey, southern Yukon Territory.

#66

Fraser, F. 1953. Wildlife management in the Yukon Territory. Forest Chron. 29(2): 150-157

Abstract

In the early years of the development of the Yukon the game resources were largely wasted because of lack of management, the population depending to a great extent upon moose and caribou for its meat. Although conditions improved greatly in the interim between 1910 and 1949, the greatest indication of improvement has come about since the formation of a game department as a branch of the Territorial Government in 1949. Registered trap lines were introduced in 1950 to regulate the trapping of all fur bearing animals.

The majority of the trappers are native Indians of the Yukon and their predilection of numerous dogs has been a severe strain on the caribou and moose, the Yukon producing few fish as a substitute. As a result of education in conservation, however, the situation is improving.

In 1951 trail implantations of elk and bison were made in the southern portion of the Territory, the elk from one of the National Parks in Alberta and the bison from Alaska. If these experiments prove successful, additional animals will be imported. The danger of implanting an exotic species is realized and the wildlife authorities are watching developments with interest.

The Yukon is internationally known for its big game hunting, the climate and food varieties producing splendid animals of all native species. With proper management of the game resources of the Yukon, with a continued program of education, and finally, with the co-operation of the people who live and work in the Territory, the Yukon should long continue to be what is today, an attraction to the tourist, a cynosure to the trophy hunter of

Canada and the United States and a thoroughly pleasant place to live in the year round.

Key Words: management, economics, harvest, Yukon Territory.

#67

Fuller, W.A. 1955. Report on a general reconnaissance of game conditions in southern Yukon. Unpubl. Rep. Canadian Wildlife Service. Whitehorse. 9 pp.

Abstract

Pp.1:...Fur bearing animals have received little attention in recent years because of the reduced prices for most species... Pp.7:...The people interviewed ran the spectrum from "not enough predator control" to "too much predator control"...predator control is perhaps the "hottest" game issue in the Territory today...(included is a list of wolf occurence records).

Pp.9:...Little opportunity to gather information on fur bearers presented itself. Beaver seems to be a in a satisfactory position at present but many persons fear that the species could be easily decimated following a return of higher prices. Marten is another valuable species which requires investigation.

Key Words: (small) mammals, harvest, abundance, Yukon Territory.

#68

Fuller, W.A. 1957. Preliminary report on predator control in Yukon Territory. Unpubl. Rep. Canadian Wildlife Service. Whitehorse. 8 pp.

Abstract

Predator control has been carried on in the Yukon Territory for the

past four years. The purpose of Fuller's participation in this year's (1957) program was to begin to collect information which could be used to evaluate (1) the need for predator control and (2) the efficiency of the program in killing wolves. It was decided to have about 40 bait stations frozen in for subsequent reexamination (in the areas: Ross River, Dawson City, Old Crow, Atlin Road, Y.T.-N.W.T. boundary, Kluane Game Sanctuary). The author was plagued by bad luck in placing these stations (adverse weather, unserviceable aircraft).

Key Words: mammals-wolf, harvest, management, Yukon Territory.

#69

Fuller, W.A. 1958. Wolf control in Yukon Territory 1957-58. Unpubl. Rep. Canadian Wildlife Service. Whitehorse. 7 pp.

Abstract

A small scale wolf control project was carried out in the Yukon Territory in 1956-57 and the results were considered to be inconclusive. The program for 1957-58 was designed to complement the earlier program in order to reach some more definite conclusions. The preliminary results of 1956-57 were confirmed: wolves do not appear to be abundant over most of the Territory. It is feld that wolves are not common enought to constitute a hazard to game populations over most of the Territory. There is evidence in the age-ratios of the wolves destroyed that the population is probably in the low of population cycle. A low intensity program should be carried on to detect a population increase.

Key Words: mammals-wolf, harvest, abundance, management, Yukon Territory.

#70

Fuller, W.A. 1959. The need for predator control in Yukon Territory. Unpubl. Rep. Canadian Wildlife Service. Whitehorse. 5 pp.

Abstract

This report presents the results of three winters of predator control in Yukon Territory. The wolf population appeared to be at a low ebb during the three winters of the study. The few wolves taken by poison stations have been costly and have probably had no net effect on either wolf or game population examined suggests that the most likely future development will be an increase in wolves. The cost of killing wolves is inversely proportional to the abundance thereof and to this extent wolf control follows the well known economic laws of supply and demand and diminishing returns. If predator control is to be used as a tool of game management it must be under the control of the Game Department. Historical (not biological) evidence shows beyond reasonable doubt that poison, under the control of the state, is the only effective means to control wolves. The program is carried on for the past three years is supplying important information about the abundance, distribution and population trends of wolves. While the population is low, this aspect is of greater potential importance than the actual wolf kill. The annual expenditure is not felt to be unreasonable in relation to the information obtained and it is strongly recommended for the program to continue.

Key Words: mammals-wolf, harvest, management, economics, distribution, Yukon Territory.

#71

Gauthier, D., A. Harestad. 1983. Foraging behaviour and risk of predation in arctic ground squirrels (Spermophilus paryii). Simon Fraser University. Burnaby. In: Proc. 34th Alaska Science Conf. pp. 75. Whitehorse.

Abstract

Hypothesis concerning the effects of risk of predation on foraging behaviour of arctic ground squirrels were tested by manipulating the risk of predation in natural habitats. First season of work showed that relative time spent in feeding and predator detection varies with the level of risk of predation as well as the spatial patterns of feeding activities and the diet selection.

Key Words: small mammals-arctic ground squirrel, behaviour, diet composition, southwestern Yukon Territory.

#72

Gauthier, D.A. 1984. Population limitation in the Burwash Caribou Herd, Southwest Yukon. Ph.D. thesis, University of Waterloo. Waterloo. 247 pp. and Appendices.

Abstract

A four-year field study (1978 to 1982) in the Kluane region of the southwest Yukon Territory (61°N, 139°W) focused on factors affecting changes in the abundance and distribution of a herd of caribou (Rangifer tarandus caribou). The research examined five predictions arising from the hypothesis that predation, primarily by wolves (Canis lupus), was the major limiting factor to herd growth. The influences of forage, climate and disease on herd growth were also assessed.

Seasonal censuses (calving, rut and winter periods) and other surveys were undertaken to apportion changes in caribou numbers to changes in mortality, recruitment or ingress/egress, and to assess seasonal distribution. Thirty-nine caribou were radio-collared and used in capture-recapture analysis. Estimates varied from a minimum herd size of 330 to a maximum of 560. Bulls comprised 34% of animals older than calves. Calving occurred between 15 May and 13 June during 1979 to 1982. Pregnancy

rates varied from 78% to 82% during 1980 to 1982. Calves comprised 20% of the herd in calving periods, 19% during ruts and 18% during midwinters. Recruitment (% yearlings) varied from 9% in 1980 to 13% in 1981 and 14% in 1982. Neonate mortality (birth to 3.5 weeks) varied from 13 to 49% between 1980 and 1982. An average of 56% of calves died within five months of birth. Natural-mortality rates of adult/subadults varied between 6% and 9%. All evidence indicated stable or slowly increasing numbers until winter 1982 when movement from the study area was observed.

The total range size was 1978 km^2 with the herd occupying two distinct seasonal ranges in upland tundra plateaux separated by lowland boreal forest. Herd densities (based on seasonal range size) averaged 1.66 caribou per km^2. The proportion of the herd in each upland area varied consistently between seasons and years so that variations in numbers could be accounted for by fall and spring movements between the two upland areas and by mortality, recruitment and movement from the study area in winter 1982.

The results of visual examination of live-captured caribou (n=39) and blood analyses (n=15) showed no evidence of external disorders, viral antibodies, infections, nutritional deficiencies or anemias suggesting summer forage conditions were not resulting in deterioration of caribou physical condition.

Caribou primarily occupied sedge/grass and shrub habitats over all seasons, increasing their occupancy of sedge/grass habitats from calving to rut and winter. An analysis of fecal pellets showed that caribou primarily consumed shrub species, but substantially increased their use of lichens in winter. Dry-weigh estimates of lichen biomass far exceeded estimated requirements for the herd. Availability of winter forage to caribou was not influenced by snow thickness or hardness, both of which were well below documented threshold levels. Inclement weather during calving may have been a factor in high neonate mortality in calving 1982, but not in previous years.

Two wolf packs varying in total number from ten to fourteen animals preyed primarily on ungulates (65% of all prey consumed) and secondarily on small mammals (35%) over all seasons. The biomass consumption of prey determined through wolf fecal analysis showed that caribou were the dominant prey type (35% of all prey consumed) followed by moose (30%) and hare (21%).

Ungulate calves comprised only of 20% of prey types in the calving period. Wolves consumed caribou and moose in proportion to their available biomass during calving but disproportionately consumed caribou in rut and winter. Wolf predation accounted for 56% to 64% on average of total annual caribou mortality over 1981 and 1982. It is concluded that predation was likely the most important factor responsible for limiting herd growth. Wolves were the dominant predator, principally important in reducing caribou numbers outside of the immediate calving period.

The results are discussed relative to (1) seven models encompassing current wolf-ungulate predator theory (presented in the form of an analogy), and (2) two competing models of wolf-ungulate interactions, the step-sequence model and the multi-equilibria mode, currently in the literature. An explanation encompassing the interactions of predation, forage, climate, other animals and caribou behaviour is advanced to account for the observed seasonal distribution and movement patterns of the herd. The results of this study support the environmental-heterogeneity viewpoint of population regulation.

Key Words: (small) mammals-wolf, diet composition, abundance, distribution, techniques-faecal analysis, southwestern Yukon Territory.

#73

Geist, V., R. Ogilvie. 1972. Report on the McArthur Range, Yukon. Ct. Site 20, Panel 10. Unpubl. Rep. Environmental Sciences Centre and Department of Biology. University of Calgary. 86 pp.

Abstract

The report describes the unique features of this area, it specifies boundaries for the ecological reserve, and it proposes recommendations for its future management (with notes on the occurrence and distribution of small mammals and furbearers).

Key Words: (small) mammals, distribution, central Yukon Territory.

#74

Geist, V., R.T. Ogilvie, D.E. Reid, D.H. Gubbe, and I.D. Hubbard. 1974. Report on Wolf Lake panel 10, c.t. site 18. Unpubl. Rep. Faculty of Environmental Design, University of Calgary. 238 pp.

Abstract

The proposed Wolf lake ecological reserve encompasses, on a minimum of land, a complete ecosystem representative of the Cassiar biotic communities of the southern Yukon and north-central British Columbia. Its size is about 2.320 square miles, much of which is unproductive land but necessary to support the following significant areas: the Nisutlin River delta, the Wolf River, the Moraine Lakes, the greater part of the Englishman's and Cassiar Ranges.

The following is a summary of information pertaining to furbearers. beaver are quite common in the proposed reserve area. The density of hoary marmot is very low. It is felt to be unlikely that the two wolf packs believed to be in the proposed reserve area exceed 25 animals each. Wolverine are fairly common in the area. Otter were seen on the Nisutlin River. A list of furbearers and small mammals expected to be found in the area is presented.

Key Words: (small mammals, distribution, abundance, southern Yukon Territory.

#75

Gill, D. 1978. Large mammals of the MacMillan Pass area, Northwest Territories and Yukon. Amax Northwest Mining Co. Ltd. Vancouver. 59 pp.

Abstract

Includes the record of a kill of a Dall's sheep by a wolverine, in the

headwaters of a Hess River tributary.

Key Words: mammals, distribution, eastern Yukon Territory.

#76

Gimmer, D. 1975. Report on the status of Canadian Wildlife used by the fur industry. Department of Industry, Trade and Commerce and Canada Fur Council. Information Canada. Ottawa. 66 pp.

Abstract

A factual account of the status of Canadian wildlife harvested by trappers and used by the international fur trade is presented, with information on population abundance, conservation methods and management employed, legal and general status, harvest 1971-72, potential harvest, value of the harvest.

Key Words: (small) mammals, fur harvest, economics, abundance, management, Yukon Territory.

#77

Green, J.E. 1977. Population regulation and annual cycles of activity and dispersal in the arctic ground squirrel. M.Sc. Thesis, Department of Zoology. University of British Columbia. Vancouver. 193 pp.

Abstract

To determine if social behaviour is related to dispersal and to population regulation, a study was conducted of population changes and behaviour of two populations of arctic ground squirrel, Spermophilus undulates, in Kluane National Park. Within each study site a control area and one experimental area in which resident animals were removed at regular

intervals. On one site, two additional experiments were conducted. One involved the provision of an additional food supply and the other, a continuous removal of all adult males. The annual activity pattern of arctic ground squirrels in the Kluane region was characterized by a 7-8 month period of hibernation, emergence, establishment of territories, a short breeding period, development and emergence of young, restoration of fat deposits, establishment of fall territories and entry into hibernation. Two peaks of aggressive behaviour, as evidenced by interaction rates and wounding occurred, both coincident with the establishment of territories. The number of resident breeding adults changed little during the two and a half years of this study. Some fluctuations in the total population occurred as a result of mature animal and juvenile dispersal and recruitment of young. Four possible sources of in situ loss were investigated: predation, disease, starvation and dispersal. Loss due to disease of starvation was negligible. Interspecific predation accounted for an estimated 10-15% of the total annual loss. The three measures of dispersal: immigration to removal and control areas and emigration to control areas showed similar seasonal peaks. The correlation between the three measures indicates that dispersal is the major cause of in situ loss. Mature females dispersal was highest in August. Juvenile male dispersal was related to body size. Larger juvenile males tended to disperse first. A hypothesis is proposed suggesting that body size is related to the initiation of adult: juvenile aggression and the subsequent dispersal of juveniles. behavioural comparisons of dispersing and resident animals indicated few differences. Overall, dispersing animals tended to initiate fewer and receive more agonistic behaviour than resident animals. Animals of one class received and initiated most agonistic behaviour with animals of the same age and/or sex. This suggests that agression among animals of the same class may be an important cause of dispersal, particularly in juveniles. Further, related animals tended to show higher rates of amicable behaviour and lower levels of physical aggression than unrelated animals. A graphical model of population regulation in arctic ground squirrels based on behavioural and demographic relationships observed in this study, is proposed.

Key Words: (small mammals-arctic ground squirrel, behaviour, movements,

disease, reproduction, techniques-capture/recapture, southwestern Yukon Territory.

#78

Hagmeier, E.M. 1955. The genus Martes (Mustelidae) in North America: its distribution, variation, classification, phylogeny and relationship to Old World forms. Ph.D. Thesis. Department of Zoology, Univerisy of British Columbia. Vancouver. 469 pp.

Abstract

Three subgenera of the genus Martes exist in the world today. The first, Martes, consists of the following species: M. americana, M. foina, M. martes, M. melampus and M. zibellina; the second, Pekania, of only one, M. pennanti; and the third, Charronia, of one, M. flavigula, with sometimes a second, M. guatkinsi.

Of the subgenus of Martes, M. americana, M. martes, M. zibellina and possibly M. melampus are so closely related morphologically that there appears good reason to believe that they all belong to one species.

Two species occur in North America, namely M. american and M. pennanti. Until recently M. americana was considered to be made of two species, M. americana and M. caurina, and thirteen or so subspecies. The recent work of P.L. Wright indicates that while the two "species" are distinctive morphologically, they intergrade at the point where their ranges meet and must be considered one species, made up of three subspecies.

The concept of the subspecies proves in many respects to be unsatisfactory. It lacks reality, it involves the arbitrary partitioning of continea, it possesses no lower limit, and it is determined deductively, among other failings. This, together with the clinal nature of variation in the marten and fisher leads to the conclusion that marten of the New World should be considered represented by only two subspecies (M. a. americana and M. a. caurina), the fisher by one species, and no named subspecies.

The distribution of marten and fisher corresponds closely to the

distribution of the northern evergreen forests. The distribution is less precise in fisher than in marten.

Fossils referable to the genus Martes are first recorded from the Miocene of both the Old and New Worlds. Twenty-eight fossil species are known (when synonyms are disposed of) of which five are still living, two of them in North America. It appears that modern martens and fishers arrived in the New World (or evolved there) late in the Pliocene or early in the Pleistocene.

During the Pleistocene marten found habitable environments in the forest refugia of southeastern United States, the Rocky Mountains south of the ice sheet, the Coast and Cascade Mountains south of the ice sheet, and in Alaska and Yukon. Fisher presumably occurred in all of these except the Alaska-Yukon one. With postglacial climatic amelioration they migrated to the regions of their present occurrence.

Key Words: small mammals-marten, taxonomy, distribution, Yukon Territory.

