

THE AVIFAUNA OF KOOTENAY NATIONAL PARK
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INTRODUCTION

This study was originally conceived of during my first summer as a Seasonal Naturalist in Kootenay National Park. At that time it became apparent to me that no concentrated effort had yet been made to arrive at a detailed understanding of the avifauna of the Park. During my three summers in the Park - 1975, 1976, and 1977 - I spent a considerable amount of time in the field, particularly during the singing season, accumulating the data which is summarized in this report.

Kootenay National Park, in the Rocky Mountains of southeastern British Columbia, covers approximately 543 square miles of forested and mountainous terrain. It includes parts of three drainage systems which are separated by parallel mountain chains trending northwest/southeast, perpendicular to the prevailing wind direction, which is southwesterly. The interaction of topography and climate results in a diversity of micro-climate and vegetation that, with the proximity of the Park to the Continental Divide, creates an interesting situation for the biologist and biogeographer.

The avifauna of the Park is one aspect of its biology that has been studied somewhat more intensively than others. Much of the work which has been done in the field, however, is either fragmentary, out-dated, or poorly documented. Munro and Cowan (1944) published an excellent preliminary report on the Park's birds and mammals and their observations on habitats in the Park at that time provide good bases against which to compare modern conditions. Johnstone (1949) produced an annotated list of the birds of the East Kootenay, based primarily on his own observations between 1937 and 1949. He lists several records of species in the Park and adjacent areas along the Columbia River Valley.

Seel (1965) prepared an updated annotated list of the Park's avifauna. Anderson and Meredith (1973) summarized all the available data, supplemented by field notes of other workers, in an attempt to provide a comprehensive review of the status of all bird species in the park. Their work also led to the publication of a checklist of birds for use by Park visitors and to the maintenance of bird report sheets during subsequent years. Work by Edwards (1972) and others in the area of the 1968 Vermilion Pass Burn has provided detailed information on reinvasion of burned forest by birds.

In 1976, I initiated a study of the breeding birds in Kootenay National Park and was assisted in the field by Jim Mulchinock. In 1977 I continued the study with the assistance of Bill Anderson. We attempted to cover, at least twice, a representative cross section of all the major habitat types in the Park. During the months of June and July we conducted several dawn censuses (Appendix A-C). Detailed notes were kept of all observations made in the Park and adjacent areas at all times of the year and whenever a gap was noted in our data, we made special trips to fill it in.

The purpose of this paper is to summarize all the available information on the birds of Kootenay National Park, particularly the results of our field work, and to present them in a format which will be useful for as many purposes as possible. Hopefully, interpretive staff, in the future, will be able to make use of this report, and it is anticipated that it will be continually updated and improved as time passes and more workers spend time in the area.

Limitations of time and manpower restricted the quantity and quality of work which could be put into this study; future studies will, no doubt, refine our findings considerably.

DESCRIPTION OF THE STUDY AREA

1. Physiography

Kootenay National Park is predominantly an area of long, parallel mountain ranges and broad, u-shaped river valleys. The mountains are composed mostly of limestones and shaley-limestones, with local outcroppings of marble and quartzite, especially along the Continental Divide. The two major rivers in the Park - the Kootenay and the Vermilion - are rapid, braided rivers which are aggrading their valleys and flow across broad, gravelly floodplains. Most of their tributary streams are glacially derived and turbulent, a notable exception being Dolly Varden Creek, a tributary to the Kootenay, which is a clear, meandering meadow stream along much of its length. It arises in and flows along the edge of the Kootenay Valley.

The mountains forming the southwest boundary of the Park - the Stanford and Brisco Ranges - represent the Western most ranges of the Rocky Mountain cordillera. They are older and more highly deformed than the ranges to the east, and are generally of lower stature. Sinclair Pass roughly separates the two ranges which are usually referred to collectively as the Stanford/Brisco Range.

East of the Kootenay River is the Mitchell Range, a long ridge averaging 8000 to 9000 feet high and interrupted only by three major creek valleys along its twenty mile length. Its southern end, outside the Park, borders the Cross River Valley. To the north it is separated from the Vermilion Range, a somewhat higher and more massive range, by Hector Gorge where the Vermilion River cuts across to join the Kootenay.

The Vermilion Range is also known as the Rockwall because of the massive, cliff-forming ootertail limestone formation which creates an almost impassable barrier for almost twenty-five miles. At the base of the rockwall, there are extensive timberline forest and meadow areas due to the presence of several lateral ridges of about 6000 to 7000 feet elevation extending eastward. These ridges are steep sided and usually heavily scarred by avalanche paths.

Across the Vermilion Valley to the east are Hawk Ridge and the mountains of the Ball Mountain group which comprises part of the Continental Divide. There are several peaks here exceeding 9000 feet in elevation. Verdant Creek is separated from the Vermilion River Valley by Hawk Ridge and runs parallel to it, joining the Simpson River outside the Park.

2. Climate

Little detailed data is available regarding the climate of the Park, due to the absence of year-round manned weather stations in the area. Ongoing studies of the Vermilion Pass Burn, (Harris, 1976), are providing information on climatic features of the Vermilion Pass area but the rest of the Park is less well understood.

In general, precipitation increases from west to east due to the increased influence of the higher mountain masses to the east. Annual precipitation in the Radium area, at the southwestern edge of the Park, is about 20 inches, with about 1/3 of this falling as snow. This is also the warmest part of the Park. In the higher, more easterly, Marble Canyon area, annual precipitation averages 40 inches and about 1/2 of this falls as snow. The Kootenay River Valley has milder temperatures and is less moist than the Vermilion River Valley.

Two areas in the Park are of particular interest in a micro-climatic sense. The lower part of the Sinclair Creek drainage, due to the narrowness and shadiness of the valleys and presence of permanent streams such as McKay and Sinclair Creeks, is sufficiently moist and mild to allow the growth of lush vegetation more typical of much wetter areas. Tree species such as Western Red Cedar (Thuja plicata), and Douglas Maple (Acer douglasii), are restricted, in the Park, to this and a few other very small areas.

The Hector Gorge area, on the other hand, is more xeric than adjacent areas because of the wind tunnelling effect produced by the gap in what would otherwise be a continuous mountain chain. Snow accumulation is low here, evapotranspiration is high and, especially on the exposed souther face of Mount Wardle, an open, xeric vegetation has developed.

3. Vegetation

The vegetation of the Park represents several climatic and elevational types which have been more or less modified by fire, insect infestations and other forms of disturbance. Because of the complexity and extent of the various types no attempt was made to analyze them thoroughly and the following descriptions are quite generalized.

Along the western edge of the Park in the Radium/Stoddart Creek area, open douglas fir (Pseudotsuga menziesii) forest covers the exposed slopes, with an understory dominated by bluebunch wheatgrass (Agropyron spicatum), rough fescue (Festuca scabrella), and other relatively xerophytic forbs and shrubs. Locally, especially in depressional areas, there are stands of aspen (Populus tremuloides); and the former occurrence of fires in this area is indicated by charred bark on many older trees as well as by fire-successional stands of young douglas fir and lodgepole pine (Pinus contorta var. latifolia).

At higher elevations in this area, on the valley slopes of the Sinclair and Stoddart Creek drainages, lodgepole pine and western larch (Larix occidentalis), are also intermingled with the douglas fir which forms a more closed canopy here. In the creek bottoms there is a very lush riparian forest composed of up to ten species of trees alone, including western red cedar, white birch (Betula papyrifera), black cottonwood (Populus trichocarpa), white spruce (Picea glauca), and others. The understory varies from stands of Equisetum to dense deciduous shrubbery.

At still higher elevations, as around Sinclair Pass, the douglas fir forest is gradually replaced by a subalpine forest of Engelmann spruce (Picea engelmannii), and subalpine fir (Abies lasiocarpa), while at about 6,500' - 7,000' elevation an open forest of subalpine fir and alpine larch (Larix lyallii) grades into alpine meadows and shrublands.

In the Kootenay Valley, douglas fir forest clothes the lower slopes of the southern half of the valley and occurs locally elsewhere, as along the Dog Lake Trail, but an extensive fire history has resulted in most of the valley being covered with lodgepole pine forests of varying ages. It is of interest to note that Munro and Cowan (1944), describe the Kootenay Crossing area as being open, recently burned forest. Their description of its avifauna closely resembles what is now found in the recently burned Vermilion Pass. Today the Kootenay Crossing area is densely covered with lodgepole pine of about 40 to 50 years in age.

Willows (Salix spp.), open wet meadows and patches of white spruce forest form mosaics along such poorly drained areas as Dolly Varden Creek, Dog Lake and some of the small kettle ponds around Kootenay Crossing. Some poorly drained sites have developed Sphagnum/dwarf birch (Betula glandulosa)/white

spruce muskeg, the most extensive such areas being at the north end of Daer Pond and half a mile north of the Wardle Creek picnic site.

River bottom vegetation varies from stands of white spruce in stable areas along the upper Kootenay River to open grass/shrub communities of variable composition on the open flats of the aggrading floodplains of the Vermilion and lower Kootenay Rivers.

In the McLeod and Crooks Meadows areas, heavy infestations of mountain pine beetles (Dendroctonus monticolae) in the thirties and forties eliminated much of the fire-successional lodgepole pine timber so that today the area is a mosaic of open, grassy meadows, young white spruce, and old mixed stands of aspen, lodgepole pine and white spruce.

The Vermilion Valley contains some small stands of douglas fir near Hector Gorge, the Simpson River and the Floe Lake Trail; and some fire-successional lodgepole pine stands such as along the first two miles of the Hawk Creek Trail; but the bulk of the forest vegetation is dominated by spruce and, at higher elevations, subalpine fir. The understory is generally fairly open with menziesia (Menziesia glabella) and species of Vaccinium growing in a dense feather moss carpet.

Avalanche slopes are found throughout the Park, especially along the west side of the Vermilion Valley. These have been described by Winterbottom (1969); generally they consist of an upper portion of broken and stunted conifers; a middle portion of dense shrubbery comprised mostly of alder (Alnus crispa sinuata), elderberry (Sambucus), and mountain ash (Sorbus sitchensis); and a lower meadow portion characterized by lush growth of grasses and forbs.

Subalpine parkland of alpine larch and subalpine fir interspersed with meadows and heaths occur at timberline - about 6,000' to 7500' elevation - throughout the Park. The alpine vegetation above this elevation is very complex and variable and is more or less similar to that described for Alberta's Rockies by Ogilvie (1969).

METHODS

In most regards the methodology evolved as the study progressed and we became more familiar with what we were doing. No quantitative methods were employed, these being considered beyond the scope of and inappropriate to our study. However, numbers of birds seen were usually recorded if only to serve as indicators of relative abundance. Wherever a species was quite common no attempt was made to count the individuals.

During field work we listed all birds observed in each distinct habitat type as we moved through an area so that, for example, on a walk to Dog Lake, Audubon's Warbler might be listed four or five different times, once in each different habitat.

This approach was particularly adhered to during the 1977 field season and enabled me to refine considerably my understanding of the distributions of many species. The bulk of my field notes are included in Appendices A, B. and C.

For the purposes of this report, I reduced my habitat data into a number of readily recognized habitat types defined primarily by their dominant plant species. There are certain obvious disadvantages to this approach but in the absence of detailed biophysical data it was considered the most practical. For areas of special interest to birders, such as Dolly Varden Creek or Daer Pond, the whole landscape unit was considered instead of the component habitat types. Thus it should be possible for a person to use the appendices of this report and gain an idea of what they might expect to find in any major habitat type or birding hotspot in the Park, at least at certain times of the year.

The annotated list was prepared from a variety of sources including the published works listed above, works from adjacent areas such as Wade's (1977) excellent publication on the birds of Yoho National Park, my field notes, and knowledge based on experience with the area. There will always be a need for updating of the Park list, but it is hoped that the list contained herein will remain useful for some time yet.

HABITAT TYPES

1. Grassland

Grassland is of limited extent in the Park and in most areas it occurs as a consequence of some form of disturbance to the forest cover. In the Radium/Stoddart Creek area open savannah-like stands of Douglas fir forest grade locally into patches of grassland not unlike the so-called Palouse Prairie (Johnstone 1949). Blue bunch wheatgrass, rough fescue and rabbitbush (Chrysothamnus nauseosus), are among the most abundant plants comprising this grassland. Few bird species are confined to this habitat; most birds found here are discussed below in association with the Douglas fir savannah habitat type. One species, the Vesper Sparrow, occurs commonly in grassland of this sort and, in June, can usually be heard singing near the Administration Building and along the lower reaches of Stoddart Creek. Outside the Park, Western Meadowlarks frequent this habitat; they have not yet been reported in the Park except from the Kootenay River Valley where the grassland is of a different nature.

Along the Banff/Windermere Parkway in the Kootenay and Vermilion Valleys the right of way has been seeded to an agronomic grass mix containing red top (Agrostis alba), bluegrass (Poa pratensis), and other pasture species. This habitat is of considerable importance to a number of animal species, but few birds apparently use it except for feeding. Even the landing strip near Kootenay Crossing is surprisingly barren of grassland birds. Vesper and Savannah Sparrows occur very sporadically here and on similar grass areas on the river flood plains and it is uncertain whether they breed here or not. There are a number of old Meadowlark records from near McLeod Meadows and the species may occasionally use the roadside and river flats.

Generally, the birds seen in grassy areas along the Parkway are visitors from other habitats that feed here. During June, especially in the Kootenay Valley, flocks of robins - mostly males - are often seen along the roadsides and small numbers of cowbirds are also seen there. Kestrels, relatively scarce in the Park, can often be seen hunting along the roadsides from McLeod Meadows south to Settler's Road. Water Pipits and Grey-Crowned Rosy Finches, which frequent alpine habitats during the breeding season, are sometimes seen along the highway verges in Spring and late Fall and it might be anticipated that migrants such as Snow Buntings and Longspurs would occur here also on occasion.

The large pasture at Kootenay Crossing is used by Robins and Pine Siskin for foraging, and Barn, Bank and Cliff Swallows are often seen feeding above it, but here again there is a paucity of birdlife using the pasture for breeding.

2. Forest.

Most of Kootenay National Park is forested. Coniferous and mixed woodland predominates and deciduous woodland is very restricted to only a few small stands of poplars on alluvial fans and disturbed sites. A number of more or less distinct forest associations can be recognized:

- i. Riparian Woodland containing Western Red Cedar
Historical evidence (Spry, 1969) suggests that cedar woodland formerly existed in parts of the Vermilion Valley and, in fact, young cedars are abundant along Verendrye Creek today. However, mature cedars and their associated vegetation are known at present only from Sinclair Creek Drainage, Stoddart and Dry Gulch Creeks, and one or two small stands along Swede Creek which drains into the Kootenay River. This habitat develops only in areas with adequate moisture, hot summers and mild winters.

In the tall coniferous growth Townsend's Warbler, Audubon's Warbler, Golden Crowned Kinglets and Hammond's Flycatcher are found. Varied Thrushes are commonly heard singing along McKay and Swede Creeks. Where the shrubby undergrowth is thick, Wilson's Warblers occur, and Winter Wrens are ubiquitous. The deciduous component of this habitat - birches and poplars - predominates locally and here species such as Warbling Vireo and Orange-crowned Warbler are common.

The riparian woodland is used to a great extent by wide ranging species also, including Pileated and Hairy Woodpeckers, Crossbill species and Great Horned Owl. Red-eyed Vireos breed in the Riparian woods outside the Park along Sinclair Creek and may be expected occasionally farther upstream.

ii. Douglas fir forest.

Douglas fir forest typically occupies valley slopes adjacent to the riparian communities described above. The canopy is fairly closed and there is usually an admixture of such other tree species as aspen, western larch and lodgepole pine. The understory is sparse, comprised mainly of grasses such as pine grass (Calamagrostis rubescens) and shrubs such as buffaloberry (Shepherdia canadensis), and creeping juniper (Juniperis communis). Locally, as on the north-facing valley slopes of the Cobb Lake Trail, dense shrubbery can also be found in the understory.

Common birds in this habitat include Hammond's Flycatcher, Swainson's Thrush, Solitary Vireo, Warbling Vireo, Townsend's Warbler, Audubon's Warbler, and Oregon Junco. As is true of most coniferous habitats in the Park, the occasional presence of groves of poplar or birch results in the presence of such species as Ruffed Grouse, Warbling Vireo and Orange-Crowned Warbler.

At low elevations along the edge of the Columbia River Valley, this closed forest gives way to a more open, savannah-like vegetation with Douglas fir and Rocky Mountain Juniper (Juniperus scopulorum), growing well-dispersed in a grassland-like vegetation. The Park Administration Building, the Valleyview Trail and the lower reaches of Stoddart Creek are located in this habitat type. Common birds include Blue Grouse, Common Nighthawk, Red-Breasted Nuthatch, Robin, Townsend's Solitaire, Red-shafted Flicker, Solitary Vireo, Audubon's Warbler, Oregon Junco and Chipping Sparrow. Where there are open patches of grassland, Vesper Sparrow is often found.

iii. Mixed forest.

One of the most productive and diverse types of forest in the park is that found along the Kootenay River Valley from the south boundary almost to Kootenay Crossing. From a vantage point such as the Daer Fire Lookout, the forest appears as a blanket of dark conifers interrupted everywhere with the paler green puffs of aspen and poplar foliage. At closer range it can be seen that this is a fairly open forest with trees of varying ages and with small clearings and meadows interspersed throughout. Most of the oldest trees are lodgepole pine and aspen, but a large proportion of the pines were killed in the

1940's and '50's by the mountain pine beetle, leaving the forest with large openings and considerable deadfall. White spruce is abundant, mostly as young trees of less than 150 years. The understory is highly variable.

The areas around McLeod and Crook's Meadows and the Conservation Corps Camp are considered characteristic of this habitat type.

A great variety of birds frequent the Kootenay valley mixed forest. Adjacent to clearings and especially in areas with a lot of older, dying trees the olive-sided Flycatcher, Robin, Ruby-crowned Kinglet and Chipping Sparrow are common. In denser stands dominated by conifers common species include Spruce Grouse, Swainson's Thrush, Golden-crowned Kinglet, Hammond's Flycatcher, Boreal Chickadee, Townsend's Warbler, Audubon's Warbler, Pine Siskin and Oregon Junco. Where the deciduous element prevails common species include Ruffed Grouse, Yellow-bellied Sapsucker, Western Wood Pewee, Warbling Vireo, Orange-crowned Warbler and Purple Finch. Numerous other species can be found in this diverse habitat and the reader is advised to consult the appendices for a better appreciation of the variety.

iv. Lodgepole pine forest.

According to McArthur and McArthur () the number of vegetation strata is of greater importance in determining bird diversity than in the variety of vegetation. The mixed forest contains a large variety of vegetation synusia; in many cases stands of fire-successional lodgepole pine do not and are, as a consequence, relatively impoverished in terms of birdlife. South of Kootenay Crossing there are large stands of pine with only a narrow canopy layer, a low shrub layer dominated by well-spaced buffaloberry, and a sparse grass layer. West of Kootenay Crossing along the Dolly Varden Fire Road there are stands of

"doghair" pine with only one vegetation layer, the dense tree canopy, and virtually no understory.

Oregon Junco is the commonest species found in dense lodgepole pine stands; Robin, Audubon's Warbler, Pine Siskin and Chipping Sparrow may also occur here but are seldom common.

In some cases an entire stand of pine may have next to no birdlife at all. Older stands, especially those whose canopies have opened up or which have an admixture of aspen and young spruce, may contain a much more diverse and abundant avifauna.

v. Riparian spruce forest.

White spruce forest is of limited extent in the park with most stands being found along the upper Kootenay River. One old spruce stand borders the east side of Daer Pond. White spruce typically forms a dense, closed canopy in this habitat type; there is a sparse shrub layer and a thick mat of feather mosses and other non-vascular plants.

The most extensive areas of this habitat harbour only a few bird species including Spruce Grouse, Swainson's Thrush, Varied Thrush Golden-crowned Kinglet and Townsend's Warbler. Most stands, however, are fairly small and border on other more productive habitats. Two species considered typical of white spruce stands bordering streams and rivers are olive-sided Flycatcher and Ruby-crowned Kinglet.

vi. Subalpine forest.

The subalpine forest, characterized by Engelmann spruce and subalpine fir, covers most of the Vermilion River valley and most undisturbed areas between about 4500' and 6500' elevation elsewhere in the park. Ogilvie (1969) has described several classes of subalpine forest based on differences in understory vegetation.

Widespread species include Spruce Grouse, Northern Three-toed Woodpecker, Golden-crowned Kinglet, Red-breasted Nuthatch, Swainson's Thrush, Hermit Thrush, Varied Thrush, Audubon's Warbler, Townsend's Warbler, Pine Siskin and Oregon Junco. Along water courses and where the forest is oldest and, consequently, most open, Winter Wren, Ruby-crowned Kinglet, Olive-sided Flycatcher, Tennessee Warbler, Robin and Chipping Sparrow are common.

vii. Timberline forest.

