

## **Biological Investigations of the Blue River Headwater Area, Wells Gray Park**

**Robert A. Cannings, June, 1977**

### **I) Introduction**

In the near future, Interior Lumber and Shingle Co. Ltd, a subsidiary of Rayonier of Canada, propose to log three blocks of timber totaling 180 acres within the eastern boundary of Wells Gray Park. These timber licenses pre-date the park's establishment in 1939. In order to retain the area in its natural condition, these lands would have to be acquired by the Crown. To justify any expenditure involved in a recommendation of purchase, the Parks Branch requires a document case involving, among other things, the wildlife values that might be adversely affected if the blocks were to be logged.

Up-to-date knowledge of the wildlife of the immediate area is scanty. W.G. Hazelwood flew briefly over the area on March 29-30, 1977, during an investigation of park wildlife. Harry Melts, Parks Branch Ranger stationed at Murtle Lake, has made a number of wildlife observations in the past several years. Bob Miller of Clearwater, who in the years 1952-56 operated a trapline and carried out wildlife studies for the Parks Branch in the region, has provided the most detailed information on the area. In conversation with Miller, and also in examining his diaries, I gleaned much information to supplement the data gathered during this study.

### **Figure 1. Murtle Lake- Blue River headwaters area, Wells Gray Park**

The major problem raised by the proposed logging operation is that of the Mountain Caribou that evidently use this very area as a lowland migration corridor. Both the Parks Branch and the Fish and Wildlife Branch have voiced their concern over the detrimental effects that the logging of the Blue River headwaters would have on the caribou of Wells Gray Park. There is little definite documentation of this migration route in the files of the Fish and Wildlife Branch and knowledge of its existence is based on two factors, (a) the area lies directly between the winter ranges in the upper Raft River region and the summer ranges to the west and east of Murtle Lake, and (b) the regular caribou sightings in the area from fall to early spring made by Miller in the 1950's.

This report attempts to identify the wildlife values of the general area (Figure 1) and specifically those of the timber licenses within and adjacent to the park boundary. Special emphasis has been placed on the populations of birds and large mammals. Because of the concern for the future of the caribou in Wells Gray Park, an attempt was made to gather all pertinent records for the immediate area of the cutblocks in order to document the existence and timing of this migration.

On June 3 I met with Mr. K. Baker (Regional Planner, Parks Branch) and Mr. D. Podmore (Regional Manager, Parks Branch) and Mr. R. Ritcey (Regional Biologist, Fish

and Wildlife Branch) to discuss the planned fieldwork and to examine relevant information in their files. From June 5 to 10 I explored the study area thoroughly, concentrating on the timber licenses straddling the park boundary, but also I examined the trail corridor leading to Murtle Lake. Murtle Lagoon, the mouth of Snookwa Creek and the east end of Murtle Lake were examined by boat in the company of Harry Melts, Parks Branch Ranger. All routes examined are shown in Figure 2. On June 4 and 11 I talked with Bob Miller in Clearwater about his experiences and recollections of wildlife in the study area.

## II) Description of the Area

### A. Physiography

Wells Gray Park boundary, which cuts through the study area, lies about 15.5 miles west of the community of Blue River. The area is the headwaters of the Blue River itself, and access is by forestry road up the Blue River Valley (Figure 1). The access road terminates in a parking area placed exactly on the height of land between the Blue River drainage and that of the stream that flows into Murtle Lake to the west. Blue River rises in Headwaters Lake, flows into Blue Lake and thence meanders east through open marshy ground and out of the study area.

Snookwa Creek flows north from Stevens Lakes to empty into Murtle Lake and forms the outlet of Murtle Lagoon. Other smaller streams pour off the relatively low-lying ridges to the north and south of the shallow valley in question, which lies at an elevation of about 3600 feet. The ridges on either side rise to about 5500 feet. Two miles or so downstream from the study area the Blue River drops into a steep-sided canyon.

### B. Vegetation

The whole area lies in the Engelmann Spruce – Subalpine Fir Biogeoclimatic Zone, characterized by dense forests of Engelmann Spruce (*Picea engelmannii*) and Subalpine Fir (*Abies lasiocarpa*) with smaller amounts of Western Red Cedar (*Thuja plicata*), Western Hemlock (*Tsuga heterophylla*), Western White Pine (*Pinus monticola*) and

**Photo: mixed coniferous common to the Timber License area near the Park boundary.**

**Photo: Open marsh at headwaters of Blue River.**

**Photo: Headwaters Lake – source of Blue River within the Wells Gray Park Boundary.**

**Figure 2. Areas examined during wildlife inventory June 5-10, 1977.**

Lodgepole Pine (*Pinus contorta*). The latter species occurs mainly in drier locations within the area. Many of these trees have growths of *Alectoria* lichens. Undergrowth is

predominantly False Box (*Pachistima myrsinites*), False Azalea (*Menziesia ferruginea*), Thin-leaved Blueberry (*Vaccinium membranaceum*), Twinflower (*Linnaea borealis*), Black Twinberry (*Lonicera involucrate*), Sitka Alder (*Alnus sitchensis*), White Rhododendron (*Rhododendron albiflorum*), Mountain Ash (*Sorbus scopulina*) and Bunchberry (*Cornus canadensis*).