#79

Hagmeier, E.M. 1956. Distribution of marten and fisher in North America. Can. Field-Naturalist 70(4): 149-168.

Abstract

Pp.163:...Marten: present through all of the forested part of the Territory, at least as far north as MacMillan River. Their present status is good and promises to remain so although the present total take is not equal to that of the catches of some single trappers 35 to 40 years ago. A locality not mapped is the lower Yukon region.

Fisher: Rand wrote that they barely enter the southern Yukon. The same author reported the "Mr. Drury of Whitehorse...trades a few fisher, but they do not average one a year, and he did not know of a single pelt that had undoubtedly been taken in Yukon...That fisher do occur in southeast Yukon, as usually assumed, is supported by trappers Leitman and Carmen of Tobally

Lakes, and Larsen of Beaver River. The former have taken three in several years' trapping; the latter one fisher in several years' trapping..." Rand said two to 38 skins have been traded in Yukon from 1920 to 1942, but gave no assurance that they were taken within the Territory. Turner reported that they occurred in the upper Yukon alley, but I do not know if he meant that portion in the Territory or not.

Key Words: small mammals-marten, fisher, distribution, fur, harvest, Yukon Territory.

#80

Hartman, G.F. 1975. Management of forest systems north of 60° for subsistence and recreational wildlife and fisheries: developing policies in Yukon. Wildlife Branch. Yukon Department of Renewable Resources. Whitehorse. 18 pp.

Abstract

Northern ecosystems are characterized by low productivity. There is great value in the Yukon in the fur bearing species. Furbearers depend on extensive areas of intact forest systems. Three major requirements for sound land use planning are knowledge of the capability of the land, knowledge of the social goals and aspirations of the people, a process of education and an ongoing exchange of dialogue that leads people to understand what achievement of their social goals might mean to the resource base.

The approach to fire in Yukon should be one of fire management. In some areas, fire generation may be a very useful land management tool, depending on the capability of the land and the resources we want to see enhanced. Forest management, fire protection and wildlife are the responsibilities of different levels of government. With such split jurisdictions and different implied resource objectives, it is not easy to achieve well integrated planning. Current information indicates that in

Yukon forest systems should be managed in strategies predominantly aimed at wildlife, furbearer and fisheries production. The type of forest uses and forest industrial needs for the Yukon are not the same as for other areas of Canada.

key Words: habitat, management, Yukon Territory.

#81

Hartman, G.F. 1979. Wildlife as an extractive industry. In: Development dilemma. Proc. Sixth N. Resouc. Conf. 1978. Whitehorse. pp. 29-32.

Abstract

The benefits and uses of fish and wildlife resources are shown to be selected in the Yukon's economy and possible expansions are discussed. The low productivity, and vulnerability of the Yukon ecosystem is emphasized.

The total annual value of wildlife is estimated at 10 million dollars. This value can be expanded and realized indefinitely with protection of the land base and good management. It is field that there is potential to expand on the use of the wildlife resource particularly where such use is coupled with the use of scenic values. Many trapping areas should also be used more effectively. Potential exists for the development of business based on the secondary processing of furs and hides. There may be potential for special rearing programs for species such as bison and muskoxen. however, because of the character of natural systems here such activities should not be developed on large scales or they will simply exceed the productive capacity of the land. An additional expansion of the use of wildlife would be to eveluate licence, seal and permit costs in most areas.

Because of the nature of the wildlife resource and the nature of increasing pressures on it there exists a need for a far more effective management and protection system. With good land use planning that recognizes the value of the resource and the expansion of the Wildlife Branch to meet its Management and protection responsibilities many pressures

can be ameliorated. Without these, the author is concerned about the long term viability of the fish and wildlife resource for any sustantial role in Yukon's recreation or commercial future.

Key Words: mammals, abundance, fur, habitat, economics, harvest, management, Yukon Territory.

#82

Hartman, G.F. 1981. Managing non-native renewable resource use in the north: rising expectations in unproductive ecosystems. In: Freeman, M.M.R. (ed.). Proc. First. Int. Symp. Renew. Resources and the Economy of the North. Banff. pp 30-55.

Abstract

A comprehensive survey of non-native renewable resource use and its management in view of its productive capabilities, general limitations, and competition with non-renewable resource development.

(Included are statistics of big game harvest, fur harvest, as well as a list of mammals with notes on status, distribution and abundance).

Key Words: (small) mammals, fur, harvest, statistics, distribution, abundance, Yukon Territory.

#83

Hartmann, G.F., R. Hayes. (n.d). Threatened species in Yukon, a preliminary list of birds and mammals. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 43 pp.

Abstract

A list of birds and mammals found in Yukon Territory with notes on

their status, discussed in the light of their special circumstances and potential environmental changes.

Key Words: (small) mammals, distribution, habitat, Yukon Territory.

#84

Hayes, R., P. Merchant, and A. Baer. 1985. Wolf population research and management studies in the Yukon 1983. Progress Report. Part I: Southwest Yukon. Unpubl. Report. Fish & Wildlife Report. Yukon Department of Renewable Resources. Whitehorse.

Abstract

Wolf density around Whitehorse increased in autumn 1982 concurrent with a depression in wild ungulate numbers and a major die-off of snowshoe hares. Wolf density of 1 wolf/84 km^2 in the study area is within the range of densities observed in unexploited populations in Alaska. Using prey census data it was concluded that the study areas prey base is sufficient to support a stable or declining wolf population. A major assumption of this conclusion is that sheep are an important secondary prey species. Wolf population reduction in the study area was at least 44%. It was not possible to define the wolf population status based on the samples collected by shooting, due to errors inherent to sampling non-complete packs. Moose appears to be the primary prey species. A sample of 19 moose killed by wolves consisted mainly of adults and an assessment of physical condition of these animals showed none to be starving according to criteria used in Alaskan studies. Wolf/moose ration predicts that the pre-reduction wolf population should cause a decline in moose numbers in the area regardless of other additive mortality agents. Grizzly bear predation on neo-natal moose calves appears to be limiting recruitment into the population and wolf predation, human harvest and natural mortality are probably causing excessive mortality in adult cohorts.

Key Words: mammals-wolf, abundance, distribution, movements, techniques - survey/telemetry, southwestern Yukon Territory.

#85

Herrick, R. 1977. Natural history themes and resources study, Yukon River, Yukon Territory. Agreements for Recreation and Conservation. Planning Division. Parks Canada. Ottawa. 166 pp.

Abstract

This report provides baseline information on the natural resources within the 648 mile long Yukon River corridor from Bennett to the Alaska-Yukon boundary. It is an initial step towards bringing the amount of natural history information up to the level of human history information in order that all the values can be considered in recreational concept planning for the Yukon River corridor.

A short note of mammals, including furbearers, along the Yukon River corridor is provided.

Key Words: (small) mammals, habitat, distribution, western Yukon Territory.

#86

Hoefs, M., W.G. Benjey. 1971. The park in perpetual planning: the Kluane Park Reserve, Yukon. Can. Field-Naturalist 85: 261-265.

Abstract

Pp.262:...Other large mammals include wolf, coyote, black bear, lynx, wolverine, red fox, beaver, otter, muskrat and mink.

Key Words: mammals, distribution, southwestern Yukon Territory.

#87

Hoefs, M. 1973. Ecological investigation in Kluane National Park, Yukon Territory. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse, 82 pp.

Abstract

The results of an ecological investigation in Kluane National Park including 1) birds of Kluane National Park and adjacent areas, 2) distribution and abundance of important wildlife species in Kluane National Park; their "critical" habitats, range and migration routes, 3) potential areas or avenues of conflict between visitors and development and the wildlife species in the Park areas, with recommendations for reducing such conflicts in so far as possible for the future.

The following is a summary of the furbearer section. Wolves are rare in the central portion of Kluane area; more abundant in the north as well as in the south. At least three packs appear to hunt the Kluane National Park and Reserve areas. Observations are recorded. It is felt that a conservative estimate of 50 wolves use the Kluane National Park and Reserve areas. Notes on distribution and observations are presented of the furbearers: coyote, lynx, red fox and varying hare.

Key Words: (small) mammals, distribution, abundance, habitat, southwestern Yukon Territory.

#88

Hoefs, M. 1975. The Yukon's wildlife resources. In: Fifth Northern Resources Conf. ("Yukon on the move"). Whitehorse. pp. 100-109.

Abstract

This report deals with the wildlife resource and its management in the Yukon Territory. It summarizes the various activities the Wildlife

Management Branch is involved in to introduce proper game management practices in the Territory. The economic importance of the wildlife resource is dealt with and the various aspects of consumptive and non-consumptive use and how each contributes to the local economy are discussed. Various real and potential areas of conflict between game management and other land use practices are mentioned (included are fur harvest statistics).

Key Words: mammals, management, fur, harvest, statistics, Yukon Territory.

#89

Hoefs, M. 1976. Preliminary biological reconnaissance of the lower Nisutlin River floodplain. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 72 pp.

Abstract

This report presents the result of a preliminary biological reconnaissance of the lower Nisutlin River floodplain as part of the Wildlife Management Branch's territory-wide wildlife inventory program. Included are notes on furbearers and a table of furbearer's harvest.

The valley is considered important with respect to furbearing animals, in particular muskrat, mink, beaver and otter.

Key Words: (small) mammals, habitat, fur, distribution, harvest, southern Yukon Territory.

#90

Hoefs, M., G.M. Lortie. 1976. Big Game inventory in Game Management Zone 11. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 91 pp.

Abstract

The report presents the results of a big game survey, consisting of a summer, and a late winter survey. In addition to observations of ungulates, several sightings of wolves are reported.

Key Words: mammals-wolf, distribution, techiques-survey, southern Yukon Territory.

#91

Hoefs, M., and I.McT. Cowan. 1979. Ecological investigation of a population of Dall sheep (Ovis dalli dalli Nelson). Syesis 12, suppl.1: 1-81.

Abstract

Pp. 28-29:...The coyote is the most common predator in the Sheep Mountain area. Interviews with "oldtimers" indicate that the region around the south end of Kluane Lake appeared to always have been a stronghold for coyotes...Pp.30:...The study area is within the range of a small wolf pack numbering at least six animals, plus a few solitary individuals...Pp. 31: during the study period single wolverines were seen on six occasions in alpine and subalpine altitudes...Pp. 31:...hares had reached their peak in 1970/71 and they were still fairly numerous in the 1971/72 winter. In the winter of 1972/73, very few were observed and hardly any in the winter of 1973/74. Judging from the reports of the Yukon Game Branch, from trappers as well as from fur sales, the lynx numbers appeared to have reached their peak in the winter of 1972/73...Predator-prey relations of these predators and sheep are discussed.

Pp.32:...Foxes are not very common in the area; they have been observed only about a dozen times...

Key Words: mammals, distribution, abundance, southwestern Yukon Territory.

#92

Hoefs, M. 1982. A summary of wildlife on Yukon's north slope and a brief discussion on important habitats. In: Yukon Department of Renewable Resources. 1983. Northern Yukon. Strategic Land Use Plan. Whitehorse. 73 pp. and Appendices.

Abstract

No reliable fur harvest statistics for the northern Yukon are available that could be used for an analysis of furbearer distribution and abundance. Some information has, however, accumulated through aerial surveys in relation to proposed pipeline routes. The only abundant furbearer is the Arctic fox, and coloured foxes are also relatively numerous. A third animal which may be seasonally and locally abundant is the wolf. The following additional ones may occasionally be seen, but their abundance is low: lynx, wolverine, least weasel, ermine, marten, mink, beaver and muskrat.

Information of arctic fox distribution is summarized after Nolan et al. 1973 (this report). From 300 to 400 wolves are thought to range between the Peel River and the Beaufort Sea in the northern Yukon. Dens will most likely be in locations which have a more stable prey source, than the migrating caribou.

Key Words: (small) mammals, distribution, abundance, habitat, Yukon Territory.

#93

Holbrow, W.C. 1976. The biology, mythology, distribution, and management of the wolverine (Gulo gulo) in western Canada. M.N.R.M. Thesis, Natural Resource Institute, University of Manitoba. Winnipeg. 214 pp.

Abstract

A study was undertaken of the wolverine in western Canada, which

included the provinces of Manitoba, Saskatchewan, Alberta, and British Columbia and the Yukon and Northwest Territories, from May 1974 to September 1975. Data on its habits and biology, historical derivation of the name, folklore, trapping techniques, habitat utilization, abundance, distribution, and legal status were gathered by use of questionnaires to biologists and trappers; personal interviews; scrutinization of available fur records; a thorough review of the literature; advertising the need for information and sightings, and by contacting people familiar with the animal. The wolverine has a large home range, uses territorial marking, and only associates with others during the mating season (May to July) or when the young (born after prolonged gestation between February and April) are dependent upon the female. The wolverine has a varied diet with special reliance on carrion. man is the foremost predator of this mammal. The folklore surrounding the wolverine is deeply embedded in history and tradition. Much of it, of course, is exaggerated with no factual data to substantiate it. Although no one set is guaranteed to capture the animal, trappers feel confident in catching it; it is harder to hold than catch. Like many other animals, once "educated", it is much more difficult to trap. The animal has both positive and negative values, but it is difficult to assign a definite dollar value to any one of them. The earnings from wolverine trapping are certainly not overwhelming, and any predator can cause hardship to the trapper. Surprisingly, the majority indicated losses of fur and traps of only $250.00, and the wolverine was not the chief cause. The animal is ranked rare to common across the study area. Only the Yukon Territory and British Columbia report constant high yields or increases over the years. The reset of the study area shows declines in harvest but an upsurge in the last ten yeas with the high price of the pelt on the market. Among the recommendations, it is suggested that the wolverine be removed from the "game" list in the Yukon and British Columbia and from "carnivore" status in Alberta. As well, various areas are advised to be closed to harvesting and the majority of trapping localities in Alberta, Saskatchewan, and Manitoba should only be utilized when wolverine trapping is of economic importance to local inhabitants or when the animals are a nuisance and special permits are issued. Finally, the feasibilities and problems of the management proposals are noted.

Key Words: mammals-wolverine, distribution, behaviour, history, harvest, reproduction, diet composition, Yukon Territory, British Columbia.

#94

Innis, H.A. 1970. The fur trade in Canada. An introduction to Canadian economic history. University of Toronto Press, Toronto. 463 pp.

Abstract

Included are fur trade statistics of Frances Lake, Pelly Banks and Fort Slekirk (pp. 324).

Key Words: fur, harvest, economics, central and eastern Yukon Territory.

#95

Jack, J.P. 1975. Fur activity in the Yukon Territory. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable resources. Whitehorse. 13 pp.

Abstract

The report discusses the present trapline system in the Yukon Territory. It evaluates the harvest trend for the past seven years and makes a prediction for the 74/75 season. The number and distribution of individual trapline holders are discussed and the trappers are divided by racial origin. Group trapping and the possibilities of forming new group areas are also dealt with.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#96

Jack, J.P. 1976. Annual Fur Activity. Unpubl. Rep. Wildlife Management Branch. Yukon Department of Renewable Resources. Whitehorse. 15 pp.

Abstract

This report discusses the procedures taken to obtain the annual fur harvest statistics. It also shows the distribution of fur buyers and their effect on the overall value paid to Yukon trappers.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#97

Jack, J.P. 1977. Annual fur harvest report. Unpubl. Rep. Wildlife Management Branch. Yukon Department of Renewable Resources. Whitehorse. 19 pp.

Abstract

The report discusses utilization of registered traplines and group trapping areas. Mention is being made of some factors of populations cycles' effect on the number of fur bearer species trapped, and the harvest of the 1976/77 fur season is predicted.

Key Words: (small) mammals, abundance, fur, harvest, Yukon Territory.

#98

Jaques, F.P. 1951. As far as the Yukon. Harper and Brothers. New York. 243 pp.

Abstract

Pp. 122:...The only animal we saw was a red fox bounding through a

spruce forest...(Yukon River, between Whitehorse and Dawson City)...Pp.130:...wolves howled outside the town...(Dawson City).

Key Words: mammals, distribution, Yukon Territory.

#99

Jessup, H. 1978. Fur activity in the Yukon Territory. In: Proc. 4th. Ann. W. Fur Managers Conf. Yellowknife. pp. 29-50.

Abstract

This paper comments on the increased interest in trapping in the Yukon Territory and presents information on the fur harvest 1976-77, administration, trapper education and fur research programs.

Key Words: fur, harvest, statistics, education, research, Yukon Territory.

#100

Jessup, R.H. 1979. An update on the Fur Program in the Yukon Territory. Report presented at the Fifth Ann. W. Fur Managers Conf. Prince Albert April 24-26. Unpubl. M.S. 13 pp.

