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Notes on the Mammals of the Kluane
Game Sanctuary, Yukon Territory

by
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NOTES ON THE MAMMALS OF THE KLUANE GAME SANCTUARY, YUKON TERRITORY

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The Kluane Game Sanctuary, comprising an area of approximately 10,000 square miles, is situated in extreme southwestern Yukon Territory. Alaska and the 60th parallel of latitude form its western and southern boundaries, and the valleys of Kluane Lake and the White River form its northern boundary. About two-thirds of the area is composed of the glacier-clad St. Elias Mountains. The northern tundra-clad foothills, situated in a moisture shadow of the higher southern peaks, constitute excellent big game range because of their limited annual snowfall. The boreal forest extends up the outer slopes and valleys to about 3,800 feet. This spectacular area is also a National Park reserve.

The big game and fur-bearer resources of the Sanctuary were investigated for the Canadian Wildlife Service during the month of June, 1951. A second brief visit was paid to the area on May 29, 1955. The Sanctuary was first reached via the Alaska highway on June 4, 1951. After a short stay at Kluane Lake, the interior of the Sanctuary was explored by pack train from the 6th to the 19th. The route led up the Donjek River, Wolverine Creek, Tepee Lake, St. Clair River, Klutlan Glacier, White River, and the highway was reached again via Edith Creek. On the 21st and 22nd, the highway was patrolled as far as White River; the Haines road was traversed on the 22nd and 23rd. I returned to Whitehorse on the 24th and arranged for an aerial survey of big game ranges of the Sanctuary, which was conducted on June 28.

Other accounts of the mammals of the area, notably those of Baker (1951) and Cameron (1952) dealt largely with the taxonomy of the smaller mammals. The present account merits recording in view of the fact that it deals at greater length with the status of the larger species found in the interior of the Sanctuary. Clarke (1943) prepared a manuscript report on an early visit to the area.

During my investigations, small mammal populations were at a low ebb in the sanctuary in contrast to conditions when the other workers visited the area. During the month, only 18 specimens of five species were secured in 300 trap-nights.

Notes on the birds observed have previously been recorded (Banfield, 1953).

ANNOTATED LIST

Cinereus Shrew *Sorex cinereus cinereus* Kerr

Four specimens were taken at Tepee Lake, June 14 and 15, and two at Edith Creek summit, June 17 and 18. The average measurements (mm) were: total length, 85; tail, 36; hind foot, 12; and ear, 7. They were found along the stream-beds above timberline and in mossy spruce woods.

Grizzly Bear *Ursus arctos*

Grizzly bear signs were common on the Donjek River flats on June 8 and 9, where the bears had been digging *Hedysarum* roots. Tracks were also noted at Wolverine Creek, Tepee Lake, and the Klutlan River. I saw no grizzlies in the Sanctuary, although the Indian wrangler saw two while searching for the horses on the Donjek flats. The number of their tracks led me to conclude, however, that they were common and were widely distributed. During the early summer they were feeding on the river bottoms. Neither bears nor their tracks were seen on the tundra. A skull picked up at the Duke River was donated by Mr. Joe Langevin. One bear was seen at Kusawa Lake, June 28.

Black Bear *Ursus americanus*

Only one black bear track was noted on the trail ascending Wolverine Creek, June 10. It seemed to be less common in the sanctuary than along the Alaska Highway, where it is reported to be a nuisance about settlements and camps.

Timber Wolf *Canis lupus*

The only sign of wolves noted during the investigation was one track observed on the Wolverine Creek trail on June 10.

Several outfitters along the Alaska Highway, including Mrs. Jacquot of Burwash Landing, had sustained losses of horses from wolf predation during the winter months. It was supposed that large packs of wolves inhabited the sanctuary. However, when the Director of Game and Publicity gave a permit to Archie Lampman of Burwash Landing to poison wolves in the Sanctuary during the preceding two winters, only one wolf was killed.

When Mr. Joe Langevin, Kluane Warden, accompanied Lampman on a winter patrol into the Sanctuary, they saw only one wolf track during the trip on the upper Wolverine Creek.