Being in an area of relatively high annual precipitation, the Murtle Lake area supports rather dense forests. This is especially true of the shaded north-facing slopes on the southern side of the valley under study. Here there is considerable climax Western Hemlock forest. On the more exposed south-facing slopes the forest is of a slightly drier type, particularly in areas above Blue Lake where apparently fire and blowdowns have opened up the forest canopy.

In the valley bottom dense forests give way in many places to water-oriented vegetation. Along the stream from Circlet Lake to Murtle Lagoon Sitka Alder (*Alnus sitchensis*), Red-osier Dogwood (*Cornus stolonifera*) and various willows (*Salix*) are dominant. Around the lagoon itself and on the extensive marshy area formed by the Snookwa Creek delta large beds of these plants flourish. Around the chain of small lakes adjacent to the road terminus and eastward the same vegetation type occurs except in many places it is replaced by one of two kinds of more open communities. Wetland vegetation reaches its climax at Headwaters Lake where *Sphagnum* moss forms bogs on the north and west sides, complete with Sundew (*Drosera rotundifolia*), Buckbean (*Menyanthes trifoliata*), Kalmia (*Kalmia polifolia*), Bog Cranberry (*Vaccinium oxycoccus*) and other acid bog plants. Further east past Blue Lake, along the meandering upper reaches of Blue River, the valley bottom is filled with grass and sedge meadows.

Throughout the whole area, with the exception of the very peaty river course, the soil is rather thin. Rock outcrops are prevalent on both the slopes and in the valley.

### C. The Timber Licenses and Cut Blocks

Figure 3 shows that TL5406 extends from Phyllis and Headwaters lakes east in a swath  $\frac{1}{2}$  mile wide and two miles long. Its western  $\frac{1}{4}$  lies within the park and contains the road terminus as well as the above two lakes. Cut block 1 lies on the slope immediately east of the parking area. The northern half of cut block 2 is in the southwest corner just south of Phyllis Lake and adjacent to the road.

TL5416 is a square block 1 mile on each side and bisected north and south by the park boundary. The northern third is in the valley bottom and includes Blue Lake, Snipe Marsh and Blue River itself. Part of cut block 2 is in the northwest corner while cut block 3 is in its southwest corner and block 4 is on the north shore of Blue Lake and extends into TL5406 along the park boundary. Cut block 5 is near the boundary and abuts the southern flank of the access road. Block 6 extends into TL5416 in the southeast corner. Other proposed blocks not examined lie to the east, one spreading extensively along the northern edge of the river meadows to the east of Snipe Marsh.

These proposed cut block areas within and adjacent to the park boundary were crisscrossed on foot as shown in Figure 2.

### **Figure 3. Major wildlife observations in proposed cutblock areas June 5-10/77**

The results of this examination, with regard to ungulate presence and nesting birds, are shown in Figure 3. More detailed observations are found in the species inventories.

## **III) Species Inventory**

### **A. Fish**

Although several visitors fished Headwaters lake and Phyllis Lake during my study, it appeared no fish were caught. No other evidence of fish in these lakes was observed. Harry Melts states that good-sized Rainbow Trout (*Salmo gairdneri*) are found in Murtle Lagoon, and Murtle Lake itself is well known for its trout.

### **B. Amphibians**

The Northwestern Toad (*Bufo boreas*) was the most often-observed amphibian. Seven sightings were noted, three along the trail to Murtle Lagoon, one at Headwaters Lake, one at Snipe Marsh, one in each of cut block 3 and 4. One Western Spotted Frog (*Rana pretiosa*) was observed at Headwaters Lake on June 10. The commonest frog appeared to be the Northern Wood Frog (*Rana sylvestris*); four were seen, one at Phyllis Lake, one at Blue Lake, one at Snookwa Creek and one in the bog near Headwaters Lake. One Tree Frog (*Hyla regilla*) was seen in Snipe Marsh.

### **C. Reptiles**

The only reptile observed was a single Striped Garter Snake (*Thamnophis sirtalis*) on June 6 at Phyllis Lake.

### **D. Birds**

In the six days of observation, 59 species of birds were noted and 10 nests of eight species were found. Most of the other species listed are suspected to breed in the area. The list includes only those seen in the present study; several species expected to be present were not seen, and probably the additional species that migrate through the area would double the total. "The Birds of Wells Gray Park" (Edwards and Ritcey, 1967) should be consulted for further information. It is, however, with the breeding species that this report is most concerned.

Each species is listed with all sightings recorded. The observations are noted by date, and after each locality the number of birds seen is placed in brackets. The total number of individual birds observed is in square brackets.