From about 6500' elevation up to the upper limit of tree growth there is an open, park-like vegetation dominated by subalpine fir and alpine larch which grow in clumps in a matrix of low alpine-like vegetation. Grouseberry (Vaccinium scoparium) is an important understory component at lowest elevations; higher up the trees are sparser and the understory is predominantly heath and alpine meadow vegetation. Common species of the timberline forest includes Varied Thrush, Hermit Thrush, Robin, Clark's Nutcracker, Ruby-crowned Kinglet, Audubon's Warbler, Oregon Junco, Fox Sparrow and Chipping Sparrow. Frequently these birds arrive and establish breeding territories weeks before the snow has melted at this elevation. Early in June one can stand out in the blinding snow and hear birdsong everywhere; by the time the last snow has gone only the occasional thrush or junco is still singing.

3. Wetland

i. Dolly Varden Creek

Dolly Varden Creek is one of the most unique and important areas in the park. There is an exceptional abundance and variety of birdlife here and several species of birds are confined almost entirely to this area.

In its upper reaches the creek meanders through a shallow, poorly-drained valley and is dammed in numerous places by beavers. The valley is a complex of wet sedge meadows, hummocky bogs with clumps of tall shrubbery and white spruce, and slight ridges covered with mixed white spruce/popular woodland. The whole valley is bounded by mixed woodland and lodgepole pine forest.

For a complete list of bird species found along Dolly Varden Creek the reader is referred to the appendices; species of rare or local occurrence in the park which are found in this area include Common Snipe, Eastern Kingbird, Alder Flycatcher, Willow Flycatcher, Least Flycatcher, Yellow Warbler, Purple Finch, Song Sparrow and Savannah Sparrow.

ii. Settler's Beaverponds

A similar but less extensive area is one mile north of the Settler's Road junction, between highway 93 and the Kootenay River. Here beavers have dammed a small creek to form a series of sedge-bordered ponds and marshes. This area is highly productive of birdlife; rarities which have been recorded here include Western Kingbird, Blackpoll Warbler and Clay-colored Sparrow.

iii. Lakes and Ponds

a. Kootenay Pond

In the kame and kettle terrain around Kootenay Crossing there are several ponds and marshes, each having its own distinctive character. Sranko (1976) had described and mapped these as part of an Interpretive Unit Plan for Kootenay National Park. Kootenay Pond itself and Kootenay Pond II, another pond about 1/4 miles east of Kootenay Pond, are not particularly important to birds because of their barren shorelines and the degree of

disturbance received from picnickers. Spotted Sandpiper and migrant water fowl are occasionally observed here.

A shallow pond north of these two, unofficially named Sora Pond, is considerably more productive. Besides a large bed of cattails (Typha latifolia) at one end of the pond, there are several beds of sedge and rush which provide cover for water fowl. Ducks are nearly always present here, the commonest species being the Mallard, Blue-winged Teal and Green-winged Teal, and the only known nesting of American Coot in the park was in Sora Pond. Migrant shorebirds are found here occasionally and the open grass/sedge meadows surrounding the pond is used by Red-tailed Hawk and Pine Siskins for foraging.

The largest pond is an un-named pond about one mile southwest of Kootenay Crossing Warden Station. Open, shallow water is surrounded in concentric rings by a floating sedge/birch mat, a zone of dwarf birch/white spruce muskeg, a tall shrubbery zone and, at the outermost periphery, lodgepole pine forest. With its diversity of associated vegetation, this is probably the most productive of all the ponds in the Kootenay Crossing area.

6. Valley-bottom Lakes

There are very few lakes in Kootenay National Park; only four sizable lakes occur at low elevations and these are all in the Kootenay River valley. These four are Cobb Lake, Nixon Lake, Dog Lake and Daer Pond.

Cobb and Nixon Lake appear to be relatively unimportant to water fowl but the tall alder/willow shrubbery surrounding the lakes is used by a variety of species of birds including Rufous Hummingbird, Black-capped Chickadee, Warbling Vireo, Orange-crowned Warbler, Red-start, Wilson's Warbler and Northern Water-Thrush. Buffleheads are often seen on Nixon Lake.

Dog Lake is larger than the above two and usually has a few water fowl present on it. A short hiking trail from MacLeod Meadows brings visitors to a first view of Dog Lake by its outlet and here there is a sedge meadow bordered by a dwarf birch community; this is one of the best places in the park for observing Northern Yellowthroats and is the site of several unusual observations, including LeConte's and Savannah Sparrows.

Daer Pond is a unique lake in that it appears to be becoming gradually deeper as Daer Creek builds up its outlet with alluvial gravel deposits. The pond is surrounded, especially on its west side, by a narrow zone of dead spruce used by Northern Waterthrush and Olive-sided Flycatcher. At its north end is a very productive, large muskeg area. The pond itself is used as a nesting and staging area for Buffleheads, Goldeneyes and Mallards and along the edges of the lake there can usually be found Sora Rail, Red-winged Blackbird and Belted Kingfisher.

c. High Altitude Lakes.

Floe and Kaufmann Lakes, and the two unnamed lakes on Storm Mountain, are high altitude, oligotrophic lakes whose low productivity render them relatively unimportant to aquatic birds. What few records are available of birds using these lakes, however, are usually of unusual species such as Eared and Western Grebes, Northern Phalarope, Ring-billed Gull and Common Loon. Most of these observations occurred during migration periods.

d. The Redstreak Sewage Lagoon.

This is certainly one of the least natural and least attractive aquatic habitats in the Park and is mentioned here only because it is used to some extent by non-breeding water fowl, especially Mallard and Goldeneyes.

iv. Muskegs.

A muskeg is a poorly drained, acidic bog. Two species of peat moss (Sphagnum fuscum and S. warnstorffianum), generally cover most of the wetland and form hummocks upon which grow low shrubs such as dwarf birch and labrador tea (Ledum groenlandicum). The larger hummocks may also support clumps of willow and scraggly white spruce.

There are a number of muskegs of limited extent in the Kootenay and Vermilion Valleys; the two most extensive and interesting examples are at the north end of Daer Pond and one mile north of Wardle Creek Picnic Site, on the west side of Highway 93.

Muskeg is a productive habitat in terms of birdlife. Common species include Olive-sided Flycatcher, Hammond's Flycatcher, Ruby-crowned Kinglet, Tennessee Warbler, Audubon's Warbler, Oregon Junco and Chipping Sparrow. The Daer Muskeg contains some dense stands of dwarf birch used by Northern Yellowthroat, Orange-crowned Warbler, Wilson's Warbler and Willow Flycatcher, as well as sedge beds frequented by Sora Rail and Savannah Sparrow. Interestingly, the only records to date of Clay-colored Sparrow in the park have been from muskeg habitats, unlike the species normal habitat of low, dry shrubbery.

v. Creek and Rivers.

Most of the streams in Kootenay National Park are fast-flowing, aggrading mountain streams. The American Dipper is ubiquitous, being found at all elevations and in some surprisingly small streams. For several years a pair of Dippers has nested beside Sinclair Creek at the upstream end of the Iron Gates tunnel. The Spotted Sandpiper is also widespread in the park, although not abundant, and is found from the valley bottoms up to timberline. No other shorebirds are known to breed in the park. Belted Kingfishers use the Kootenay River and its tributaries sporadically but it is uncertain whether they nest in the park. There is a shortage of exposed earthen banks such as are required by this species for nesting; the same shortage confines Bank and Rough-winged Swallows to road cuts and quarries such as the large road cut north of Hector Gorge.

4. Alluvial Plains.

The floodplains of the Vermilion and lower Kootenay Rivers represent a significant habitat for a number of animals, including some species of birds. There is a complex successional sequence of vegetation types here, which appears to be controlled largely by parent material and drainage. Coarse grained and gravelly

Alluvial deposits are colonized by mats of dryas (Dryas drummondii) which are replaced by grasses, shrubby cinquefoil (Potentilla frutiscoa), dwarf birch and willows. Fine grained sediments are initially colonized by grasses and sedges, then by willows. Because of the repeated erosion and re-deposition of parts of the floodplain, the river flats are usually a complex of seral plant communities which provide a variety of habitats for wildlife.

Birds which breed on floodplain complexes include Spotted Sandpiper, Ruby-crowned Kinglet, Robin, Oregon Junco, Chipping Sparrow, Vesper Sparrow and White-crowned Sparrow. Killdeer, Common Nighthawk and Mountain Bluebird occur here in small numbers.

5. Avalanche Slopes

Avalanche slopes occur throughout the park, mostly above 4000' elevation, wherever topographic and microclimatic factors interact to favour the repeated accumulation and release of large masses of snow. The greatest concentration of avalanche slopes is along the west side of the Vermilion River valley. These gaps in the forest cover have been studied and described by Winterbottom (1973); There are two predominant vegetation types generally found on these sites - an upper zone of dense alder shrubbery, and a lush, lower meadow zone. Above these there is frequently an area of broken and stunted trees interspersed with meadow, bedrock outcrops and shrubbery.

The most accessible avalanche slopes in the park are the Simpson and Assiniboine Slides, just north of the Simpson Monument. Both these slide paths extend across the highway and both are highly productive of birdlife.

Species commonly found in the shrubby vegetation include Lincoln's Sparrow, Chipping Sparrow, White-crowned Sparrow, Warbling Vireo, Wilson's Warbler and MacGillivray's Warbler.

Species frequenting the wooded edges of avalanche slopes and the broken conifer zone include White-crowned Sparrow, Fox Sparrow, MacGillivray's Warbler, Chipping Sparrow, Oregon Junco, Audubon's Warbler, Olive-sided Flycatcher, Ruby-crowned Kinglet, Western Tanager, Hermit Thrush, Varied Thrush and Robin. At the base of the Simpson Slide there is a poorly-drained, depositional area full of dead and dying spruce and in this site there are Northern Water-thrush, Tennessee Warbler, Hammond's Flycatcher, Olive-sided Flycatcher, Ruby-crowned Kinglet and Townsend's Warbler. Stellar's Jays are occasionally found on avalanche slopes.

The Simpson Slide, in particular, is a particularly important area by virtue of its abundance and diversity of birdlife, its accessibility, and its attractiveness.

6. Alpine Areas

A large part of Kootenay National Park is above timberline, at elevation of 6500' to over 10,000'. The vegetation of these high-altitude areas is highly variable, depending on drainage, aspect, snow deposition and edaphic factors, but rarely does it exceed two feet in height. Upper timberline is characterized by herbaceous meadows and heathlands interspersed with sprawling krummholly of subalpine fir and alpine larch; above this zone there are no trees of any kind. Alpine vegetation has been described in detail by Ogilvie (1969).

Birds confined during the breeding season to the alpine zone include White-tailed Ptarmigan, Water Pipit and Grey-crowned Rosy Finches. Timberline species such as Robin and Clarke's Nutcracker frequently forage above the trees.

7. Disturbed Sites

The Vermilion Pass Burn Study (Harris, 1976) describes in considerable detail some of the changes that take place in the avifauna as a consequence of forest fire and the reader is referred to that work for information on birds in burned areas.

Few native species of birds are equipped to benefit from the impact of man upon their environments. The effects of man's activities in Kootenay National Park have not been extensive; nor drastic enough to dramatically alter the avifauna, but their influence can be seen. The impact of the highways's construction has already been briefly discussed. Other disturbed habitats included developed areas such as the campgrounds, picnic sites, parking lots and residences; and areas that have been quarried for gravel for the highway. Developements are beneficial insofar as they increase edge habitat and favour such tolerant species as Robin, Chipping Sparrow, and Oregon Junco. Because large concentrations of people and their pets are attracted there more sensitive birds such as grouse, hawks, owls and waterfowl tend to be excluded from the immediate vicinity of the developed areas; this is a point worth considering when developments such as an upgraded group campsite at Crook's Meadow, the only known site in the park where Great Gray Owls have nested, are proposed.

Barn and Cliff Swallows are able to make use of structures such as bridges, interpretive theatres and buildings for nest sites. Ground-nesting birds are placed at a disadvantage where pedestrian and vehicular traffic is heavy. Developments usually result in a readjustment of avian populations with widespread, "weedy" species being favoured at the expense of specialized species of more restricted distribution.

Abandoned gravel quarries are very slow to be recolonized by vegetation and are used mostly for foraging purposes by a few species of birds, not for breeding. A quarry two hundred yards north of Vermilion Crossing has been filled by a natural spring to become a shallow pond; this site is used by Mallard, Eastern Kingbird and Rufous Hummingbird.

ANNOTATED LIST

The following list is based both on published reports by previous workers and observations made by myself during the course of the field studies. More detailed information is available from observation sheets maintained by the Park Naturalist and from the Appendices of this report.

Relative abundance is based on the system described by Wade (1977) as follows:

- Abundant - Many individuals may be seen on any field trip.
- Common - at least one individual may be seen on any field trip.
- Fairly Common - The species may or may not be seen, but frequently will be.
- Uncommon -- sightings are sporadic; the species is regularly present but not in sufficient numbers to be seen often.
- Rare - Sightings are sporadic; the species is not necessarily present in the Park year to year.
- Accidental - Only one or two records are available and the species is not likely to be seen in the Park at any time.

Seasonal occurrence has been determined on the basis of when the bulk of the sightings of a species occurs. Birds known to have bred in the Park are indicated by a "B" opposite the species name in the list. It must be borne in mind that a species may be described as common and still be readily missed if its habitat is of limited extent in the Park. Willow Flycatcher, for example, is considered fairly common, but is, in fact, found only along Dolly Varden Creek and a very few other areas of suitable habitat.

COMMON LOON Gavia immer Rare Summer.

Although both Johnstone (1949) and Merilees (1976) mention this species as being a breeder in the Columbia River Valley adjacent to Kootenay National Park, there is no evidence of it ever having bred in the Park. Wade (1977) says that it is not known to breed in Yoho National Park. Individuals and groups of two or three have been sighted on Dog Lake in summer and there is one record each from Floe and Kaufmann Lakes.

(Red-Necked Grebe) Podiceps gresegina

Known to breed adjacent to the Park in the sloughs of the Columbia Valley. There is one hypothetical record from Dog Lake, June, 1977 (J. Clark). This species, due to the lack of suitable habitat, should not be expected to breed in the Park but may occur occasionally during migration.

HORNED GREBE Podiceps auritus Rare Migrant.

Reported by Johnstone (1949) as a common breeding species in the Columbia Valley, but not mentioned by Merilees (1976). The two records available for Kootenay National Park indicate that Horned Grebes may pass through the Park occasionally during migration, but they are not present during the breeding season.

EARED GREBE Podiceps nigricollis Rare Migrant

There are only two late summer records of this species in the Park. It is considered rare in the Columbia Valley by Johnstone (1949) and a rare migrant in Yoho by Wade (1977).

WESTERN GREBE Aechmophorus occidentalis Rare Migrant

There are only two records to date; one of a Fall migrant at Floe Lake and one of a Spring migrant on the Vermilion River. Wade (1977) suggests that Western Grebes seldom stop in the area during migration except when forced to do so by foul weather.

(PIED BILLED GREBE) Podilymbus podiceps

Reported as breeding outside the Park in Radium Pond by Merilees (1976). There is very little suitable habitat for the species in the Park and it is most likely to be seen during migration, if at all. The species has not been recorded in Yoho (Wade, 1977).

GREAT BLUE HERON Ardea herodias Rare Summer

There are a number of small colonies of this species along the Columbia River outside the Park but the paucity of observations within the Park suggests that herons only rarely wander into the few areas of the Park suitable to them.

CANADA GOOSE Branta canadensis Rare Migrant

Known only from a scattering of records during Spring migration and early summer. Canada Geese breed commonly in the Columbia River Valley; although there is no evidence of the species ever having bred in the Park, it remains a possibility since suitable habitat is, minimally, available (e.g. Dog Lake, Kootenay Ponds).

SNOW GOOSE Chen caerulescens Accidental

Reported twice including one very unusual record of an individual bird in June at Simpson Monument (Seel, 1965). Kootenay National Park lies off the usual migration routes of this species and any observations made in the Park must be considered exceptional.

MALLARD Anas platyrhynchos Uncommon Summer B

A number of non-breeding individuals frequent the Kootenay Ponds area, Daer Pond and the sewage lagoon during the summer. Seel (1965) makes mention of old breeding records for Dolly Varden Creek; one brood of young was seen with a female mallard at the Vermilion Crossing Pond in July, 1976 (K. Van Tighem). Apparently the species does not usually breed within the Park.

PINTAIL Anas acuta Rare Summer

First recorded August 23, 1976; one dead female found on Highway 93 North of Vermilion Crossing. In 1977 up to four individuals were seen repeatedly in the Kootenay Ponds area during the summer. The species occurs regularly, in small numbers, in the Columbia River Valley and Yoho National Park (Wade, 1977).

GREEN-WINGED TEAL Anas crecca Uncommon Summer B

Seen regularly in the Kootenay Ponds area in 1976 and 1977, up to four birds present at one time. A female with five half-grown young was seen June 19, 1976 on Daer Pond (K. Van Tighem). This constitutes the only known breeding record for the species in the Park but Johnstone (1949) reports the species breeding in the Cranbrook area.

BLUE-WINGED TEAL Anas discors Uncommon Summer

Seen regularly in the Kootenay Ponds area; no evidence of breeding. There are no records of this species breeding in Yoho National Park or the Columbia River Valley, and it appears that it is mainly a migrant in our area.

AMERICAN WIGEON Anas americana Rare Migrant

Of four records in the Park to date, three are from the Fall migration period and one from May.

NORTHERN SHOVELER Anas clypeata Rare Migrant

First observed in the Park in June 1977; one male on Kootenay Pond (K. Van Tighem). Considered a scarce migrant in Yoho National Park (Wade, 1977).

RING-NECKED DUCK Aythya collaris Uncommon Summer

Occur regularly on Daer Pond during the summer, less frequently on Dog Lake and Kootenay Pond South. The species probably breeds in the Park as courtship behaviour has been observed and Wade (1977) reports several breeding records from Yoho National Park.

LESSER SCAUP Aythya affinis Rare Migrant

Although some scaup are occasionally seen in the Park throughout the summer, the species is uncommon and most likely to be observed during migration periods.

COMMON GOLDENEYE Bucephala clangula Rare Migrant

Due to the difficulty in separating females and immature birds of this species from Barrow's Goldeneye, the status of this species is still uncertain. The only reliable observations of male Common Goldeneye come from migration periods and it is probable that the species occurs in the Park mainly as a migrant.

BARROW'S GOLDENEYE Bucephala islandica Uncommon Summer

May breed in the Park, but like the former species the only reliable records are from migration periods. A number of apparently non-breeding female goldeneyes frequent the sewage lagoon and Kootenay Ponds all summer, but these have not yet been reliably assigned to either species.

BUFFLEHEAD Bucephala albeola Uncommon Summer B

Commonest during Spring and Fall but some remain in the Park all summer, especially at Dog Lake, Daer Pond and Nixon Lake. There are breeding records from Nixon Lake and the Kootenay Ponds area.

HARLEQUIN DUCK Histrionicus histrionicus Uncommon Summer B

Occurs regularly and breeds in the Sinclair Creek drainage; although the species has been recorded much less frequently elsewhere in the Park it is probably fairly widely, but sparsely, distributed.

WHITE-WINGED SCOTER Melanitta deglandi Rare Migrant

It is doubtful that this species breeds in the Park even though it has been observed at different times from May through July. Birds seen in the Park are probably non-breeding adults. All sightings to date have been from Dog Lake and Kootenay Ponds.

RUDDY DUCK Oxyura jamaicensis Rare Migrant

There is a single record from 1965 of a pair of Ruddy Ducks which initiated a nest at the Kootenay Crossing Marsh, then disappeared without nesting (Seel, 1965). The species breeds sparsely in the Columbia Valley but is not likely to occur in the Park except rarely, on migration.

COMMON MERGANSER Mergus merganser Rare Summer

Although only recorded once in the Park, (June 27, 1975), the Common Merganser may occur more frequently in the Park, at least during migration. Wade (1977) describes it as a fairly common breeding species in Yoho National Park and Johnstone (1949) considers it abundant in the Columbia Valley.

RED-BREASTED MERGANSER

Mergus serrator Rare Migrant

As is the case with the former species, this merganser is known in Kootenay National Park on the basis of single record on May 27, 1976 (K. Van Tighem). The species is regarded as an uncommon or rare migrant in adjacent areas (Wade, 1977; Johnstone, 1949).

GOSHAWK Accipiter gentilis Rare Permanent

Goshawks may be somewhat more common than the few reports available indicate, the species being normally somewhat shy and secretive. There is no evidence of breeding in the Park but there are sightings for all seasons of the year. Frequently large accipiters are seen at a distance or for so brief a period that positive identification cannot be made.

SHARP-SHINNED HAWK Accipiter striatus Uncommon Summer

Sparsely distributed throughout the wooded areas of the Park; probably breeds here, but records suggest that Sharp-shins leave the Park during the winter.

COOPER'S HAWK Accipiter cooperii Rare Summer

There are very few positive records of this species in the Park. Its true status remains uncertain due to the difficulty of finding and identifying the species. Wade (1977) considers Cooper's Hawk to be an uncommon breeding species in Yoho National Park while Johnstone (1949) lists it as a common summer visitant in the East Kootenay.

RED-TAILED HAWK Buteo jamaicensis Uncommon Summer B

Observed regularly in summer in the Kootenay River Valley, less often elsewhere. A pair has nested near Mount Wardle for the last three years; prior to that there were breeding records for Crook's Meadow and indications of breeding along Settler's Road. Probably no more than two pairs are present in the Park each summer.

SWAINSON'S HAWK Buteo swainsoni Accidental

Seel (1965) reports observing a dark-phase individual at Dolly Varden Creek during Fall migration. This is an exceptional record as the species is only rarely observed in the Rocky Mountains.