Abstract

Presents the statistics of the fur harvest and values of the 1977/78 season.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#101

Jessup, H. 1980. Yukon Territory fur program update. In: Proc. 6th. Ann. W. Fur Managers Conf. Whitehorse. pp 7-19.

Abstract

This report summarizes the 1978/79 fur harvest and comments on the trend so far in the 1979/80 season. In addition the present status of trapper education and fur research in the Yukon Territory is discussed. Information is presented concerning: total harvest, value of the harvest, and their relation with the previous season; number, status and location of licenced trappers; trapper education program; fur research.

Key Words: fur, harvest, economics, statistics, education, research, Yukon Territory.

#102

Jessup, R.H. 1981. Fur harvest report. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 9 pp.

Abstract

This report presents the 1980/81 fur harvest and value statistics of the Yukon Territory.

Key Words: fur, harvest, economics, statistics, Yukon Territory

#103

Jessup, R.H. 1982. Fur program update 1980/81. Report presented at the Eighth Ann. W. Fur Managers Conf. Winnipeg. April 26-30, 1982. Unpubl. M.S. 10 pp.

Abstract

Presents the statistics of the fur harvest and values of the 1980/81 season.

Key Words: fur, harvest, economics, statistics, Yukon Territory.

#104

Jones, D.M. 1980. The home range, habitat use and diet of the red fox (Vulpes vulpes) in the heterogeneous environments of Northwest British Columbia and Southwest Yukon. M.Sc. thesis, University of Waterloo. Waterloo. 115 pp. & App.

Abstract

The red fox (Vulpes vulpes) is widely distributed in habitats ranging from lowland forests to subalpine and alpine tundra. The objective of this study was to ascertain the adaptive strategies to foxes in a heterogeneous subalpine and alpine environment and their niche separation from sympatric species. The study was conducted in northwestern British Columbia and southwestern Yukon during the summers of 1978 and 1979. Eight adult foxes were radio-tracked in an alpine and subalpine environment to provide information on the size, shape and overlap of home ranges as well as habitat use and wolf (Canislupus) scats were analysed to ascertain canid diets and to evaluate the potential for food-based competition among these species. Relative densities of small mammals, arctic ground squirrels (Spermophilus parryii) and willow ptarmigan (Lagopus lagopus) were elimated for broadly defined plant communities.

Home ranges averaged 1611 ha (range = 277-3420 ha) which were larger than ranges of foxes in temperate environments. The size and shape of home ranges and the degree of overlap between home ranges was influenced by the breeding status of the fox. Five of the seven foxes exhibited habitat

selection. Salix communities were preferred, whereas dry lichen/Empetrum and fen communities were avoided.

Foxes were active in 53% of the total fixes. Peak activity occurred between 0-6 hours and 18-25 hours.

Relative densities of small mammals and arctic ground squirrels varied significantly among plant communities. Small mammals were most abundant in Salix communities and least abundant in dry lichen/Empetrum and gravel pipeline communities. Indices of arctic ground squirrels were highest in the roadside, lower in grass, gravel pipeline and dry lichen/Empetrum communities and lowest in the Salix and Betula communities.

The vulpine diet in the subalpine and alpine tundra was dominated by arctic ground squirrel and small mammals. In contrast, the diet of foxes in the forested lowlands was dominated by snowshoe hare (Lepus americanus). Diets varied between locations (den versus non-den), sites, seasons and years reflecting the spatial and temporal variation in the abundance of prey.

Key Words: (small) mammals - red fox/wolf, behavior, movements, habitat, diet composition, abundance, techniques - telemetry/faecal analysis, southwestern Yukon Territory, British Columbia.

#105

Jones, D.M., J.B. Theberge. 1982. Summer home range and habitat utilization of the red fox (Vulpes vulpes) in a tundra habitat, northwest British Columbia. Can. J. Zool. 60: 807-812.

Abstract

Eight adult red foxes (Vulpes vulpes) were radio tracked during the summers of 1978 and 1979 in an alpine and subalpine environment of northwest British Columbia. The spatial distributions of small mammals (mice, voles, and shrews) and arctic ground squirrels (Spermophilus parryii) were

to complement the telemetric study. Summer home ranges averaged 1611 ha (range = 277-3420 ha) and were larger than vulpine ranges in temperate environments. Significant habitat selections was evident in five of the seven home ranges that were examined. Salix shrub communities were preferred habitats, whereas, open lichen - Empetrum and fen communities were avoided. Relative densities of small mammals and arctic ground squirrels varied significantly among plant communities. Possible explanations, considering the diet of the fox and the spatial distribution of its prey, are offered to account for the observed patterns of home range size and habitat utilization.

Key Words: (small) mammals - red fox, movements, abundance, diet composition, habitat, techniques -telemetry, British Columbia.

#106

Jones, D.M., Theberge, J.B. 1983. Variation in Red Fox, Vulpes vulpes, summer diets in Northwest British Columbia and Southwest Yukon. Can. Field-Nat: 97(3): 311-314.

Abstract

Diets of Red Fox (Vulpes vulpes) were examined in alpine, subalpine, and boreal forest habitats on and near the Chilkat Pass, British Columbia. Above the boreal forest habitat Arctic Ground Squirrel (Spermophilus parryii) and voles and mice predominated, especially in whelp scats from dens, but also in adult scats collected elsewhere. Non-den scats contained significantly fewer ground squirrel and more voles and mice remains. Scats collected from the boreal forest zone were dominated by Snowshoe Hare (Lepus americanus), and a greater diversity of species. Significant difference in results were found using "equal weight" and "random sampling" methods of analysis. These data show the considerable dietary plasticity and opportunism of Red Fox predation in this heterogeneous northern environment.

Key Words: mammals - red fox, diet composition, habitat, techniques - faecal analysis, southwestern Yukon Territory, British Columbia.

#107

Judd, W.W. 1950. Mammals observed in the Yukon Territory, Canada, in the summer of 1949. J. Mammal. 31(3): 360-361.

Abstract

A note on mammals observed in the Dawson City area, being: black bear, wood chuck, red squirrel, beaver, varying hare.

Key Words: (small) mammals, distribution, northern Yukon Territory.

#108

Keele, J. 1910. A reconnaissance across the Mackenzie Mountains on the Pelly, Ross, and Gravel Rivers. Geological Survey Branch, Ottawa. 54 pp.

Abstract

The section on fur trade in this report provides fur harvest statistics of the Pelly and MacMillan Rivers during the years 1901-1905. Fur bearers taken included marten, lynx, beaver, wolverine, fox. The total value of which amounted to $136,000 over this five year period. Lynx were thought to invade the country in 1904 and disappear during 1907. Rabbits were extremely abundant prior to 1904. They declined steadily after 1904 and had practically disappeared in 1907.

Key Words: Fur, harvest, economics, abundance, central and eastern Yukon Territory.

#109

Kelsall, J.P. 1981. Status report on the wolverine, Gulo gulo, in Canada in 1981. Prepared for the World Wildlife Fund. Committee on the status of endangered wildlife in Canada. Ottawa. Unpubl. Report. 47 pp.

Abstract

The Wolverine (Gulo gulo) is a rare mammal in Canada, and seemingly has not been common within historic times. Its range has diminished, especially in eastern Canada and along the southern peripheries to the Rocky Mountains. Judging from fur market figures, overall population numbers may have diminished during the past decade concurrent with great increases in the value of the hides. Fur records going back to the 16th century suggest population fluctuations with amplitudes of several hundred per cent above the mean at odd intervals.

The wolverine ranges impartially over most wilderness habitats in Canada, although it may never have occurred regularly on the southern prairies. A mythology has developed around the wolverine's supposed strength, stamina, and cunning, and trappers generally both hated it for its destructive ways and value it for its "frost free" fur. In general, its biology is poorly known. As in other mustelids, its reproductive cycle features delayed implantation of the blastocyst. Breeding occurs in late spring and early summer, and whelping occurs in winter. The primary limiting factors are believed to be predation by humans, reduction of habitat by encroaching civilization, and availability of food, particularly carrion from large ungulates, in winter.

Wolverines are protected absolutely in Quebec and Newfoundland, in areas of rarity in British Columbia, and from trappers, but not hunters, in parts of Alberta. Otherwise, open seasons for trappers and hunters tend to

be liberal, and to extend into, or through, the whelping season. Knowledge at present is insufficient to recommend sound management measures, other than doubtfully valuable adjustments to the open seasons. It is recommended that wildlife biologists improve the data base on all aspects of wolverine biology, distribution and population numbers.

Key Words: Mammals-wolverine, distribution, abundance, fur, reproduction, harvest, history, research, Yukon Territory.

#110

Klassen, W.J., J.P. Jack. 1979. Preliminary biological reconnaissance of the Sixty Mile River Floodplain below Glacier Creek. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 55 pp.

Abstract

The report is part of a series of biological surveys of Yukon Territory river floodplains began in 1974. The survey was mainly concerned with cataloguing the plant communities along the river and determining the extent of waterfowl activity and seasonal changes in use of the floodplain by mammals and birds.

Key Words: (small) mammals, habitat, distribution, techniques-survey, northern Yukon Territory.

#111

Krebs, C.J., I. Wingate. 1974. Survey of small mammals, Kluane National Park. Unpubl. Rep. Institute of Animal Resource Ecology, University of British Columbia. Vancouver. 40 pp.

Abstract

A survey of small mammals was carried out in Kluane National Park in the southwestern Yukon from June to September 1973. Of 18 species recorded, two species of shrews and nine species of voles, mice, and lemmings were studied in detail with snap trapping lines. Fourteen habitats were analyzed and the species composition of each determined. Kluane Park is in a zoolographic tension zone and several species of small mammals reach their northern (or southern) limits in or near the Park. We recorded two minor and one major range extensions in small mammals. Species diversity was highest in marshes along the Dezadeash River, where three rare species were found. Peromyscus maniculatus was the most abundant small mammal and occupied the widest habitat spectrum. Clethrionomys rutilus was second most abundant and also occupied many habitats. There is very little niche overlap among the nine species of small rodents in the habitats they occupy. Most overlap occurs between species of differing food habits.

Key Words: (small) mammals, habitat, distribution, techniques-capture, southwestern Yukon Territory.

#112

Krebs, C.J. I. Wingate. 1976. Small mammal communities of the Kluane Region. Yukon Territory, Can. Field-Naturalist 90(4): 379-389.

Abstract

A survey of small mammals was carried out near Kluane National Park in the southwestern Yukon in 1973 and 1974. Of 19 species recorded, nine species of voles, mice, and lemmings were studied in detail with snap-trapping lines. Twenty-one habitats were analyzed, and the species composition of each determined. Kluane Park is in a zoogeographic tension zone and several species of small mammals reach their northern (or southern) limits in or near the park. Species diversity was highest in marshes along

the Dezadeash River, where three rare species were found. The deer mouse, Peromyscus maniculatus, and northern red-backed vole. Clethrionomys rutilus were the most abundant small mammals and occupied the widest habitat spectrum. There is very little niche overlap among the nine species of small rodents in the habitats they occupy. Abundance changes do not occur in synchrony in the northern and southern parts of the Kluane region.

Key Words: small mammals, habitat, abundance, southwestern Yukon Territory.

#113

Krutzsch, P. H. 1954. North American Jumping Mice (Genus Zapus). Univ. Kansas Publ. Mus.Nat.Hist. 7(4): 349-472.

Abstract

An account of the members of the Genus-Zapus concerning geographic distribution, taxonomically significant characters, and interrelationships of the known kinds. In addition, attention is given to the probable center of origin of the subfamily Zapodinae and to the relationships and taxonomic positions of the genera Zapus, Napaeozapus, and Eozapus.

Some records from the Yukon Territory are included: Zapus priceps saltator J.A. Allen (from mile 95 on Canol Road), Z. hudsonicus hudsonicus (Zimmerman) (from Lake Laberge and MacMillan River area).

Key Words: small mammals-jumping mice, distribution, taxonomy, Yukon Territory.

#114

Lemon, M., O. Lubin, G. Paget, D. Thompson, J. Thompson, S. Tynan, L. Webb, and S. Witton (n.d.) Kluane National Park. A scenic and wilderness resource study. Unpub. Rep. Yukon Scenic and Wilderness Resource Study Group. On file, Yukon Archives. Whitehorse. 97 pp.

Abstract

P.9:... The most dense concentration of any animal is the number of snowshoe hares and ground squirrels. Experiments of trapping and retrapping arctic ground squirrels on the Duke River flats to estimate animal populations yielded some interesting results. Scientists found that if a ground squirrel weighs one pound then there are about 56 tons of squirrel/square mile. This estimate was thought to be small. The Kluane is also the habitat for beaver, muskrat and otter...Pp.A-15:...Beaver were active. There was a dam some 200 feet in length...Signs of wolf and fox were abundant...(Alder Creek).

Key Words: (small) mammals, abundance, distribution, southwestern Yukon Territory.

#115

Lincoln, B.J., 1972. Behavior study of the Arctic Ground Squirrel. Icefield Ranges Research Project, Sci. Results, Vol. 3, Arctic Inst. North America, pp. 245-253.

Abstract

The locomotion, food, grooming, burrows, and behaviors of the Arctic ground squirrel, Citellus parryi plesius, were studied at three sites in the region of the Icefield Ranges Research Project during the summers of 1966 and 1967. Studies of food preference were made, and a relative utilization rating was determined for each species of plant found in the squirrels' stomachs. In a study of the squirrels' effect on its environment, it was found that when its burrows and runways were built on steep slopes they caused considerable erosion.

Key Words: small mammals - Arctic Ground Squirrel, diet composition, behavior, habitat, southwestern Yukon Territory.

#116

Liskop, K.S., R.M.F.S. Sadleir, and B.P. Saunders. 1981. Reproduction and harvest of wolverine (Gulo gulo) in British Columbia. Worldwide Furbearer Conf. Proc. 1. 469-477.

Abstract

Reproductive data were obtained from 84 (40 females and 44 males) wolverine (Gulo gulo) carcasses taken in northwestern British Columbia during the trapping seasons from 1976 to 1979. All mature females were reproductively active except for three which were estimated to be six and seven years old. All one year old females were immature as were two of the 13 two year olds. Nine mature wolverines taken in November, December and January had unimplanted blastocysts. From 14 mature females taken in February and March, five were pregnant, seven were post partum and two had unimplanted blastocysts. The five tracts with detectable embryos had a mean litter size of 2.60 $\pm$ 0.24. Males over three years old were sexually mature. Early spermatogenesis was detected in three males before April.

Key Words: mammals-wolverine, reproduction, techniques-analysis of reproductive tract, harvest, British Columbia.

#117

Lortie, G.M., M. Hoefs, T. Wagner, W. Klassen, and L. Mychasiw. 1978. Wildlife inventories in GMZ 8 and GMZ 10, Yukon Territory with an evaluation of present levels of sheep harvest (1976 and 1977).

Abstract

Included in the survey results are notes on observations of wolf activity.

Key Words: mammals-wolf, distribution, southern Yukon Territory.

#118

Lysyk, K.M., E.E. Bohmer, and W.L. Phelps. 1977. The fur trade. In: Alaska Highway Pipeline Inquiry. Supply and Services Canada. Ottawa. pp 11-12.

Abstract

A short outline of the history of the fur trade.

Key Words: fur, economics, Yukon Territory.

#119

Manning, T.H. 1956. The northern red-backed mouse, Clethrionomys rutilus (Pallas), in Canada, Nat.Mus.Can.Bull. 144: 1-67.

Abstract

This paper is primarily a taxonomic study of the Arctic Red-backed Mouse, Clethrionomys rutilus, in Canada, based on collections made at Tuktoyaktuk, Aklavik, and Norman Wells in 1951 and 1952, on other specimens in the National Museum, and on material borrowed from the American Museum of National History, the Chicago Museum of Natural History, the Royal Ontario Museum, the United States National Museum, the University of British Columbia, and the University of Kansas.

Key Words: mammals-northern red-backed mouse, taxonomy, distribution, Yukon Territory.

#120

Martindale, T. 1913. Hunting in the upper Yukon. Jacobs and Co. Philadelphia 320 pp.

Abstract

Pp.70: Of fur-coated animals I, personally, saw three silver foxes, one black fox (a real beauty he was), two red foxes (both full grown and well furred), some weasels and red squirrels, myriads of gophers,...(between Whitehorse and Kluane Lake). Pp.216:...a magnificent black fox jumped up. (Alsek River valley).

Pages 224-230 are devoted to a description of the life of a trapper, as seen by author A.D.Cameron.

