

north and 6.0 km east of Stoke Centre, 17080(2). Compton Co., 3.3 km north and 1.3 km west of St. Isidore, 17073(1); 2.8 km west of East Hereford, 17060(11); 2.6 km east of St. Malo, 17067(1); 6.6 km east of La Patrie, 17078(1).

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Literature Cited

- Bleakney, J. S.** 1958. A zoogeographical study of the amphibians and reptiles of eastern Canada. National Museum of Canada Bulletin 115: 1-119.
- Brandon, R. A.** 1967. *Gyrinophilus porphyriticus*. Catalogue of American amphibians and reptiles. pp.33.1-33.3.
- Conant, R.** 1975. A field guide to reptiles and amphibians of eastern and central North America. 2nd edition. Houghton Mifflin Co., Boston. 429 pp.
- Denman, N. S. and I. S. Lapper.** 1964. The herpetology of Mont St.-Hilaire, Rouville County, Quebec, Canada. Herpetologica 20(1): 25-30.
- Dresser, J. A. and T. C. Denis.** 1944. Geology of Quebec. Volume 2. Quebec Department of Mines, Geological Report 20. 544 pp.
- Logier, E. B. S. and G. C. Toner.** 1961. Checklist of the amphibians and reptiles of Canada and Alaska. Royal Ontario Museum Life Sciences Division, Contribution 53: 1-92.
- Mittleman, M. B.** 1966. *Eurycea bislineata*. Catalogue of American amphibians and reptiles. pp. 45.1-45.3.
- Pendlebury, G. B.** 1973. Distribution of the dusky salamander *Desmognathus fuscus fuscus* (Caudata: Plethodontidae) in Quebec, with special reference to a population from St. Hilaire. Canadian Field-Naturalist 87: 131-136.

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The River Otter (*Lutra canadensis*) on the North Slope of the Brooks Range, Alaska

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We believe a case can be made for the range extension of the river otter (*Lutra canadensis*) onto the north slope of the Brooks Range in Alaska within the last two decades (see Figure 1). To our knowledge, the first observation of otters north of the Brooks Range was a report of tracks on the Kuparuk River in 1949 (Bee and Hall 1956). The first recorded sighting of an otter was at Kanayut Lake about 24 km northeast of Tolugak Lake in 1950 (Rausch 1950). Rauch believed the otter was not a resident in the Anaktuvuk Pass region of the Brooks Range; at the time of his investigations, few Inuit there had ever seen an otter. To the east, the people of Arctic Village frequently trapped otters 48 km south of their village, but they had no knowledge of otters occurring in the mountains (Rausch 1953). An otter sighted on the Sheenjok River near the mouth of Old Woman Creek, however, indicated that otters occurred north of the

village at least occasionally, but the observer had never seen otters on the north side of the mountains (Bee and Hall 1956).

By 1965 it appeared that the river otter had become established on the north slope of the Brooks Range. Gubser (1965) reported that the Inuit at Anaktuvuk Pass now considered the otter a resident species in the Chandler River just north of the Brooks Range. David Snarski and Roland Quimby (personal communication) observed otter tracks along Spring Creek on 3 May 1972 and at Shublik Springs on 16 May 1972. On 13 June 1972 we photographed three otters swimming in a small lake about 6 km east of the junction of Eagle Creek and the Canning River. David Snarski (personal communication) saw an otter near open water on the Ribdon River 21 April 1973. Another otter was sighted 22 May 1973 in the Marsh Fork of the Canning River (Jakimohuk 1974). In

April 1974 Audrey Magoun and Averill Thayer saw 17 sets of otter tracks while they were conducting a wildlife survey from Arctic Village north to Shublik Island in the Canning River and west to Elusive Lake (Figure 1). Tracks were evident at nearly every stretch of open water, not only on the south side of the Brooks Range but on the north side as well. While flying over the March Fork Harold Downing saw three otters on 2 May 1975 (Chapman³). Otter tracks were frequently seen in the same area during June 1975.