1. Common Loon (*Gavia immer*): 5 VI 77: lagoon – Murtle Lake (1); 6 VI 77: lagoon – Murtle Lake (2) [3] Seen only on Murtle Lagoon and Murtle Lake. Summer resident; breeding.
2. Horned Grebe (*Podiceps auritus*): 6 VI 77: lagoon (1) [1] Scarce breeder on small lakes at low elevations in park; summer resident.
3. Canada Goose (*Branta canadensis*): 5 VI 77: Phyllis L. (2) [2] One pair only seen, no evidence of nesting. Miller notes geese nesting at lagoon and at Blue L. Summer resident.
4. Mallard (*Anas platyrhynchos*): 5 VI 77: lagoon – Murtle Lake (5♂); 7 VI 77: Phyllis L. (2♂), Headwater L. (2♂); 8 VI 77: Phyllis L. (2♂); 9 VI 77: Headwater L. (2♂); 10 VI 77: Headwater L. (2♂) [7♂] Two males most of time on Headwaters Lake, probably same ones at Phyllis Lake, and part of group of 5 on lagoon earlier. Summer resident, breeding.
5. Barrow's Goldeneye (*Bucephala islandica*): 5 VI 77: Phyllis L. (1 pr.), Headwaters L. (1 pr.); 6 VI 77: Phyllis L. (1 pr.), Circlet L. (1♀); 7 VI 77: Phyllis L. (1 pr.), Headwaters L. (2 pr.); 8 VI 77: Phyllis L. (1 pr.); Headwaters L. (1♂, 2♀) [3 pr. and 1♀]. At least 3 pairs nesting, 1 at Phyllis Lake, 2 in the Headwaters Lake – Blue Lake area; most common waterfowl species. Summer resident.
6. Bufflehead (*Bucephala albeola*): 5 VI 77: Headwaters L. (1 pr.) [2] This is the only sighting, no evidence of breeding here. Summer resident.
7. Common Merganser (*Mergus merganser*): 6 VI 77: Murtle Lagoon (1) [1] Probably breeding. Summer resident.
8. Red-tail Hawk (*Buteo jamaicensis*): 5 VI 77: Murtle Lake (1) [1] One observed soaring over lake near mouth of Snookwa Creek. This is the only buteo of regular occurrence in the area. Summer resident.
9. Swainson's Hawk (*Buteo swainsoni*): 9 VI 77: Snipe Marsh (1 pr.) [2]; 10 VI 77: Headwaters L. (1) [2] One pair apparently breeding in forest to north of Blue L. Both of very dark race; seen at close range. This is an unusual record for this area, this hawk being mainly a grassland bird. The only other record for the park is at Hemp Creek, May, 1953.
10. Osprey (*Pandion haliaetus*): 5 VI 77: Murtle Lake (1) [1] There is apparently a nest up the main arm in the vicinity of the ranger's cabin. Summer resident.
11. Spruce Grouse (*Falci pennis canadensis*): 5 VI 77: lagoon – Murtle L. (1); 7 VI 77: West ½ TL5406 (1 pr. with nest of 5 eggs), Blue L. (1♀); 8 VI 77: West ½ TL5416 (1♀); 10 VI 77: Phyllis L. (1♀ with nest of 6 eggs) [6] The only grouse observed; common resident.

12. Solitary Sandpiper (*Tringa solitaria*): 10 VI 77: Headwaters L. (2) [2] Probably breeding.
13. Spotted Sandpiper (*Actitis macularia*): 6 VI 77: lagoon – Murtle L. (1); 7 VI 77: Headwaters L. (1), Snipe Marsh (1); 9 VI 77: Headwaters L. – Snipe Marsh, N. side (1) [4] Common summer resident, probably breeding.
14. Common Snipe (*Gallinago gallinago*): 9 VI 77: Snipe Marsh (1♀) on nest with 4 eggs. Summer resident.
15. Rufous Hummingbird (*Selasphorus rufus*): 5 VI 77: lagoon – Murtle L. (1); 6 VI 77: lagoon – Murtle L. (1); 7 VI 77: Blue L. (3); 8 VI 77: Headwaters L. – Blue Lake, S. side (1) [6] The only hummer expected; common summer resident, found at forest edges and openings.
16. Yellow-breasted Sapsucker (*Sphyrapicus varius*): 6 VI 77: Parking area – Murtle L. (2); 7 VI 77: West ½ TL5406 (1), Blue L. (3 with 2 nests, both being incubated); 8 VI 77: west ½ TL5416 (1); 10 VI 77: Phyllis L. to S. and W. (3), Headwaters L. – Snipe Marsh, N. side (1) [11] Summer resident.
17. Northern Three-toed Woodpecker (*Picoides tridactylus*): 5 VI 77: Parking area – Murtle L. (1); 6 VI 77: Phyllis L. (2 mating); 7 VI 77: west ½ TL5406 (3); 8 VI 77: west ½ TL5416 (1); 10 VI 77: Headwaters L. – Snipe Marsh, N. side (2) [9] Conspicuous resident; breeding.
18. Willow Flycatcher (*Empidonax traillii*): 5 VI 77: lagoon – Murtle L. (1) [1] One seen and heard in willows at edge of lagoon, mouth of Snookwa Creek. Summer resident.
19. Hammond's Flycatcher (*Empidonax hammondi*): 5 VI 77: Phyllis L. (2), Lagoon – Murtle L. (3); 6 VI 77: Parking area – Murtle L. (12, including one on nest by footbridge), Phyllis L. (4); 7 VI 77: west ½ TL5406 (3), Blue L. (1), Snipe Marsh (1); 8 VI 77: west ½ TL5416 (2), Headwaters L. – Blue Lake, S. side (3); 9 VI 77: Headwaters L. – Snipe Marsh, N. side (5); 10 VI 77: Phyllis Lake to S. and W. (6), Headwaters L. – Blue Lake, N. side (4) [46] The common flycatcher of mature coniferous forests; its call is a familiar sound of forest edge and openings. Summer resident.
20. Dusky Flycatcher (*Empidonax oberholseri*): 6 VI 77: lagoon (1) [1] A bird observed in deciduous growth at lagoon sounded like this species though no good nesting habitat nearby. Probably migrating (?)
21. Olive-sided Flycatcher (*Contopus cooperi*): 5 VI 77: Parking area – lagoon (1); 8 VI 77: Headwaters L. (1), Blue L. (1); 9 VI 77: east ½ TL5416 (1); 10 VI 77: Headwaters L. – Snipe Marsh, N. side (3) [7] Conspicuous but not abundant; summer resident, breeding.