Key Words: (small) mammals, distribution, southwestern Yukon Territory.

#121

Mason, M.H. 1924. The arctic forests. Hodder and Stoughton. London. 320 pp.

Abstract

Pp.118:...One fact of interest worth recording, however, is that they (coyotes) seem to be drifting northward in increasing numbers. They are now common as far north as Stewart River, Yukon Territory, and have been caught at Fort Yukon, Alaska, beyond the Arctic Circle.

Key Words: mammals-coyote, distribution, Yukon Territory.

#122

McCandless, R.G. 1976. Trophies or meat, Yukon Game Management 1896 to 1976. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse, 12 pp.

Abstract

The report is a preliminary survey of Yukon Game Management from 1896, when legislation to protect the Yukon's (then Northwest Territories) game resources was introduced, to the present. Some of the research is presented so that current problems are set in a historical context. Topics include: history of, the Yukon Game Ordinance, trapping, trophy and meat hunting, habitat management, exotic species, the Game Branch from 1949 to 1976.

The following summarizes the section on trapping furbearers. Trapping appears to have always been the mainstay of economic activity based on Yukon wildlife before the second world war. In 1929 fur contributed 17% of government revenues, compared with 0.03% for the fiscal year 1975/76. Large sections of the Yukon Territory may have been depleted of furbearers because of overharvest, between 1898 and 1910. Closed seasons for fur harvesting were introduced in 1920. Yukon Territory's fur resources are felt to be underutilized by the Wildlife Management Branch. Indian trappers are less likely to be influenced by economic or market pressures in trapping a certain area than non-indian trappers. The territory's government's fur management policies encourages monopoly trade and a credit system, between the wars. Trapline registration began with the Registered Trapline Regulations in 1952.

Key Words: fur, harvest, economics, management, history, Yukon Territory.

#123

McCandless, R. 1982. Value of northern wildlife. Economics of wildlife. Proc. 46th. Federal-Provincial Wildlife Conf. Whitehorse. pp. 118-124.

Abstract

An outline of the history of the economics of game, the history of the Yukon's game economy since 1900, and the aspects of the potential of the northern wildlife economy.

A table of Yukon trapping statistics, 1926-81, is included.

Key Words: (small) mammals, fur, harvest, history, economics, Yukon Territory.

#124

McClellan, C. 1975. My old people say. An ethnographic survey of southern Yukon Territory, Nat.Mus.Can.Publ.Ethnol. 6(1): 1-324.

Abstract

Pp.19:...The fur bearers which played such a decisive part in both the native and white economics of the nineteenth and early twentieth centuries are not quite so numerous as they are in some other parts of Canada, but the quality of the pelts is exceptionally fine. Fox, lynx, marten, mink, otter, and muskrat are the chief animals trapped. Pp.130-161: An account of furbearers and small mammals and their relevance to natives is provided. Discussed are usage, trapping, hunting, skinning techniques, and cultural aspects, of the various species.

Included is a record of a sighting of a cougar at Old Dalton Post in 1954 (pp.161).

Key Words: (small) mammals, fur, harvest, southern Yukon Territory.

#125

McEwen, C.A., and W.G. Johnston. 1983. Winter ecology of pine marten (Martes americanus) in the south-central Yukon Territory, 1980/81. Prepared for Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. Northern Biomes Ltd. Environmental Services. Whitehorse. 52 pp.

Abstract

The winter ecology of pine marten was studied intensively from November 1980 to March 1981 at Evelyn Creek, south-central Yukon Territory. Marten used the open black and white spruce vegetation type less than expected and used the white and black spruce with fir type predominantly for hunting. Snow depth did not affect marten winter activity. Marten accessed the subnivean passively employing branches, saplines and deadfall protruding above the snow. Marten spent little time in trees. From the scat analysis critecids, especially red-backed voles, and varying hare comprised the bulk of the marten winter diet with the frequency of occurrence of these two food items in the scats fluctuating inversely during the winter months.

Key Words: small mammals-marten, habitat, diet composition, techniques-faecal analysis, southern Yukon Territory.

#126

McKellar, R., and P. Chan. 1981. Fire and Furbearers. Report to Forest Resources Division. Department of Indian Affairs and Northern Development. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources, Whitehorse. 32 pp.

Abstract

Harvest data is analysed to determine the effect of fire on furbearer populations in the Yukon Territory. The implication of the assumptions upon which the analyses were based reduced confidence in the reliability of the analysis. In particular, trapping effort and some index of habitat modification by fire are required if valid analyses are to be made. Some questions are raised, and suggestions offered with respect to the problem of managing a living resource in changing natural and social environments.

Analysis of the data available indicates five of the furbearers studied, beaver, mink, muskrat, weasel and marten are not affected by fire.

As hypothesized, it does appear that squirrel populations are reduced in areas which have been burned.

Key Words: (small) mammals, fur, harvest, habitat, management, research, Yukon Territory.

#127

McLean, I. 1977. Social ecology of the Arctic ground squirrel. M. Sc. thesis, Dept. Zoology, University of Alberta, Edmonton.

Abstract

Arctic ground squirrels (Spermophilus parryii plesius) were studied near Haines Junction, Yukon Territory, during the summers of 1977, 1978 and 1979.

The population was trapped weekly to obtain data on dispersal, patterns of weight change and wounding, and reproductive success. Juveniles were trapped as they emerged from natal burrows to ensure that kin relationships were known. Two areas were gridded in 15 x 15 m squares and all ground squirrels living in them were marked with individual dye patterns. Observations were conducted in these areas from platforms 2.5 m high. Positions, and activity at each position, of animals were sampled instantaneously to obtain data on home range and behavior. Plant species taken as food were determined from monthly samples of feces collected during 1978. These were related to the abundance of plant species in areas in which ground squirrels were observed to feed.

Female arctic ground squirrels exhibited nepotism. Due to differential dispersal of males and females, only female kin were likely to live near to each other. Close female kin (sisters, mothers/daughters) had greater overlap of home ranges and interacted more amicably and less agnostically, than did less closely related females. Values for distant relatives (known genetic relatives that had not associated in a natal burrow) were intermediate (overlap of home ranges) to those for close and non-relatives, or were

more similar to those of non-relatives (interactions, distances between natal burrows). I suggest that females benefit from associations with relatives during periods that infanticide by males is likely.
Male arctic ground squirrels defended territories. Spatial separation and territorial defence were most observed during the periods that females were giving birth and juveniles were underground. Male arctic ground squirrels committed infanticide. Infanticide was most likely in areas where the male that had been resident in an area during the mating period (and hence the likely father of young in that area) was removed. Males that moved in (unlikely fathers) tended to kill young. I suggest that territori- ality by males prevents infanticide, and that males give paternal care as a consequence.

Arctic ground squirrels fed predominately on legumes (including the genera Oxytropis, Astragalus, Hedysarum, and Lupinus), and on sage (Artemisia). The low abundances of these in feeding areas indicated that ground squirrels fed selectively. The overall diets of males and females were very similar, but some differences between the sexes in the timing of changes in diet occurred.

In addition to showing some differences in feeding habits, male and female arctic ground squirrels adopted different tactics for the hibernation period. Males stored food and lost little weight through the winter. Females entered hibernation earlier and lost more weight than males. Males lost weight in the spring, whereas females did not. I suggest that these differences are related to the length of the mating period, which for males lasts for several weeks, whereas for females it lasts for one or two days.

Key Words: small mammals-arctic ground squirrel, behavior, movements, reproduction, diet composition, techniques-capture/recapture, southwestern Yukon Territory.

#128

McLean, I.G., 1981. Social ecology of the Arctic ground squirrel (Spermophilus parryii). Ph. D. thesis, University of Alberta, Edmonton.

Abstract

Arctic ground squirrels (Spermophilus parryii plesius) were studied near Haines Junction, Yukon Territory, during the summers of 1977, 1978 and 1979.

The population was trapped weekly to obtain data on dispersal, patterns of weight change and wounding, and reproductive success. Juveniles were trapped as they emerged from natal burrows to ensure that kin relationships were known. Two areas were gridded in 15 x 15 m squares and all ground squirrels living in them were marked with individual dye patterns. Observations were conducted in these areas from platforms 2.5 m high. Positions, and activity at each position, of animals were sampled instantaneously to obtain data on home range and behavior. Plant species taken as food were determined from monthly samples of feces collected during 1978. These were related to the abundance of plant species in areas in which ground squirrels were observed to feed.

Female arctic ground squirrels exhibited nepotism. Due to differential dispersal of males and females, only female kin were likely to live near to each other. Close female kin (sisters, mothers/daughters) had greater overlap of home ranges and interacted more amicably and less agnostically, than did less closely related females. Values for distant relatives (known genetic relatives that had not associated in a natal burrow) were intermediate (overlap of home ranges) to those for close and non-relatives, or were more similar to those of non-relatives (interactions, distances between natal burrows). I suggest that females benefit from associations with relatives during periods that infanticide by males is likely.

Male arctic ground squirrels defended territories. Spatial separation and territorial defence were most observed during the periods that females were giving birth and juveniles were underground. Male arctic ground squirrels committed infanticide. Infanticide was most likely in areas where the male that had been resident in an area during the mating period (and hence the likely father of young in that area) was removed. Males that moved in (unlikely fathers) tended to kill young. I suggest that territoriality by males prevents infanticide, and that males give paternal care as a consequence.

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Key Words: small mammals-arctic ground squirrel, behavior, movements, reproduction, diet composition, techniques-capture/recapture, southwestern Yukon Territory.

#129

McLean, I.G., and A.J. Towns. 1981. Differences in weight changes and the annual cycle of male and female arctic ground squirrels. Arctic 34(3): 249-254.

Abstract

Arctic ground squirrels (Spermophilus parryii) were studied for three summers near Haines Junction, Yukon Territory. Population characteristics and the behavior of individual animals were monitored throughout the study. Ground squirrels entered hibernation in the order adult females, juvenile females, then males. Males emerged from hibernation before females. Males shared food in the autumn when conditions permitted, whereas females did not. Males emerged from hibernation having lost significantly less weight than females over winter. Males lost weight during the mating period,

whereas females did not. These data are interpreted in terms of the mating period which for males lasts for approximately three weeks, whereas for females it lasts for less than a day.

Key Words: (small) mammals-arctic ground squirrel, behavior, reproduction, southwestern Yukon Territory.

#130

McLean, I.G., 1982. The association of female kin in the Arctic Ground Squirrel Spermophilus parryii. Behav. Ecol. Sociobiol. 10: 91-99.

Abstract

The association of kin in arctic ground squirrels (Spermophilus parryii) was studied near Haines Junction, Yukon Territory, during the summers of 1977, 1978 and 1979. Males dispersed in this population, thus only females were likely to live near relatives.

Close female kin (sisters, mothers/daughters) had greater overlap of home ranges and interacted more amicably and less agnostically than did less closely related females. Closely related females clumped their young at emergence, whereas more distantly related females did not; there was little indication of clumping of pre-emerged young. The overlap of home ranges of distant relatives (known genetic relatives that had not associated in a natal burrow) was intermediate to that of close relatives and non-relatives. The types of interactions between distant relatives were more similar to those between non-relatives than between close relatives.

I conclude that female arctic ground squirrels exhibit nepotism. Females may benefit from associations with relatives by sharing watching for predators once juveniles become conspicuous. Male arctic ground squirrels commit infanticide and several females may be more effective at protecting their young from infanticide males than females living alone. I suggest that clumping of young by close relatives may provide a mechanism allowing distantly related females to identify each other.

Organisms that live in groups are usually assumed to have more efficient access to essential resources as a result of group living than if they lived solitarily (Hoogland and Sherman 1976). They also have some likelihood of living near to kin, particularly if some members of the population do not disperse. Although stable groups of unrelated individuals certainly occur (McCracken and Bradbury 1977) it may be hypothesized that kin selection (West Eberhard 1975) is operating wherever: i) closely related individuals that are capable of communicating tend to live nearer to each other than is the average for the population; or ii) where they do not live closer, closely related individuals have the capability of interacting selectively. Demonstration that kin selection is occurring requires long term studies in which individuals that benefit from aid given by relatives have a greater proportion of young than those that reproduce without aid in subsequent (preferably distant) generations (adapted from Thoday 1958; see also Brandon 1978). The implications of the term kin selection are conveniently avoided by referring to those behaviors which indicate that individuals selectively favour relatives as nepotism (Alexander 1974; Sherman 1977, 1980 b).

Most members of the genus Spermophilus are to some extent group living and related individuals are known to live in close proximity in at least 7 species, including Spermophilus parryii (see Michener, in press for a review). In most species studied, differential dispersal of males and females resulted in only females living among relatives. That nepotism may occur has been found for S. beldingi (Sherman 1980a), S. tereticaudus (Dunford 1977a, b), S. tridecemlineatus (Schwagmeyer 1980), and possibly S. parryii (Green 1977). Recognition of kin by females has been shown for S. richardsonii (Michener and Sheppard 1972; Michener 1974) and is likely for S. beldingi (Sherman 1980a). In this study I monitored: i) the pattern of dispersal, ii) the spatial distribution of animals of known relationships, and iii) the interactions occurring amongst animals of known relationship, within a subarctic population of the Arctic ground squirrel (S. parryii plesius). These animals are conspicuous, diurnal, and group living, and males defend territories and kill juveniles (McLean 1981 and in preparation). I hypothesised that related female arctic ground squirrels would live near each other whereas related males would not, and that females would

exhibit nepotism.

Key Words: (small) mammals-arctic ground squirrel, behavior, movements, southwestern Yukon Territory.

#131

McLean, I.G. 1983. Paternal behavior and killing of young in arctic ground squirrels. Anim. Behav. 31: 32-44.

Abstract

During the summers of 1977, 1978 and 1979, I investigated killing of infants and young juveniles (for simplicity referred to herein as infanticide) and paternal behaviour in a population of arctic ground squirrels, Spermophilus parryii, near Haines Junction, Yukon Territory. Males defended territories primarily during the period when young ground squirrels were most susceptible to being killed. Killing was most likely after removal of males that had been resident during the mating period. Immigrant males, which were unlikely to have sired the young in their new area of residence, tended to kill young, and it appeared that infanticide was a consequence of a male's establishing residence in a new area. An analysis of the time budget of males and females suggested that males acted as lookouts during lactation, when females were spending the most time feeding. I suggested that males behave paternally through defending territories because they increase the likelihood of survival of young that they may have sired; I also discuss the various tactics that both males and females might be expected to adopt given the existence of infanticide in the population.

Key Words: small mammals-arctic ground squirrel, behaviour, techniques-capture/recapture, southwestern Yukon Territory.

#132

McLean, I.G. 1985. Seasonal patterns and sexual differences in the feeding ecology of arctic ground squirrels (Spermophilus parryii plesius). Can. J. Zool. 63: 1298-1301.

Abstract

Arctic ground squirrels (Spermophilus parryii plesius) were studied in southwestern Yukon during the summers of 1977, 1978, and 1979. Samples of feces were collected from every adult captured every two weeks in 1978. Legumes were predominant in the diet until the fall, when squirrels switched to Artemisia. Females switched to Artemisia one month earlier than males, which correlates with the females earlier entry into hibernation. Low abundance of legumes in areas in which squirrels preferred to feed indicated that squirrels fed selectively, although proximity of burrows also influenced selection of feeding sites.

Key Words: small mammals - arctic ground squirrel, diet composition, habitat, techniques-faecal analysis, southwestern Yukon Territory.

#133

Murray, B.M., and D.F. Murray. 1969. Notes on mammals in alpine areas of the northern St. Elias Mountains, Yukon Territory and Alaska. Can. Field-Naturalist 83: 331-338.

Abstract

Observations were made on mammals in the vicinity of the Kaskawulsh, Steele, and Russell glaciers, Yukon Territory. Included are wolf, coyote, red fox, weasel, wolverine, lynx, singing vole, collared pika, porcupine.

Key Words: (small) mammals, distribution, southwestern Yukon Territory.

#134

Nolan, J.W., B.C. Goski, and G.W. Wilde. 1973. Atlas of wildlife habitat inventory maps for Environmental Social Program, Northern Pipelines. Part of a Wildlife Habitat Inventory of the Mackenzie Valley and the Northern Yukon. Canadian Wildlife Service. Ottawa.

Abstract

The wildlife species included for study for this habitat inventory were selected primarily on the basis of social values and feasibility of short-term inventory, with some consideration directed to the susceptability of the species to distance and esthetic values. Furbearer species represented in the mapping series include arctic fox, muskrat and beaver.