(ROUGH-LEGGED HAWK) Buteo lagopus

There is a single report of this species in the Park, from June 2, 1966 (I.D. Jack). Roughlegs generally leave their wintering grounds in southern Canada and the U.S.A. by late April and do not return until October; consequently a June observation of this species is highly unusual. Nonetheless, the species may well be expected to pass through the Park occasionally during regular migrations.

GOLDEN EAGLE Aquila chrysaetos Uncommon Summer

Not known to nest in Kootenay National Park. Seel (1965) says Golden Eagles are "said to nest on Wardle Mountain", but if this was true the nest site has been abandoned. Golden Eagles are sighted sporadically throughout the year; most summer observations are from Kindersley Pass and from along the Continental Divide.

BALD EAGLE Haliaeetus leucocephalus Rare Summer

Since Bald Eagles nest in small numbers along the Columbia River adjacent to the Park they are occasionally observed in the Sinclair Canyon area, but their wanderings into the Park are very sporadic and uncommon.

MARSH HAWK Circus cyaneus Rare Migrant

There are two records each for Spring and Fall migration periods. Marsh Hawk immatures are seen most frequently in the Rocky Mountains during the autumn months (pers. obs.; Wade, 1977) hunting in subalpine creek meadows and other open areas.

OSPREY Pandion haliaetus Accidental

An individual was seen on two consecutive days in June, 1973 (W.J. Anderson). The species breeds fairly commonly in the Columbia Valley and is known to nest in Banff and Yoho National Parks, but there is a paucity of suitable habitat in Kootenay National Park and breeding is unlikely here.

MERLIN Falco columbarius Rare Summer

Uncommon throughout the area; there are only two certain records for Kootenay National Park, both from May. Merlins may breed in the Park but their actual status has yet to be adequately determined.

AMERICAN KESTREL Falco sparverius Uncommon Summer B

Locally distributed throughout the Park - probably no more than five pairs frequent the Park each summer. Kestrels are most frequently seen in the Vermilion Pass Burn, along Highway 93 near McLeod Meadows, and in the Douglas fir savannah near the Valleyview Trail. There are nesting records from the burn and McLeod Meadows.

BLUE GROUSE Dendragapus obsurus Uncommon Permanent B

Fairly common in summer in the Douglas fir savannah from Mount Berland Fire Road to Stoddart Creek. Two families were observed on August 4, 1975 in the Valley of the Rocks, Mount Assiniboine Provincial Park (K. Van Tighem). The seasonal distribution of this species in the Kootenay National Park area is not well understood. Nesting has been observed near Redstreak and at the Paint Pots (Seel).

SPRUCE GROUSE Canachites canadensis Uncommon Permanent B

Probably the commonest grouse species in the Park, the Spruce Grouse is found in most coniferous habitats throughout the Park, with the exception of the Douglas fir savannah. Families of "fool hens" are most frequently met up with in spruce and spruce/fir forest.

RUFFED GROUSE Bonasa umbellus Uncommon Permanent B

The greatest concentration of this species found in the Park was in the aspen groves along the Daer Fire Lookout Road. Ruffed Grouse are found at low elevations wherever poplar, willow and other deciduous growth occurs; they are present at the base of Mount Wardle, throughout the Kootenay Valley mixed woodland, and in the lower Sinclair and McKay Creek area. There are two breeding records from Redstreak Campground; one from McKay Creek.

WHITE-TAILED PTARMIGAN Fairly common Permanent B

Lagopus leucurus

Commonly seen on Numa Pass and Kindersley Pass in summer; probably occurs throughout the alpine areas of the Park. Ptarmigan winter at timberline and on avalanche slopes and are, therefore, unlikely to be seen by those who confine themselves to areas along the highways.

SORA RAIL Porzana carolina Fairly Common Summer

Breeds in the Park wherever suitable stands of emergent vegetation are found. Although rarely seen, the distinctive calls of the Sora Rail are often heard along the edges of Daer Pond, Dog Lake and Sora Pond.

AMERICAN COOT Fulica americana Rare Summer B

Occasionally seen during migration. In September, 1973, a coot was found exhausted on the switchbacks below Floe Lake, in spruce/fir forest (G. Sranko). Only one breeding record is available, a family of coots raised in 1976 on Sora Pond, but coot families head for cover when disturbed and may be easily missed. Coots probably do not usually nest in the Park.

(Semipalmated Plover) Charadrius Semipalmata

There is a single record of an individual seen on April 7, 1964, beside Highway 93 in a marshy area (Seel, 1965). This record is treated as hypothetical in the absence of a field description or other substantiation, due to the fact that Semipalmated Plovers rarely appear before the middle of May during Spring migration and have not been recorded in Spring elsewhere in the area.

KILLDEER PLOVER Charadrius vociferus Uncommon Summer

Although most observations of this species have been made during the summer months, there have been no breeding records to date. Killdeers may nest in the Park in areas of suitable habitat such as the Kootenay River Flats and Kootenay Ponds area.

COMMON SNIPE Capella gallinago Fairly Common Summer

Locally common in the Kootenay Valley, especially along Dolly Varden Creek and the Kootenay Ponds. Often heard winnowing at dawn and dusk around Crook's Meadow.

SPOTTED SANDPIPER Actitis macularia Fairly Common Summer B

Widespread in the Park; has been seen along most major streams in the Park at elevations of up to 6,500' and at Floe Lake. There are two nesting records from Dog Lake.

SOLITARY SANDPIPER Tringa solitaria Rare Migrant

Seen occasionally during Spring and Fall migration but the presence of two birds throughout the summer of 1976 in the Kootenay Ponds area points to at least the possibility that the species may remain occasionally to breed in the Park. Johnstone (1949) suggests that Solitary Sandpipers breed in the East Kootenay and Wade (1977) considers it a breeding species in Yoho.

GREATER YELLOWLEGS Tringa melanoleuca Rare Migrant

Recorded twice from the Park on migration. Apparently this species is a less common migrant in the Park than the Lesser Yellowlegs.

LESSER YELLOWLEGS Tringa flavipes Uncommon Migrant

Although not recorded in the Park before 1975, Lesser Yellowlegs have been seen in late summer during each year of this field study and are probably a fairly regular migrant. They are seen most often in the Kootenay Ponds area.

WESTERN SANDPIPER Calidris mauri Rare Migrant

Included on the basis of an observation in August, 1977, of an individual bird at Sora Pond (W.J. Anderson). Wade (1977) reports several observations of the species in Yoho in late summer; its exact status from year to year is not known.

LEAST SANDPIPER Calidris minutilla Rare Migrant

Four Least Sandpipers lingered around Sora Pond for a few days in August, 1977 and were seen by several observers. The species is probably not a regular migrant.

BAIRD'S SANDPIPER Calidris bairdii Rare Migrant

Only one record of this species exists for Kootenay National Park; a specimen was collected at Kooteany Crossing in May, 1945, and is now in the U.B.C. Museum of Zoology.

DOWITCHER Limnodromus sp. Rare Migrant

An individual Dowitcher was seen at Kooteany Pond in August, 1977 (W.J. Anderson). Both species of Dowitcher have been recorded on migration in Yoho National Park (Wade, 1977).

WILSON'S PHALAROPE Steganopus tricolor Rare Migrant

One record is on file, of a female observed May 16, 1977 on Dog Lake (K. Van Tighem). The species breeds in the Columbia Valley and may occur in the Park on migration.

NORTHERN PHALAROPE Lobipes lobatus Uncommon Migrant

Observed on three occasions during migration; twice at Dog Lake and once on the unnamed lakes on Storm Mountain. The species may be a fairly regular migrant; Wade (1977) has found it to be not uncommon in Yoho National Park during late August.

LONG-TAILED JAEGER Accidental
Stercorarius longicaudis

There is only one record of the Long-tailed Jaeger in Kootenay National Park; an adult bird was found dead on Highway 93 in the Vermilion Valley by a Park Warden in November, 1975 and placed in the Park collection.

CALIFORNIA GULL Larus californicus Rare Migrant

Occasionally seen in May and in late summer. Gulls of any species are rarely seen in Kootenay National Park and any gulls sighted should be identified with care. Most California Gulls seen in the Park are immature birds.

RING-BILLED GULL Larus delarvarensis Rare Migrant

There are only three records of this species in the Park, all from late summer.

MEW GULL Larus canus Accidental

There is a specimen of an immature Mew Gull in the Park collection, a road-kill dating from fall, 1976.

BONAPARTE'S GULL Larus philadelphia Accidental

Seel (1965) reports observing an individual of this species at Kootenay Pond, May 27, 1965. There are no other records.

MOURNING DOVE Zenaida macroura Rare Migrant

All records are of individuals or pairs of doves, and all date from the months of May and June. Mourning Doves are most often seen walking about on the edge of Highway 93 in the Kootenay and Vermilion Valleys. There is no evidence of breeding in the Park, but doves are known to breed outside the Park along the Columbia River.

DOMESTIC PIGEON Columba livia Accidental

Only rarely seen in the Park. There are two records, both of individual birds seen on the edge of Highway 93. These could both, in fact, have been domesticated birds and their presence in the Park is probably insignificant.

GREAT HORNED OWL Bubo virginianus Uncommon Permanent

Occurs sparsely throughout the Park in valley bottom areas.

HAWK OWL Surnia ulula Rare Permanent B

Hawk Owls apparently breed in the Vermilion Pass Burn area; a family of four young were observed near Marble Canyon in 1975 and individual Hawk Owls have been seen in the area at other times. The winter status of the species is uncertain although it probably winters in the Park; they have been observed in November near MacLeod Meadows and in January at Helmet Falls.

PYGMY OWL Glaucidium gnoma Uncommon Permanent

Insufficient data is available to properly assess the status of the Pygmy Owl in the Park. It is probably of fairly widespread distribution but scarce throughout the Park. Wade (1977) considers it the commonest owl in Yoho National Park.

BARRED OWL Strix varia Rare Summer B

Barred Owls may be commoner than the few records of the species indicate; Wade (1977) found them to be fairly common in Yoho and it is well known that the species may be easily overlooked unless sought for especially. All our records are from the Sincalir Creek drainage, including a family of young observed near McKay Creek in 1975. Suitable habitat for the species exists in the riparian mixed woodlands of this area and in the mixed forest of the Kootenay River Valley.

GREAT GRAY OWL Strix nebulosa Rare Permanent B

A pair of Great Gray Owls successfully raised two young in an abandoned Red-tailed Hawk nest near Crook's Meadow in 1975. They did not return to the site in 1976 but an adult was observed near Kootenay Crossing that year by Hans Fuhrer. The species may be well established in the Park but, being a shy and quiet species, is not easily located.

SHORT-EARED OWL Asio flammeus Accidental

There is a single late fall record of the species in the Park (I.D. Jack); Short-eared Owls should not normally be expected in the Park due to the rarity of suitable habitat.

BOREAL OWL Aegolius funereus Rare Permanent

There are very few records of Boreal Owl in Kootenay National Park but the species may well be commoner than believed. More night work during the early spring is required to clarify the status of this and other owl species. Most of the forested areas of the Park represent potential Boreal Owl habitat.

(FLAMMULATED OWL) Otus flammeolus

On July 27, 1975, the author captured a newly fledged owl at Nipika and wrote a description of the bird before releasing it. On the basis of this description (see Park record sheet) the bird appears to have been a Flammulated Owl. The distribution of this species in British Columbia is not well understood but the forest around Nipika appears to resemble the habitats used by Flammulated Owls elsewhere.

COMMON NIGHTHAWK Chordeiles minor Fairly Common Summer B

Most commonly seen in the Douglas Fir savannah area around Redstreak Campground and the Administration Building, especially on late evenings in summer. Nighthawks also occur, less frequently, along the river flats of the Kootenay and Vermilion Rivers. Two breeding records; both from the Redstreak area.

BLACK SWIFT Cypseloides niger Uncommon Summer

Locally common in summer, Black Swifts are seen most often around Marble Canyon, Helmet Falls and Sinclair Canyon. No nests have been found but it is likely that Swifts use Marble Canyon as well as other, more remote sites for breeding. They are occasionally seen feeding at high altitudes over the highway during July and August.

VAUX'S SWIFT Chaetura vauxi Accidental

There is one record on file of Vaux's Swift in the Park; six birds flying about the tree tops at Marble Canyon on August 31, 1972 (W.J. Anderson).

(BLACK-CHINNED HUMMING BIRD) Archilocus alexandri

There is one questionable observation of a female near Radium from August 9, 1965 (Seel, 1965). Although this area is not far from, and not unlike, areas in which this species is normally found there have been no definite records of Black-chins in the Park yet.

RUFOUS HUMMINGBIRD Selasphorus rufus Fairly Common Summer

This is the common hummingbird of Kootenay National Park, occurring throughout the Park in small numbers. Males have been seen displaying in the Crook's Meadow area. EARly in the summer hummingbirds appear to concentrate on currant (Ribes), menziezia and other shrubs; later on they are seen more frequently on avalanche slopes and in clearings as forbs such as fireweed (Epilobium angustifolium) and paintbrush (Castilleja spp.) come into bloom. Kimpton Creek Trail appears to have one of the largest hummingbird concentrations in the Park.

CALLIOPE HUMMINGBIRD Stellula calliope Rare Summer B

Apparently very uncommon in the Park. There is a single nest record from Marble Canyon in 1976 - two eggs were laid in spruce growing out of the canyon wall beneath one of the nature trail bridges, but whether the young were ultimately fledged or not was not ascertained. Wade (1977) lists the Calliope Hummingbird as rare in Yoho National Park.

BELTED KINGFISHER Megaceryle alcyon Rare Summer B

Scarce; has been seen along the Vermilion and Kootenay Rivers, Sinclair Creek, Daer Pond and the Kootenay Ponds. Munro and Cowan (1944) report finding a nest along the Kootenay River but whether kingfishers breed regularly in the Park is not known.

COMMON FLICKER Colaptes auratus Fairly Common Summer B

Both subspecies, yellow-shafted (C.a.auratus) and Red-Shafted (C.a. cafer) have been recorded in the Park but the Red-shafted Flicker appears to predominate. In June 1973 a breeding pair was found at MacLeod Meadows consisting of one bird of each variety (W.J. Anderson); This hybridization is not uncommon where both subspecies occur together and is one reason why both are included in one species now. Flickers are commonest in the Vermilion Pass Burn, the Kootenay River valley mixed woodland, and the Douglas fir savannah near Radium.

PILEATED WOODPECKER Dryocopus pileatus Uncommon Permanent B

The diagnostic workings of this species - deep, rectangular holes in stumps and the bases of old trees - can be found almost throughout the Park, but the species is observed most frequently at low elevations and in forests where Douglas Fir predominates. There are breeding records from the Aquacourt area and the Floe Lake Trail. Although not uncommon, Pileated Woodpeckers are seldom seen; the author has seen them most often in the Sinclair Creek drainage and around MacLeod Meadows.

(LEWIS' WOODPECKER) Asyndesmus lewis

The present checklist of Park birds lists Lewis' Woodpecker as an accidental, however, no records of the species are on file or in any published reports. Lewis' Woodpeckers are not uncommon in the Columbia Valley from Canal Flats south and might be expected to wander occasionally into the Radium area where the Douglas Fir savannah resembles their favoured habitat elsewhere.

YELLOW BELLIED SAPSUCKER Fairly Common Summer B

Sphyrapicus varius

Common in the Kootenay Valley and locally in the Sinclair Creek drainage. Sapsuckers prefer areas with considerable deciduous growth such as the Kootenay Valley mixed forest. In 1975 three nests were found, all in live aspens, within two miles of one another along the Dolly Varden Fire Road near Crook's Meadow (K. Van Tighem).

HAIRY WOODPECKER Dendrocopus villosus Uncommon Permanent B

In winter this species is occasionally seen at the Administration Building where a bird feeder is maintained and no doubt occurs elsewhere; during the breeding season it occurs sparsely throughout the Kootenay River Valley and Columbia drainage. In 1975, 1976 and 1977 a pair nested in a light pole at the Industrial Compound on McKay Creek. Other nests have been observed at Crook's Meadow (Munro & Cowan, 1943) and Daer Fire Road (K. Van Tighem).

DOWNY WOODPECKER Dendrocopus pubescens Rare Permanent

This is one of the least common woodpeckers in the Park, probably because suitable deciduous habitats are of such limited extent. The species may breed locally in the Kootenay Valley (Dolly Varden Creek?) but its status in the Park is poorly understood. It may be commoner outside the Park, along the Columbia River.

BLACK-BACKED THREE-TOED WOODPECKER Rare Permanent B

Picoides arcticus

Salt and Salt (1976) describe this species as "one of the quietest of our woodpeckers." Whether it is because of its secretive nature or because of real scarcity, the Black-backed Three-toed Woodpecker has very rarely been reported in Kootenay National Park and its status is unknown. The species has been observed both summer and winter and one nesting is on record, at Marble Canyon in 1963 (Seel, 1965).

NORTHERN THREE-TOED WOODPECKER Fairly Common Permanent B

Picoides tridactylus

Although seldom seen by the casual observer, this species is one of the most common woodpeckers in the Park. Three-toes feed by chipping bark scales off spruce and pine; trees which have been stripped down to the red inner bark and left with piles of scales about their bases can be seen in almost every coniferous habitat in the Park. The edges of the Vermilion Pass Burn and the East Kootenay Fire Road are among the better places for locating this species and its work; there are several breeding records. Drumming is most often heard in March and April.

EASTERN KINGBIRD Tyrannus tyrannus Fairly Common Summer
Occurs regularly along Dolly Varden Creek and at Settler's beaver-
ponds, but less frequently elsewhere, shrubby deciduous habitat
being scarce in the Park. Eastern Kingbirds no doubt nest in the
park; a probable breeding record is indicated by an observation
of six kingbirds feeding together near Settler's beaverponds on
August 21, 1973 (W. J. Anderson). The species is common along the
Columbia River.

WESTERN KINGBIRD Tyrannus verticalis Accidental
Western Kingbirds breed at Radium Junction immediately adjacent to
the Park and may occasionally nest in the Park in the Douglas fir
savannah. At present the species is known only as a casual visitor
to the Park, having been recorded twice in the Kootenay Valley and
once at the Aquacourt.

WILLOW FLYCATCHER Empidonax traillii Fairly Common Summer
Of the two species formerly lumped together as Traill's Flycatcher,
the Willow Flycatcher is the commonest one in the Park. Willow
Flycatchers are common along Dolly Varden Creek; they have also
been recorded at Dog Lake and Daer Pond. This is the common Traill's
Flycatcher of the Columbia River wetlands outside the Park.

ALDER FLYCATCHER Empidonax alnorum Uncommon Summer
Although Alder Flycatchers have been heard at Dolly Varden Creek,
at Settler's beaverponds and in the seepage springs at the foot of
Mount Wardle, they are considerably less common than Willow Flycatchers.
Both species occupy similar habitat; shrubby wetlands and the brushy
part of muskegs.

LEAST FLYCATCHER Empidonax minimus Uncommon Summer
An individual was heard singing in old aspen/spruce woodland adjacent
the Conservation Corps camp in June, 1976; otherwise the only records
in the Park are from Dolly Varden Creek near Crook's Meadow, where the
species occurs regularly and apparently breeds. Outside the Park along
the Columbia River Least Flycatchers are more widespread. Suitable
deciduous habitat is in scarce supply in the Park.

HAMMOND'S FLYCATCHER	<u>Empidonax hammondii</u>	Common	Summer
DUSKY FLYCATCHER	<u>Empidonax oberholtsi</u>	Rare	Summer

Needless to say, the author and his co-workers had a great deal of difficulty deciding which species was which. Munro and Cowan (1943) list Dusky Flycatcher on the basis of voice identification which, in our opinions, is not possible, at least in our area. It is believed that Hammond's Flycatcher is the commonest Empidonax in the Park, occurring in all coniferous and mixed woodland habitats but, if this is the case, we have some very sweet-voiced Hammond's Flycatchers. On the shrubby, open slopes of Mount Wardle and along Dolly Varden Creek we heard flycatchers that were quite probably Dusksies and these may also be the birds heard in the alder shrubbery of avalanche slopes. Dusky Flycatchers are almost certainly the species heard commonly along the Columbia River outside the Park.

The Problem of establishing the identities of these confusing Empidonax flycatchers can probably only be solved with a shotgun; a rather drastic solution to something which matters to nobody but the museum taxonomist. At present we believe that the best solution is to call all birds of this complex located in the Park Hammond's Flycatchers unless their calls have no burriness at all and they confine themselves to low, shrubby, deciduous habitats. It might be pointed out that having collected a bird and identified it one cannot say it is a Dusky Flycatcher. It was a Dusky Flycatcher; now it's a dead bird. Better to be left wondering about a living one.

(WESTERN FLYCATCHER) Empidonax difficilis

This species has never been recorded in the Park but is included here due to the presence of suitable habitat in the Park, which is located well within the usual range of Western Flycatcher. Wade (1977) reports that Western Flycatchers frequent Douglas fir forests with maple understories; Salt and Salt (1976) describe typical habitat as being deciduous woodland adjacent streams. Both habitats exist in the Park and it is believed that

Western Flycatchers will no doubt be found here at some time in the future.