22. Tree Swallow (*Tachycineta bicolor*): 5 VI 77: lagoon – Murtle L. (3); 6 VI 77: Murtle L. (2), lagoon (1) [6] The only swallow seen; all over lagoon or Murtle L. Summer resident.
23. Steller's Jay (*Cyanocitta stelleri*): 9 VI 77: Headwaters L. – Snipe Marsh – N. side (2) [2] Resident.
24. Gray Jay (*Perisoreus canadensis*): 5 VI 77: Parking area – lagoon (1); 6 VI 77: Parking area – Murtle L. (4); 7 VI 77: west ½ TL5406 (3, including 1 young), Headwaters L. (2); 8 VI 77: west ½ TL5416 (1); 10 VI 77: Phyllis Lake, to S. and W. (2), Headwaters L. – Snipe Marsh, N. side (3) [16] Common resident.
25. Common Raven (*Corvus corax*): 5 VI 77: lagoon – Murtle L. (2); 6 VI 77: lagoon – Murtle L. (1); 10 VI 77: Headwaters L. – Snipe Marsh, N. side (1) [4] Resident.
26. Common crow (*Corvus brachyrhynchos*): 5 VI 77: lagoon – Murtle L. (1); 6 VI 77: Murtle L. (3) [4] Seen only at Murtle L. Summer resident, mainly at lower elevations.
27. Black-capped Chickadee (*Poecile atricapilla*): 9 VI 77: Headwaters L. – Snipe Marsh, N. side (2) Resident; mainly deciduous growth.
28. Mountain Chickadee (*Poecile gambeli*): 7 VI 77: Blue L. (4) [4] Resident.
29. Boreal Chickadee (*Poecile hudsonica*): 10 VI 77: Phyllis Lake, to S. and W. (2) [2] Resident; a little low for this species.
30. Chestnut-backed Chickadee (*Poecile rufescens*): 5 VI 77: Parking area – lagoon (1), lagoon (2); 7 VI 77: west ½ TL5406 (6); 8 VI 77: west ½ TL5416 (15); 9 VI 77: east ½ TL5416 (13); 10 VI 77: Headwaters L. – Snipe Marsh, N. side (5) [42] Common, especially in heavy spruce – hemlock woods on south slopes of valley. Resident.
31. Red-breasted Nuthatch (*Sitta canadensis*): 5 VI 77: Parking area – lagoon (1); 6 VI 77: Phyllis L. (2); 7 VI 77: west ½ TL5406 (1), Headwaters L. (1), Blue L. (1); 8 VI 77: west ½ TL5416 (3), Headwaters L. – Blue Lake, S. side (1); 9 VI 77: east ½ TL5416 (1), Headwaters L. – Snipe Marsh, S. side (2); 10 VI 77: Phyllis Lake, to S. and W. (1), Headwaters L. – Snipe Marsh, N. side (3) [17] Regularly head throughout; resident.
32. Winter Wren (*Troglodytes troglodytes*): 5 VI 77: Parking area – lagoon (2); 6 VI 77: Parking area – Murtle L. (6, including 1 pr. nesting by footbridge); 7 VI 77: west ½ TL5406 (2); 8 VI 77: west ½ TL5416 (6); 9 VI 77: east ½ TL5406 (4); 10 VI 77: Headwaters L. – Snipe Marsh, N. side (1) [21] Common in deep hemlock and spruce forest, less so elsewhere; resident.