Arctic fox range is restricted to the arctic tundra regions of the study area. The greatest concentration of arctic fox dens was found in the Herschel Island mapsheet area. Dens occurred on a variety of sites, including sand dunes in river deltas, frost heaves, and on the brim of river, lake and stream banks. Crests of low hills were also favoured. Several colored fox dens were located, and a small overlap between the ranges of colored and arctic fox was noted.

The Hudson Bay Company fur buyer in Tuktoyaktuk stated that the 1971-72 trapping season was the best in years.

Key Words: mammals - arctic fox, habitat, distribution, abundance, northern Yukon Territory.

#135

Osgood, W.H., L.B. Bishop. 1900. Results of a biological reconnaissance of the Yukon River region. North American Fauna 19: 1-100.

Abstract

Included is a list of species and subspecies of mammals with notes on

physical characteristics, taxonomy, distribution. Nine new species and subspecies are described. They are as follows: Sciuropterus Yukonensis, Sciurus hudsonicus petulans, Eutamias caniceps, Spermophilus empetra plesius, Neotoma saxamans, Fiber spatulatus, Lepus saliens, Lutreola vison ingens, Mustela americana actuosa.

Key Words: (small) mammals, taxonomy, distribution, Yukon Territory.

#136

Osgood, W.H. 1909. Biological investigations in Alaska and Yukon Territory. North American Fauna 30: 1-96.

Abstract

Presented are the results of a biological investigation in the Ogilvie Range, MacMillan, Pelly River areas, Yukon Territory in 1904. The author accompanied Charles Sheldon (see Sheldon 1911, this report) and Frederick C. Selous (see Selous 1907, this report). Of furbearing and small mammals the following species were recorded from the Ogilvie Range, Flying Squirrel, Red Squirrel, Ground Squirrel, Dawson Red-backed Mouse, Drummond Vole, Interior Vole, Northwest Muskrat, Dall Lemming Mouse, Collared Pika, MacFarlane Varying Hare, Northern Wolf, Otter, Mink, Arctic Weasel, Northern Wolverine, Tundra Shrew. Records of the MacMillan and Pelly River areas include: Arctic White-footed Mouse, Red Squirrel, Ground Squirrel, Gray-headed Chipmunk, Beaver, Dawson Red-backed Mouse, Drummond Vole, Northwest Muskrat, Dall Lemming Mouse, Yukon Lemming, MacFarlane Varying Mouse, Canada Lynx, Northern Wolf, Fox, Otter, Northwest Mink, Arctic Weasel, Marten, Wolverine.

Key Words: (small) mammals, distribution, abundance, Yukon Territory.

#137

Pearson, A. & Associates. 1981. Fish and wildlife harvest: an update of Yukon Statistics and an analysis of the Alaska experience during the Trans-Alaska oil pipeline era. Prepared for: Foothills Pipe Lines (South Yukon) Ltd. Calgary. Pearson, A. & Associates. Whitehorse. 15pp.

Abstract

This report reviews and updates the harvest data for the Yukon Territory and investigates the conditions in Alaska during the construction of the Trans-Alaska oil pipeline and evaluates the "Alaska experience" with respect to fish and game harvest. It was felt that the potential for over exploitation of fish and wildlife from people associated with the Alaska Highway Natural Gas Pipeline in the Yukon Territory can be adequately handled through existing Government regulatory processes.

The following is a summary of the wildlife harvest section. During the period 1970-79 the number of resident hunters increased 29%, compared with 20% for non-resident hunters. The total non-resident take of big game has remained stable, except for grizzly and mountain goat, during this 10 year span. Harvest by resident hunters increased for all species.

Key Words: fur, harvest, statistics, management, Yukon Territory.

#138

Penner, D.F., and D.M. Ealey. 1982. Preliminary environmental and Socio-economic evaluation of potential hydroelectric projects in the Yukon. Component report on wildlife and vegetation resources. McCourt Management Ltd. and Hardy Associates (1978) Ltd. Prepared for Northern Canada Power Commission. Whitehorse. 177 pp.

Abstract

The study includes the preparation of a baseline inventory report on

vegetation, wildlife habitat and wildlife populations of each of five potential hydroelectric projects in the southern Yukon Territory. With respect to the furbearer section: mean annual harvest data of reporting traplines of the project areas are reported, as well as the results of beaver and muskrat population surveys. Beaver density in the study area is below average of those reported for the boreal forest. The study area constitutes marginal habitat for muskrats.

Key Words: (small) mammals, fur, harvest, statistics, abundance, distribution, techniques-survey, southern Yukon Territory.

#139

Pike, W. 1896. Through the subarctic forest. A record of a canoe journey from Fort Wrangel to the Pelly Lakes and down the Yukon River to the Bering Sea. Edward Arnold. London and New York. 295 pp.

Abstract

Pp. 203-304: Foxes are remarkably numerous all along the Pelly, but, with the exception of lynx and a very few beaver, the other fur-bearing animals seem to be scarce.

Key Words: (small) mammals, distribution, abundance, central Yukon Territory.

#140

Price, L.W. 1972. Geomorphic effect of the Arctic ground squirrel in an alpine environment. Icefield Rangers Research Project. Sci. Results Vol. 3. Arctic Inst. N. Am. pp. 255-259.

Abstract

The Arctic Ground Squirrel (Citellus undulatus) is an important geomorphological agent in the Ruby Range particularly since its distribution and concentration is highly variable, depending upon the existence of favourable habitats. 320 lbs. of material per acre are being excavated annually from a total 53 acre burrowing area (8 tons per acre when calculated for actual area of occurrence) on a southeast-facing slope where solifluction lobes are well developed, while southwest-, east-, and north-facing slopes are little affected. This added denudational component may be important in consideration of valley asymmetry.

Key Words: small mammals - arctic ground squirrel, distribution, abundance, habitat, southwestern Yukon Territory.

#141

Quaife, L.R. 1978. Klondike Highway Summer-Fall ungulate and furbearer studies 1977. Prepared for Foothills Pipe Lines (Yukon) Ltd., Calgary. Beak Consultants Ltd. Calgary. 57 pp.

Abstract

Summer and fall investigations were conducted on ungulates and certain furbearers along the proposed Klondike Highway gas pipeline route. Aquatic furbearer concentrations are highest along southern portions of the route (Carmacks to Whitehorse), with the greatest relative abundance of beaver and otter having been documented between Little Braeburn Lake and Twin Lakes. The Reid Lakes area was identified as being of particular local importance in terms of numbers of muskrat.

Key Words: (small) mammals, habitat, distribution, techniques-survey, central, southern Yukon Territory.

#142

Quaife, L.R. 1978. Summer-Fall (1977) mammal studies: proposed Alaska Highway Gas Pipeline route, southern Yukon. Prepared for Foothills Pipe Lines (Yukon) Ltd. Calgary. Beak Consultants Ltd. Calgary. 36 pp.

Abstract

Summer and Fall surveys for ungulates and certain aquatic furbearers were conducted along the proposed Alaska Highway gas pipeline route.

In terms of aquatic furbearers, the majority of active beaver colonies were located in the Haines Junction-Ibex Pass area, the Mount Michie-Squanga Lake region and in the vicinity of the Rancheria River.

Of those areas utilized by muskrats, the greatest amount of muskrat activity (as evidenced by the presence of push-ups) was observed at the Enger Lakes, Pickhandle Lakes, the Donjek River area and Mendenhall Marsh. Along the eastern section of the proposed pipeline route, muskrat push-ups were widely dispersed and occurred in low numbers. Few observations of terrestrial furbearers were made during the course of the study. Those observations which were made include two grizzly bears in the Slims River Valley and seven wolves in the vicinity of Mount Michie-Squanga Lake. An active wolf den was found north of Mount Michie. Five areas were identified as being of particular concern, either by virtue of their greater potential for being directly impacted by pipeline development or by their specific ecological sensitivity to disruption, being: a) Burwash Uplands, b) Sheep Mountain/Outpost Mountain, c) Ibex Pass, d) Mount Michie-Squanga Lake, e) Swift River Valley.

Key Words: (small) mammals, distribution, habitat, techniques-survey, western, southern Yukon Territory.

#143

Rand, A.L. 1945. Mammal investigations on the Canol Road, Yukon and Northwest Territories, 1944. Nat. Mus. Can. Bull. 99: 1-52.

Abstract

A list of 41 mammals from the Canol Road is recorded, with notes on actual and historical occurrence. The Pelly-MacMillan-Ross River area is reported to have been good marten and lynx country, referring to a report from 1909. Data on fur harvest values from the Pelly and MacMillan Rivers, 1901-1905, are presented. The decrease in marten has been very pronounced. Lynx were scarce, but were reported to be on the increase in 1944.

Key Words: (small) mammals, distribution, abundance, taxonomy, economics, Yukon Territory.

#144

Rausch, R.A., Pearson, A.M. 1972. Notes on the wolverine in Alaska and the Yukon Territory. J. Wildl. Manage. 36(2): 249-268.

Abstract

New data concerning the life history of the wolverine (Gulo gulo) were obtained from 1059 specimens taken in Alaska and the Yukon Territory during 1960-68. Fifty percent of female wolverines 16 to 28 months old were pregnant; 91 percent of those 29 months and older were pregnant. Wolverines apparently breed in May, June, and July. The blastocysts implant primarily in January and February, and most of the young are born in February and March. Implantation occurs from December through March and parturition occurs from January through April. Fifty-four litters (in utero) averaged 3.5 fetuses. Most male wolverines are sexually mature when 14 to 15 months old. In males, testis weights indicate that the peak of the breeding condition is in May and June. Mean body weights of whole wolverines were: adult males, 31.2 pounds; juvenile males, 29.1 pounds; adult females, 20.7 pounds; and juvenile females, 20.1 pounds. The wolverine is not an endangered species and its habitat is reasonably secure.

Key Words: mammals-wolverine, reproduction, techniques-capture, Yukon Territory.

#145

Reid, Crowther & Partners Ltd. 1982. Appraisal of McMillan Pass-Howard's Pass-Nahanni River area. A contribution to Northern Land Use Planning Program for Dept. Indian Affairs and Northern Development. 132 pp.

Abstract

This report provides an appraisal of the McMillan Pass-Howard's Pass-Nahanni River area in terms of the introduction of the Government of Canada's Northern Land Use Planning Program to that part of the Yukon Territory and Northwest Territories. Present and potential future conditions pertinent to land use planning are discussed, in terms of biophysical characteristics, land use, institutional arrangements and the data base.

Key Words: habitat, management, eastern Yukon Territory.

#146

Reid Crowther & Partners Ltd. 1983. Ibex Pass resource study and management alternatives, Yukon Territory. Prepared for Yukon Department of Renewable Resources and Northern Pipeline Agency. Whitehorse and Calgary. 157 pp.

Abstract

Pp. 2.49: ...In summary the overall capability of trapping in the Ibex Pass study area appears to be relatively high. To further substantiate this

claim, however, proper surveying of the resource base will be required.

Key Words: fur, harvest, southwestern Yukon Territory.

#147

Rowatt, H.H. 1916. The Yukon Territory. Its history and resources. Mining Lands and Yukon Branch, Department of the Interior. Ottawa. 233 pp.

Abstract

Included is a chapter on fox farming with information about farming techniques, judging the quality and value of skins, reproduction schedules to obtain certain pelt colours.

Key Words: mammals - red fox, reproduction, economics, Yukon Territory.

#148

Russell, D. and D. Mossop. 1985. Wildlife. For: MacMillan Pass Resource Inventory. Lands, Park and Resources Branch, Yukon Department of Renewable Resources. Whitehorse (in press).

Abstract

The MacMillan Pass area supports significant populations of beaver, mink, otter, ermine, wolverine, marten, wolves, and red squirrel. Red fox are common at higher elevations. The coyote is rare on the North Canol Road beyond the Tintina Trench. Lynx is common on the lower North Canol below Marjorie Lake but it is rare on the south MacMillan River. Muskrats are found throughout the area, with a few local concentrations occurring along the South MacMillan River.

Key Words: (small) mammals, distribution, abundance, eastern Yukon Territory.

#149

Ruttan, R.A., and D.R. Wooley. 1974. A study of furbearers associated with proposed pipeline route in the Yukon Territory and Mackenzie River Valley, 1971. Renewable Resources Consulting Services Ltd. Arctic Gas Biol. Report Series 8 117 pp. and Appendix.

Abstract

An extensive survey of furbearer populations and their habitat was carried out along the proposed pipeline routes from the Alaska-Yukon border to the Northwest Territories-Alberta border. The largest concentration of Arctic fox dens and potential denning habitat was found in the valleys near the mouth of the Firth and Malcolm rivers, with habitat of progressively poorer quality east along the proposed route. Thirteen wolves were sighted in the coastal tundra in late August, but in spring when caribou utilized the area, wolf populations were higher. The Fort McPherson area is an important beaver area. The Old Crow Flats is an important muskrat area. Muskrat were found in other areas, usually in association with beaver. However, data from fur sale records and the scattered distribution of muskrats indicate small populations. Suitable habitat for mink is found in river valleys and delta regions throughout the study area. Fur records indicate a low average harvest per trapper. An important marten habitat is the Porcupine River area between Driftwood River and Berry Creek. Habitat evaluation for the two regions in Yukon Territory is summarized as follows. Region 1. Alaska-Peel River, Zone A: Alaska-Blow River. This coastal tundra zone is marginal-good for Arctic and Red Fox, with den sites limited to the area west of Spring River. River valleys provide summer range for wolves. Zone B: Blow River-Peel River. This area of tundra-delta-taiga transition contains upland fur-bearers (wolf, fox, wolverine, lynx) throughout; lynx are especially plentiful in the southern portion. Delta

Lakes are good muskrat habitat but poor for beaver. Delta streams are good for mink. Region 2. Old Crow-Richardson Mountains Zone A: Old Crow Flats - Driftwood River. The flats are excellent muskrat and mink habitat and appear to be good beaver habitat. Upland furbearers are present in this zone. Zone B: Driftwood River-Richardson Mountains. This zone contains tundra, mixed spruce and birch forests, and spruce forests. It has a wide variety of habitat, suitable for fox, lynx, wolf, squirrel, and ermine. Marten habitat is provided by the spruce forests. Beaver habitat is marginal.

The most productive furbearer species are lynx, marten, muskrat, beaver and mink.

Key Words: (small) mammals, distribution, abundance, habitat, economics, fur, harvest, techniques-survey, northern Yukon Territory.

#150

Scace & Associates Ltd. 1975. Kluane National Park Yukon Territory. A review of Resources and Research. Parks Canada, Department of Indian Affairs and Northern Development. Ottawa. 349 pp.

Abstract

In the wildlife section a list of small mammals and furbearers of the area with notes on their distribution, abundance, habitat, ecological relationships is presented. Included are: cinerious shrew, dusky shrew, wandering shrew, American water shrew, pigmy shrew, pine marten, fisher, short-tailed weasel, least weasel, mink, wolverine, otter, lynx, red fox, wolf, coyote, woodchuck, hoary mormot, arctic ground squirrel, northern flying squirrel, beaver, deer mouse, northern bog lemming, brown lemming, heather vole, red-backed vole, meadow vole, long-tailed vole, tundra vole, singing vole, muskrat, meadow jumping mouse, porcupine, collared pika, snowshoe hare.

Key Words: (small) mammals, distribution, abundance, habitat, southwestern Yukon Territory.

#151

Schwatka, F. 1898. Along Alaska's Great River. Henry Publishing Co. Chicago 426 pp.

Abstract

Pp. 112: ...Quite a number of marmots were seen by our Indians, and the hillsides were dotted with their holes ...(along Nares Lake; followed by an account of techniques of trapping these). Pp. 155: ...Muskrats were plentiful in this part of the river, and I could hear them "plumping"into the water from the banks, every minute or two, as I walked along them ...(Yukon River, between Marsh Lake and Whitehorse rapids).

Key Words: small mammals, distribution, abundance, southern Yukon Territory.

#152

Selous, F.C. 1907. Recent hunting trips in British North America. Witherby and Co., London. Charles Scribner's Sons, New York. 400 pp.

Abstract

Pp. 161-162: ...These most intelligent and interesting animals were very numerous all along the course of the MacMillian river ...(beaver) ...As yet they had only been trapped or in any way interfered with in one or two places, as the very few trappers who had penetrated into this region had devoted almost all their time and energy to catching martens, which are the

most valuable fur-bearing animals in the Yukon country with the exception, of course, of the very rare silver fox...
Author killed lynx along Pelly River (p. 313), black wolf along MacMillan River (p. 238); author's companion shot wolverine near MacMillan River (p. 238); author saw black wolf up the south fork of the MacMillan River (p. 358).