WESTERN WOOD PEWEE Contopus sordidulus Fairly Common Summer

Occurs locally in the Kootenay River Valley, especially where aspens predominate in the mixed forest. Pewees have also been observed in the Redstreak area. Crook's Meadow and Dolly Varden Creek are among the best places in the Park for seeing Pewees.

OLIVE-SIDED FLYCATCHER Common Summer

Nuttallornis borealis

Olive-sided Flycatchers prefer old spruce/fir stands along the edges of avalanche slopes and river flats; open timberline forests of larch and fir; and areas in the Kootenay River Valley where old, dying lodgepole pines stand out above the surrounding lodgepole pine or mixed woodlands. The species is commonest at timberline; it can also be found regularly at Simpson Slide, Crook's Meadow, Dolly Varden Creek and Daer Pond as well as in the Vermilion Pass Burn.

VIOLET-GREEN SWALLOW Uncommon Summer B

Tachycineta thalassina

This species is known to nest in the Aquacourt area and is suspected of nesting in the walls of Sinclair Canyon. Munro and Cowan (1943) recorded Violet-greens in the Kootenay Crossing Burn but it has not been observed in the Vermilion Pass Burn to date (Harris, 1976). Most observations of the species have been in the lower Sinclair Creek area, the Industrial Compound on McKay Creek, and Redstreak Campground, but it may also be expected throughout the Kootenay River Valley.

CLIFF SWALLOW Petrochelidon pyrrhonota Uncommon Summer B

There are two small colonies of Cliff Swallows in the Park; one at the Vermilion Crossing bridge, and one at the Kootenay Crossing bridge. Of these, only the Kootenay Crossing colony appears to be used to any great extent.

GRAY JAY Perisoreus canadensis Fairly Common Permanent B

Common throughout the Park, from Valley bottom to timberline; commonest in the Kootenay Valley and least common in the Douglas fir savannah area.

STELLER'S JAY Cyanocitta stelleri Uncommon Permanent

In winter this species is seen frequently in the valley bottoms around such developed areas as the Kootenay Crossing Warden Station, MacLeod Meadows Campground, Redstreak Campground and the Aquacourt area. Steller's Jay is far less approachable than the Gray Jay and in summer is often difficult to find. Most summer sightings have been from the Vermilion River drainage, of birds seen along avalanche slopes especially in the alder shrubbery and timbered edges.

BLACK-BILLED MAGPIE Pica pica Rare Winter

Munro and Cowan (1943) mention warden reports of magpies occurring regularly in the Kootenay River Valley until an eradication program took place, after which magpies became very scarce. There are no records of the species on file from the summer months for the Kootenay Valley; magpies are seen occasionally around Redstreak Campground in summer but probably do not breed. They appear to be commoner in the non-breeding seasons.

COMMON RAVEN Corvus corax Fairly Common Permanent

Known to have nested once near McLeod Meadows and from 1973 to 1976 on the walls of Sinclair Canyon; may nest elsewhere in the Park. Ravens are seen most commonly scouring the highway early each morning in search of roadkills and circling above the benches near Radium where, until 1977 when the dump was closed, flocks of ravens used to visit a garbage dump outside the Park daily. Late in the summer ravens appear to disperse throughout the park and there are sufficient records to indicate that the species remains in the park, at least in small numbers, all winter.

COMMON CROW Corvus brachyrhynchos Rare Summer

Nests commonly in the Columbia Valley river bottom... "and organized crow shoots make no appreciable difference in their numbers." (Johnstone, 1944: p. 57). Crows are seldom, however, seen in the park and there are no records of its ever having nested here. Earliest reports of crows are from March, the latest from October, with most sightings being from the Radium area and the Kootenay River valley. Munro and Cowan (1943) conjecture that epidemic die-offs of mountain sheep may cause temporary invasions of the park by crows attracted to the abundant carrion.

CLARKE'S NUTCRACKER Nucifraga columbiana Common Permanent B

Nutcrackers are common in summer in most timberline areas of the park and, because of their loud and raucous calls, are easily found in such areas as Kindersley, Numa and Tumbling Passes, as well as in the Vermilion Pass burn. Late in the summer the species begins to appear in the valley bottoms and a few remain in the park all winter, especially in the Radium area. Johnstone (1944) says that nutcrackers winter most commonly in the Columbia and Kootenay valley bottoms in Douglas

fir/Ponderosa pine (Pinus ponderosa) savannah.

BLACK-CAPPED CHICKADEE Parus atricapillus Fairly common Permanent B

Occurs sparsely throughout the Douglas fir forest, the Kootenay valley mixed woodland, and in other low-elevation habitats having considerable deciduous growth. Black-capped and Mountain chickadee commonly are seen together at bird feeders near Radium.

MOUNTAIN CHICKADEE Parus gambeli Fairly common Permanent

Found throughout the coniferous habitats of the park, from the Douglas fir savannah up to timberline. Common in winter around the Redstreak area.

BOREAL CHICKADEE Parus hudsonicus Common Permanent

Commonest in the Kootenay valley mixed forest but found throughout the park in coniferous habitats.

(CHESTNUT-BACKED CHICKADEE) Parus rufescens

Seel (1965) reports several observations of this species in winter, in habitat very unlike that frequented by Chestnut-backs under normal circumstances. These highly unlikely observations probably involved Boreal Chickadees in their bright winter plumages and, in the absence of further substantiation, must be treated as hypothetical.

WHITE BREASTED NUTHATCH Sitta carolinensis Rare Winter

Seel (1965) reports this species from the Redstreak area both in summer and in winter; there is also a record from the same area in August of 1973 (WTA). The species no doubt breeds along the Columbia River and is said to breed in Ponderosa pine forests further south, and may be expected as a casual visitor to the Douglas fir savannah around Radium.

RED-BREASTED NUTHATCH Sitta canadensis Common Permanent B

One of the commoner and more widespread species of the park, the Red-Breasted Nutbatch is found wherever there are conifers and has even been detected at upper timberline on Wolverine Pass in August (KVT). Though nuthatches may not be seen often their soft, nagging calls can be heard at almost any time of the year.

BROWN CREEPER Certhia familiaris Rare Permanent

Most frequently observed in winter; no evidence of breeding activity although there are records from the Vermilion Pass burn during the breeding season. The Brown Creeper is a quiet, obscure little bird whose status in the park is still not well understood.

AMERICAN DIPPER Cincilus mexicanus Fairly common Permanent B

Found along almost every water course in the park. One pair has nested for several years at the entrance to the canyon beside the Iron Gates tunnel; adults with young have been seen below Stanley Glacier and on Helmet Creek.

WINTER WREN Troglodytes troglodytes Common Summer B

Frequents coniferous forests throughout the park, being commonest in such forests having lush shrubby understory and deadfall, along streams and in boggy places. Winter wrens are least common in Lodgepole pine and open Douglas fir stands and in timberline forest. Some of the better trails in the park for Winter Wrens are McKay Creek, Kindersley/Sinclair, and Floe Lake trails.

AMERICAN ROBIN Turdus migratorius Common Summer B

Robins are found in open forests and "edge" habitats throughout the park, being commonest at timberline, along the river flats

and in the Douglas fir Savannah. The species is least common in the old, dense spruce and spruce/fir forests. In June and July flocks of male robins are seen frequently along highway 93 in the Kootenay River Valley. Robins may occasionally winter in the Columbia Valley.

VARIED THRUSH Ixoreus naevius Common Summer B

Commonest in timberline forest, subalpine forest and riparian forest communities. Found in coniferous forest throughout the park, preferring dense, moist stands. McKay Creek, Kindersley/Sinclair, and Floe Lake trails are among the better trails for seeing Varied Thrushes or hearing their simple, whistled song. There is one breeding record from Tokumm Creek.

HERMIT THRUSH Catharus guttatus Common Summer

Hermit thrushes are commonest at timberline and in the upper reaches of the subalpine forest, as well as locally in open coniferous forests at lower elevations. They are heard singing most often at earliest dawn and latest dusk; at other times it may seem as if this shy species is completely absent from places where it is, in fact, not uncommon.

SWAINSONS THRUSH Catharus ustulata Common Summer B

Swainson's Thrush does not occur in the open timberline forest but is the commonest thrush in the park at lower elevations, in coniferous and mixed woodlands. Along almost any trail in the park this species' song can be heard late in the evening and early in the morning, from mid-May to early July. Swainsons Thrush appears to prefer denser vegetation and more closed canopies than Hermit thrushes.

MOUNTAIN BLUEBIRD Sialia currucoides Uncommon Summer B

The Mountain Bluebird is a quiet bird that is not common anywhere in the park. It prefers open habitats such as the Vermilion Pass burn, river flats and the Douglas fir savannah, being occasionally found in the timberline forest too. There are several nesting records from Redstreak, Crook's Meadow, Mount Wardle and Vermilion Pass.

TOWNSEND'S SOLITAIRE Myadestes townsendi Uncommon summer B

Nests have been found along the Daer Fire Road and near Redstreak; the species appears commonest in the Vermilion Pass burn and at the south end of the park in the Douglas fir savannah, but is found throughout the park up to the timberline. This is one of the earliest spring migrants - some individuals winter in the Radium area - and is rarely heard singing past the middle of June which is when most songbirds are getting into full swing.

GOLDEN-CROWNED KINGLET Regulus satrapa Common Summer

Rarely seen well but often heard, the Golden-crowned Kinglet occurs throughout the park in coniferous or mixed forests. Goldencrowns are commonest where spruce and fir predominate and where the tree cover is uninterrupted; they can often be found along the Dog Lake trail, near Daer Pond, and along most of the trails in the Vermilion River drainage. Seel (1965) reports two February sightings but it appears that most of our Kinglets leave the park in winter.

RUBY-CROWNED KINGLET Regulus calendula Common Summer

Ruby-Crowned Kinglets prefer opener habitats than Golden crowns, being commonest at timberline; in over-mature spruce forests bordering streams, rivers and ponds; and in the Kootenay valley mixed woodland. Dolly Varden Creek and the Paint Pots are among several places where Ruby-crowned Kinglets

are commonly heard.

WATER PIPIT Anthus spinoletta Common Summer B

During April and May and again in September, Pipit can be seen in small flocks along highway 93 and the river flats of the Kootenay and the Vermilion. All summer long they can be seen and heard in most alpine areas of the park, where evidence of breeding has been recorded. (KVT)

BOHEMIAN WAXWING Bombycilla garrulus Uncommon Permanent B

Munro and Cowan (1944) report that they found a nesting pair of Bohemian Waxwings at Kootenay Crossing. There have been no breeding records since then but the species has been observed sporadically at locations throughout the park in summer. Flocks are seen in the Radium area in the winter. Most Bohemian Waxwings seen during the field study were catching flies over the Vermilion River floodplain.

CEDAR WAXWING Bombycilla cedrorum Rare Summer

Although common along the Columbia River adjacent to the park, Cedar Waxwing are seldom observed in Kootenay National Park. The few records available are from June and July, in the Redstreak area and the Kootenay Valley mixed woodland. Whether these observations indicate breeding birds or not is open to conjecture.

(LOGGERHEAD SHRIKE) Lanius ludovicianus

There are two records of loggerhead shrike on file, one from June 16, 1973 (GF) and one from May 24, 1974 (TM). The loggerhead shrike is not known to breed anywhere in the East Kootenay (Johnstone, 1949) and has not been recorded for Yoho although Northern Shrike has been (Wade, 1977). Both these

records could well have been of Loggerheads and probably were, but in the absence of field descriptions or other substantiation, must be considered hypothetical. Northern Shrikes should usually be long gone by May or June.

COMMON STARLING Sturnus vulgaris Rare Summer B

Unlike its status in most of North America, the starling remains a rare bird in Kootenay National Park. There is one nesting record near McLeod Meadows (WJA) and starlings are occasionally seen in that area during summer, but the species is commonest here on migration when small flocks may be seen in the Radium area and Kootenay valley, often intermixed with cowbirds. Some starlings winter in the Columbia Valley.

SOLITARY VIREO Vireo solitarius Common Summer

Commonest in the Kootenay valley, in the Douglas fir savannah, and in the riparian mixed woodland. Solitary Vireos can be heard, if not seen, almost any day from mid-May to early July at the Administration building, Nipika, Hog Lake trail and Dolly Varden fire road. The species prefers open, mixed forest but can be found in lodgepole pine stands and in aspen groves; rarely in old spruce/fir forest.

RED EYED VIREO Vireo Olivaceus Rare Summer

There are two possible records of Red-Eyed Vireos from the Kootenay River Valley and the remaining records are from the Radium area. The species is common in poplar woodland adjacent the park near Radium and may sporadically nest in the park here. Dolly Varden Creek and other areas in the Kootenay River valley represent potential habitat for the species and it may, in future, be found in the areas.

WARBLING VIREO Vireo gilvus Common Summer

Found almost anywhere that there is deciduous shrubbery or woodland in the Park. Commonest along Dolly Varden Creek, on shrubby avalanche slopes, and in mixed woodland throughout the valley bottoms of the Park. Warbling Vireos can be heard during the breeding season at Nipika, Kimpton Creek Trail, Dog Lake Trail, Dolly Varden Creek and Simpson Slide.

TENNESSEE WARBLER Vermivora peregrina Fairly Common Summer

Breeds throughout the Vermilion River Valley, especially in over-mature stands of spruce or lodgepole pine bordering the floodplain. Tennessee Warblers have been observed in breeding season on Honeymoon Pass (K. Van Tighem) but are uncommon at high elevations. The Wardle Muskeg and the base of the Simpson Slide are good locations to seek out this species, its distinctive song often being heard in mid-afternoon when few other birds are singing.

ORANGE-CROWNED WARBLER Fairly Common Summer
Vermivora celata

This species is of local occurrence in the Park; the greater the amount of aspen or willow in the vegetation the greater the likelihood of hearing the simple trill of the Orange-crowned Warbler. Orange-crowns frequent the shrubbery of avalanche slopes and wetlands, as well as mixed woodland containing poplars. They are common in aspen stands along the Daer Fire Lookout Road, along Dolly Varden Creek, and on the south-facing slope of Mount Wardle.

YELLOW WARBLER	<u>Dendroica petechia</u>	Uncommon	Summer
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Although this is one of the commonest species in the deciduous growth along the Columbia River, it is known from only two small areas within Kootenay National Park. Yellow Warblers can be found singing in the willow/dwarf birch shrubbery along Dolly Varden Creek; they have also been observed in willow stands in the seepage areas at the base of Mount Wardle (K. Van Tighem).

MAGNOLIA WARBLER	<u>Dendroica magnolia</u>	Rare	Summer
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Seel (1965) reports a singing male at Marble Canyon on June 3, 1965 as well as another male on September 5, 1965. There is a record of a singing male in the Vermilion Pass Burn on July 10, 1973 (G. Sranko). These are exceptional records and may indicate that the species has bred in Kootenay. Salt and Salt (1976) report Magnolia Warbler as breeding in the Banff area. Wade (1977) considers it a "very rare migrant" (p.589) in Yoho. Its exact status in our area remains to be determined.

YELLOW-RUMPED WARBLER		Very Common	Summer
	<u>Dendroica Coronata</u>		

Audubon's Warbler (D.c. memorabilis) is common throughout the Park wherever there are conifers, being least common in pure stands of lodgepole pine and dense old spruce/fir forests. Two of the most familiar sounds of June are the songs of this and the Townsend's Warbler. Myrtle Warbler (D. c. coronata) has been observed once in the park (K. Van Tighem) and should not be expected except rarely on migration.

TOWNSEND'S WARBLER	<u>Dendroica townsendi</u>	Very Common	Summer
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Townsend's Warbler prefers mature spruce and spruce/fir forest but is common as well in Douglas fir forest, riparian mixed woodland and the Kootenay Valley mixed forest. The species is much less abundant in dense lodgepole pine stands and in open timberline forest.

BLACKPOLL WARBLER Dendroica striata Rare Summer

On June 4 and 6, 1975 the author and Jim Mulchinock observed two separate male Blackpolls singing on territories in lodge-pole pine woods bordering Settler's Beaverponds. On June 18, 1976 we again observed two males singing in over-mature lodge-pole pine/Engelmann Spruce forest at the upper end of Marble Canyon. These are the only records to date in Kootenay National Park and it remains to be seen whether this species is indeed a regular breeder in the Park. Wade (1977) reports several sightings in Yoho from late May to mid July.

NORTHERN WATERTHRUSH Uncommon Summer

Seiurus noveboracensis

Northern Waterthrush is of local distribution in the Park, preferring boggy areas with standing spruce trees. The species occurs regularly at the foot of the Simpson Slide and in the flooded timber bordering Daer Pond, and is heard occasionally in the seepage areas at the foot of Mount Wardle and around Cobb Lake.

MACGILLIVRAY'S WARBLER Oporornis tolmiei Common Summer

A common species on brushy avalanche slopes, often seen feeding on the ground in the broken conifers and beneath the alders. Also occurs in other brushy habitats such as Dolly Varden Creek.

COMMON YELLOWTHROAT Geothlypis trichas Common Summer B

Yellowthroats are quite common along Dolly Varden Creek, at the outlet from Dog Lake, and in the Daer muskeg. The species prefers wet, shrubby habitats at low elevations and does not occur on avalanche slopes or in forested bogs.

WILSON'S WARBLER Wilsonia pusilla Fairly common Summer

Common in tall shrubbery, especially near streams. Wilson's Warbler is found on shrubby avalanche slopes, in coniferous or mixed woodland having a dense, shrubby understory, and in wetlands bordered by tall shrubs. Kimpton Creek Trail, McKay Creek, Dolly Varden Fire Road and Simpson Slide are among the locations where this species is commonly seen and heard during the breeding season. Wilson's Warbler is also common in unburned pockets of the Vermilion Pass Burn (Harris, 1976).

AMERICAN REDSTART Setophaga ruticilla Uncommon Summer

In breeding season Redstarts are found in only a few locations in Kootenay National Park, mostly in the Kootenay River Valley. The species appears to prefer tall willow shrubbery close to spruce or mixed forest. Seepage sites at the base of Mount Wardle, the willow growth along the Kootenay River near Kootenay Crossing, and tall shrubbery bordering ponds such as Settler's beaverponds and Dog Lake are areas in which Redstarts have been observed in June and July.

HOUSE SPARROW Passer domesticus Accidental

There is one record from Redstreak Campground on August 1, 1965 (Seel, 1965). House Sparrows are very dependent on human settlements for habitat and are consequently very rare in the Park. Any observations of the species are apt to be in the Radium area, of birds wandering into the Park from the town of Radium.

WESTERN MEADOWLARK Sturnella neglecta Rare Summer

There are very few records of meadowlarks in the Park and no indication of the species ever having bred there. Meadowlarks are common in the Palouse grasslands of the Columbia Valley, outside the Park, and may occasionally range into the Redstreak area or grassy areas along the Kootenay River floodplain. Most sightings to date have been from the Kootenay Valley.

YELLOW-HEADED BLACKBIRD Uncommon Migrant
Xanthocephalus xanthocephalus

Occasionally seen in Spring and Fall along the highway, often in association with small flocks of cowbirds. Yellow-headed Blackbirds breed in the Columbia Valley but are unlikely to remain in the Park to nest, due to the very limited amount of suitable habitat here.

RED-WINGED BLACKBIRD Agelaius phoeniceus Uncommon Summer

Redwings breed in the Park, but only in a very few locations. There are usually one or two pairs of Redwings at Settler's beaver ponds, Dog Lake, Daer Pond and the Kootenay Ponds. Habitat for this species is of very limited extent in the Park and Redwings are commonest on migration, when they may be seen in mixed flocks of blackbirds along highway 93.

BROWN-HEADED COWBIRD Molothrus Ater Uncommon Summer B

Although cowbirds are most evident on migration, when they gather in flocks along highway 93, the species may be commoner than it appears to be during the summer since it is rather secretive and quiet at this time of year. Small flocks of males are often seen around MacLeod Meadows all summer; doubtless the females are around somewhere too, sneaking their eggs into the nests of unsuspecting other birds. Immature cowbirds appear now and then in late July and August.

WESTERN Tanager Piranga ludoviciana Uncommon Summer B

Tanagers are rarely seen although it is not unusual to hear their song in the Douglas fir savanna, mixed forest habitats and the edges of avalanche slopes or river flats. One breeding record is on file, from Redstreak Campground (Seel, 1965). Late May and early June are good times to watch for tanagers arriving back in the Park, especially in the area of the Aquacourt and the Administration Building; at this time they are somewhat more readily seen than later in the season.

BLACK-HEADED GROSBEAK Accidental
Pheucticus melanocephalus

A singing male Black-headed Grosbeak was observed in subalpine forest near Marble Canyon by Carson and Lynn Wade in June of 1975. This observation is very exceptional, especially considering that normal habitat for the species is poplar forest at low elevations; however, the observers are highly experienced and the author has chosen to accept the record as a highly unusual wanderer of the species.

LAZULI BUNTING Passerina amoena Rare Summer

Two males were observed singing in small clumps of young aspen on an avalanche slope north of Ochre Creek on July 1, 1975 (K. Van Tighem). None were seen there in 1977 but an unfamiliar song heard there may have been a bunting. It appears possible that Lazuli Buntings may occur regularly in the Park but more work is required to ascertain the true status of the species. The aspen/saskatoon scrub on the lower slopes of Mount Wardle appears to offer excellent habitat for the species and should be investigated in the future.