33. American Robin (*Turdus migratorius*): 5 VI 77: lagoon – Murtle L. (1); 6 VI 77: Phyllis L. (1); 9 VI 77: east ½ TL5416 (1), Headwaters L. – Snipe Marsh, N. side (2) [5] Least common of the four thrushes of the area; summer resident.
34. Varied Thrush (*Ixoreus naevius*): 5 VI 77: Phyllis L. (2); 6 VI 77: lagoon – Murtle L. (1); 7 VI 77: west ½ TL5406 (2 flying young); 8 VI 77: west ½ TL 5416 (13, including 2 flying young), Headwaters L. – Blue Lake, S. side (1); 9 VI 77: east ½ TL5416 (7, including 4 flying young); 10 VI 77: Phyllis L. to S. and W. (1), Blue L. – Snipe Marsh, N. side (2) [29] Common resident; favours damp sites.
35. Hermit Thrush (*Catharus guttatus*): 5 VI 77: Parking area – lagoon (2); 6 VI 77: Parking area – Murtle L. (4); 7 VI 77: west ½ TL5406 (2, nest with 4 eggs); 8 VI 77: west ½ TL5415 (1); 9 VI 77: Headwaters L. – Blue Lake, N. side (1) [10] Frequently heard in spruce/fir forest, especially at higher elevations; summer resident.
36. Swainson's Thrush (*Catharus ustulatus*): 6 VI 77: Parking area – Murtle L. (10); 7 VI 77: west ½ TL5406 (4), Headwaters L. (1); 8 VI 77: west ½ TL5416 (5); 9 VI 77: east ½ TL5416 (1); 10 VI 77: Phyllis Lake, to S. and W. (1), Headwaters L. – Snipe Marsh, N. side (2) [25] The second most common thrush (after the varied) in the area; found at forest edge and in lodgepole pines. Summer resident.
37. Golden-crowned Kinglet (*Regulus satrapa*): 5 VI 77: Parking area – lagoon (2), lagoon – Murtle L. (3); 6 VI 77: Parking area – Murtle L. (7); 7 VI 77: west ½ TL5406 (2); 8 VI 77: west ½ TL5416 (7); 9 VI 77: east ½ TL5416 (6); 10 VI 77: Phyllis Lake, to S. and W. (1), Headwaters L. – Snipe Marsh, N. side (3) [31] Regular in small flocks throughout the area. Resident.
38. Solitary Vireo (*Vireo solitarius*): 7 VI 77: west ½ TL5406 (1), Headwaters L. (1), Blue L. (1) [3] Seen only on the north side of the lakes in open forest; summer resident.
39. Warbling Vireo (*Vireo gilvus*): 10 VI 77: Blue L. (1) [1] Summer resident.
40. Orange-crowned Warbler (*Vermivora celata*): 5 VI 77: Parking area – lagoon (1); 10 VI 77: Headwaters L. – Snipe Marsh, N. side (2) [3]. Uncommon, found in deciduous brush. Summer resident.
41. Yellow Warbler (*Dendroica petechia*): 6 VI 77: lagoon (1) [1] Surprisingly uncommon, usually found near water. Summer resident.
42. Magnolia Warbler (*Dendroica magnolia*): 10 VI 77: Phyllis Lake, to S. and W. (1) [1] Surprisingly scarce in spruce/fir forest. Summer resident.



43. Yellow-rumped Warbler (*Dendroica coronata*): 5 VI 77: Parking area – lagoon (1), Murtle L. (1); 6 VI 77: Parking area – Murtle L. (7), lagoon – Murtle L. (2); 7 VI 77: west ½ TL5406 (1); 8 VI 77: west ½ TL5416 (1), Headwaters L. – Blue Lake, S. side (1); 10 VI 77: Phyllis Lake, to S. ad W. (2), Headwaters L. – Snipe Marsh, N. side (1) [17]. Frequently seen and heard in open woods. Summer resident.
44. Townsend's Warbler (*Dendroica townsendi*): 5 VI 77: Parking area – lagoon (3); 6 VI 77: Parking area – Murtle L. (8); 7 VI 77: west ½ TL5406 (7), Headwaters L. (1), Snipe Marsh (1); 8 VI 77: west ½ TL5416 (6), Headwaters L. – Blue Lake, S. side (1); 9 VI 77: east ½ TL5416 (6); 10 VI 77: Phyllis Lake, to s. and w. (2), Headwaters L. – Snipe Marsh, N. side (1) [36]. The second-most abundant warbler in the area (after Wilson's). Its song is heard in coniferous forests of all types. Summer resident.
45. Blackpoll Warbler (*Dendroica striata*): 5 VI 77: Parking area – lagoon (2); 6 VI 77: Parking area – Murtle L. (6); 7 VI 77: Headwaters L. (2), Blue L. (1), Snipe Marsh (1); 8 VI 77: Phyllis L. (1), Headwaters L. – Blue Lake, S. side (2), Headwaters L. – Snipe Lake, N. side (4); 10 VI 77: Phyllis L. (1), Blue L. – Snipe Marsh, N. side (3) [23]. Common in valley bottom in spruce near bogs and lake; absent from side slopes. Summer resident.
46. Northern Waterthrush (*Seiurus noveboracensis*): 7 VI 77: Snipe Marsh (1) [1] Surprisingly scarce. Always near water; summer resident.
47. Common Yellowthroat (*Geothlypis trichas*): 5 VI 77: lagoon – Murtle L. (2); 10 VI 77: Blue L. (1) [3] Uncommon (surprisingly) in low willows near water. Summer resident.
48. MacGillivray's Warbler (*Oporornis Philadelphia*): 5 VI 77: Parking area – lagoon (1); 8 VI 77: Headwaters L. – Blue Lake, S. side (1); 9 VI 77: east ½ TL5416 (1) [3]. Uncommon in shrubs, mainly alder, near water. Summer resident.
49. Wilson's Warbler (*Wilsonia pusilla*): 5 VI 77: Parking area – lagoon (2), lagoon – Murtle L. (4); 6 VI 77: Parking area – Murtle L. (14), lagoon – Murtle L. (4); 7 VI 77: west ½ TL 5406 (4), Blue L. (3), Snipe Marsh (1); 8 VI 77: west ½ TL5416 (9), Headwaters L. – Blue Lake, S. side (3); 9 VI 77: east ½ TL5416 (3), Headwaters L. – Snipe Marsh, N. side (6); 10 VI 77: Phyllis Lake, to S. and W. (8), Headwater L. – Snipe Marsh, N. side (8) [69]. The most abundant warbler in the area, its song is heard everywhere. Summer resident.
50. Brewer's Blackbird (*Euphagus cyanocephalus*): 7 VI 77: Headwaters L. (1♂) [1]. Summer resident.