From these observations, it was concluded that timber wolves were scarce in the Sanctuary.

Coyote *Canis latrans*

A coyote track was observed at Tepee Lake. My guide told me that there were a few coyotes in the area.

Fox *Vulpes vulpes*

Fox tracks were very common along the shore of Tepee Lake, June 11 to 15. There were numerous locations where foxes had dug out ground squirrels (*Spermophilus parryi plesius*). The local scarcity of those animals was thought to be the result of predation by foxes.

Pine Marten *Martes americana*

The guide reported that there were a few in the Sanctuary. He secured two the previous season on the Kluane River north of the Sanctuary.

Short-tailed Weasel *Mustela erminea*

While hunting pikas on Edith Creek Pass on June 18, I observed a weasel scurrying among the boulders of a talus slope, engaged in the same occupation.

Mink *Mustela vison*

Reported by the Indians as occurring in the Sanctuary.

Otter *Lutra canadensis*

Messrs. Cameron and Kendall reported seeing two otter on their canoe trip down the Koidern River, June 5, 1950. They expressed some concern that otters were common in the valley and thought that they were a threat to beaver and muskrat propagation.

Wolverine *Gulo luscus*

The fresh tracks of a wolverine were noted on the trail ascending to Edith Creek summit on June 17. The guide reported that they were common in the Sanctuary.

Lynx *Lynx canadensis*

The guide reported that while accompanying his uncle, Jimmy Joe, on his trapline in the present Sanctuary area in 1942, they snared a lynx on Cement Creek, a tributary of the Donjek River.

Hoary Marmot *Marmota caligata*

No marmots were observed during the investigation, although a considerable amount of time was spent above the treeline. My guide reported that a few occur in Sergeant's Pass.

Ground Squirrel *Spermophilus parryii plesius* (Osgood)

These squirrels were abundant above timberline throughout the Sanctuary and in open dry meadows and river flats at lower elevations. They are an important summer source of food for predatory animals and birds. Specimens were secured at Kluane Lake, Wade Creek, Tepee Lake, and the Haines Road. They are absent in the northwest portion of the Sanctuary where there are many sphagnum bogs underlain by permafrost.

Yukon Chipmunk *Eutamias minimus caniceps* Osgood

The chipmunk was commonly observed along the Alaska Highway as far as the Duke River, and along the Haines Road as far as Dezadeash Lake. None was observed, however, on the pack trip to the interior. It seems likely that they are confined to the forests and clearings of the lower elevations and do not extend far into the Sanctuary.

Red Squirrel *Tamiasciurus hudsonicus petulans* Osgood

Abundantly distributed throughout the forested regions of the Sanctuary. One specimen secured at Wade Creek, June 9.

Beaver *Castor canadensis*

Beaver signs and a dam were located on a small pond west of Tepee Lake. Two lodges were also observed through field glasses on the Koidern River. During a canoe trip down the Koidern River on June 5, 1950, Messrs. Kendall and Cameron observed 12 beaver and much old beaver sign.

White-footed Mouse *Peromyscus maniculatus algidus* Osgood

One white-footed mouse was taken in a clearing at Wade Creek, June 10. The tail of a second was left in a trap at Edith Creek. This region is near the northwest boundary of the range of the species.

Red-backed Vole *Clethrionomys rutilus dawsoni* Merriam

These voles were widely distributed throughout the spruce forests, and in stream banks and willow thickets above treeline. Specimens were taken at the following localities: Wade Creek: 1, June 9; Wolverine Creek: 1, June 11; Tepee Lake: 2, June 14, 15; Edith Creek summit: 1, June 18. Average measurements (mm) were: total length, 132; tail, 31; hind foot, 19; ear, 17. On three occasions during the pack trip, red-backed mice were observed running through the ground vegetation alongside the horses' feet.

Long-tailed Vole *Microtus longicaudus vellerosus* Allen

Two specimens of this vole were secured from tundra runways at the Haines Road summit, B.C., immediately south of the Sanctuary.