EVENING GROSBEAK Hesperiphona vespertina Uncommon Summer

More often heard than seen. Evening Grosbeak occur sparsely throughout the Kootenay and Vermilion Valleys, being seen most frequently at Vermilion Crossing and the Paint Pots. Its exact status is uncertain but the Evening Grosbeak probably breeds sparsely throughout the coniferous and mixed forests of the Park.

PURPLE FINCH Carpodacus purpureus Uncommon Summer

Found regularly, in small numbers, in the open, mixed woodland of the Kootenay Valley from MacLeod Meadows to Dolly Varden Creek; rarely seen elsewhere. Seel (1965) reports migrant Purple Finches from the Redstreak area.

CASSIN'S FINCH Carpodacus cassinii Rare Migrant

Breeds in the Douglas fir savannah of the Columbia River Valley but rarely seen in the Park. Most records have been of migrant birds in the Radium area. Seel (1965) describes large flocks of Cassin's Finches visiting the McKay Creek Industrial Compound in March of 1958 and 1963.

(HOUSE FINCH) Carpodacus mexicanus

There is one record of this species from MacLeod Meadows, June 15, 1973 (W. J. Anderson) which is considered hypothetical. House Finches have been observed singing in Radium (K.V.T.) and may wander into the Park occasionally.

PINE GROSBEAK Pinicola enucleator Uncommon Summer B

Apparently less common than the Evening Grosbeak, being seen most often in the Redstreak area in winter (Seel, 1965). Singing males have been observed in June and July near Cobb Lake (KVT), Dolly Varden Creek (KVT), and at timberline. Nest building activity has been observed near Cobb Lake (J.M.); immature birds have been

seen along Ochre Creek (KVT). Although shy and apparently uncommon the Pine Grosbeak seems to be a widespread breeding species in the Park. Wade (1977) describes it as a common resident in Yoho.

Gray-crowned Rosy Finch Leucosticte tephrocotis Fairly common Summer
Winters commonly in the Columbia valley (Johnstone, 1949) and seen most often in Kootenay National Park during spring and Fall along the highway and open valley bottoms. In summer the Gray-crowned Rosy Finch is a common breeding species above timberline, it is apparently of more localized distribution than is the Water Pipit.

Common Redpoll Acanthis flammea Rare Winter
Little work has been done in winter in the park and the Common Redpoll is no doubt commoner than the paucity of records would indicate. Seel (1965) mentions seeing redpolls on November 24 and 26, 1965; there are no other records from the park. Wade (1977) describes the species as a fairly common winter resident of Yoho. Johnstone (1949) says it is an irregular winter visitant to the East Kootenay.

Pine Siskin Spinus pinus Very common Summer
Common throughout the park in summer; there are no winter records on file. Pine Siskin are frequently seen feeding on ripe dandelion (Taraxacum spp.) heads in mid-summer and heard calling from the tops of coniferous trees.

Red Crossbill Loxia curvirostra Uncommon Permanent
Possibly commoner than White-winged Crossbill, but since most observations of crossbills are of small flocks bouncing by overhead, exact identification is difficult. Wade (1977) points out the difficulties involved with attempting to identify crossbills by voice. Neither species of crossbill was common during the

field study. Most observations came from the Kootenay River Valley.

White-winged Crossbill Loxia leucoptera Rare permanent
There is only one record on file, of a flock of eleven using a
birdbath near Redstreak in May, 1965 (Seel, 1965). None were
positively identified during this field study. Crossbills are
well known for their erratic behaviour and no doubt their status
in the Park varies from year to year, but they are probably present
most of the time at least in small numbers.

Savannah Sparrow Passerculus sandwichensis Uncommon Summer
Savannah Sparrows can be heard singing in suitable grassy areas
in the Kootenay and Vermilion River valleys but have not been
recorded from the Columbia valley portion of the park. They are
present in small numbers at Dolly Varden Creek, Daer Pond, Wardle
muskeg and a few other areas with lush, moist stands of grasses
and sedges.

Le Conte's Sparrow Ammospiza leconteii Accidental
One was heard singing on May 27, 1975 at Dog Lake (KVT) but was
not found on subsequent trips to the area and was no doubt a
migrant. Suitable habitat exists in the park for this species
but it is not known to breed farther west than the Front Ranges
of the Rockies (Salt & Salt, 1976).

Vesper Sparrow Poocetes gramineus Uncommon Summer
Prefers open, dry grassland such as that which develops along the
floodplain of the Kootenay River and the understory vegetation of
the Douglas fir savannah. Vesper sparrows are frequently heard
singing near the Administration building and can often be heard at
dawn along the river flats south of MacLeod Meadows.

Dark-eyed Junco Junco hyemalis Very common Summer B

By far the commonest subspecies found in Kootenay National Park is the Oregon Junco (J. h. montanus) which is found in open coniferous or mixed forests throughout the park. This was the only kind of junco observed during the field studies, which makes the volume of past records of the state-colored Junco (J. h. hyemalis) seem rather extraordinary. Wade (1977) lists the state-colored Junco as a migrant and occasional winter visitor; Johnstone (1949) regards it as a rare winter visitant. Almost all our summer records of slate colored Juncos (M. J. C. ; G. S.) are from the Vermilion Pass burn; more work is required to account for this apparent disjunct population of the northern subspecies of the Dark-eyed Junco.

Chipping Sparrow Spizella passerina Common Summer B

Common in open woodland and forest edge habitats throughout the park, up to timberline. Commonest in the Vermilion Pass burn, on avalanche slopes and in the Redstreak area.

Clay-colored Sparrow Spizella pallida Rare migrant

Seel (1965) reports two observations of what must have been Fall migrants in late August 1965, in the Radium area. Two separate singing males were observed in 1977, both in dwarf birch vegetation in muskeg areas (KVT). Clay-colored Sparrows are known to nest in dwarf birch vegetation in the foothills of Alberta (pers. obs.) but it is probable that these were migrants.

Brewer's Sparrow Spizella breweri Rare Summer

Brewer's Sparrow has been recorded only once from Kootenay National Park; two singing males below Stanley Glacier on June 17, 1975 (KVT.) One was heard in Mount Assiniboine Provincial Park on August 1, 1975 (KVT). The species is evidently quite rare in the park in spite of the apparent availability of suitable habitat.

White-crowned Sparrow Zonotrichia leucophrys Uncommon Summer B

This species frequents shrubby areas along stream floodplains, avalanche slopes and the Vermilion Pass burn. One of the best spots to listen for its song is where the avalanche slopes on Mount Whympers cross highway 93; in 1975 a nest was found there. Early in the morning Whitecrowns can be heard along the Kootenay River floodplain near MacLeod Meadows.

Fox Sparrow Passerella iliaco Common Summer

Common in the timberline larch/fir forests of the Park; less common on avalanche slopes and along Dolly Varden Creek. It is quite often necessary to be willing to slog through the lingering snows of early June in order to hear the song of this species above Floe Lake or on Ball and Honeymoon Passes, but the effort is well worth it.

Lincoln's Sparrow Melospiza lincolni Fairly common Summer B

Common in marshy places and at the bases of avalanche slopes. Dolly Varden Creek, Daer Pond, Kootenay Pond South and Simpson Slide are among the places where Lincoln's Sparrows are regularly seen. The species is also common outside the park along the sloughs of the Columbia River. There is one breeding record from Dolly Varden Creek.
(KVT)

Song Sparrow Melospiza melodia Rare Migrant

Song sparrows are common in the shrubbery bordering the Columbia River but are seen only occasionally in the park, during migration periods. The only extensive areas of suitable breeding habitat in the park occur along Dolly Varden Creek and locally along the upper Kootenay River but the species has yet to be found nesting there..

Snow Bunting

Plectrophenax nivalis

Rare winter

There is one record from Sinclair Pass, November 5, 1965 (Seel, 1965) and one other hypothetical record from Hector Gorge. The species occur regularly in Yoho during the winter (Wade, 1977) and is no doubt commoner than the scanty records indicate in Kootenay. Insufficient winter field work has been done to determine the distributions of several bird species in winter.

CONCLUSION

The 164 species of birds thus far known to have occurred in the Park will no doubt be added to considerably as our understanding of migratory and over-wintering birds increases. There are many questions left unanswered by this study and only a more detailed and comprehensive study conducted over the whole year by one or more persons employed solely for that purpose will enable us to begin to answer these.

No significant differences were noticed in the avifauna of the three main drainages of the park except insofar as the Columbia drainage includes habitats not represented elsewhere in the park or, if so, only locally. The greatest proportion of rare and unusual sightings were from the Kootenay River valley. This is interpreted as being less a biogeographical phenomenon than it is due simply to the fact that the Kootenay valley contains a great variety of highly productive habitats not found elsewhere. Three predominantly eastern taxa which appear to be restricted to the Vermilion valley are Lazuli Bunting, slate-colored Junco and Tennessee Warbler; there may be a tendency for non-cordilleran species to range just across the Continental Divide from the Bow River valley and thus to be seen most often in the Vermilion valley. In this regard it is worth mentioning that two other species, Blackpoll Warbler and Magnolia Warbler, have been reported from the Marble Canyon/Vermilion Pass area, adjacent to the Continental Divide.

The small amount of deciduous woodland and shrubland and the limited extent of our wetlands restricts the avian diversity of Kootenay National Park to some extent; nonetheless there are areas in the park, such as Simpson Slide, the Mount Wardle area, Dolly Varden Creek and Daer Pond, which are of exceptional interest to the birder. In fact, the variety and abundance of birds in the park is surprisingly great in spite of the lack of habitat diversity, and the park's position part way between the eastern slopes of the Rocky Mountains and the Interior ranges of British Columbia, ensures that it will remain so in the future.

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Many others, of course, also contributed to the study and to my work and I thank all of them for helping to make this report possible.

APPENDIX A

1975

SELECTED FIELD NOTES

SEASONAL REPORT

MAY 26

Dry sedge marsh on W. side of Kootenay River at Cross R. Fire Road.

- | | |
|---------------------------|---|
| 4 Hammond's Flycatchers | 5 or 6 Ruby-crowned Kinglets |
| 4 Warbling Vireos | 2 Flickers |
| 2 Lincoln's Sparrows | Juncos |
| 3 Orange-crowned Warblers | Townsend's Warblers in surrounding mixed woods. |

Kootenay River Picnic Grounds

- | | |
|---------------------|--------------------------------------|
| 1 Spotted Sandpiper | 3 or 4 White-crowned Sparrows (Male) |
| Audubon Warblers | |

Kettle Pond - (50 year old L.P. forest, some sedge)

- | | |
|---------------------|--------------------------|
| 2 Redstarts (Male) | 3 Redbreasted Nuthatches |
| Audubon's Warblers | Hammond's Flycatcher |
| Townsend's Warblers | 2 Townsend's Solitaires |
| Spotted Sandpiper | |

MAY 27

Dog Lake -(LP and DF - big willow area beside Lake)

3	Savanna Sparrows (Male)	5	Chipping Sparrows
1	Leontes Sparrow (Male)	2	Winter Wrens (Male)
1	Clay-coloured Sparrow (Male)	2	Buffleheads (Male)
4	Yellowthroat (Male)	1	Mallard (Male)
1	Yellowthroat (Female)	1	Mallard (Female)
		2	Solitary Vireos (Male)

Numerous Hammond's Flycatchers

Numerous Audubon's Warblers

JUNE 3

Nipika - (DF and WB mixed woods)

1 MacGillvaray's Warbler First Swainson's Thrushes of the year.

JUNE 4

Beaverponds on small stream 1.8 miles S. of Kootenay Picnic Site.

1	Kingfisher eating a 6" fish (Female)		Ruby-crowned Kinglets
3	Lincoln's Sparrows	2	Golden-crowned Kinglets (Male)
	Chipping Sparrows	2	Western Wood Pewees
	Yellowthroats		Hammond's Flycatchers
	Townsend's Warblers	2	Eastern Kingbirds
	Audubon's Warblers	1	Western Kingbird
3	Redwings (Female)		Robins
	Swainson's Thrushes	2	Boreal Chickadees
1	Blackpoll (Male)		Ruffed Grouse
	Barn Swallows		Tree Swallows

McLeod Meadows - (AP and WS Mixed Woods)

3 Purple Finches (Male)	Robins
Warbling Vireos	Chipping Sparrows
Hammond's Flycatchers	Junco
Rufous Hummingbird	Ruby-crowned Kinglets
Golden-crowned Kinglets	Boreal Chickadees

Crook's Meadow - (Ditto - also IP)

1 Western Tanager (Male)	2 Solitary Vireo (Male)
6 or 7 Cowbirds	Townsend's Warblers
1 Olive-sided Flycatcher (Male)	Audubon's Warblers
Robins	Ruby-crowned Kinglets
1 Rufous Hummingbird (Male)	Chipping Sparrows
Hammond's Flycatcher	3 Flickers
	1 Wilson's Warbler (Male)

JUNE 5

Honeymoon Pass - PM (SF and WS - some open shrubbery)

2 Rufous Hummingbirds	8 Hermit Thrushes
3 Varied Thrushes (Male)	10 Ruby-crowned Kinglets
3 Fox Sparrows (Male)	

Lots of Audubon's Warblers, Townsend's Warblers, Juncos and Wilson's Warblers.

Kettle Pond

1 Whitewinged Scoter (Female)

JUNE 6

Beaverponds 1.8 miles S. of Kootenay Picnic Site.

2 + Swainson's Thrushes (Male)	Audubon's Warblers
3 Lincoln's Sparrows (Male)	2 Eastern Kingbirds
4 + Yellowthroats	5 + Ruby-crowned Kinglets
3 + Wilson's Warblers	5 + Bank Swallows
2 + Blackpolls	5 Tree Swallows
4 + Redstarts (mostly first year males)	2 Rufous Hummingbirds (Female)
	A family of Whiskyjacks
	2 Alder Flycatchers
	Way-be-o

JUNE 15

McLeod Meadows

1 Kestrel (Male)

JUNE 16

Dolly Varden Creek (beaverponds)

Swainson's Thrushes	Audubon's Warblers
Ruby-crowned Kinglets	Juncos
Chipping Sparrows	

Kootenay Pond

2 Killdeers

Great Grey Owl Nest (mixed woods)

2 Young Great Greys	1 + Olive-sided Flycatcher
1 Snipe	1 Redtail
4 + Swainson's Thrushes (Male)	Robins
1 Purple Finch (Male)	2 or 3 Hammond's Flycatchers
1 Pileated Woodpecker	5 + Ruby-crowned Kinglets
1 Orange-crowned Warbler	Cowbirds
4 or 5 Chipping Sparrows	1 Western Wood Pewee

Kettle Pond

Many Swainson's Thrushes (Male)	1 + Solitary Vireo
2 + Warbling Vireos	Robins (plus 1 fledgling)

JUNE 17

Mount Wardle (IP plus open mountainside)

1 Crow

Stanley Glacier - (Burn and WS and SF)

1 Olive-sided Flycatcher	Ptarmigan sign
2 + Brewer's Sparrows (Male)	2 + Fox Sparrows
Raven	Many Hermit Thrushes

Daer Fireroad Gate

2 Cedar Waxwings - first of the year

East Kootenay Fire Road - PM

- 2 Nighthawks, 2 miles N. of Cross River
Swainson's Thrushes and Robins singing at every stop.

JUNE 18

Aquacourt

- 2 Roughwinged Swallows 4 Chipping Sparrows

Kootenay Viewpoint

- 1 Raven 1 Warbling Vireo
2 Orange-crowned Warblers

Daer Lookout Road

Solitaire nest in the road cut.

JUNE 19

McLeod Meadows

- 1 Pileated Woodpecker (John Nairne says there's a pair there constantly)
2 Solitary Vireos (Male)
Ruby-crowned Kinglets
White-crown out on the river flats - found on flats all along
Kootenay and Vermilion Rivers.

JUNE 28

McLeod Meadows A-frame

Junco nest with 4 eggs --- July 5th - 4 young.

JUNE 30

Dog Lake

- 1 Willow Flycatcher
- 1 Sora
- 2 Savannah Sparrows (Male)
- 3 or 4 Redwings (Female)

Dolly Varden Creek

- 4 Willow Flycatchers - no alder here at all.
Yellowthroat Nest - 5 eggs.
- 3 Sapsucker nests within 2 miles along fire road - all in live aspen.

JULY 1

Lower Ochre Creek

- 3 + Tennessee Warblers singing @ Paint Pots.
- 2 Lazuli Buntings singing on avalanche slope.
Spotted Sandpiper near Helmet Cabin.
Varied Thrushes
Swainson's Thrushes
Hermit Thrushes

JULY 20

The woods and shrubbery along the road by the Columbia below the Revelstoke Mill.

10 + Yellow Warblers	7 Eastern Kingbirds - 1 eating redosier dogwood berries.
Song Sparrows	
2 Redeyed Virios	2 Families of Black Capped Chickadees
Robins	5 Western Wood Pewees
4 Cedar Waxwings	4 Flickers
Ravens	2 Swainson's Thrushes (Male)
3 Spotted Sandpipers	1 Mourning Dove
Osprey nest with 2 plus young.	Siskins
5 + Dusky Flycatchers	1 Rufous Hummingbird
1 Male Yellow-bellied Sapsucker and 1 nest with young.	1 Kestrel (Female)

Numerous Starlings, many immature.

Westside Road, west of Radium

1 Vesper Sparrow singing in disturbed grassland.
2 Families of Horned Grebes
3 Mallard Families.

JULY 21

Dog Lake Hike

2 Downy Woodpeckers -- Sighted by Leslie.
1 Pileated Woodpecker -- Sighted by Leslie.

APPENDIX B

1976

SELECTED FIELD NOTES

Riparian Woodland (Cedar etc.)

May 18/76	Place of Silence Trail	2 Ravens 1 Golden Crowned Kinglet 2 Townsend's warbler 2 Audubon Warbler 1 Oregon Junco Robins
May 25/76	John McKay Creek	2 Dippers Townsend's Warblers Hammond's Flycatchers 3 Winter Wren 1 Great Horned Owl Golden-crowned Kinglets Varied Thrushes 1 Black-capped Chickadee 1 Hermit Thrush
June 14/76	Kimpton Creek (next to no DAWN cedars here) (before avalanche slope area) (after avalanche slope area)	Golden crowned Kinglet Townsend's Warbler Hammond Flycatcher Audubon's Warbler 1 MacGillivray's Warbler, dense 1 Wilson's Warbler, understory Pine Siskin Oregon Junco 2 Whiskyjacks 6 Black capped Chickadee Warbling Vireo 4 Rufous Hummingbird 3 Ruffed Grouse (drumming) 3 Winter Wrens 2 Townsend's Warbler 3 Audubons' Warbler 2 MacGillivray's Warbler 5 Wilson's Warbler 2 Golden-crowned Kinglet Chipping Sparrow Hammond's Flycatchers 2 Varied Thrush Pileated Woodpecker (fresh boring) 4 Warbling Vireo 1 ♂ Myrtle Warbler
June 15/76	Cobb Lake Trail afternoon	1 Spruce Grouse ♂ 4 Orange-Crowned Warbler 5 Wilson's Warbler 2 Redstart Oregon Junco Townsend's Warbler 1 Audubon's Warbler Swainson's Thrush 1 Redbreasted Nuthatch 1 Warbling Vireo

July 13/76 Stoddart Creek

Winter Wren
Audubon Warbler
MacGillivray's Warbler
Warbling Vireo
Orange-crowned Warbler

Douglas Fir Forest

May 17/76	Nipika	1 Townsend's Warbler 2 Audubon's Warbler 1 Solitary Vireo 1 Pileated Woodpecker Oregon Juncos 2 Hairy Woodpeckers (nesting in light pole)
May 19/76	Nipika	1 Solitary Vireo 2 Townsend's Warbler
May 20/76	Nipika	1 Mountain Bluebird 1 Townsend's Warbler
May 21/76	Nipika	1 Solitary Vireo 1 Audubon Warbler 3 Townsend's Warbler 2 Oregon Junco 2 Hammond's Flycatcher 1 Robin 1 Flicker (calling) Siskins Golden-crowned Kinglets (a flock, moving through) 2 Black-capped Chickadees Barn Swallows Violet-green Swallows 10 Audubon's Warblers (a flock, moving through in P.M.; only one ♀) 1 Warbling Vireo 1 Pileated Woodpecker 1 Varied Thrush
May 24/76	Nipika	1 Swainson's Thrush (singing)
May 26/76	Nipika	1 Solitary Vireo Oregon Juncos 3 Townsend's Warblers 2 Audubon Warblers 2 Chipping Sparrows
May 27/76	Nipika	1 Warbling Vireo 1 Ruffed Grouse (drumming) Oregon Juncos 2 Barn Swallows (nesting on the garage) Siskins Hammond's Flycatcher 1 Pileated Woodpecker 1 Whiskyjack Townsend's Warblers