Key Words: (small) mammals, distribution, abundance, harvest, central Yukon Territory.

#153

Searing, G.F. Darling, L.M. 1982. A catalogue of sensitive and critical beaver and muskrat habitat along the Yukon portion of the Alaska Highway Gas Pipeline. LGL Ltd. Sidney, B.C. Prepared for Foothills Pipe Lines (Yukon) Ltd. Calgary. 40 pp.

Abstract

The report summarizes sensitive and critical beaver or muskrat habitat along the Yukon portion of the Alaska Highway gas pipeline corridor.

Working definitions for sensitive and critical habitats are based on biological criteria that permit application of the sensitive and critical habitat concepts in field situations. The relationship of the general concepts of sensitive and critical habitats to the working definitions is described. Sensitive areas are considered to be those habitats in which construction or operation of the pipeline may result in significant adverse effects on significant beaver and muskrat populations. Significant effects are likely to result primarily from disturbance of isolated areas of productive habitat. Instances of severe disturbance which may result in loss of animals within an isolated habitat will cause a localized decline in abundance for several years until densities can recover through immigration and local recruitment.

Critical areas are considered to be those habitats in which

construction or operation of the pipeline may threaten the continued existence of significant beaver and muskrat populations. These areas are highly productive areas which regularly produce excess animals that are available for emigration to less productive areas. Disturbance of these areas may threaten the existence of regional populations especially if the entire area is stressed by the effects of disturbance.

Key Words: mammals-beaver, muskrat, habitat, management, Yukon Territory.

#154

Sheldon, C. 1911. The wilderness of the upper Yukon, Charles Scribner's Sons. New York. 344 pp.

Abstract

Pp. 196: ... Rabbits, ground squirrels, and red squirrels were plentiful (in Lapie Creek valley, 1905). Pp. 246: ...Wolves must be abundant, for I saw great quantities of their old dung everywhere (Pelly Mountains, 1905). Pp. 254: ...Rabbits and red squirrels were numerous, but the little beaver cutting that I noticed was very old, the Indians having practically exterminated the beavers long before (Ross River valley, 1905). Pp. 256: ...Both lynx and wolf tracks were abundant on the bars...(of the Ross River, 1905). Pp. 263: ... and I found in the traps, which had been set the day before, four red-back mice, Evotomys dawsoni ...(Ross River valley, 1905). Pp.266: ...red-backed mice were very abundant, their intersecting trails spreading all over the surface of the woods (near Mt. Sheldon, 1905). Pp. 274: ...Rabbits, red squirrels ground squirrels, marmots, and red-backed mice were the common small mammals. The vast spruce forests yielded to former trappers abundant martens, lynxes, and some minks,but foxes are rather scarce (Ross River valley, 1905). Pp. 283 ...I saw the dusky form of a lynx...(along Pelly River, near Tay River, 1905). Pp. 285:...they were swimming the river and soon a third one followed them...(wolves, Pelly River near Tay River, 1905). Pp. 293: ...Foxes were

more abundant in the Glenlyons than in any of the country near the Pelly where I had been (1905) ...That year (1905) was the period of maximum abundance of the rabbits, but the following year they were scarce ...Pp. 293: ...the sight of two lynxes at different places on the bank of the river (Pelly River, below Glenlyon Mtn's). Pp. 296: ...A wolverine's tracks followed the crest for some distance until lost among the wind-swept rocks (on MacMillan Mountain).

Key Words: (small) mammals, fur, distribution, harvest, central and eastern Yukon Territory.

#155

Sinclair, A.R.E., C.J. Krebs and J.N.M. Smith. 1982. Diet quality and food limitation in herbivores: the case of the snowshoe hare. Can.J.Zool. 60: 889-897.

Abstract

Arguments concerning the regulation of animal populations through food shortage are hampered by the difficulty of measuring available food. This is avoided by considering how animals respond to declining food supplies. Three alternatives exist: (a) maintain a constant rate of food intake by including more poor food, (b) increase the quantity eaten to compensate for poor quality, or (c) eat only high-quality foods and thus decrease the quantity eaten. Experiments with snowshoe hares (Lepus americanus) fed ad libitum food of different crude protein values, show hares maintain a relatively constant intake rate as quality falls. This result allows us to use mean diet quality to predict whether animals can maintain body weight under natural conditions. The threshold diet quality below which weight loss occurred was 11% crude protein in the labratory. There is a strong correlation between diet crude protein and faecal crude protein. By collecting faecal pellets in the field, one can monitor the diet of the population. If faecal crude protein falls below 7.5%, animals lose weight

as a result of insufficient good food. Field data for 1977-1980 show faecal protein for some animals dropping below this level in late winter of 1979 when the hare population was at its peak density.

Key Words: mammals-snowshoe hare, diet composition, techniques-faecal analysis, southwestern Yukon Territory.

#156

Sinclair, A.R.E., and J.N.M. Smith. 1984. Do plant secondary compounds determine feeding preferences of snowshoe hares? Oecol. (Berl.) 61:403-410.

Abstract

Investigated are the food preferences of captive snowshoe hares (Lepus americanus) in winter to test three hypotheses proposed to explain food choices by hares: (1) that food choice is related to the protein content of twigs; (2) that defensive chemicals present in twigs are negatively correlated with hare food preferences; and (3) that hares eat less-preferred but protein-rich twigs when their diet is buffered by large amounts of palatable food. Hares exhibited striking and consistent preferences for different species and, in general preferred mature twigs to juvenile growth stages. Preferences across species among mature twigs were not, however, the same as preferences for juveniles growth stages across species. None of the three hypotheses adequately explained food choice by hares. Hares did not (1) select twigs that were high in protein content. They also did not (2) consistently select twigs that were low in resins or phenols. Finally (3), hares generally ate less, not more of non-preferred twigs in the presence of a protein and energy rich alternative food, commercial rabbit chow. Food preferences of hares must presumably have some chemical basis, but no simple theory has yet explained what this is. It is suggested that hares may not be under severe dietary constraints imposed by chemical defenses in winter.

Key Words: mammals-snowshoe hare, diet composition, behavior, southwestern Yukon Territory.

#157

Singleton, G.A., O.A. Steven, K. Weagle, and D. Weir. (n.d.) Fish and Wildlife habitat recovery in placer mined areas of the Yukon. Prepared for Department Indian Affairs and Northern Development. Hardy Associates (1978) Ltd. Calgary. 131 pp.

Abstract

The rate and degree of natural fish and wildlife habitat recovery in placer mined areas of the Yukon Territory was determined. Factors most limiting to this habitat recovery were identified and workable methods whereby the habitat recovery process could be enhanced suggested.

(Beaver and snowshoe hare were among species selected as indicator species for evaluation of wildlife habitat capability).

Key Words: (small) mammals, habitat, management, Yukon Territory.

#158

Slaney, F.F. & Co. Ltd. 1974. Environmental Considerations Proposed Northern Railway Extension, Whitehorse to Pelly River. White Pass & Yukon Corporation Ltd. Vancouver. 183 pp.

Abstract

The study describes the environmental setting, identifies elements of particular concern and recommends alternative routes or procedures to protect or mitigate potential adverse environmental effects of the proposed railway development.

Environmental data were assembled from published literature, resource and topographic maps, airphoto interpretation, interviews with government personnel and concerned individuals, field reconnaissances along the proposed route and prior local knowledge of the region.

(Notes are made on the distribution of mammals in the proposed railway corridors and their sensitivity to railway development).

Key Words: mammals, habitat, distribution, southern and central Yukon Territory.

#159

Slaney, F.F. 1977. Yukon Land and Resource Inventory. Final Report. Prepared for Department of Indian Affairs and Northern Affairs and the Government of Yukon Territory. Slaney, F.F. & Associates Ltd. Vancouver. 75 pp.

Abstract

The Yukon Land and Resource inventory presents in an illustrated form available information on land use and resources of the Yukon Territory, the collected data forming a base to which new information may be added.

Information compiled for the Yukon Inventory has been presented graphically as printed overlays on 1:250.000 topographic maps and listed in a bibliographic index book.

(Furbearers and large carnivores are included in the subject categories).

Key Words: (small) mammals, distribution, Yukon Territory.

#160

Slough, B.G. 1982. Preliminary investigation of the muskrat population and

harvest of Old Crow flats and northern Yukon. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse, 13 pp. and Appendices.

Abstract

The northwestern muskrat ranges over the entire Yukon Territory, being absent only from arctic and alpine tundra zones. Optimum environmental requirements include an abundant supply of emergent and submergent plants, water bodies with good shoreline or bank development and depths below normal ice-formation levels. The better muskrat habitat in Yukon is found in the south where the climate is less severe than in the north, however suitable wetlands are nowhere more concentrated than they are on the Old Crow Flats resulting in the highest population of muskrats in the Territory.

Biological and ecological studies of muskrats on the MacKenzie Delta have revealed a range of behavioral and genetically controlled adaptions to the severe subarctic environment.

The Old Crow Flats muskrat population is harvested by natives from the community of Old Crow. The Old Crow harvest represents 75% of the total muskrat harvest from Yukon and is a locally significant social activity and economic enterprise. The Old Crow muskrat harvest has been highly variable over the years, probably reflecting trapper effort rather than fluctuations in numbers. A considerable portion of the harvest is taken by shooting in the late spring when natural overwinter mortality has already occurred and pelts may be rubbed and unprime.

The northwestern muskrat is best inventoried (indexed) with spring pushup counts from fixed-wing aircraft. The ideal time for censusing pushups is when the snow has melted sufficiently to reveal the pushups and before the ice has melted (mid to late May on Old Crow Flats). The first detailed inventory on the Flats was conducted in late May 1982, using a strip-census sampling technique.

Recommendations

The following recommendations should be implemented:

1. The Old Crow Flats muskrat population should be indexed biennially

from 1982 with spring pushup counts.

2. The biology and ecology of the muskrat population should be documented through field studies to determine annual allowable harvest levels and preferred temporal and spatial harvest strategies.
3. The Old Crow Indian Band should be encouraged to harvest muskrats from the Flats, both to maintain the social fabric and cultural heritage of the community and to provide a local economy. This could be realized through an education program which could also stress optimal harvest strategies, harvest methods and pelt handling techniques.

Key Words: mammals-muskrat, distribution, abundance, fur, harvest, management, techniques-survey, Yukon Territory.

#161

Slough, B.G. 1982. Status of wolverine in Yukon. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 6 pp.

Abstract

A short note on the status of the wolverine in the Yukon Territory with suggestions for further studies.

Key Words: mammals-wolverine, distribution, abundance, research, Yukon Territory.

#162

Slough, B.G. 1983. 1981-1982 Furbearer Inventory, Habitat Assessment and Trapper Utilization of the North Canol-MacMillan Pass Development Area. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 40 pp.

Abstract

The report presents the results of surveys of furbearer habitats, winter track-counts, muskrat pushups and houses, beaver food cache surveys, beaver colony sites in the North Canol-MacMillan Pass Development Area. The data base characterizes the furbearer populations and habitat utilization in the North Canol study area. The potential impacts on furbearer populations and trapping activities are discussed.

Key Words: (small) mammals, fur, habitat, harvest, distribution, techniques survey, management, eastern Yukon Territory.

#163

Slough, B. 1983. Yukon Furbearer Management Program. Report presented at Third N. Furbearer Conf. Fairbanks. March 22-23. Unpubl. M.S. 7 pp.

Abstract

The paper outlines the Yukon's Furbearer Management Program and presents fur harvest and value data for the 1981/82 season. Also included are notes on monitoring the furbearer's population status.

Key Words: fur, harvest, economics, statistics, management, research, Yukon Territory.

#164

Slough, B.G. 1984. Trapper Questionnaire Report. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 19 pp. and figures.

Abstract

Presents the results of the trapper questionnaire analysis over the period 1977-1981.

Key Words: (small) mammals, distribution, abundance, habitat, southwestern Yukon Territory.

#165

Slough, B.G. 1984. Trapline management and the Trapper. Proc. of W. Assoc. Fish and Wild. Agencies Conf., July 16-19, 1984. Victoria. pp. 153-156

Abstract

Various management techniques are exercised to accomplish one or more of the following goals: 1) a substained annual fur harvest (and income), 2) the prevention of overpopulation (the damping of cycles), 3) habitat conservation, 4) disease and parasite control, 5) nuisance control, 6) predator management, 7) furbearer husbandry, 8) food procurement, 9) social and recreational benefits, 10) public acceptance.

Public acceptance of trapping is a relatively new concept which has very quickly vaulted to the top of the priority list of management goals. In Canada, we are only just beginning to develop and implement humane trapping and furbearer management systems, an endeavour in which the Fur Institute of Canada is instrumental. The two basic concepts of furbearer population management, selective harvesting and limited harvesting are discussed against dynamical characteristics of marten and lynx populations.

Key Words: mammals- marten/lynx, fur, harvest, management education, reproduction, Yukon Territory.

#166

Slough B.G., R.H. Jessup. 1984. Furbearer inventory habitat assessment and trapper utilization of the Yukon River Basin. Yukon River Basin Study Project Report: Wildlife No. 1. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 87 pp. and appendices.

Abstract

The Yukon Department of Renewable Resources conducted furbearer inventory studies in the Canadian Yukon River Basin in 1982 and 1983. Field studies included beaver (Castor canadensis) food cache and colony site surveys, winter track-count sampling and muskrat (Ondatra zibethica) pushup surveys. Data from the surveys were analyzed in conjunction with ongoing trapper questionnaire and historical fur harvest data sources to characterize furbearer population distributions, levels, trends and habitats. Historical and present fur harvest and trapping activity are described. The fur resource capability and problems and issues associated with impacts on furbearer populations, habitats and user groups are discussed.

The population of wolves Canis lupus, red fox Vulpes fulva, coyote C. latrans, red squirrel Tamiasciurus hudsonicus, weasel Mustela erminea, marten Martes americana, mink Mustela vison, otter Lutra canadensis, wolverine Gulo luscus, beaver, muskrat and lynx Lynx canadensis are all widely distributed within the Yukon River Basin. Some local absences were noted: coyotes are rare east of the Pelly River and marten are rare in the southern Yukon between Kluane Lake and Teslin Lake. The marten absence is believed to have been caused by a combination of overharvest and fires (in 1958) and sustained by trapping pressure which is preventing recolonization of the maturing habitat. All populations (except marten) are believed to be healthy within the context of "available" habitat for each species and acknowledging the effect of population cycles. Two major prey species, grouse and snowshoe hare, were also monitored during the studies. Both species have been at the low point of their cycles since population crashes in 1981 (grouse; mainly spruce and ruffed grouse, Canachites canadensis and Bonasa umbrellus) and 1982 (hares Lepus americanus). Their predators are

still abundant, although will probably decline extensively in 1983-84 and for the following one or two years when natural and trapping mortality will exceed recruitment into the population (recruitment diminishes when animals are stressed with a food shortage). Lynx will exhibit the greatest decline. Fox, coyote and wolverine will also be directly affected but to a lesser degree, and other species may receive secondary impacts as prey shifts occur. Long distance movements and movements through suboptimal habitats were noted for wolverine and lynx in 1982-83 indicating a food stress on these species. Wolverine, lynx and marten are harvested near the upper limit of a sustainable harvest. Trappers are being made aware of their responsibility to manage furbearers through an education program. Muskrats are declining in their already sparcely distributed habitat in a phase of an apparently natural cycle. Furbearer populations and their harvests are being continually monitored through ongoing programs.

The value of the fur harvest of the River Basins exceeded $1 million for the first time in 1982. Lynx contributed 82% of this total. Other economically significant species include marten (8%), fox (4%), wolverine (1%), mink (1%) and squirrel (1%). The River Basin Harvest comprised 78% of the total Yukon fur harvest (1982). Some 350 to 400 trappers are annually employed (part-time or full time) by trapping in the River Basin. There are 299 registered trapping concessions, 8 radius areas around communities and 3 group areas. Resident and non-resident hunters who are permitted to hunt wolves, coyotes and wolverines annually harvest about 85, 20 and 15 individuals respectively.

Potential impacts on furbearer populations and trapping activities include permanent or temporary habitat loss, air and water pollution, and disturbance. Permanent habitat loss is seen as the most severe impact and hydroelectric development as the scenario threatening the greatest habitat loss.

An annotated bibliography and information summary on the furbearer resource and trapping industry of the Yukon River Basin is appended. One hundred and fifty-four documents were annotated and indexed by subjects.

Key Words: (small) mammals, distribution, abundance, harvest, movements, economics, techniques-survey, Yukon Territory.

#167

Slough, B.G. 1984. Report on the Status of Furbearers in the Yukon Territory. Unpubl. Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 34 pp. and App.