Muskrat *Ondatra zibethica*

One muskrat was watched cutting sedges on the shore of a pond in the Koidern valley on June 20. A close inspection of several of the ponds showed muskrat activity.

Porcupine *Erethizon dorsatum*

Unmistakable signs of porcupine feeding were noted on a balsam fir on the Donjek River flats on June 9. The Indians reported that porcupines were fairly common on the Sanctuary.

Collared Pika *Ochotona collaris*

Pikas were widely and commonly distributed in rock talus slopes on the steep mountain sides above treeline. Six specimens were taken from above Tepee Lake, June 12 and 15, and at Edith Creek summit on June 18. The average measurements (mm) were as follows: total length, 177; hind foot, 31; ear, 22. A good character to identify this species seems to be the creamy-buff fur patch on the side of the face over the facial gland. In *princeps* of the Rocky Mountains, this patch is rusty brown in colour.

A prevalent subcutaneous infection of cysticerci was found, which is probably the larval stage of a tapeworm found in the short-tailed weasel. Fleas collected were sent to Mr. George P. Holland, who has identified them as *Monopsyllus toli*, a species formerly known only from Siberia.

In a talus above Edith Creek, a pika den was discovered on June 18. The nesting cavity was in a crevasse between boulders. The floor and a

large refuse pile at the entrance were composed of *Dryas* leaves and seed heads, and *Carex* cuttings. Numerous faeces indicated prolonged and recent occupancy.

Varying Hare *Lepus americanus*

The population of hares was locally at a low ebb in the Sanctuary during the investigation. Only two hares were seen: Kluane Lake, June 5, and on the Haines Road, June 23; and signs of their occurrence were also rare.

Moose *Alces alces*

Although only three moose were seen during the investigation of the Sanctuary (Tepee Lake, June 12; Harris Creek, June 16; and Mush Lake, June 28), abundant signs of tracks and browsing along the trails indicated a population of moderate size. The signs were most abundant in the forested areas, but evidences of feeding and tracks were also observed on the tundra. In some areas the browsing on *Salix* amounted to moderate utilization. Had the animals been less wary, undoubtedly more would have been seen.

Discarded antlers were found in the Donjek, Wolverine, and Harris Creek valleys, indicating winter occupancy.

Other moose were seen from the air at Fish Lake and Kusawa Lake, east of the Sanctuary, on June 28.

Osborn Caribou *Rangifer* sp.

Only three animals were seen; two adult bulls, Klutlan Glacier, June 16, and one adult cow, Edith Creek summit, June 18. Fresh tracks observed on the trail at the following localities indicated, however, a wider summer distribution: Wade Creek summit, Wolverine Creek, Tepee Lake, St. Clare Creek, and Edith Creek. Shed caribou antlers were observed at Tepee Lake, Harris Creek, and St. Clare Creek.

During the summer months caribou range over the alpine tundra generally. In the Sanctuary their range extends south to the White River, Edith Creek summit, Sergeant's Pass, Wade Creek summit, and the St. Elias glaciers. In the winter months they are reported to descend to the wooded valleys. The St. Clare and Harris creek valleys are favourite haunts. In the height of the fly season they are reported to frequent the broad gravel beds of the river bottoms. My guide reported seeing 50 caribou on the St. Clare flats in August 1948. He estimated that the total population in the Sanctuary might be as high as 100 animals, a liberal figure judging from the scant evidence we observed.

The Kluane Sanctuary seemed to be one of the last strongholds of the Osborn mountain caribou in the Yukon. Two caribou were reported to have been killed by Indians north of Kluane Lake during the winter of 1950-51. Other reports of this subspecies were received from Marsh Lake, the mountains above Swift River, and Teslin Lake, 1950.

Stone's Caribou *Rangifer* sp.

Clarke (1943) reported the incursion of migratory barren-ground caribou to the Sanctuary during the winter of 1936-37. There was a report during the winter of 1950-51 of a small band of about 25 Stone's caribou which crossed the White River from the west, north of the Alaska Highway.