Douglas Fir Savannah

May 25/76	Radium Golf Course Administration Building	1 Purple Finch (singing) 1 Vesper Sparrow 1 Solitary Vireo
May 26/76	Valleyview Trail	2 Townsend's Solitaire Audubon Warblers Ravens Chipping Sparrow 1 Flicker (ssp.) Oregon Juncos 1 Mountain Bluebird
May 27/76	Administration Building West Gate	1 Solitary Vireo 4 Oregon Juncos Oregon Juncos 1 Hammond's Flycatcher Robins
May 28/76	Valleyview Trail Administration Building	1 Kestrel 3 Audubons' Warblers Chipping Sparrows 1 Solitary Vireo 1 Hammond's Flycatcher 2 Ravens
May 30/76	Juniper Trail	1 Swainson's Thrush 2 Chipping Sparrow Robins Ravens
May 31/76	Administration Building West Gate	2 Audubon Warbler 1 Robin 4 Chipping Sparrow 1 Warbling Vireo 1 Western Tanager Pine Siskins 1 Hammond's Flycatcher 2 Barn Swallows Violet-Green Swallows
June 8/76	Juniper Parking Lot	1 Red-eyed Vireo 2 Audubons Warbler 2 Oregon Junco Violet Green Swallows } mixed flock Rough winged Swallows } feeding high
June 10/76	Administration Building	1 Red breasted Nuthatch 1 Evening Grosbeak 1 Western Tanager (singing) 2 Solitary Vireo

		3 Chipping Sparrow
		1 Warbling Vireo
		2 Audubon's Warbler
June 27/76	Redstreak Campground	1 ♀ Mountain Bluebird (with food in bill)
		3 Common Nighthawk
		Robins
July 13/76	Stoddart Creek	Oregon Juncos
		3 Tree Swallow
		1 Townsend's Solitaire
		Vesper Sparrow
		2 Swainson's Thrush
		1 Hammond's Flycatcher
August 9/76	Redstreak	1 Black billed Magpie
		1 Red breasted Nuthatch
		1 Western Wood Pewee
		several Black capped Chickadees

Kootenay Valley Mixed Forest

May 18/76	MacLeod Meadows		1 Kestrel 5 Starlings 2 Ruby crowned Kinglet 3 Audubon Warbler Barn Swallows
May 21/76	MacLeod Meadows		2 Townsend's Warbler 3 Ruby crowned Kinglet 1 Orange crowned Warbler 2 Robin 2 Junco Audubon's Warblers Chipping Sparrows 1 ♀ Spruce Grouse 1 Kestrel Barn Swallows
May 26/76	MacLeod Meadows		Audubon's Warblers Robins - (abundant) Oregon Juncos 2 Black-Capped Chickadees 1 Red Wing Cowbirds Hammond's Flycatcher Ruby-crowned Kinglet (common)
	East Kootenay Fire Road (PM)		Oregon Juncos Robins Ruby Crowned Kinglets Townsend's Warblers Audubon's Warblers Rough-winged Swallows (feeding overhead) 1 Black-capped Chickadee 1 Great Horned Owl 1 Flicker (calling) 1 Pygmy Owl (calling) Swainson's Thrushes 1 Olive-sided Flycatcher
June 8/76	Crock's Meadows	Dawn	4 Robin 8 Townsend's Warbler Warbling Vireos 4 Solitary Vireo 6 Hammond's Flycatcher Chipping Sparrows 3 Swainson's Thrush 1 Cowbird 5 Audubon's Warbler 3 Black-capped Chickadee 1 Townsend's Solitaire 2 Red breasted Nuthatch

1 Orange crowned Warbler.
2 Common Snipe (in flight)
4 Ruby crowned Kinglets
3 Western Wood Pewee
1 Wilson's Warbler
4 Yellow bellied Sapsucker
Pine Siskins
2 Oregon Junco
2 Barn Swallow
1 Golden crowned Kinglet
3 Olive sided Flycatcher
1 Mountain Chickadee
1 Hairy Woodpecker
2 Yellow shafted Flickers

Daer Lookout (PM)

4 Audubon's Warbler
6 Hermit Thrush (near top of hill)
1 Townsend's Warbler
1 Varied Thrush
1 Northern 3 toed Woodpecker
3 Townsend's Solitaire (1 nest)
Swainson's Thrush (commoner down
the hill)

Daer Fire Road
(three miles down)

1 Townsend's Solitaire
3 Hermit Thrush
2 Swainson's Thrush
1 Robin
2 Audubon's Warbler

June 10/76

Daer Fire Road
Dawn

Stop 1.

Vermilion R. 1 Townsend's Warbler
1 Hammond's Flycatcher
1 Oregon Junco

Stop 5

Some doug.fir 1 Western Tanager
1 Oregon Junco
1 Townsend's Solitaire
2 Black-capped Chickadee

Stop 6

Edge of sedge marsh 1 Orange-crowned Warbler
3 Boreal Chickadee
1 Canada Goose (flew over in the
fog)
3 Townsend's Warbler
1 Oregon Junco
1 Ruby crowned Kinglet

- 2 Audubon's Warbler
8. 1/4 mi. up fire tower road from EKFR: aspen stand, some pine and spruce
- 3 Warbling Vireo
1 Oregon Junco
1 Solitary Vireo
1 Audubon's Warbler
1 Hammond's Flycatcher
9. 2 miles up road; aspen clump adjacent pine/spruce woods
- 2 Warbling Vireo
3 Orange crowned Warbler
1 Red breasted Nuthatch
5 Pine Siskin
2 Townsend's Warbler
1 Western Tanager
1 Solitary Vireo
4 Chipping Sparrow
1 audubon's Warbler
3 Cedar Waxwing
10. Aspen dominated mixed woods; N. W. slope
- 1 Ruffed Grouse
1 Warbling Vireo
1 Solitary Vireo
1 Orange crowned Warbler
2 Audubon's Warbler
2 Townsend's Warbler
Red Crossbills
2 Chipping Sparrow
1 Robin
1 Red breasted Nuthatch
- June 10/76
11. Same habitat but higher and with a lot of white birch
- 1 Hammond's Flycatcher
1 Chipping Sparrow
1 Orange crowned Warbler
1 Ruffed Grouse
1 Hermit Thrush
1 Warbling Vireo
1 Townsend's Warbler
12. 1.6 miles below lookout tower
- 3 Orange crowned Warbler
2 Warbling Vireo
3 Chipping Sparrow
1 Solitary Vireo
2 Hermit Thrush
1 Red Crossbill
1 Townsend's Solitaire
4 Hammond's Flycatcher

13. .6 miles below tower - Aspen
grove S. W. exposure

2 Hairy Woodpeckers (at nest)
2 Mountain Chickadee
1 Audubons Warbler
2 Chipping Sparrow
1 Red Tailed Hawk (hunting)
1 Warbling Vireo

June 15/76 Crook's Meadow
Midday

1 Pine Siskins (feeding on dande-
lion seeds)
1 Rufous Hummingbird ♀ (feed dande-
lion seeds)
1 Robin
3 Purple Finch
1 Townsend's Warbler
2 Ruby crowned Kinglet
2 Chipping Sparrow
1 Olive-sided Flycatcher
1 Solitary Vireo
1 Savannah Sparrow
1 Mountain Chickadee

June 19/76 Cons. Corps Camp

2 Orange-crowned Warbler
2 Western Wood Pewee
Robins
Pine Siskins
1 Olive Sided Flycatcher
1 Least Flycatcher
1 Solitary Vireo
Chipping Sparrows
4 Barn Swallows (2 nests)
2 Hammond's Flycatcher
2 Townsend's Warbler
3 Starlings
2 Rough-winged Swallow
2 Mountain Bluebird (1 ♂ 1 ♀)
1 Yellow bellied Sapsucker
1 Audubon's Warbler
1 Red breasted Nuthatch
1 Swainson's Thrush
2 Warbling Vireo
1 + Red-tailed Hawk

Lodgepole Pine Forest

June 1/76	Kootenay Valley Gravel Quarry		1 Raven 1 Chipping Sparrow 3 Oregon Junco 1 Swainson's Thrush
	Settlers Road		1 Olive sided Flycatcher Swainson's Thrushes (fairly common)
June 10/76	Daer Fire Road	Dawn	- nothing heard at three stops at Dawn
June 19/76	Kootenay Crossing Area (south) Dawn (some aspen; lush understory)		3 Hammond's Flycatcher 2 Chipping Sparrow 1 Crossbill (sp.) 1 Evening Grosbeak 1 Townsend's Warbler 1 Warbling Vireo 1 Varied Thrush (in White Spruce stand) 2 Solitary Vireo 1 Ruby crowned Kinglet Pine Siskins 2 Swainsons Thrush 3 Audubon's Warbler 1 Redstart
	N. Gate to E. Kootenay Fire Road		Pine Siskins 1 Hammond's Flycatcher 2 Oregon Junco 1 Swainson's Thrush 2 Audubon's Warbler 1 Western Wood Pewee 1 Olive sided Flycatcher
June 19/76	Cons. Corp Camp (dense young pine stand)		3 Warbling Vireo 3 Chipping Sparrows
July 14/76	Dolly Varden Fire Rd. from Kootenay Crossing		20+ Red Crossbill 3 Swainson's Thrush Oregon Junco Chipping Sparrow 3 Olive-sided Flycatcher 3 Golden crowned Kinglet 2 Varied Thrush 1 Lincoln's Sparrow (in a wet, shrubby clearing) 3 Raven (flying overhead)

1 Solitary Vireo
2 Pine Grosbeak (1 ♂ 1 ♀)

Riparian White Spruce Woodland

June 4/76	Sinclair Creek	4 Golden crowned Kinglet 3 Townsend's Warbler 1 Hammond's Flycatcher
June 10/76	Daer Fire Rd @ Kootenay River (small, open stand)	1 Western Wood Pewee 4 Pine Siskins 1 Ruby crowned Kinglet 1 Flicker (ssp.) 1 Western Tanager
June 14/76	Landing Strip near Kootenay Crossing (a small, open stand; willow understory)	8 Ruby crowned Kinglet Pine Siskins 2 Townsend's Warbler 2 Rufous Hummingbird 4 ♂ Redstarts (in understory by river) 1 Hammond Flycatcher 2 Audubon's Warbler 2 Chipping Sparrow 1 MacGillivray's Warbler 2 Oregon Junco 5 Robins 1 Mountain Chickadee 1 Boreal Chickadee

Subalpine forest (Spruce/fir)

May 18/76	Marble Canyon	Townsend's Warblers Varied Thrushes Oregon Juncos Pine Siskins
	Paint Pots	
May 27/76	Whymper Cabin	Pine Siskins Townsend's Warblers Audubon's Warblers Ruby-crowned Kinglets Oregon Juncos
	Paint Pots	Townsend's Warblers } very Ruby-crowned Kinglets } common Audubon's Warblers Oregon Juncos 1 Chipping Sparrow Pine Siskins
	Ochre Creek Trail	1 Hermit Thrush Townsend's Warblers (abundant) Pine Siskins (common) Golden crowned Kinglets Oregon Juncos Varied Thrushes Audubon Warblers 1 Golden Eagle (hunting overhead)
May 29/76	Marble Canyon/Paint Pots	1 Varied Thrush Audubon's Warblers Townsend's Warblers Oregon Juncos
May 30/76	Kindersley/Sinclair Trail	Townsend Warblers Golden crowned Kinglets Winter Wrens
June 12/76	Whymper Cabin	4 Chipping Sparrow 1 White crowned Sparrow 1 Varied Thrush 1 Robin 1 Audubon Warbler 2 Townsend's Warblers Pine Siskins 2 Barn Swallows 2 Golden crowned Kinglet
	Paint Pots	Pine Siskins Varied Thrush Audubon Warbler Ruby crowned Kinglet 4 Townsend's Warbler 1 Red breasted Nuthatch 1 Solitary Vireo

- 3 Robin
- 2 Olive-sided Flycatcher } ochre
- 1 Lincolns Sparrow } bog
- Golden crowned Kinglets
- 1 Northern three toed Woodpecker

Ochre Creek Trail
(as far as 1st avalanche
slope)

- Swainson's Thrush
- 2 Olive-sided Flycatcher
- Red Breasted Nuthatch
- Townsend's Warbler
- Audubon Warbler
- 3 Chipping Sparrow
- Pine Siskins
- Golden crowned Kinglets
- Varied Thrush
- 2 Wilson's Warblers (both in
menziesia tangles)
- 4 Winter Wren
- 1 Spruce Grouse ♂

Ochre Creek (1st avalanche
slope to top of switchbacks
at start of Helmet Creek
section

- 5 Whiskyjacks (a family group)
- Hermit Thrushes
- 6 Winter Wren
- 3 Mountain Chickadee

June 18/76

Tokumn Creek trail early
a.m.

- Swainson's Thrush
- Boreal Chickadee
- Oregon Junco
- Audubon's Warbler
- 2 Wilson's Warbler
- Townsend's Warbler
- 3 Olive sided Flycatcher
- Chipping Sparrow
- Hermit Thrush
- 2 Red breasted Nuthatch
- 1 Pine Grosbeak
- Mountain Chickadee
- Winter Wren
- Golden crowned Kinglet

Marble Canyon

- 3 Black Swifts (feeding overhead)
- 1 Wilson's Warbler
- Townsend's Warbler
- Chipping Sparrows
- 2 Blackpoll Warblers (singing ♂♂)

Vermilion Valley

- 3 Tennessee Warblers (singing ♂♂ ;
from the car)

July 3/76	Vermilion Crossing	1 Yellow shafted Flicker 1 Clarke's Nutcracker	
July 7/76	Ochre Creek/Helmet Creek	Winter Wren Robin Varied Thrush Townsend's Warbler Oregon Junco 1 Pine Grosbeak (singing)	
July 14/76	Paint Pots	1 Lincoln's Sparrow (in the ochre bog area) 4 Evening Grosbeak (1 ♀) Pine Siskin 4 Swainson's Thrush 2 Audubon's Warbler Oregon Junco 2 Chipping Sparrow 1 Raven 3 Robin	
July 15/76	Honeymoon Pass Trail	Swainson's Thrush Audubon's Warbler Townsend's Warbler 1 Winter Wren Varied Thrush 1 Red breasted Nuthatch Pine Siskin 2 Boreal Chickadee Whiskyjacks 2 Clarke's Nutcrackers (near timber-line)	
	Verdant and Talc Creeks	Varied Thrush Pine Siskin Chipping Sparrow Red breasted Nuthatch Audubon's Warbler Oregon Junco Golden crowned Kinglet Swainson's Thrush 1 Kestrel (talc Cr; avalanche slope) Hermit Thrush Whiskeyjack	
August 14/76	Whymper Cabin	2+ Wilson's Warbler 10+ Townsend's Warbler 10+ Audubons Warbler 1 Blackpoll Warbler ? Chipping Sparrows 1+ Brown Creeper 5 Robin (family group)	MIGRANT FLOCK

August 30/76 Honeymoon Pass Trail

1 Stellar's Jay
Boreal Chickadee
Varied Thrush
Whiskyjack
Mountain Chickadee

Timberline Forest (larch/fir; wb Pine/fir; etc.)

May 30/76	Kindersley Pass	1 Golden Eagle Clarke's Nutcrackers Varied Thrushes Grey-crowned Rosy Finches
July 4/76	Ball Pass	1 Winter Wren (in dense spruce by a creek) Ruby-crowned Kinglet Hermit Thrush Townsend's Warbler Mountain Chickadee Pine Siskin
July 15/76	Honeymoon Pass	Hermit Thrush 1 Fox Sparrow Chipping Sparrow 1 White-crowned Sparrow
August 29/76	Kindersley Pass	1 Golden Eagle 1 Bald Eagle (imm; being molested by 2 accipiters) Clarke's Nutcracker Raven Water Pipit
August 30/76	Head of Verdant Cr. Valley and Hawk Ridge	1 Vesper Sparrow 1 Grey crowned Rosy Finch 1 Golden Eagle (adult) 2 Clarke's Nutcracker

Dolly Varden

June 8/76	Early A.M.; lower end and adjacent fire road	3 Redstart
		2+ Willow Flycatcher
		2 Least Flycatcher
		1 Yellow Warbler
		1 Rufous Hummingbird ♂ (courtship display)
		6 Purple Finch
		1 Wilson's Warbler
		2 Red Breasted Nuthatch
		2 Olive-sided Flycatcher
		2 Common Snipe
		2 Warbling Vireo
		3 Robin
		2 Whiskyjack
		1 Red eyed Vireo (?)
		1 Ruffed Grouse
July 14/76	Fireroad bridge	1 Lincoln's Sparrow
		1 Barn Swallow
		1 Western Wood Pewee
		Oregon Juncos
		1 Solitary Vireo
		1 Ruby crowned Kinglet
		1 Audubon's Warbler
		1 Clarke's Nutcracker
		Yellowthroats
		2 Hairy Woodpecker (agitated; nest near by)
		2 Olive sided Flycatcher
		2 Redstart
		2 Boreal Chickadee
		1 Eastern Kingbird
		1 Robin
		2 <u>Empidonax</u> sp. (pale bellies; willow shrubbery)

Kootenay Ponds

May 29/76	Kootenay Pond II	4 Spotted Sandpipers
June 1/76	Kootenay Pond II	1 Hermit Thrush 1 Spotted Sandpiper
	"Sora" Pond	9 Mallards (all ♂) 2 Coot 1 Bufflehead ♂ 2 Green winged Teal (1 ♂ 1 ♀) 1 Solitary Vireo 4 Water Pipit (probably <u>migrants</u>) 1 Ruffed Grouse 1 Robin 2 Hammond's Flycatcher 1 Warbling Vireo 1 Violet green Swallow Oregon Juncos 2 Sora 1 Golden-crowned Kinglet 1 ♀ Redwing 2 Chipping Sparrow 4+ Audubon Warbler 1 Spotted Sandpiper 1 Solitary Sandpiper 1 Cooper's Hawk 1 Belted Kingfisher
June 15/76	Kootenay Pond	3♂ Mallards
July 1/76	"Sora" Pond	4 Redwing 2 Coot (1 ♀; 1 young of year) 3 Blue winged Teal (♂) 8 Mallard (including 4 moulting ♂) 1 Sora Rail 1 Red Shafted Flicker 1 Red tailed Hawk (agitated, probably nesting nearby) 2 Solitary Sandpiper (" , possibly " ") 2 Warbling Vireo 3 Golden crowned Kinglet 1 Black-capped Chickadees 3 Chipping Sparrow 1 Cedar Waxwing 1 Violet Green Swallow 1 Townsend's Warbler
July 3/76	"Sora" Pond	3 Coots (all young of year) 1 Sora 1 Savannah Sparrow

Dog Lake (and immediate vicinity)

May 26/76 Late P.M.

1 Spotted Sandpiper
Redwings
Swainson's Thrushes
Robins
1 Canada Goose
3 Ring necked Ducks (2 ♂ 1 ♀)
Rough winged Swallows

June 9/76 Noon

1 Sora Rail
4 Yellowthroat
2 Hammond's Flycatcher
2 Robin
1 Audubon's Warbler
1 Golden-crowned Kinglet
4 Townsend's Warbler
1 Solitary Vireo
1 Redstart
Ruby crowned Kinglets
3 Savannah Sparrow
2 Ring necked Duck
4 Redwing
2 Chipping Sparrow

Daer Pond (and muskeg etc.)

May 26/76 P.M.

1 Varied Thrush }
1 Spruce Grouse } (in adjacent
1 Great Horned Owl } White Spruce
Audubon's Warblers } woods)
Townsend's Warblers
Oregon Juncos
7 Ruby crowned Kinglets
2 Barn Swallows
3 ♂ Buffleheads
3 Sora Rails
2+ Ravens
Redwings
Robins
1 Olive sided Flycatcher
5 Mallards (4♂ 1♀)
1 White winged Scoter
3 Ring necked Ducks
6 Swainson's Thrush
1 Whiskyjack

June 19/76 Late R.M.

-See under Muskeg also:
1 Red-tailed Hawk
1 Whiskyjack
7 Green Winged Teal (1 ♂ ; 1 ♀ w. 5
young)
Red-breasted Nuthatch
1 Bufflehead (♀)
Townsend's Warbler
Swainson's Thrush
Robin
2 Solitary Vireo
Golden-crowned Kinglet
Ruby crowned Kinglet
1 Lincoln's Sparrow (singing in
drowned spruces)

High Elevation Lakes

August 22/76 Storm Mountain Lakes
(per J W M)

6 Northern Phalarope

August 28/76 Floe Lake

2 Ring Billed Gull
1 Eared Grebe
2 Common Loon
2 Barrow's Goldeneye ♀

Muskegs, etc.

June 15/76

Wardle Muskeg (+surrounding
woods) Early .AM.

6 Hammond's Flycatcher
3 Warbling Vireo
7 Townsend's Warbler
6 Chipping Sparrow
2 Tennessee Warbler
Pine Siskins
8 Robins
1 Swainson's Thrush
2 Ruby-crowned Kinglet
5 Audubon's Warbler
1 Hairy Woodpecker
2 Golden crowned Kinglet
1 Olive sided Flycatcher
1 Oregon Junco
2 Boreal Chickadee
1 Ravens
1 Spruce Grouse ♀
3 Western Wood Pewee
2 Barn Swallow
1 Cowbird
3 Savannah Sparrow
1 Common Snipe

June 19/76

Daer Muskeg etc.
Early A.M.