It is difficult to document range extensions on the north slope of the Brooks Range owing to the paucity of biological information about this area prior to 1950. Otters did occur north of the mountains occasionally, but the evidence suggests they were not

resident there. The increase in sightings of river otters and their tracks could merely correspond to an increase in biologists and other observers. We believe, however, an actual range extension of the river otter has occurred.

Records: (1) Kuparuk River, 70°11'30" N, 149°03'00" W (as reported by Bee and Hall 1956); (2) Kanayut Lake, 68°20'00" N, 151°10'00" W (Rausch 1950); (3) Spring Creek, 68°37'30" N, 149°09'00" W (tracks observed by Roland Quimby and David Snarski on 3 May 1972); (4) Shublik Springs, 69°29'30" N, 146°00'00" W (tracks observed by Roland Quimby and David Snarski on 16 May 1972); (5) Small lake near the mouth of Eagle Creek, 69°23'30" N, 145°52'00" W (three otters observed by Audrey Magoun and Patrick Valkenburg on 13 June 1972); (6) Ribdon River, 60°33'00" N, 148°10'00" W (otter observed by David Snarski on 12 April 1973); (7) Marsh Fork, 69°03'00" N, 146°06'00" W (Jakimchuk

³Chapman, R.C. 1976. The effects of human disturbance on wolves. Alaska Cooperative Park Studies Unit, University of Alaska, College, Alaska. Unpublished report. 154 pp.

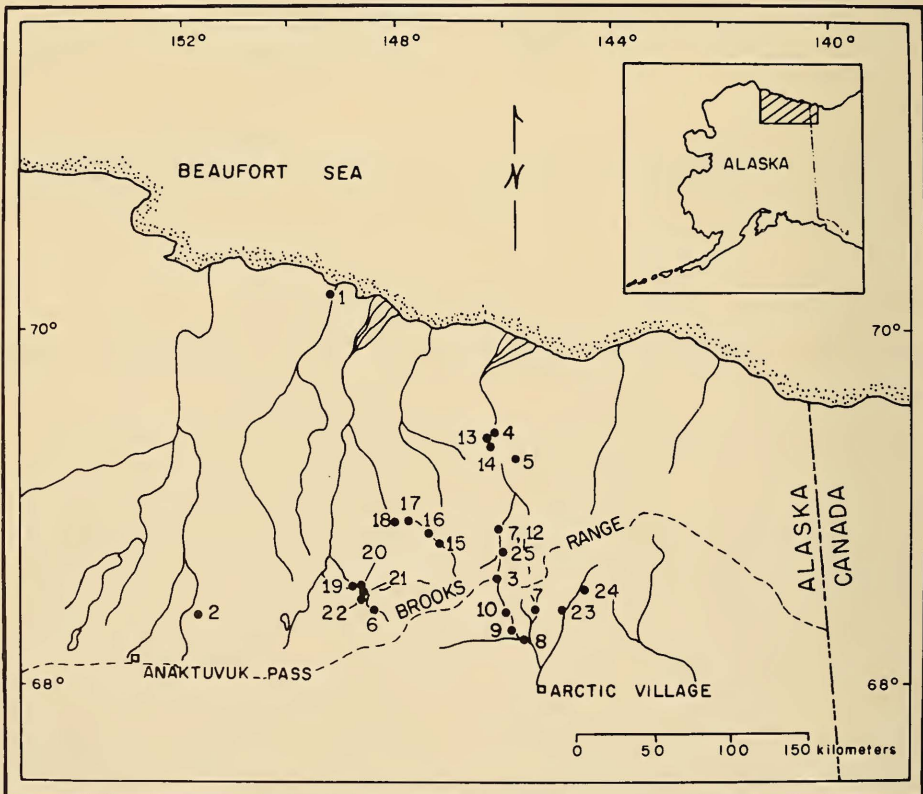


FIGURE 1. Occurrence of *Lutra canadensis* on the north slope of the Brooks Range, Alaska.