51. Western Tanager (*Piranga ludoviciana*): 7 VI 77: west ½ TL5406 (1); 8 VI 77: west ½ TL5416 (1); 10 VI 77: Phyllis Lake, to S. and W. (1) [3]. Uncommon in spruce and fir. Summer resident.
52. Evening Grosbeak (*Coccothraustes vespertinus*): 7 VI 77: west ½ TL5406 (2) [2]. Resident.
53. Purple Finch (*Carpodacus purpureus*): 10 VI 77: Parking area (1♂, 1♀) [2]. Summer Resident.
54. Pine Grosbeak (*Pinicola enucleator*): 8 VI 77: west ½ TL5416 (1♀); 9 VI 77: east ½ TL5406 (1 pair, nesting) [3]. Resident.
55. Pine Siskin (*Carduelis pinus*): 5 VI 77: Phyllis L. (10), lagoon – Murtle L. (19); 6 VI 77: Parking area – lagoon (24), Murtle L. (6); 7 VI 77: west ½ TL5406 (15), Headwaters L. (9), Blue L. (12); 8 VI 77: west ½ TL5416 (10), Headwaters L. – Blue Lake, S. side (10); 9 VI 77: east ½ TL5416 (5), Headwaters L. – Snipe Marsh, N. side (11); 10 VI 77: Phyllis Lake, to S. and W. (7), Headwaters L. – Snipe Marsh, N. side (32) [170]. Common summer resident; probably the most abundant bird in the area.
56. Red Crossbill (*Loxia curvirostra*): 5 VI 77: Phyllis L. (3), lagoon – Murtle L. (15); 7 VI 77: west ½ TL5406 (2); 8 VI 77: west ½ TL5416 (36), Headwaters L. – Blue Lake, S. side (5); 9 VI 77: east ½ TL5416 (10), Headwaters L. – Snipe Marsh, N. side (3); 10 VI 77: Phyllis Lake, to S. and W. (4), Headwaters L. – Snipe Marsh, N. side (25) [103]. Common resident.
57. Dark-eyed Junco (*Junco hyemalis*): 5 VI 77: Parking area – lagoon (2); 6 VI 77: Phyllis L. (5); 7 VI 77: west ½ TL5406 (2), Headwaters L. (1); 8 VI 77: west ½ TL5416 (2); 9 VI 77: east ½ TL5416 (2), Headwaters L. – Snipe Marsh, N. side (1); 10 VI 77: Phyllis Lake, to S. and W. (2), Headwaters L. – Snipe marsh, N. side (3) [20]. Regular in small numbers; resident.
58. Chipping Sparrow (*Spizella passerina*): 5 VI 77: Parking area – lagoon (3), lagoon (1); 6 VI 77: Parking area – Murtle L. (10); 7 VI 77: west ½ TL5406 (4), Headwaters L. (1), Blue L. (7), Snipe Marsh (3); 8 VI 77: west ½ TL5416 (1), Headwaters L. – Blue Lake, S. side (2); 9 VI 77: east ½ TL5416 (4); 10 VI 77: Phyllis Lake, to S. and W. (5), Headwaters L. – Snipe Marsh, N. side (8) [38]. Common in open woods and clearings, especially in drier areas. Summer resident.
59. Song Sparrow (*Melospiza melodia*): 5 VI 77: lagoon – Murtle L. (1); 6 VI 77: Parking area – Murtle L. (1), lagoon (1) [2]. Observed only in low willow and alder growth near Murtle Lagoon. Resident.

#### E. Mammals

## 1. Mountain Caribou

Caribou are of major concern in this report since evidence exists of a migration route through the very area proposed to be logged. Caribou are a species greatly threatened by man's activities since unlike deer or moose they require climax vegetation and do not thrive in altered environments. The yearly habitat requirements of caribou in the Wells Gray Park region have been lucidly summarized by Edwards and Ritcey (1959). Their statements are paraphrased below.

Caribou do not frequent burns or logged areas but confine their lowland lives to mature coniferous forest, meadows associated with this forest and the shorelines of lakes. From June to October caribou inhabit alpine meadows and nearby subalpine forests. In October they begin to appear in lowland forests about Murtle Lake and by November they have appeared in numbers. Here they graze on nearly bare ground where the dense foliage of trees has held the falling snow aloft. When the heavy, soft and deep snows of midwinter come the caribou are more or less trapped in the valley and turn to tree lichens as food almost exclusively. They remain here until late January when the snow is deep but settled and easily traveled upon, and by late February they return to timberline. Until April the caribou remain high on the mountains where deep, firm snow enables them to reach arboreal lichens, their major food. In April with the onset of spring thaws, but while the snow at timberline is still firm, the caribou again journey to lowland forests. This journey is timed to reach the valley floor when the first ground vegetation is appearing through the melting snow. In June, when most snow is gone, caribou again return to the alpine country to feed on the lush herbaceous summer vegetation there.