1 Tennessee Warbler
2 Orange Crowned Warbler (in the bog)
2 Townsend's Warbler
2 Red breasted Nuthatch
4 Swainson's Thrush
3 Audubon's Warbler
2 Chipping Sparrow
3+ Yellowthroat
3 Willow Flycatcher
2 Common Snipe
2 Wilson's Warbler
1 Redstart
1 Sora Rail
1 Ruby crowned Kinglet
1 Hammond's Flycatcher
2 Flicker (ssp.)
3 golden crowned Kinglet
2 Boreal Chickadee
2 Lincoln's Sparrow
1 Warbling Vireo
2 Savannah Sparrow
1 Spotted Sandpiper
1 Redwing
1 Olive sided Flycatcher
1 Pygmy Owl

River Flats

May 26/76	Sandbar island trail	1 Spotted Sandpiper
May 27/76	Paint Pots Trail	1 Spotted sandpiper
May 29/76	Paint Pots Trail	1 Spotted Sandpiper
June 11/76	Marble Canyon	1 White Crowned Sparrow 1 Robin 2 Audubon Warbler 1 Nighthawk
June 12/76	Paint Pots Trail	1 Spotted Sandpiper
	Ochre Cr./Helmet Cr. Junction	1 Spotted Sandpiper
June 14/76	1/4 mile above Daer Cr. mouth	1 ♀ Mountain Bluebird 2 Barn Swallow 1 Spotted Sandpiper 8 Robins Pine Siskins 1 Chipping Sparrow
June 17/76	Simpson Monument	3 Common Snipe 2 Barn Swallow
	Wardle Area	1 ♂ Mountain Bluebird
June 18/76	Kootenay Picnic Site Dawn	1 Vesper Sparrow 2 Hammond's Flycatcher 3 Chipping Sparrow 2 Oregon Junco 4 Robin 1 Spotted Sandpiper 1 Ruby Crowned Kinglet 1 Yellow Shafted Flicker
June 18/76	2 miles upstream form Kootenay River picnic site Dawn	1 Vesper Sparrow 2 Audubon's Warbler 8 Robins 3 Ruby crowned Kinglet 1 Raven 4 Chipping Sparrow 1 Swainson's Thrush 2 Spotted Sandpiper Pine Siskins 2 Killdeer 1 Hammond's Flycatcher 2 Oregon Junco

Tokumm Creek above Marble
Canyon

1 Olive sided Flycatcher
2 Swainson's Thrush
2 Townsend's Warbler
Chipping Sparrow
3 Audubon's Warbler
1 Spotted Sandpiper
Pine Siskins
1 Winter Wren
1 Whiskyjack

June 19/76

Kootenay R. near MacLeod
Meadows

1 Olive sided Flycatcher
2 Hammond's Flycatcher
4 Chipping Sparrow
3 Audubon's Warbler
2 Yellowthroat
1 Spotted Sandpiper
2 Pine Siskin
1 Orange crowned Warbler
3 Ruby crowned Kinglet
1 Solitary Vireo
3 Boreal Chickadee
1 White crowned Sparrow (@ Cons.
Corps Camp)

July 14/76

Marble Canyon

Pine Siskins
1 White crowned Sparrow

July 15/76

Upper Verdant Creek
headwater; Talc Creek

1 Spotted Sandpiper
1 Spotted Sanpiper

Avalanche Slopes

June 12/76	Ochre Cr-1st slide on trail		1 Evening Grosbeak 1 White crowned Sparrow 1 Flicker (ssp) 2 Mountain Bluebirds 1 Whiskyjack
June 14/76	Kimpton Creek	Dawn	Swainson's Thrush MacGillivray's Warbler 3 Warbling Vireo 3 Rufous Hummingbird 2+ Wilson's Warbler (1♂ 1♀) 3+ Chipping Sparrow 2 Hammond's Flycatcher 4 Orange crowned Warbler 1 Golden crowned Kinglet 1 Townsend's Solitaire 1 Oregon Junco
June 17/76	Simpson Slide		2 Northern Waterthrush 2 Tennessee Warbler 2 Lincoln's Sparrow 6 Chipping Sparrows Pine Siskins 1 Orange crowned Warbler 4 Townsend's Warbler 1 Swainson's Thrush 2 Audubon's Warbler 3 Olive-sided Flycatcher 4 Warbling Vireo 4 Hammond Flycatcher 2 Oregon Junco 2 Mountain Chickadee 3 MacGillivray's Warbler 1 Red breasted Nuthatch 1 Lazuli Bunting (?) 3 Wilson's Warbler 2 Northern 3-toed Woodpecker (nest) 2 Evening Grosbeak 1 Whiskyjack 2 Western Wood Pewee 4 Robin 1 Varied Thrush 1 Solitary Vireo 1 Hummingbird (sp) 1 Ruby crowned Kinglet
June 18/76	Tokumm Creek		1 Hermit Thrush 2 Fox Sparrow

July 4/76	Ball Pass Trail (talus slope)	2 Fox Sparrow Pine Siskin 3 Water Pipit
July 7/76	Ochre Creek	1 Hermit Thrush 1 Lazuli Bunting 2 MacGillivray's Warbler Oregon Juncos 2 Robin Pine Siskins 2 Tennessee Warbler 1 Evening Grosbeak 1 White crowned Sparrow 2 Chipping Sparrow 3 Varied Thrush 3 Boreal Chickadee 2 Swainson's Thrush
July 11/76	Ball Pass Trail (talus slope)	1 White crowned Sparrow
July 15/76	Honeymoon Pass (high elevation)	1 Red breasted Nuthatch 1 Tennessee Warbler 2 Chipping Sparrow 1 Varied Thrush Pine Siskin 1 Fox Sparrow
August 21/76	Floe Lake Trail Appr. Mile 4	Steller's Jay (family group) 1 ♂ Spruce Grouse 3 Red breasted Nuthatch 2 Wilson's Warbler Townsend's Warbler Chipping Sparrow 2 Oregon Junco Boreal Chickadee Mountain Chickadee

responding
to
squeaking

Wardle Base

May 18/76

Ruby-crowned Kinglets (singing)

May 25/76

1 Water Pipit (on highway)
1 Red-tailed Hawk

June 15/76

S. Goat lick Dawn

1 Orange-crowned Warbler
4 Warbling Vireo
1 Townsend's Warbler
1 Raven
1 Swainson's Thrush
1 Golden-crowned Kinglet
1 Hammond's Flycatcher

Wardle Viewpoint Dawn

1 Western Tanager
2 Golden-crowned Kinglets
1 Hermit Thrush
4 Townsend's Warbler
4 Hammond's Flycatcher
3 Warbling Vireo
8 Ruby-crowned Kinglet
8 Pine Siskin
1 Orange-crowned Warbler
3 Redstart
3 Chipping Sparrow
4 Audubon Warbler
1 White-crowned Sparrow
2 Cowbird
2 MacGillivray's Warbler
1 Ruffed Grouse

Stanley Glacier Trail

July 10/76

Oregon Junco
4 Hermit Thrushes (in unburned
forest along creek)
Pine Siskin
1 Audubon's Warbler

July 12/76

Hermit Thrushes (along upper
creek)
1 Olive sided Flycatcher (along
upper creek)
1 Townsend's Solitaire
Oregon Junco
Chipping Sparrow
2 Audubon's Warbler (in unburned
pockets @ trailhead)

August 1/76

3 Dipper (2 young of the year)
(on upper creek)
5 Kestrels (family group) (in burn)
2 Northern 3-toed Woodpecker

August 3/76

1 Northern 3-toed Woodpecker
Kestrels (family group)
Clarke's Nutcracker (" ")
Mountain Chickadee (" ")
1 Red breasted Nuthatch
3 Oregon Junco (immature)
4 Audubon Warbler

August 27/76

Oregon Junco
Audubon Warbler
Robin
Hermit Thrush
Townsend's Solitaire
1 Northern 3-toed Woodpecker

APPENDIX C

1977

SELECTED FIELD NOTES

May 24

Alluvial flats at sandbar trail

Mixed woods on way to top of trail

Edge of Lake - Shrubbery and forest edge.

On the Lake

DOG LAKE

1 Lincoln Sparrow

1 Raven

White-crowned Sparrow

Golden-crowned Kinglets

Townsend's Warblers

2 or 3 Solitary Vireos

2 Oregon Juncos

2 Redbreasted Nuthatches

Hammond's Flycatcher

3 or 4 Audubon Warblers

Robins

Yellowthroats

1 Lincoln's Sparrows

2 Chipping Sparrows

4 Savannah Sparrow

1 Vesper Sparrow (not singing)

2 Soras

3 Ruffed Grouse (on flood plain
of entry stream)

Audubon Warbler

2 Orange-crowned Warblers

1 Winter Wren (in dense spruce forest)

1 Chickadee sp.

2 Red Breasted Nuthatch

3 Redwings

3 Ruby-crowned Kinglet

6 Rough-winged Swallow

1 Western Wood Pewee

1 ♂ Mallard

4 ♀ Bufflehead

1 ♂ Ringednecked Duck

- remains of a ♀ Mallard on the
ground by the outlet stream

May 31
6 p.m. -partly cloudy

Grass/strays alluvial plain with
clumps of spruce and bushes

KOOTENAY RIVER FLATS
(1 mile south of Crook's Meadow)

2 Vesper Sparrow
1 White-crowned Sparrow
Chipping Sparrows
Robins
1 Red-shafted Flicker
2 Townsend's Warblers
4+ Eastern Kingbird (Probable migrating
birds)
1 Barn Swallow
Rough-winged Swallows
A few cowbirds
2 Yellowheaded Blackbirds (in complete
summer plumage)
1 Sharpshinned Hawk
- seems like a lot of these use the flats
more for foraging than anything else.

Open, old pine forest at start of Daer fire
road.

Ruby-crowned Kinglets
1 Audubon's Warbler
2 Robins
1 Goshawk, possible (calling)

June 3

McKAY CREEK

Dawn trip

Clear, very cool, some haze later on; frost the night before.

Riparian mixed woods (see
description, F. N. B. pg. 50)

Hammond Flycatchers
Townsend's Warbler
3 Varied Thrushes
Golden-crowned Kinglet
2 Black-capped Chickadees
1 Red-breasted Nuthatch
1 Winter Wren
1 Chipping Sparrow

Douglas Fir Forest, fairly dense

Townsend's Warbler
Hammond's Flycatchers
Audubon's Warbler (less abundant than
Townsend's)
Oregon Juncos
Robins (not singing)
Varied Thrush (1 - singing where the
habitat verges on the
riparian type)

June 3

WARDLE AREA & ASSINIBOINE

Late morning
Partly cloudy

Mixed wooded, open seepage area at the
quarry on Wardle 11 a.m.

1 Ruffed Grouse
1 Eastern Kingbird
2 Townsend's Warbler
2 Juncos
1 Ruby-crowned Kinglet
1 Hammond Flyer
1 Boreal Chickadee

Assiniboine slides, brushy basal area
11:30 a.m.

1 Warbling Vireo
2 Audubon's Warbler
1 Townsend's Warbler
3 MacGillivray's Warbler
1 Wilson's Warbler
Chipping Sparrows

Spruce/fir edge

1 Stellar Jay
1 Western Tanager
1 Olive-sided Flycatcher
1 Very Dark Red-tailed Hawk (hunting)
1 Pileated Woodpecker
1 Western Wood Pewee
5 Whiskyjacks

June 7

COBB LAKE

6:30 - 8:00 a.m.

Clear, warm

Trailhead - Douglas Fir Forest
(see description, pg. 50)

2 Warbling Vireos
3 Chipping Sparrows
1 Hammond Flycatcher
1 Solitary Vireo
1 Siskin (not singing)
2 Townsend's Warbler
1 O. C. Warbler
1 Audubon's Warbler

Douglas Fir Forest down to near the
creek

Warbling Vireos
Townsend's Warblers
Chipping Sparrows
(2 Red-eyed Vireos)
2 Whiskyjacks
1 Pileated Woodpecker
2 Juncos

Riparian mixed woodland (along
Swede Creek on North Side)

1+ W. W. Crossbill
2 Varied Thrush
3 Winter Wrens
4 Audubon's Warblers
Townsend Warblers
1 Swainson's Thrush
Warbling Vireos
Siskins
1 Pine Grosbeak
1 Solitary Vireo
Golden-crowned Kinglets

"Riparian" forest - spruce and
Douglas Fir with tall shrubbery under
(see field notes)

1 Warbling Vireo
Townsend Warblers (common in dense
second growth Douglas fir and
Spruce)
4 G. C. Kinglets
1 Swainson's Thrush
1 Hermit Thrush
3+ Varied Thrush
1 Junco
1 Pine Grosbeak
2 Winter Wren
1 Whiskyjack
1 R. B. Nuthatch

Alderswale running down to the lake
edge; also lake edge shrubbery

1 North Waterthrush
3 Juncos
1 G. C. Kinglet
Townsend's Warblers
1 Warbling Vireo
1 Audubon Warbling
2 Swainson's Thrushes
1 Winter Wren
2 O. C. Warblers
4 B. C. Chickadees
1 Chipping Sparrow
2 ♀ Rufous Hummingbirds
3 Wilson Warblers

June 7

MOUNT WARDLE

Noon - 4:30 p.m
Clear and hot

Quarry area - mixed woods with
shrubbery and seepage ponds

1 Hammond Flycatchers
2 R. C. Kinglet
1 Yellow Throat
2 Chipping Sparrows
1 Yellow Warbler
1 W. Tanager
1 Townsend Warbler
1 Alder Flycatcher
1 Warbling Vireo

Wardle Slope - sparse stunted Aspen
and old Douglas Fir; Shrubbery
understory (see field notes)

Chipping Sparrows
2 Dusky Flycatchers - in scrub aspen
1 Hammond Flycatcher } in denser Douglas
1 Townsend Warbler } Fir near base of
slope
2 Audubon Warbler -very impoverished
1 Junco in terms of bird-
1 Townsend Solitaire life but this may
have been due to
part of how hot a
day it was.

Avalanche slope on S. Side of Mountain
Aspen/Saskatoon

1 Audubon Warbler
1 Warbler Vireo
2 O. C. Warbler
1 MacGillivray's Warbler
2 Dusky Flycatchers

- Dusky Flycatcher call is very close
Hammonds but sounds "cuter" or
sweeter.

June 9

SEWAGE LAGOON & DUMP AREA

9:30 a.m.

Warm and Sunny

Sewage Lagoon

4 ♀ Goldeneyes

Douglas Fir Saran & Forest

Chipping Sparrows
Oregon Juncos
2 Swainson's Thrushes
1 Raven
2 B. C. Chickadees
1 Boreal Chickadees
1 Solitary Vireo
1 G. C. Kinglet
3 Robin
1 R. B. Nuthatch

June 9

NUMA PICNIC SITE

6:00 p.m.

Clear & Warm

-very little birdsong due to time of day.

Spruce forest with high coverage of
menziesia (see Field Notes p. 14)

1 Wilson Warbler
Townsend Warbler
Varied Thrushes
2 Robin
3 G. C. Kinglets
1 Audubon Warbler
3 Hermit Thrushes

Brush avalanche slope (see Notes)

1 Dusky Flycatcher
2 Wilson's Warbler
1 Audubon Warbler
3 chipping Sparrows
1 Robin (feeding)

June 12

FLOE LAKE

-all day
-some rain, mostly overcast

Spruce/Douglas fir forest with bush
understory dominated by menziesia

Wilson's Warblers
Townsend Warblers
Audubon Warblers
2 Winter Wrens
2 Hammond Flycatcher
G. C. Kinglets
1♂ Spruce Grouse

Avalanche Slopes (mostly alder)

Wilson Warblers
1 Dusky Flycatcher
1 O. S. Flycatcher
1 Hermit Thrush

Subalpine forest
(fir/spruce fir/larch)

2 Hermit Thrush
Varied Thrushes (several)
2 Fox Sparrow
1 Pine Grosbeak

larch/fir forest

Fox Sparrows
Hermit Thrushes-common
2 Fox Sparrow
1 Pine Grosbeak

June 13 A.M.

larch/fir forest

Fox Sparrows
Hermit Thrushes - common
2 R. C. Kinglet
1 Audubon Warbler
1 Robin
Varied Thrushes - common
1 Townsend Solitaire

Alpine meadows

Water Pipits (several)
Ptarmigan (sign)

Avalanche Slopes

To the above add:

1 O. C. Warbler

June 15

CROOK'S MEADOW

'Dawn' (6 a.m.)

Partly overcast, clearing up..

Mixed woods @ Crook's Meadow and a short ways up the fire road.

R. C. Kinglets
Robins
Juncos
Townsend Warblers
1 Ruffed Grouse
Warbler Vireos
Hammond Flycatcher
W. W. Pewee
1 O. C. Warbler
1 Raven
1 Solitary Vireo
1 Kestrel
Chipping Sparrow
1 MacGillivray's Warbler
1 Swainson Thrush
4 Yellowbreasted Sapsucker
1 Hairy Woodp.
1 O. S. Flycatcher
1 Boreal Chickadee
Siskins

Mixed woods bordering a marshy brushland area about 1/2 mile sp. the fire road from the above.

4 Purple Finch singing, and several more feeding on dandelion heads in seed
2 Willow Flycatcher
1 Least Flycatcher
2 Hammond's Flycatcher
2 Sapsuckers
2 O. S. Flycatcatcher
4 O. C. Warblers
2 Warbler Vireo
2 Pewee
Robins
3 Juncos (one with a 3 part trill)
R. C. Kinglets
1 ♂ Pileated Woodpecker
Wilson Warblers
(MacGillivray's Warblers? -I'm having trouble here)
1 Townsend's Warblers
Chipping Sparrow
1 Snipe
1 W. Tanager

Mixed woods dominated by Spruce &
Pine (a little north of last spot.)

2 R. B. Nuthatch
1 O. S. Flycatcher
Wilson's Warbler
Warbling Vireo
Townsend's Warbler
Purple Finches
Hammond Flycatcher
Robin
1 Hairy Woodpecker
O. C. Warblers
1 Audubon's Warbler
1 Sapsucker
Whiskyjacks
2 W. Tanager
1 Hummingbird Sp.
1 Kestrel
1 MacGillivray Warbler

June 17

SETTLER'S BEAVERPONDS

5:30 A.M. 6:30 A.M.

Clear, mild

Lodgepole pine forest with some
buffaloberry and some mossy areas
in understudy (see notes)

Swainson's Thrushes
1 Hermit Thrush
2 Audubon Warbler
1 R. B. Nuthatch
2 Solitary Vireo
1 Junco
1 R. B. Nuthatch
1 Chipping Sparrow
1 Siskin
1 Clay-colored Sparrow - singing
sporadically in dwarf birch at
edge of road side grassland.

Small:

White spruce/dwarf birch bog

1 Lincoln's Sparrow
1 Swainson's Thrush
1 Audubon Warbler
2 R. C. Kinglets
1 O. C. Warbler
1 Yellowthroat
1 G. C. Kinglet

Shrubby bog area interspersed
with meadows & beaverponds
(see notes)

2 Chipping Sparrow
Lincoln's Sparrows (abundant)
1 Hermit Thrush
3+ Swainson's Thrushes
Crossbills
3 Hammond Flycatchers
2 Townsend's Warblers
3 Audubon Warblers
Yellowthroats
2 Juncos
2 Wilson Warblers
R. C. Kinglets
1 Robin
1 Sora
1 Whiskeyjack

Lodgepole pine forest with clumps of
aspen and w. spruce (along the inlet
stream)

1 Warbling Vireo
1 Lincoln Sparrow
3 Townsend's Warbler
1 G. C. Kinglet
3 Hammond's Flycatcher

2 Swainsons's Thrush
2 Audubon Warblers
1 Junco
1 Robin
2 Chip Sparrow
1 Hermit Thrush
W. W. Crossbills

June 17 7 a.m. - 8 a.m.
 clear, mild
Willow/Equisitum stand bordered
and being replaced by white
spruce (see notes)

The Wardle Muskeg

WARDLE BASE

1 MacGillivary Warbler } in the dense
1 Yellow Warbler } willows
1 Redstart
 R. C. Kinglets
2 Swainsons's Thrush } mostly in the
2 Hammond Flycatcher } older, bordering
1 Townsend Warbler } woods
1 O. C. Warbler
1 Robin
1 W. Tanager

1 Tennessee Warbler
2 Hammond Flycatcher
 Townsend Warblers
3 Audubon Warblers
2 R. C. Kinglet
1 Evening Grosbeak
2 Chipping Sparrow
2 Lincoln's Sparrow
2 Swainson's Thrush
1 Junco
1 Whiskyjack
1 Pileated Woodpecker
1 Robin
 Juncos
1 Northern 3-toed Woodpecker
 Siskins

June 17

SIMPSON SLIDE

7:30 a.m. - 9
clear, mild

Spruce/fir forest edge at sides
of slope.

1 MacGillivray Warbler
1 Audubon Warbler
1 Winter Wren
Townsend's Warbler
1 Swainson's Thrush
2 Hammond Flycatcher
1 Varied Thrush
1 R. B. Nuthatch
1 W. Tanager
2 G. C. Kinglet

Spruce/fir seepage area below
the base of the slope

1 Tennessee Warbler
3 MacGillivray Warbler
1 Hammond Flycatcher
1 Audubon Warbler
Juncos
1 Northern Waterthrush
Whiskyjacks
2 R. C. Kinglets
1 Snipe
1 Townsend's Warblers
Robins
1 O. S. Flycatcher

The slope (alder/meadow)

2 O. S. Flycatcher
3 Lincoln Sparrow
Robins
Siskins
1 Chipping Sparrow
Whiskyjacks
3 Warbler Vireo
1 MacGillivray Warbler
1 Hammond Flycatcher
2 W. C. Sparrow
3 Wils. Warbling
3+ Stellar Jay
1 Cowbird
2 Y B Sapsucker (nesting? in birches
at edge)

June 17

VERMILION R. @ SHANKS FIRE ROAD

9:30 - 10
Clear, Mild

River flats

1 Lincoln Sparrow
Barn Swallows
Siskins
Robins
1 Chipping Sparrow
2 Sparrow Sandpipers

Edge of Spruce forest

1 Hammond Flycatcher
1 Swainson's Thrush
1 MacGillivray Warbler
1 Townsend's Warblers
1 Tennessee Warbler

June 17

DAER POND

7 - 10 p.m.