White Sheep *Ovis dalli*

The northeastern slopes of the St. Elias Mountains have long been known as a stronghold of the white sheep.

During the summer months, the sheep were distributed upon the higher alpine tundra slopes, green ledges, and talus slopes. In the Sanctuary, sheep were seen at the following localities: north of Mush Lake, June 28; Slim's River, eastern mountain shoulders, June 4 and 28; Sheep Creek, June 4; mountain east of Duke River, June 28; Mountain west of Donjek River, June 9; mountain south of Wolverine Creek, June 11; mountains north of Tepee Lake, June 11 to 15; about Edith Creek, June 18 and 19. My guide reported, in addition, that sheep were present in summer above the Kathleen Lakes, south of Duke River, at the head of Halfbreed Creek, Cement Creek, Lynx Creek, Sergeant's Pass, and St. Clare Creek. At that time of year the sexes were segregated; the rams frequented the highest alpine slopes, while the ewes, lambs, and yearlings tended to occupy lower grassy ledges and talus slopes.

In winter the sheep are reported to descend to the outer ranges of the St. Elias Mountains, where the snowfall is less. Favourite winter ranges are as follows: above Silver Creek, Sheep Mountain down to the Highway,

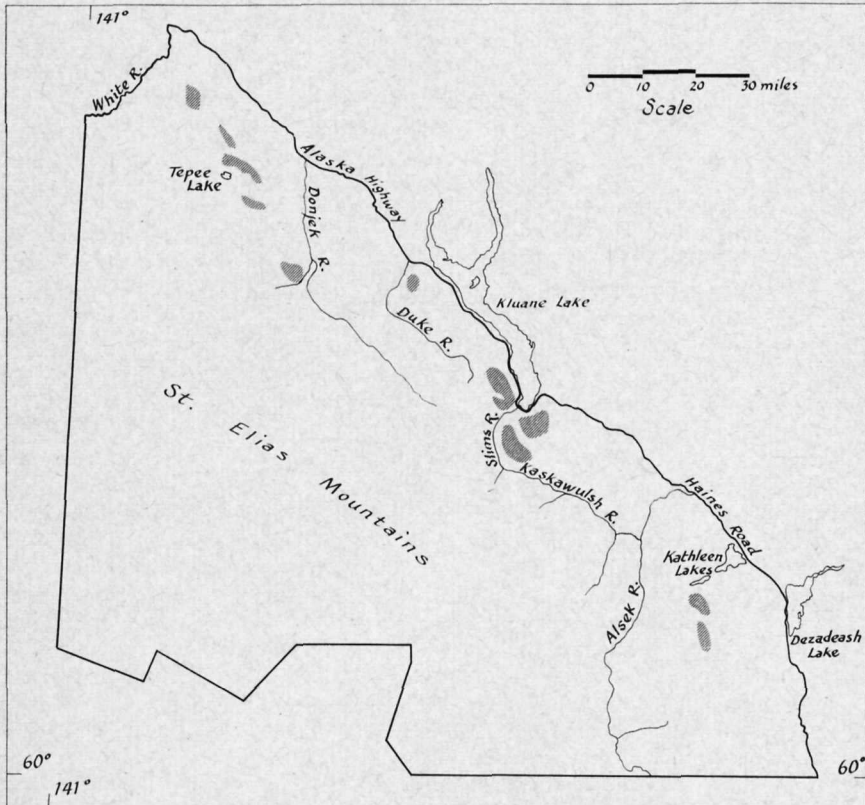


FIGURE 1.—Distribution of white sheep in the Kluane Sanctuary.

the mountains and benches north of Wolverine Creek between Lynx Creek and the Donjek River, and above the lower reaches of Edith and Hazel creeks. Many of these slopes are reported to blow free of snow in the winter. Accompanied by Warden Langevin, I examined, on foot, the Sheep Mountain winter range in detail on June 21. The range was composed of grassy slopes and benches, with groves of spruce and fir trees in canyons and pockets. The grass cover was moderately good. Other forage genera were *Arctostaphylos*, *Vaccinium*, *Shepherdia*, and *Artemisia*. The plants indicated xerophytic alpine conditions. There was abundant sign of winter sheep occupancy, but nowhere did the vegetation show signs of excessive utilization. Langevin reported counting 43 sheep on this range during the winter. I observed four rams high on the mountain shoulder. We saw no carcasses and thought predation was light.