1974); (8,9,10,11) Junjuk River, 68°33'24" N, 145°32'46" W; 68°23'24" N, 145°43'34" W; 68°26'04" N, 145°54'20" W; 68°30'24" N, 146°07'50" W, respectively (tracks observed by Audrey Magoun and Averill Thayer in April 1974); (12) Marsh Fork, 69°03'00" N, 146°06'00" W (tracks observed by Audrey Magoun and Averill Thayer in April 1974); (13,14) Canning River, 69°27'52" N, 146°16'23" W; 69°26'12" N, 146°14'33" W, respectively (tracks observed by Audrey Magoun and Averill Thayer in April 1974); (15,16,17,18) Ivishak River, 68°55'30" N, 147°04'21" W; 69°01'49" N, 147°18'21" W; 69°02'31" N, 147°33'27" W; 69°01'51" N, 147°42'33" W, respectively (tracks observed by Audrey Magoun and Averill Thayer in April 1974); (19,20,21,22) Ribdon River, 68°39'00" N, 148°25'21" W; 68°39'00" N, 148°16'50" W; 68°37'18" N, 148°15'24" W; 68°35'48" N, 148°11'12" W, respectively (tracks observed by Audrey Magoun and Averill Thayer in April 1974); (23,24) East Fork of the Chandalar River, 68°35'41" N,

144°58'00" W, 68°41'00" N, 144°46'11" W, respectively (tracks observed by Audrey Magoun and Averill Thayer in April 1974); (25) Marsh Fork, 68°53'30" N, 146°07'30" W (Chapman³).

Literature Cited

- Bee, J. W. and E. R. Hall.** 1956. Mammals of northern Alaska on the Arctic Slope. University of Kansas Museum of Natural History, Miscellaneous Publication 8, 309 pp.
- Gubser, N. J.** 1965. The Nunamiut Eskimo, hunters of caribou. Yale University Press, New Haven. 384 pp.
- Jakimchuk, R. D. (Editor).** 1974. In Mammal studies in northeastern Alaska with emphasis within the Canning River drainage. Appendix B. Canadian Arctic Gas Studies Limited Biological Report Series 24: 17-20.
- Rausch, R. L.** 1950. Notes on the distribution of some Arctic mammals. Journal of Mammalogy 31: 464-466.
- Rausch, R. L.** 1953. On the status of some arctic mammals. Arctic 6: 91-148.

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Lichens of the Bamfield Marine Station, Vancouver Island, British Columbia

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Abstract. Seventy-four species of lichens were collected from the 0.73-km² reserve of the Bamfield Marine Station on the west coast of Vancouver Island. New records for North America were *Buellia griseovirens*, *Caloplaca thallicola*, *Ochrolechia androgyna* var. *saxorum*, and *Porina chlorotica* var. *persicina*. In addition, *Spilonema revertens* is new to the British Columbia flora. The species found indicate the richness of the flora and the need for a more detailed study of the area.

The lichens of British Columbia have only recently been catalogued by Otto and Ahti (1967). Little is known about the lichen flora of southern Vancouver Island (Bird and Bird 1973) and the west coast lichens in general. It was decided that a lichen study of the Bamfield area, where a marine biological station is situated, would be of value, not only to those using the research station, but also to those working on coastal lichens elsewhere in British Columbia. It would provide an indication of the richness of the lichen flora, which in turn might stimulate further studies.

The remote settlement of Bamfield (48°54' N,

125°09' W) lies on the west coast of Vancouver Island approximately 145 km (90 mi) north of the provincial capital of Victoria. To the north of the settlement is the Bamfield Marine Station which is surrounded by a small reserve with an area of 0.73 km² (Figure 1).

Climate

The Bamfield climate, according to the Köppen classification, is equable mesothermal humid and can be considered "oceanic" in the strict sense. The moderating influence of the ocean creates year-round mild temperatures. The highest annual temperature and lowest rainfall occurs during the summer (Table 1). Winter months are characterized by the heaviest annual rainfall with the lowest annual temperatures. Approximately 36 cm of snow falls in a

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