Ritcey (1955) notes, "Caribou apparently follow traditional routes when leaving their summering grounds. All mountains are not equally attractive as summering areas so distribution is by no means uniform throughout... Late fall concentrations of caribou occur at various points near Murtle Lake at elevations from 3000 to 5000 feet. No other part of the park is known to have similar concentrations."

It is established that one of the main wintering areas of Wells Gray Park caribou is outside the park in the plateau area at the head of Raft River. Evidently caribou move there from east of Murtle Lake and probably also from the Battle Mountain area. Ritcey estimates that the total wintering population here may reach 70 animals.

The east end of Murtle Lake acts as a funnel to migrating caribou coming down the shorelines heading east and south in the autumn. The funnel narrows at the park entrance and concentrates the animals in the mature forest at the headwaters of the Blue River. As noted previously, this heavy timber allows caribou to travel easily and feed sufficiently when snow is on the ground.

Most records of caribou in this area are from the diaries of Bob Miller, 1952-56. Miller today estimates 20 to 30 caribou pass through this funnel here each fall and spring. This agrees favorably with the estimate of Ritcey (1955) of probably 25 (possibly up to 40) animals summering east of Murtle Lake. Miller feels some cows in spring may linger here to calve. Below is a list of his sightings.

1952.

- November 20: Caribou crossed trail heading south, ½ mile below park boundary.  
21: Old Caribou sign at mile 11.7, heading south.  
30: 3-4 caribou crossed the trail between mile 13 and 16 (Phyllis Lake).

1954

- November 03: 2 caribou going south at lagoon.  
15: 3-4 caribou crossed trail heading south at Circlet Lake, one more at mile 12.6.  
20: 6 caribou on trail at mile 13  
29: 1 caribou at mile 15.2 (Park boundary) and a small band at mile 12.6.  
December 05: 3-4 caribou went south just below park boundary.

1955

- October 03: Caribou sign heading west at lagoon.  
16: 2 caribou on beach at mouth of Snookwa Creek going south.
- November 07: Cow caribou at lagoon.  
09: Band of caribou in meadows at Snookwa Creek; also a band of 8 at east end of lagoon, going south.  
20: 2 caribou at lagoon headed south; caribou at east end of lagoon.  
30: 2 caribou at lagoon.
- December 02: Band of 3 adults and 1 calf at Snookwa Creek.  
03: 3 caribou (1♂, 1♀, 1 calf) at east end of Murtle Lake.

1956

- January 01: Caribou at Snookwa Creek.

10: 8-10 caribou heading south at mile 14.

February 03: Climbed hill to south of mile 13.5 (to 5500 feet); lots of caribou tracks.

April 13: Caribou on ridge 2 miles south of mile 13.9.

14: 2 caribou at mile 11.5, 5 at mile 13, 12 more at mile 13.

As would be expected, these data show that the caribou concentrate in the study area from November to April, and show clearly that there is a traditional migration route through the area. By June in 1977 when the present inventory took place, all the snow supporting the caribou migration had disappeared, and it is not surprising I saw no caribou. Only one winter pellet group was found, this just inside the park boundary 200 yards north of cut block 3.

According to flight maps of his reconnaissance flight of March 29-30, 1977, G. Hazelwood saw 11 caribou on the ridges in the region of the study area – 3 on the ridge to the west of North Blue River and 8 (7 cows, 1 bull) near the head of Raft River. These animals probably would be heading towards the lowlands around Murtle Lake within a month.

## 2. Moose

More evidence of use of the area by moose was gathered than for any other large mammal. A cow moose was observed browsing on willow at the south end of Snipe Marsh on June 10 and a spike-antlered bull was seen on the road at mile 12. Fresh tracks indicating at least three separate animals were very abundant along the shores of Headwaters and Blue Lakes and along the trail bordering the north bank of Blue River. Winter pellets were common along this trail and were scattered throughout the forested slopes. A skull was found at the southeast corner of Blue Lake. Moose tracks and winter pellets were also observed at Murtle Lagoon, Murtle Lake beach and Snookwa Creek mouth.

Winter browse did not appear to be extensive in the area. Along the northern boundary of TL5406, Rod-osier Dogwood, Squashberry, Black twinberry and Mountain Ash were browsed about 25 percent while similar species were heavily browsed around a waterhole near the southern edge of cut block 1. Browse along the trail running along the northern edge of the bottomland was moderate to heavy in spots, especially on False Azalea, Mountain Ash and Blueberries.

Bob Miller feels there are more moose now than previously spending the winter in this bottomland. In 1952 he made 28 moose sightings and 27 in 1954. He thinks there may be as many as 50 animals coming through this valley throughout the year. In addition to the above sightings, he noted moose sign plentiful on the trail at dates indicating year-round use: May 28, June 16, July 9, October 18, November 3, November 20, and December 8.

## 3. Mule Deer

This species does not appear to be common here in June. One group of fresh tracks were found at the south end of cut block 1. Harry Melts had recently seen a deer on the road about 2 miles downhill from the parking area. Miller mentions fresh tracks at Murtle Lake on June 19, 1952; deer were plentiful on the Blue River trail July 9, 1952.