A classified count of sheep made during the investigation, the majority of which were rams, is given in Table 1. The few ewe groups observed were seen at great distances, and a complete segregation was seldom possible. The small sample suggests a satisfactory annual increment and should provide an increasing population under the local conditions.

TABLE 1
Sheep Observations

Band	Date	Rams	Ewes	Lambs	Yg.	Unclassified
	June					
Sheep Creek.....	4	12	—	—	—	—
Donjek River.....	9	—	—	—	—	33
Wolverine Creek.....	10	—	5	3	2	—
Tepee Lake.....	11	14	1	—	—	—
	15	17	2	1	2	6
Edith Creek.....	18	—	10	5	3	—
Mush Lake.....	28	—	—	—	—	5
Slim's River (ewes +).....	—	—	—	—	—	70
Duke River (ewes +).....	—	—	—	—	—	30
Total.....	221	43	18	9	7	144

It is doubted that the white sheep are suffering from much wolf predation at present. As reported previously, wolves are scarce in the Sanctuary. Furthermore, an inspection of occupied sheep ranges failed to produce signs of predation. The habitat chosen by the sheep was rugged and precipitous. Most bands seen were close to ideal escape terrain in the form of rock faces. This was especially true of the ewe and lamb bands, which were often observed on inaccessible ledges. It seems that the white sheep are seldom vulnerable to wolf predation except when crossing valleys or on the lower benches of the winter range. The fact that sheep occupy these benches at the mouth of Sheep Creek in itself suggests that wolf predation is light.

During the investigations, several observations upon golden eagle white sheep relations led me to conclude that these birds are an important predator upon white sheep lambs (Banfield, 1953).

I was interested to note that upon my arrival in the Yukon in early June the white sheep lambs were already about a month old, although when I left Jasper at the end of May, no lamb bighorns (*Ovis canadensis*) had yet been observed.

I found that the white sheep were extremely wary, although they nominally had eight years of sanctuary. On two occasions above Tepee Lake, stalks were interrupted by a slight change in wind direction, which caused bands of rams to catch my scent. In both cases the rams fled, not stopping until they had gone over the mountain shoulder.

On our flight to the Sanctuary from Whitehorse on June 28, we observed bands of about 50 sheep, including ewes and lambs, on Primrose Mountain, and on the mountaintop east of Kusawa Lake we saw about ten rams outside the Sanctuary (see Figure 1 for distribution within the Sanctuary).

On May 29, 1955, 95 sheep were counted from the highway on Sheep Mountain. Warden Langevin reported that the sheep population, then totalling 200, had shown a steady increase since 1951.

Mountain Goat *Oreamnos montanus*

According to local reports, mountain goats in the Sanctuary are confined to the valley of the Alsek River. On June 28, six goats were seen from the air on a mountain west of the Alsek River. Numerous game trails were observed along the shale talus slopes north of the Kaskawulsh River, but these may have been other sheep or goat trails. Goats were reported as being common on the Haines Road summit in British Columbia, south of the Sanctuary. Although no goats were observed here on June 22 and 23, their trails and tracks were observed. The most easterly range of goats in southwest Yukon is reported to be Mount White, east of Marsh Lake.

Small mammal populations were found to be at a low ebb in the Sanctuary during the investigation. This is in marked contrast to conditions described by Clarke (1943). During the month only 18 specimens of five species (*Tamiasciurus*, *Peromyscus*, *Clethrionomys*, *Microtus longicaudus*, and *Sorex cinereus*) were trapped in 300 trap-nights.

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