Abstract

The report presents information on the biological and economical status of 14 species of mammals trapped in Yukon Territory. Topics include biological information (geographical distribution, population estimates and trends, habitat trends), harvest and trade data.

Key Words: (small) mammals, distribution, abundance, habitat, fur, harvest, economics, Yukon Territory.

#168

Smits, C.M.M., B.G. Slough. 1984. Relative abundance and habitat utilization of furbearers in the Frenchman-Tatchun area, Yukon Territory, as evidenced from winter track-count surveys (March 1984). Unpubl.Rep. Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 13 pp. and App.

Abstract

Presented are the results of winter track-count surveys of furbearers in the Frenchman-Tatchun area, Yukon Territory, March 5-7 1984. Fur harvest data from the period 1950/51 to 1982/83 are also presented. Five furbearer species were encountered (red squirrel, Tamiasciurus hudsonicus; snowshoe hare, Lepus americanus; coyote, Canis latrans; marten, Martes americana; red fox, Vulpes fulva). The most abundant tracks recorded were those of red squirrel. A moderately abundant species was snowshoe hare. Coyote, marten and red fox were less common. Ermine, mink, otter, wolverine, lynx and wolf were not encountered, although are known to be present in the area from fur

harvest records. Distinct habitat preferences were shown by red squirrel (white spruce), snowshoe hare (aspen-willow and white spruce-black spruce), mice (aspen) and grouse (willow). All species avoided lake ice, especially the larger Frenchman and Tatchun lakes. Red squirrels constituted the major part of the fur harvest. Lynx harvest declined in 1982/83 after a peak in the winters 1980/81 and 1981/82. There was a sharp increase in the wolverine harvest in 1982/83. Beaver and muskrat are trapped in moderate numbers on the study area. The results are discussed in view of Slough and Jessup's (1984) data.

Key Words: mammals, abundance, distribution, habitat, fur, harvest, techniques-survey, Yukon Territory.

#169

Smits, C.M.M., R.H. Jessup. 1985. Den distribution, harvest and management of arctic fox in northern Yukon Territory. Prepared for the Northern Oil and Gas Action Program (Project G-15). Unpubl. Rep. Fish and Wildlife Branch, Yukon Department of Renewable Resources, Whitehorse.

Abstract

The distribution and occupancy of arctic fox (Alopex lagopus) dens is discussed from data collected on aerial surveys of the Yukon Territory's arctic coastal plain and Herschel Island during the summers of 1984 and 1985. In addition, information on harvest of arctic fox from the area is reported. A total of 55 fox dens were identified in the study area, 36 on the mainland and 19 on Herschel Island. Den density for Herschel (0.1478 dens.km $^{-2}$) and mainland dens (0.0099 dens.km $^{-2}$) is very high and low, respectively, in comparison with densities reported elsewhere. Three of four natal dens located on Herschel Island were occupied by arctic fox and one by red fox (Vulpes vulpes), both in 1984 and 1985. No notal dens were found on the mainland in 1984; in 1985 two natal dens on the mainland yielded a red fox family and an arctic fox family. Red fox densities as

evidenced from den occupancy rates have declined since a survey in 1972. Proportions of natal dens were low in both years and are suggestive of low population levels of arctic fox in the study area. The number of pups seen at dens varied from zero to five, but is not thought to accurately reflect total pup production. Dens were randomly dispersed on Herschel Island, the mainland, and all areas combined. Spacing of natal dens on Herschel Island departed significantly ($p<0.01$) from random in both years and suggests territoriality among breeding foxes. Foxes were sighted 27 times involving 28 arctic foxes (23 on Herschel Island; five on the mainland) and 14 red foxes (five on Herschel Island; nine on the mainland). Five trappers have been trapping the northern Yukon Territory in the recent past. Harvest data are scant and imprecise. The catch during the last three trapping seasons varied from <45 in 1983/84 to 98 in 1984/85. More trapping activity occurred during the period 1970-1980, with yearly catches probably surpassing 100 arctic foxes (and in one year 200 arctic foxes). The value of the fox catch may have amounted to over $7,000 in the late seventies, but decreased during the early eighties. In the 1984/85 season it amounted to approximately $1,000. Red Fox was of little significance in the catch. It is considered unlikely that the 98 arctic foxes in the catch of 1984/85 could have been produced on the study areas and we suggest that part of this catch reflects an influx of arctic foxes from adjacent areas. Based on the low density of fox dens in the area, the harvest potential for foxes is believed to be low. Further monitoring of breeding arctic fox performance and harvest are proposed.

Key Words: mammals-arctic fox, distribution, abundance, habitat reproduction, fur, harvest, management, techniques-survey, northern Yukon Territory.

#170

Slough, B.G., H.P. Slama. 1985. Winter Furbearer track count surveys in the Coal River Park Reserve, Yukon Territory (November-December, 1984). Fish and Wildlife Branch, Yukon Department of Renewable Resources.

Whitehorse, 11 pp. and App.

Abstract

Winter track counts of furbearers in the Coal River proposed park area were conducted November 26 to December 21, 1984. Six species of furbearers were encountered: weasel, marten, wolf, red fox, lynx and red squirrel. Squirrel, marten and weasel were abundant, as were snowshoe hare and small rodents (mice and voles). Habitat preferences were shown by weasel (intermittent burn, pine/black spruce), marten (intermittent burn), red squirrel (pine regeneration), snowshoe hare (aspen/pine/spruce, pine/black spruce). A site visit to the Coal River Springs on February 28, 1985 revealed the presence of mink and otter. Wolverine, muskrat, and fisher are also known to be present in the area. Moose, were the only ungulate noted, although a set of sheep horns was found in the Coal River Springs.

A beaver cache survey in October 1984, located 25 active, and 20 inactive colony sites southwest of the springs in the park reserve. Aspen is their dominant food species here.

The open water pools and sloughs associated with the springs attract mink, otter and beaver in winter albeit in low numbers.

The historical fur harvest data shows marten, beaver and lynx to be the most important economic furbearers. The furbearers are all underharvested.

Key Words: (small) mammals, abundance, distribution, habitat, techniques-survey, harvest, southern Yukon Territory.

#171

Slough, B.G., C.M.M. Smits, 1985. Yukon Marten Management Progress to August, 1985. Unpubl. Rep. Yukon Fish and Wildlife Branch. Department of Renewable Resources.

Abstract

Marten is one of three top priority furbearer species for management effort in Yukon (besides lynx and wolverine). It is the second most important economic species, the "bread and butter" of many traplines, and is heavily in demand by trappers.

Management effort is being expended in four main areas:

1. Population status monitoring.
2. Harvest Monitoring.
3. Providing trappers with "trapline management" information.
4. Population enhancement through re-introductions and trapping restrictions.

The specific components of the 1985/86 management program are:

1. Population monitoring through winter track-counts and trapper questionnaire responses.
2. Fur harvest data analysis.
3. Completion of reserach on marten habitat selection in Yukon.
4. Marten re-introduction and trapping restrictions in the "Conservation Area" of southwest Yukon.
5. Trapline management education of trappers through brochures and presentations at trapper meetings.

All analyzed data from the management program are summarized.

Key Words: (small) mammals-marten, fur, harvest, abundance, distribution, economics, habitat, diet composition, management, movements, statistics, techniques-faecal, analysis/survey/telemetry/capture, southern Yukon Territory.

#172

Smith, B.L. 1983. Status and management of wolves in the Yukon Territory. In: Carbyn, L.N. (ed.). Wolves in Canada and Alaska: their status, biology, and managemnt. Canadian Wildlife Service Report Series No. 45, pp. 48-50. Ottawa.

Abstract

Wolves range over the entire territory; however, little is known of their subspecies distribution, population status, and influence on prey populations. Management since 1919 is reviewed. Current wolf harvest regulations offer liberal yet traditional hunting and trapping opportunities. Wolf predation on livestock is infrequent because livestock numbers are low. There is no compensation to livestock owners for losses. By necessity, wolf management currently receives limited attention.

Key Words: mammals-wolf, distribution, abundance, management, Yukon Territory

#173

Swarth, H.S. 1926. Report on a collection of birds and mammals from the Atlin region, northern British Columbia. Univ. Calif. Publ. Zool. 30(4): 51-162.

Abstract

Included in this report are notes on small mammals, and furbearers (beaver, coyote, wolverine, red fox).

Key Words: (small) mammals, British Columbia.

#174

Swarth, H.S. 1936. Mammals of the Atlin region, northwestern British Columbia. J. Mammal. 17: 398-405.

Abstract

The paper lists a number of mammals collected during the years 1924,

1929, 1931 and 1934. Forty species are included, among them the furbearers marten, least weasel, mink, wolverine, red fox, coyote, wolf, lynx, squirrel, beaver, muskrat, snowshoe hare.

Key Words: (small) mammals, distribution, abundance habitat, British Columbia.

#175

Synergy West Ltd. 1974. Kluane Region Study. Government of Yukon Territory and Government of Canada. Whitehorse, 31 pp.

Abstract

This study determines a development corridor and projects a long-range plan for "best land use". (Significant wildlife habitats are identified, in the corridor).

Key Words: mammals, habitat, distribution, southwestern Yukon Territory.

#176

Tanner, A. 1964. The structure of fur trade relations. M.A. Thesis. Dept. of Anthropoloby. University of British Columbia. Vancouver. 96 pp.

Abstract

In this study historical data on the changes in fur trade among Indian groups fo the Yukon territory is organized into convenient stages by identifying types of trade institutions. Four such stages are described and analyzed with reference to the major conditioning factors for trade in the area and at the time. These stages are 1) inter-tribal trade, 2) trading chief trade, 3) monopoly trade, 4) market trade.

Key Words: economics, fur, history, Yukon Territory.

#177

Tanner, A. 1966. Trappers, hunters and fishermen. Wildlife utilization in the Yukon Territory. Northern Co-ordination and Research Centre. Department of Northern Affairs and National Resources. Ottawa. 79 pp.

Abstract

This report is one of a series of studies which share a common concern with the Yukon Territory and its development. Its subject is the hunting, trapping and fishing industries of the Territory.

The following is a summary of the trapping section. There has been a 70 year history of open competition between Whites and Indians for fur with only recent and partial measures to ensure Indian rights to furbearing animals. During this period fur prices have been unstable, and this has not been conducive to the utilization by Indians of the concept of the open market and credit. The 19th century fur trade created (or added to already existing) differences in the wealth of the various Indian local groups in the Yukon. The size of the fur catch in any year is dependent on a number of factors: efforts of trappers; alternate employment opportunities; credit supply; need and availability of goods requiring cash; furbearer population numbers; fur prices. Trappers income for the winter months are low by comparison with almost any other occupation. Little information is available to the Game Department on the populations and locations of the various furbearing species. Government fur conservation measures do not extend far beyond a beaver tag system, by which it is possible to administer limits on the number of beaver pelts traded by each trapper, and an individual trapline registration program. There is a problem of lack of capital, and of institutions providing savings and credit facilities, for use by trappers, particularly Indians. Little credit is available from the traditional source, the trader, because, since monopoly fur trading ended, traders have no means of making sure debts are repaid.

A number of recommendations are made: 1) steps should be taken to enable trappers to obtain short-term summer employment in order to capitalize their winter trapping expeditions, 2) a trapping development program is needed, based on research conducted to establish the numbers and

of principal furbearers, and the factors which cause changes in these numbers and locations, 3) the problem of the supply of credit for the trapping enterprise must ultimately be solved by the provision of basic financial services for trappers, 4) the marketing of furs could be improved in order to obtain higher prices for trappers, 5) education of trappers in good trapping practices; in fur preparation and in conservation techniques is needed, 6) in order to best serve the economic development of trapping, administration must be aware of the needs, ambitions and values of those whose conditions they are working to improve.

(Included are statistics on numbers and values of furs trapped, number of active Yukon trappers, number of trapline registrations, average income from fur for active trappers, tax payable on furs exported from the Yukon Territory).

Key Words: (small) mammals, fur, harvest, history, economics, management, statistics, education, Yukon Territory.

#178

Theberge, J.B., T.J. Cottrell. 1977. Food habits of wolves in Kluane National Park. Arctic 30(3): 189-191.

Abstract

The food habits of wolves were studied at two different den-sites in Kluane National park in 1972 and 1973. A total of 721 food items found in 453 scats collected at the two dens consisted of moose (52.9% frequency), beaver (15.5%), arctic ground squirrel (7.9%), mountain goat (6.8%), snowshoe hare (6.2%), microtine species (6.1%). The remaining 4.6% consisted of Dall's sheep, bird feathers, grizzly bear, black bear and horse. The frequencies of occurrence of the food items in the scats were however very different at the two dens.

The comparison of pup with adult scats was based on 297 food items in 186 scats. Pup scats contained twice as much beaver (15.8%) as adult scats

(7.6%) and three times as much arctic ground squirrel (12.8%) as adult scats (3.5%). Adult scats contained more mountain goat (6.6%) and Dall's sheep (5.6%) than pup scats, with 0.7% and 0.3% respectively.

Key Words: mammals-wolf, diet composition, techniques-faecal analysis, southwestern Yukon Territory.

#179

Theberge, J. 1977. Wolf. In: Alaska Highway Gas Line Project. Environmental concerns and recommendations of the Yukon Wildlife Branch. Wildlife Management Branch, Yukon Dept. of Ren. Resources. Whitehorse. 159 pp.

Abstract

The paper presents some observations of wolves in the proposed pipeline corridor and stresses the need for further research of wolf dens or rendezvous sites. Recommendations are made with respect to human activity near these wolf activity sites and regarding wolves in general, in the proposed pipeline corridor.

Key Words: mammals-wolf, distribution, habitat, southern Yukon Territory.

#180

Theberge, J.B., J.G. Nelson and T. Fenge. 1980. Environmentally Significant Areas of the Yukon Territory. Canadian Arctic Resources Committee. Ottawa. 134 pp.

Abstract

Pp. 38: ...Site 13, MacMillan Pass (occurrence of hoary marmot is a criterion for selection of this area as an ESA). Pp. 44: ...Site 17,

Frances Lake (wolf habitat, criterion for selection). Pp. 20: ...Site 20, Aishihik Lake (wolf habitat, population of muskrat, otter, beaver, and mink; criteria for selection). Pp. 24: ...Dalton Post (wolf habitat; criterion for selection). Pp. 35: ...Streak Mountain (critical wolf denning area, criterion for selection).

Key Words: (small) mammals, distribution, Yukon Territory.

#181

Theberge, J.B., J. Bastedo. 1982. Resource survey of the Aishihik Lake environmentally significant area, Yukon: Evaluation of biotic resources. Appendix 2. Faculty of Environmental Studies. University of Waterloo. 44 pp.

Abstract

To facilitate land use planning in the Yukon Environmentally Significant Areas, a resource survey approach was developed which involves the independent analysis and subsequent integration of abiotic, biotic, and cultural resource data. This report concerns the application of the procedures for the biotic component of this approach.

(Included are notes on the favourability of wildlife habitat to beaver, muskrat and wolf).

Key Words: (small) mammals, habitat, distribution, southwestern Yukon Territory.

#182

Theberge, J.B. (n.d.). Kluane National Park. National and Provincial Parks Association of Canada. Toronto. 70 pp.

Abstract

The purposes of this report are: 1) to make clear the gains and losses resulting from the present boundaries of Kluane National Park, 2) to document the ways in which land at Kluane was managed in the years preceding park status, thus helping to develop more effective approaches in the establishment of new parks, 3) to make Canadians better acquainted with the spectacular scenery, natural diversity, opportunities for outdoor recreation ranging from roadside camping to wilderness back-packing and the chances to see and photograph northern mammals in a sub-arctic environment, all of which are part of Kluane National Park.

This is the only comprehensive study of the Kluane area to be made public which relates its values as a national park to other types of resource uses. It includes an assessment of mineral occurrences and the economic benefits of mining and relates these to natural features worthy of preservation and the economic benefits of a large national park. It develops a rationale for park boundaries based on ecological criteria which are pertinent to national park purposes.

(Notes are made on the status and distribution of some mammals).

Key Words: mammals, distribution, southwestern Yukon Territory.

#183

Tinker, A.H. 1969. Final report of small mammals study Kluane Lake, Yukon Territory, summer 1968. Unpubl. Rep. Canadian Wildlife Service. Edmonton. 19 pp.

Abstract

The climate to which small mammals are subjected may be very different from that to which a larger animal would be subjected if living in the same place. The micro-climate is less frequently measured than is the macro-

climate, therefore it is often assumed that animals live under conditions which actually do not exist for them. It seems quite likely that the changes occurring in the micro-climate may influence the distribution of animals in an area. In the present study, the relative humidity of the air inside of the nesting chamber appears to be the critical factor in determination of occupancy of a nest.