Clear, sunny (boat trip)

On the Lake or along its edge

4 Bufflehead
4 B. W Teal
Swainson's Thrushs
Yellowthroats
2 Lincoln's Sparrow
Townsend's Warblers
Audubon Warblers
R. W. Swallows
2 Kingfishers
2 Hammond's Flycatchers
3 Redwings
Juncos
3+ Soras
1 North Water thrush

June 18

CONSERVATION CORPS CAMP

Noon
hot, sunny

Open
mild Spruce/pine/aspen woods

2 Pewees
2 R. C. Kinglets
3 Juncos
2 Barn Swallows
2 Hammond Flycatcher
Siskins
2 Warbling Vireo
2 Tree Swallows
1 Solitary
1 Audubon Warblers
1 Robin
1 Purple Finch
1 Townsend's Warbling
1 Hermit Thrush

Lodgepole Pine/buffaloberry/grass
stand (at Settlers' Road Junction)

1 Solitary Vireo
3 Juncos

June 24

EAST KOOTENAY FIRE ROAD

Dawn (5:30)

Kootenay R. bridge - Pine Forest

1 Robin
1 Hammond's Flycatcher

Mixed Woods 1. Aspen/pine at Vermilion
River bridge

1 Warbling Vireo
1 Townsend's Warbling
1 Junco
1 Audubon Warbling
1 Hammond Flycatcher
1 Chipping Sparrow

2. Aspen/pine/spruce

1 B. C. Chickadee
1 O. C. Warbler (in aspen change)
1 Audubon
Crossbills
2 Swainson's Thrushes

3. pine/aspen in an open
hollow

1 Junco
1 Swainson's Thrushes

4. aspen/pine/spruce

1 Junco
1 Swainson's Thrush
1 Audubon Warbling
1 Solitary Vireo
1 Chickadee
1 Townsend's Warbling

Pine

Pine/Buffaloberry, at edge of sedge
meadow

1 Junco
1 Audubon Warbler
1 R. C. Kinglet

Spruce/Douglas fir on hillside
overlooking a small bog

2 Townsend Warbler
1 Swainson's Thrush
Crossbills

5. Spruce/fir/aspen
open understory

2 Swainson Thrushes
1 Junco
1 Siskin

Repirian spruce along Daer Creek

2 Swainson's Thrushes
3 Junco
1 Townsends Warbler
1 Hammond Flycatcher
1 G. C. Kinglet

June 24

DAER POND MUSKEG

7:30 a.m.

Sphognum/Betula/Picea

2 Lincoln's Sparrow
Yellowthroats
2 O. C. Warbler (Betula)
2 Hammond Flycatcher
1 Audubon Warbler
2 Townsend's Warbler
1 Siskin
Juncos
2 Chipping Sparrow
2+ Wils. Warb.
1 C. C. Sparrow -right in the bog
3 Willow Flycatcher
2+ Savannah Sparrow
Crossbills
2 Soras
2 Swainson's Thrush
1 Siskin
2 R. C. Kinglet
1 Redwing

Mixed aspen/spruce/pine
forest and open canopy
1 m. N. Of Con Corps Camp

2 Pewee
1 Siskin
1 R. C. Kinglet
1 Swainson's Thrush
1 Townsend's Warbler

June 28

DOLLY VARDEN FIRE ROAD

Dawn (5:30 --)

Lodgepole pine forest
-dense young timber

Lots of Juncos
1 Varied Thrush
Several Swainson Thrush
1 Audubon Warbler
2 O. C. Warbler
1 R. B. Nuthatch
1 Chipping Sparrow
1 Robin family

Aspen/pine w. young Spruce Mile 1

2 R. C. Kinglets
Juncos
Siskins
Swainson's Thrushes
1 O. C. Warbler
2 Warbling Vireo
2 Audubon Warbler
1 Townsend's Warbler
1 Robin

Edge of D. V. Creek
pine' spruce/shrubs

Whiskyjacks
Swainson's Thrushes
1 R. C. Kinglet
Juncos
1 Fox Sparrow
1 Solitary Vireo
1 Lincoln's Sparrow
1 O. S. Flycatcher
Robins
4 Townsend's Warbler
1 Pileated Woodpecker
1 Yellowthroat
2 Chipping Sparrows } adjacent a
9 W. W. Crossbills } willow
1 Wilson's Warbler } swale
2 G. C. Kinglet
1 Pine Grosbeak

June 28

DOLLY VARDEN CREEK

7:00 --

A. M.

Spruce/willow/Sedge complex

1 Yellow Warbler
2 Yellowthroat
1 Alder Flycatcher
3 Willow Flycatcher
1 Wilson's Warbler
2 Swainson's Thrush
2 R. C. Kinglet
2 Barn Swallows
1 Savannah Sparrow
1 Song Sparrow
2 Lincoln's Sparrow (with a nest)
2 Chipping Sparrow

July 1

FLOELAKE AREA

All day
Cloudy, some snowfall

Larch/fir graveland

Fox Sparrow
Hermit Thrushes
Varied Thrushes
1 ♂ Mountain Bluebird
1+ Chipping Sparrow
1+ Junco
Mountain Chickadees
2 Clark's Nuthatchers
1 R. C. Kinglet
Robins
2 Ravens

Fir/spruce forest

Winter Wrens
Swainson's Thrushes (commonest at
lowest elevations)
Hermit Thrushes (commonest higher up)
Townsend's Warblers
Audubon Warblers
Juncos
Varied Thrushes
Wilson's Warblers (where understory
is shrubby)
MacGillivray Warblers (on avalanche
slopes)
2 Pine Grosbeaks
Siskins
Robins

July 20

TUMBLING PASS TRAIL (OCHRE CR.)

Spruce/fir forest

Swainson's Thrushes
Hermit Thrushes
Oreg. Juncos
2 Chipping Sparrow
Winter Wrens
G. C. Kinglets
W. W. Crossbills

Avalanche Slopes

MacGillivray's Warblers
Audubon Warblers
1 Lazuli Bunting? -1st slope above
Paint Pots
G. C. Kinglets
1 W. C. Sparrow
Chipping Sparrows

Subalpine/alpine

1 Townsend Warbler
Siskins
Water Pipits (one acted like there
was a nest nearby)

Proposed Checklist Revision

The accompanying list includes all birds thus far reported for Kootenay National Park with their abundance rating and seasonal and breeding status updated according to the foregoing report. The present park checklist is totally outdated and should be replaced by one based on the list below. It must be borne in mind, however, that this list, too, will soon be out of date. Our knowledge of migrant and over-wintering birds is still inadequate since the bulk of what fieldwork has been done has taken place in the summer.

164 species of birds have been definitely observed in the Park and of these 54 are definitely known to breed here. Definite breeding records are based on the discovery of nests or newly-fledged young, or observation of a pair of extremely agitated adults indicating the nearby presence of a nest. In addition to these species, a further 11 species have been reported or are anticipated to occur in the Park and are treated as hypothetical for various reasons. Any observation of rare or unusual birds in the future, unless made by two or more competent observers, should be accompanied by a detailed written description made while the observer was viewing the bird and before the observer had consulted a field guide. This is the minimum amount of substantiation required to lift a species from hypothetical status.

Seasonal status is indicated as in the existing checklist. Relative abundance follows the system laid out in Wade (1977, page 31) except that the "abundant" status is replaced by "very common"; and the "very rare" by "accidental" or by "rare", depending on the circumstances. A capital "B" is used to indicate species for which there are definite breeding records.

S	Summer	V	Very Common	B	Known to Breed
W	Winter	C	Common		
M	Migrant	F	Fairly Common		
P	Permanent	U	Uncommon		
A	Accidental	R	Rare		

Common Loon	S R
Horned Grebe	M R
Eared Grebe	M R
Western Grebe	M R
Great Blue Heron	S R
Canada Goose	M R
Snow Goose	A
Mallard	S U B
Pintail	S R
Green-winged Teal	S U B
Blue-winged Teal	S U
American Wigeon	M R
Northern Shoveler	M R
Ring-necked Duck	S U
Lesser Scaup	M R
Common Goldeneye	M R
Barrow's Goldeneye	S U
Bufflehead	S U B
Harlequin Duck	S U B
White-winged Scoter	M R
Ruddy Duck	M R
Common Merganser	S R
Red-breasted Merganser	M R
Goshawk	P R
Sharp-skinned Hawk	S U
Cooper's Hawk	S R
Red-tailed Hawk	S U B
Swainson's Hawk	A
Golden Eagle	S U
Bald Eagle	S R

Marsh Hawk	M R.
Osprey	A
Merlin	S R
American Kestrel	S U B
Blue Grouse	P U B
Spruce Grouse	P F B
Ruffed Grouse	P U B
White-tailed Ptarmigan	P F B
Sora Rail	S F
American Coot	S R B
Killdeer Plover	S U
Common Snipe	S F
Spotted Sandpiper	S <u>F</u>
Solitary Sandpiper	M R
Greater Yellowlegs	M R
Lesser Yellowlegs	M U
Western Sandpiper	M R
Least Sandpiper	M R
Baird's Sandpiper	M R
Dowitcher	M R
Northern Phalarope	M U
Long-tailed Jaeger	A
California Gull	M R
Ring-billed Gull	M R
Mew Gull	A
Bonaparte's Gull	A
Mourning Dove	M R
Domestic Pigeon	A
Great Horned Owl	P U B
Hawk Owl	P R B

Pygmy Owl	P U
Barred Owl	S R B
Great Gray Owl	P R B
Short-eared Owl	A
Boreal Owl	P R
Common Nighthawk	S F B
Black Swift	S U
Vaux's Swift	A
Rufous Hummingbird	S F
Calliope Hummingbird	S R B
Belted Kingfisher	S R B
Common Flicker	S F B
Pileated Woodpecker	P U B
Yellow-bellied Sapsucker	S F B
Hairy Woodpecker	P U B
Downy Woodpecker	P R
Black-backed 3-toed Wood pecker	P R B
Northern 3-toed Wood pecker	P F B
Eastern Kingbird	S F
Western Kingbird	A
Willow Flycatcher	S F
Alder Flycatcher	S U
Least Flycatcher	S U
Hammond's Flycatcher	S C
Dusky Flycatcher	S R
Western Wood Pewee	S F
Olive-sided Flycatcher	S C
Violet-green Swallow	S U B
Tree Swallow	S U B
Bank Swallow	S U B

Rough-winged Swallow	S <u>F</u> B
Barn Swallow	S <u>F</u> B
Cliff Swallow	S U B
Gray Jay	P F B
Steller's Jay	P U
Black-billed Magpie	W R
Common Raven	P F B
Common Crow	S R
Clark's Nutcracker	P C B
Black-capped Chickadee	P F B
Mountain Chickadee	P F
Boreal Chickadee	P F
White-breasted Nuthatch	W R
Red-breasted Nuthatch	P C B
Brown Creeper	P R
American Dipper	P F B
Winter Wren	P C B
American Robin	S C B
Varied Thrush	S C B
Hermit Thrush	S C
Swainson's Thrush	S C B
Mountain Bluebird	S U B
Townsend's Solitaire	S U B
Golden-crowned Kinglet	S C
Ruby-crowned Kinglet	S C
Water Pipit	S C B
Bohemian Waxwing	S U B
Cedar Waxwing	S R
Common Starling	S R B
Solitary Vireo	S C

Red-eyed Vireo	S R
Warbling Vireo	S C
Tennessee Warbler	S S F
Orange-crowned Warbler	S F
Yellow Warbler	S U
Magnolia Warbler	S R
Yellow-rumped (Audubon's) Warbler	S V
Townsend's Warbler	S V
Blackpoll Warbler	S R
Northern Waterthrush	S U
MacGillivray's Warbler	S C
Common Yellowthroat	S C B
Wilson's Warbler	S F
American Redstart	S U
House Sparrow	A
Western Meadowlark	S R
Yellow-headed Blackbird	M U
Red-winged Blackbird	S U
Brown-headed Cowbird	S U B
Western Tanager	S U B
Black-headed Grosbeak	A
Lazuli Bunting	S R
Evening Grosbeak	S U
Purple Finch	S U
Cassin's Finch	M R
Pine Grosbeak	S U B
Gray-crowned Fesy Finch	S F
Common Redpoll	W R
Pine Siskin	S V
Red Crossbill	P U

White-winged Crossbill	P R
Savannah Sparrow	S U
LeConte's Sparrow	A
Vesper Sparrow	S U
Dark-eyed (Oregon)Junco	S V B
Chipping Sparrow	S C B
Clay-colored Sparrow	M R
Brewer's Sparrow	S R
White-crowned Sparrow	S U B
Fox Sparrow	S C
Lincoln's Sparrow	S F B
Song Sparrow	M R
Snow Bunting	W R

HYPOTHETICAL SPECIES:

Red-necked Grebe
Pied-billed Grebe
Rough-legged Hawk
Semipalmated Plover
Flammulated Owl
Black-chinned Hummingbird
Lewis' Woodpecker
Western Flycatcher
Chestnut-backed Chickadee
Loggerhead Shrike
House Finch

Appendix E

RECOMMENDATIONS

A number of suggestions can be made based on the results of the study. Some involve recordkeeping, some involve future research objectives, and some involve Park management.

I. Record Keeping

Field notes not only provide the only reliable and accurate way of recording observations, they also increase the observational ability of the worker since they force him to write down exactly what he sees rather than to see and then forget. My understanding both of bird distributions and of the "lay of the land" was greatly improved when I began to write lists of bird sightings in each different habitat along a trail, rather than simply for the trail. The lists themselves are of limited usefulness since there is not usually any way to correlate number of birds seen and heard with total areal extent of the habitat type; nonetheless, the practise of keeping notes this way is well worth the added effort.

Something I did not always do and later regretted not having done was to make notes of how many birds were singing males and how many were not. Again, I recommend this for other workers in the future.

The park observation sheets are very useful and worthwhile keeping up. However, they intimidated me since there was no way that I had time or ambition to transfer all my field notes into the observation sheets. Instead, I included most of my more interesting or unusual records and all my nesting records. I would suggest that only those observations which are exceptional to, or contradictory to, the annotated list in this report be placed in the park observation sheets in the future, as well as all nesting records or records of unusual behaviour etc. Look at the sheets for Oregon Junco and the reason for restricting things thusly will become quite evident.

2. Future Research Objectives

There are very definite gaps in the data we currently have on the park's avifauna. Species such as the Crossbills, Lazuli Bunting, Blackpoll Warbler, the small Owls and so on are only poorly understood. Likewise, certain habitats are worthy of more careful attention, including the aspen/saskatoon scrub on the south slope of Mount Wardle and the broken rock outcrop/Douglas fir forest above Sinclair Creek to the north. The Kootenay Valley is a big area which may yet be full of surprises since, for example, I spent very little time along either Settler's Road or the West Kootenay Fire Road.

Besides the above-mentioned priorities, it is essential that more field work be conducted during migration periods, in winter, and at night. The data is so fragmentary during much of the year that it is not worth the effort to record first and last appearance of most species in the Park. Boreal, Barred and Pygmy Owls may all be commoner than believed but this will not be known until someone does a lot of owling after dark in April and May.

Hopefully all these areas of concern will be dealt with in the forthcoming biophysical inventory.

3. Park Management

i. Rarities

In 1975 a pair of Great Gray Owls nested at Crook's Meadow within sight of the highway. The nest was subjected to such a degree of disturbance from park staff that both young left the nest early, frightened by people climbing the tree to photograph them. We got some great photographs, but we nearly lost the owls. That they survived to be successfully fledged is more in spite of us than because of the protection we gave them.

This was the first recorded nesting of a Great Gray Owl in southeastern B. C.; a very significant event where so rare a species is concerned and one which should have given rise to a great deal of concern and protectiveness on our parts. Our mandate is

specifically to ensure the preservation of such unique natural features and it is fervently hoped that in the future this purpose should come before all else, especially before photography.

My recommendation is that if ever a Great Gray Owl or any other rare or unique species is found to be nesting or inhabiting any part of the park, the Superintendent and/or Chief Naturalist should be informed immediately so that guidelines can be immediately laid out to prevent any undue harrassment of the birds. Too bad if we miss out on the opportunity to get a nice picture of a Trumpeter Swan; that's not our primary job anyway.

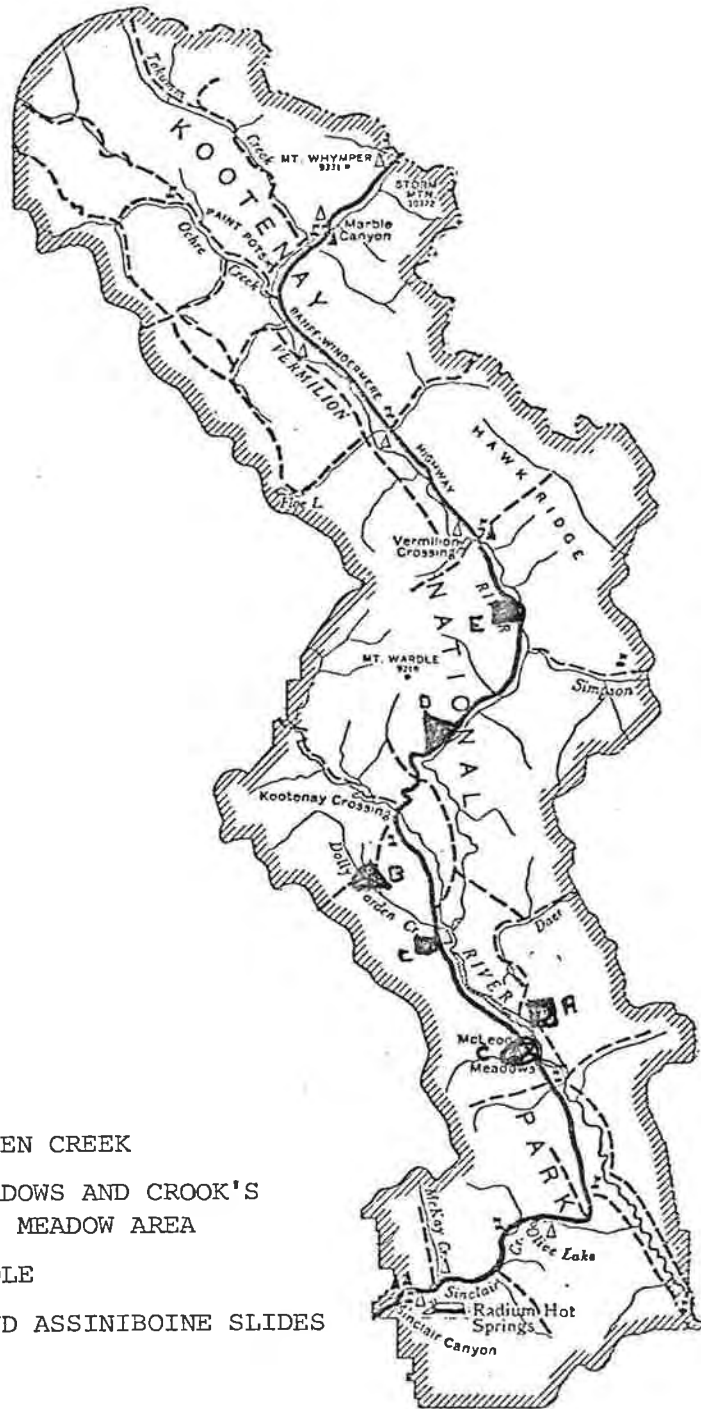
ii. Special Areas

Several areas of the park appear to be quite unique both in a regional and a park context in terms of their bird diversity and abundance. In the course of the study I became acquainted with a number of these areas and have listed them below, as well as tentatively mapping them. I believe that until the Biophysical Inventory confirms or modifies my selection of areas deserving special status, consideration should be given to ensuring that no proposed developments are allowed to infringe on them. It would be unfortunate if we went ahead and developed an area now, only to realize later that it may have been uniquely important in terms of its avifauna or other natural features.

- a. Daer Pond and Muskeg - exceptional bird diversity
 - provides habitat for a number of species of limited distribution
 - nesting and staging area for waterfowl
- b. Dolly Varden Creek - exceptional diversity
 - provides habitat for a number of park rarities.
- c. MacLeod Meadows area
and
Crook's Meadow area - best examples in the park of Kootenay Valley mixed woodland
 - exceptional bird diversity
 - provides habitat for a number of park rarities
 - interpretive potential

- d. Mount Wardle - the south slope and the basal seepage areas are unique in the park
 - exceptional bird diversity, especially near the highway.
- e. Simpson and Assiniboine Slides - see text.

APPENDIX F - MAP OF SPECIAL AREAS



- A DAER POND
- B DOLLY VARDEN CREEK
- C MCLEOD MEADOWS AND CROOK'S MEADOW AREA
- D MOUNT WARDLE
- E SIMPSON AND ASSINIBOINE SLIDES

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