#### 4. Black Bear

I recorded Black bear tracks on the Murtle Lake beach June 6. Harry Melts says bears are seen frequently at the parking area. Miller's diaries record bear tracks on the trail July 2, 1952; a bear at Snookwa Creek on October 18 and November 19, 1952; a bear on the Blue River trail November 20, 1952; and one at Headwaters Lake on May 28, 1954.

#### 5. Grizzly Bear

Miller records a track at Snookwa Creek on May 20, 1955 and sign around the lagoon on May 21, 1955.

#### 6. Wolf

On June 5, I found wolf scats on the trail one quarter mile west of Cirlet Lake. They consisted entirely of ungulate hair. Miller reported wolves several times at the east end of Murtle Lake and at the lagoon – February 10, 1954 and 7 wolves on September 8, 1954.

#### 7. Wolverine

Miller recorded frequent sightings of wolverines and sign – December 8 1954 at mile 14.2; February 10, 1955, 2 at lagoon; November 14-15, 1955 at east end of Murtle Lake; January 2, 1956 at lagoon; February 2 at Blue Lake; April 26, 1956 at east end of Murtle Lake.

#### 8. Fisher

One seen by Miller on December 2, 1952.

#### 9. Marten

Probably the most abundant fur-bearer in the area, appearing here from the higher subalpine forests in late October and remaining until spring. Many entries in Miller's diaries.

#### 10. Mink

Common resident. Miller observed this species mainly in the winter, especially from November 10 to February 13.

#### 11. Long-tailed Weasel

I observed an adult on June 10 between Phyllis and Circlet Lakes. Harry Melts recorded one a few days earlier a mile east of the lagoon. Miller observed “weasels” throughout the winter.

#### 12. Otter

Miller recorded one at the lagoon on February 10, 1954.

#### 13. Cougar

In the early 1950's Miller made several notes of cougar sign in the area – July 9, 1952 (tracks just inside park); November 9, 1952 at Snookwa Creek; November 20, 1952 at Snookwa Creek and November 21, 1952 at mile 12.

#### 14. Lynx

One seen by Miller at Snookwa Creek on June 11, 1954 and another on April 26, 1956 at the east end of Murtle Lake.

#### 15. Beaver

I observed old sign, including cutting and lodges in the lagoon and on Snookwa Creek. Old cuttings also at the south end of Headwaters Lake. There was no fresh sign observed. Miller observed beaver frequently making caches at the mouth of Snookwa Creek and on Blue Lake.

#### 16. Muskrat

Miller observed muskrats on their work at the lagoon on May 20, 1955 and on April 26, 1956 he counted five houses or caches on lagoon.

#### 17. Snowshoe Hare

Two were observed on *Sphagnum* hummocks near the north end of Headwaters Lake on June 7. Miller noted frequent observations in winter, for example, December 10, 1955 at the east end of Murtle Lake and on December 6, 1952 one was killed by a goshawk at the lagoon.

#### 18. Red Squirrel

Common everywhere.

#### 19. Northwestern Chipmunk

Seen several times especially along trail and roadsides.

#### 20. Columbia Groundsquirrel

A small colony was discovered along the trail across the lagoon from the mouth of Snookwa Creek.

#### IV) Conclusions

1. It is clear that logging in the vicinity of the park boundary and inside the park itself would:
  - a) seriously decrease the aesthetics of the park entrance;
  - b) complicate the control of access to Murtle Lake and the nature conservancy;
  - c) affect the patterns of wildlife use in the area by changing the natural habitat and by allowing increased human access in the area, via logging roads.
2. The small valley of the headwaters of Blue River is an unusual environment in the area that serves as the eastern entrance to Wells Gray Park. It contains a series of small lakes and wet meadows that create variety of habitat in the area and serve to concentrate a wide variety of nesting birds and feeding mammals. The small *sphagnum* bogs and sedge meadows are of botanical interest. Some of the cut blocks actually abut these lakes and marshes and the extraction of timber would damage them considerably.
3. While the forested slopes themselves hold little vegetation that is unusual, they are habitat for migrating caribou and moose. The latter mammals also remain here in some numbers throughout the year. Other animals utilizing these forests are documented in this report.
4. The major concern is the maintenance of mature timber to support the caribou migration documented here. Ritcey (1976) notes that:

“The remaining winter range in this management unit [unit 3-40] should be vigorously protected. The extensive sub-alpine flats between the headwaters of the Mad and Raft Rivers have some of the best capability to support caribou in the region. The caribou wintering ground at the head of Peddie Creek is probably the most consistently used of the known wintering areas and is of prime importance to the well-being of the caribou that summer in Wells Gray Park. The major migration route lying at the border of the park in unit 3-44 must also be protected or this range will be of little use... The remaining caribou [in unit 3-44] can be saved with strict adherence to a ‘no cut’ policy in the designated wintering areas and in the known migration routes. Protection of the migration route on the eastern boundary of Wells Gray Park is of paramount importance.”
5. It is recommended that for strong aesthetic and biological reasons, at least, the proposed logging in TL5416 and the western half of TL5406 be prevented through acquisition of the timber licenses. This would preserve the mature forest in the most vulnerable part of the caribou migration “funnel” as well as



maintaining the integrity of the most important biological unit in the immediate area, the watercourse of the Blue River.

Signed

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### **References**

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