Key Words: small mammals, habitat, distribution, southwestern Yukon Territory.

#184

Urquhart, D.R. 1983. Furbearers and Forest Management in Yukon. A three-part reveiw and analysis of information concerning the habits and status of northern furbearers in relation to common forest management practices. Forest Resources Division, Northern Affairs Program. Department of Indian Affairs and Northern Development. 142 pp.

Abstract

Report concerns three aspects of northern furbearer ecology and behaviour in relation to forest management. Part one profiles each of the 12 economically important forest dwelling Yukon furbearers. Between 1974/75 and 1980/81, Lynx contributed almost 50% of total fur export revenue, marten nearly 20% and muskrat 10%. Remaining 11 species ranged between 4.21% and 9.1%. Part two examines relationship between fuelwood cutting and fur harvesting in two burns. From this could only be concluded that a) recorded fur harvest data do not support assertion that fur harvests are lower on traplines exposed to woodcutting, b) fur harvest records are not reliable enough to support assertion that woodcutting does not adversely affect trapping succes. Part three summarizes current knowledge of effects of various timber harvesting practices on northern furbearers. Canids would tolerate industrial sites, mustelids may avoid certain sites. Beaver and muskrat are seldom disturbed by logging activities.

Key Words: (small) mammals, fur, habitat, behaviour, harvest, economics, management, Yukon Territory.

#185

Usher, P.J. 1979. Status report on fur, fish and game harvest data in the Yukon Territory. A report to the Northern Pipelines Branch, Department of Indian Affairs and Northern Development. Ottawa. 36 pp.

Abstract

The report enumerates and evaluates the relevant data with respect to volume and value of output in the land-based economy which already exists, and suggests what other data are required and some procedures for obtaining them, in order to predict and assess the impact of pipeline construction on the land-based economy of the Yukon. Only the statistical information on fur, fish an game use currently held by the territorial or federal government agencies in the Yukon being the only data available for general use, are considered.

Key Words: fur, harvest, economics, statistics, research, Yukon Territory.

#186

Vos, A. De., S.E. Matel. 1952. The status of the lynx in Canada, 1920-1952. J. For.: 742-745.

Abstract

Pp. 743: ...Them Kjar, Yukon Territory in a letter dated January 22, 1951, states "general distribution of Canada lynx in Yukon Territory is roughly confined to the edge of timberline north of Porcupine River areas and Sixty-mile Creek".

Key Words: mammals-lynx, distribution, Yukon Territory.

#187

Van Zyll De Jong, C.G. 1975. The distribution and abundance of the wolverine (Gulo gulo) in Canada. Can. Field-Nat. 89: 431-437.

Abstract

Trends in the distribution and abundance of the wolverine in Canada and their probable causes are reviewed. The species declined and the southern boundary of its distribution moved northward in eastern Canada and the prairie provinces. In British Columbia, the Yukon, and the Northwest Territories wolverine numbers were less affected and major changes in distribution were not apparent. Fur production statistics suggest a possible increase in some areas in recent years. Probable causes for the observed changes in distribution and abundance are exploitation by humans, decline of caribou populations, and possibly wolf control.

Key Words: mammals-wolverine, distribution, abundance, fur, harvest, statistics, Yukon Territory.

#188

Ward, R.M.P. 1985. Behavioral responses of lynx to declining snowshoe hare abundance. M. Sc. thesis University of British Columbia. Vancouver. pp. 101 and App.

Abstract

The behavioral responses of lynx (Lynx canadensis) to declines in snowshoe hare (Lepus americanus) abundance were examined in the southwestern Yukon. Between April 1982 and June 1984 eleven lynx were radio-tagged and

monitored within and near the Kluane Game Sanctuary. Lynx mean home range size increased from 13.2 to 39.2 km2 concurrent with a decline in snowshoe hare abundance from 14.7 to 0.2 hares/ha. Below about 0.5 hares/ha several lynx abandoned their home ranges and became nomadic, although they remained within the general study area. Track transects through areas known to have different snowshow hare densities indicated that lynx concentrated their foraging efforts in areas of relatively high snowshoe hare abundance. Lynx abandoned these areas after hare abundance declined. Lynx foraging effort in terms of distance travelled per day showed a curvilinear relationship to snowshoe hare abundance. Straight-line daily travel distance remained constant at 2.2 to 2.7 km/day above 1.0 hare/ha. Below 1.0 hares/ha, straight-line daily travel distances increased rapidly, reaching 5.5 km/day at 0.2 hares/ha. Three of seven radio-tagged lynx dispersed 250 km or more from the study area during the period of rapid decline in hare abundance in 1982. No similar long distance dispersal was recorded after hare densities stablized at less than 1.0 hares/ha. Trapping mortality was responsible for the loss of seven of nine radio-tagged lynx that travelled outside the game sanctuary. One lynx died, and is believed to have starved, during the winter or spring of 1984. The high rate of trapping mortality outside the game sanctuary suggests that refugia in wilderness areas are important in maintaining lynx populations during periods of low recruitment.

Key Words: mammals-lynx/snowshoe hare, abundance, movements, behaviour, harvest, southwestern Yukon Territory.

#189

Wedeles, C.H.R. 1984. The ecology of sympatric red foxes and coyotes in the Shakwak trench of the southwest Yukon Terriotry. M. Sc. thesis, University of Waterloo. Waterloo. 168 pp. and Appendices.

Abstract

The objective of this study was to examine the ecology of sympatric red

foxes (Vulpes vulpes) and coyotes (Canis latrans), and to examine their adaptive strategies and the relationship between them. The study was conducted in the Shakwak Trench of the Southwest Yukon between May 1981 and June 1982. Six foxes and two coyotes were radio-tracked to provide information on the size, shape and overlap of home ranges as well as diet activity and habitat use. Food habits of the canids were examined by analyzing scats collected at all times of the year. Habitat-use patterns of both species and their prey were examined by a series of tract transects in the winter and by live-trapping (of prey species only) in the summer.

The 90% home ranges of the foxes averaged 295.4 ha. The 90% home ranges of the two coyotes were 2272.7 and 635.4 ha. The size of fox home ranges was influenced by sex but not by breeding status; the shape and degree of overlap was influenced by breeding status and relationship to nearby foxes. In the summer, foxes exhibited no distinct diet activity patterns, but in the winter they were active more at night than during the day.

Snowshoe hare (Lepus americanus)was the main dietary item of both canid species throughout the study period; arctic ground squirrels (Spermophilus parryii)and small mammals were of secondary importance. Snowshoe hares were at or near the peak of their cycle of abundance for the entire duration of the study; this influenced the extent to which the canids exploited them and other prey species. The scat-analysis data suggested that coyotes were more dependent on hares than were foxes because they continued to exploit hares to a large extent after hare populations began to decline.

Snowshoe hares used brushy and woody communities to a large extent and exploited edges of communities heavily. Foxes used brushy and woody communities more than other habitats and coyotes used open communities more. Coyotes used the edges of communities to much larger extent than did foxes. The habitat-use patterns of both canids were efficient for exploiting hares.A possible relationship between foxes and coyotes is discussed, in which foxes are superior in terms of exploitation competiion, and coyotes in interference competition.

Key Words: (small) mammals - red fox/coyote/snowshoe hare, movements, behaviour, diet composition, habitat, reproduction, techniques-

telemetry/faecal analysis/capture, southwestern Yukon Territory.

#190

Westworth, D.A., W.R. Archibald. 1977. Preliminary assessment of the impact of the proposed Alaska Highway gas pipeline on fur bearing animals. In: Alaska gas highway project: environmental concerns and recommendations of the Yukon Wildlife Branch. Gov. of Yukon Publications. pp.55-92.

Abstract

The report, 1) provides an overview of the status of principal species of furbearers in areas effected by the proposed pipeline, 2) describes those aspects of the biology and life history of these species that could render them susceptible to disturbance by pipeline activity, 3) evaluates the potential impact of the proposed project with reference to known effects of peipline construction in neighbouring jurisdictions, 4) makes recommendations for minimizing impact and (or) acquiring baseline data necessary for allowing meaningful assessment.

Insufficient data exists on the abundance and distribution of all furbearers, and studies of these aspects should be initiated. A number of guidelines to be adopted for protection of drainage patterns and stream and like crossings is presented. Surveys should be conducted prior to any disturbance to identify and avoid den sites for foxes, coyotes, wolves and wolverines. Construction should not occur within one mile of known active dens of wolves or wolverines and within 0.5 mile of fox and coyote dens. Provision should be made for construction of "windows" to avoid disturbance of marten, lynx and other major fur bearers during the natal and post-natal denning period. Research should be initiated in conjunction with existing corridors to determine the effect of pipeline construction on the movement patterns of furbearing mammals. Strict policies to prevent poaching should be introduced. Guidelines should be established to minimize disturbance to furbearers during pipline surveillance. Construction camps, storage areas,

access roads and compressor stations should be located at least one mile away from streams and valley bottoms.

Key Words: (small) mammals, habitat, management, Yukon Territory.

#191

Williams, M.Y. 1925. Notes on the life along the Yukon-Alaska boundary. Can. Field-Nat. 34(4): 69-72.

Abstract

This is a summary of observations made in the Hudsonian-Yukon fauna district, which includes all of the Yukon region from Fort Selkirk to the limit of the trees. Some occurrences from the southern Yukon Territory are included. Furbearers and small mammals recorded include Hudson Bay Red Squirrel (Sciurus hudsonicus), Ground squirrel (Citellus sp.), American Beaver (Castor canadensis), Chestnut-cheeked Vole (Microtus xanthognathus), Yellow-haired Porcupine (Erethizon epixanthum), Dall Varying Hare (Lepus americanus dalli), Cross Fox (Vulpes fulva), Alaska Marten (Martes americana actuosa).

Key Words: (small) mammals, distribution, Yukon Territory.

#192

Willis Cunliffe Tait & Co. Ltd. 1980. Furbearers. In: Resource inventory and planning report, Chadburn Lake Park Reserve. Delcan Ltd. On file, Wildlife Management Branch, Yukon Department of Renewable Resources. Whitehorse. 138 pp.

Abstract

A short note on the occurrence of furbearers in the Chadburn Lake area.

Key Words: (small) mammals, distribution, southern Yukon Territory.

#193

Wilson, C. 1970. Campbell of the Yukon. MacMillan of Canada. Toronto 189 pp.

Abstract

Pp. 48: ...Everyone was suffering from the great periodic scarcity of snowshoe rabbits, "the only means of winter subsistence with many of them ...(winter of 1840-41, Fort Halkett). Pp. 76: ...and the easily seen vestiges of the industrious beaver is not scarce either. In some places the points and islands are literally mowed down by them, indeed it affords them a favourable (illeg.) from the abundance of poplar wood along the river (Pelly River). Several of the tributaries of the Pelly are said to be rich in beaver also. Pp. 98: ...though there were plenty Bears, Beaver, Foxes, Marten, Wolves etc., the Indians had hitherto done little in the way of hunting except to meet their own wants of food and clothing, the latter being entirely made of skins. Pp. 104: ...Fort Selkirk and Frances Lake far from cover the expenses of keeping them up. The prospects of returns from that quarter are as poor as can well be. Mr. Campbell brought no furs up from Fort Selkirk last summer and Mr. Pambrun thinks that if he can collect two packs for next spring it will be as much as he can do. Pp. 107: ...Forfurs we have, I may say, nothing to trade, - the more the pity, there are plenty of furs and leather in caches, at the mercy of the wolverines, and element(s), in every direction round us, which the Indians are very anxious to dispose of particularly so this season, as for some reason we are ignorant of, ... Pp. 109-110: ...I was greatly surprised to learn the high prices the Coy gives for inferior furs in that quarter, epecially when we cannot get goods to take any furs at all here. When we have the goods our tariff is; a Com: Gun 20 Beaver or 60 Martens - a 3 pts plain Blkst or 4 Ell Capot, or 3 1/4 lbs. Cop: Kettle, for 10 Beaver or 30 Martens. A small axe, or a com: Cot: H'd'k'f, or 1 foot Strouds, for 2 Beaver or 6 Martens a scalping knife, or 1 file, or 1 F. Steel, or 1 comb, or 20 ball, or 1 gill

powder, or 2 feet, or 6 plugs tobacco for 1 M.B.: and 1 M.B. is = 1 Beaver = 3 Martens = 1 Lynx = 1 Red Fox: - Cross = 2 MB, Silver 4 do etc. etc.

Key Words: mammals, fur, harvest, history, abundance, economics, central, Yukon Territory.

#194

Wright, A.A. 1976. Prelude to Bonanza. The discovery and exploration of the Yukon. Gray's Publ. Ltd. Sidney, B.C.

Abstract

Pp. 83-84: ...The only species of mammals I have seen here in winter, "he wrote", are foxes, rabbits, and mice, of birds, ptarmigans and whiskey jacks. There are porcupines, deer, fur animals and mountain sheep nearby, but I have no time to hunt them. Pp. 233: ...During the winter the natives of the interior (southwest Yukon Territory) roam over all the land in small parties, hunting and trapping, but return here with their spoils of black and brown bear, black, cross, gray white, and red fox, wolverine, land-otter, mink, lynx, beaver, etc., and exchange them for blankets, guns, powder, and tabacco, which the Chilkat Indians bring to them from the coast. Pp. 236: ...Here and there (Shakwak Valley) an old fox-trap could be seen, and a few rude huts of tamarack boughs used as winter camps by hunters and trappers.

Key Words: mammals, fur, harvest, history, economics, southwestern Yukon Territory.

#195

Young, G.O. 1947. Alaskan-Yukon trophies won and lost. Standard Publications. Huntington, West Virginia. 273 pp.

Abstract

Pp. 160: ...saw a large gray timber wolf coming...(Generc River).

Key Words: mammals, distribution, western Yukon Territory.

#196

Youngman, P.M. 1964. Range extensions of some mammals from northwestern Canada. Nat. Mus. Can. Nat. Hist. Paper 23: 1-6.

Abstract

A number of mammal species, collected since 1960, were found to constitute range extensions into the Yukon Territory: Sorex cinereus cinereus, Sorex cinereus ugyunak, Sorex arcticus tundrensis, Microsorex hoyi intervectus, Peromyscus maniculatus borealis, Microtus pennsylvanicus, Microtus longicaudus vellerosus, Microtus miurus, Synaptomys borealis dalli, Dicrostonyx torquatus, Zapus hudsonius hudsonius, Odocoileus hemionus hemionus.

Key Words: (small) mammals, distribution, Yukon Territory.

#197

Youngman, P.M. 1972. Type specimens of mammals in the National Museum of Natural Sciences, Ottawa. National Museums of Canada, Publications in Zoology, no. 7.7 pp.

Abstract

The collection of recent mammals at the National Museum of Natural Sciences, Ottawa, includes holotypes of five insectivores, four lagomorphs, 35

35 rodents, 10 carnivores, two pinnipeds, and two artiodactyls, as well as three neotypes of the latter order (including Evotomys dawsone Merriam of Finlayson River, Y.T., Microtus cantator Anderson of Teepee Lake, Y.T., Dicrostonys torquatus nunatakensis Youngman of S. Chapman Lake, Y.T., and Euarctos randi Anderson of Sheldon Mountain, Y.T.).

Key Words: (small) mammals, distribution, Yukon Territory.

#198

Youngman, P.M. 1975. Mammals of the Yukon Territory. Nat. Mus. Nat. Sc. Publ. Zool. no. 10. 192 pp.

Abstract

This primarily taxonomic study of the 64 species of recent mammals recorded from the Yukon Territory attempts to discover the proximate origins of terrestrial species in the northwestern Arctic and Subarctic. Ecologica data are included for some species, and distributional maps are provided for all native terrestrial species.

Sixty percent of the Yukon and Alaskan terrestrial mammals originated in the main unglaciated portion of North America to the south of the main continental glaciers, and 35 percent of the fauna in the unglaciated region in Siberia, Alaska, the Yukon and the Northwest Territories known as "Beringia". The remainder are thought to have been derived from small refugia, or are introduced species.

Key Words: (small) mammals, distribution, taxonomy, Yukon Territory.

#199

Yukon Wildlife Management Branch. 1984. Furbearers of Yukon. Yukon Department of RenewableResources. Whitehorse. 37 pp.

Abstract

A short description of the furbearing animals of the Yukon Territory with notes on their ecology, distribution and utilization.

Key Words: (small) mammals, distribution, habitat, fur, harvest, Yukon Territory.

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