

# THE AUK

A QUARTERLY JOURNAL OF  
ORNITHOLOGY

---

VOL. 66

JULY, 1949

No. 3

---

BIRDS OBSERVED IN THE GRANDE PRAIRIE—  
PEACE RIVER REGION OF NORTHWESTERN  
ALBERTA, CANADA

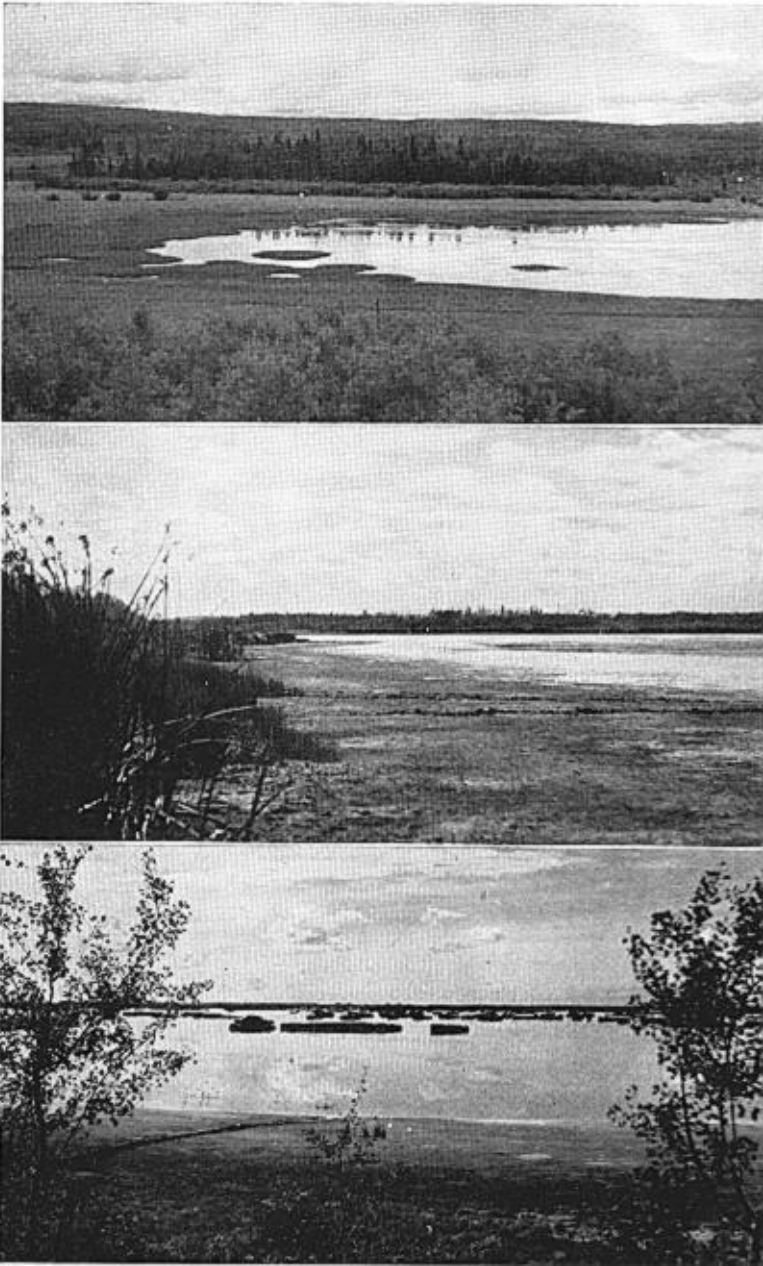
BY J. DEWEY SOPER

## INTRODUCTION

In 1944, I was assigned, as a part of investigations of natural resources under the North Pacific Planning Project, to study the distribution and abundance of birds and mammals in that portion of west-central Alberta extending from Athabaska west to the boundary between Alberta and British Columbia.

By far the most of the observations were carried out in that part of the province west of Lesser Slave Lake. That area, as a whole, is generally referred to as the Grande Prairie-Peace River Region. Considerable work was also conducted in the territory from the town of Athabaska westward to and along Lesser Slave Lake. All principal, ornithological data obtained in the whole region brought under observation are presented in the following annotated list. The width of this territory from Athabaska to the eastern border of British Columbia is approximately 270 miles; the maximum north-south depth, westward from High Prairie, is about 130 miles.

Owing to their greater economic importance, waterfowl were accorded special attention, though the general ornithological survey embraced all species of birds within the region. Specialization in wildfowl determined the choice of working localities throughout the summer, camps being invariably established on the shores of lakes. An exception to this was a side trip in late July to the Rocky Mountains south of Beaverlodge; species observed exclusively in the cordillera, proper, are not included in the present paper. During the season, detailed studies of wildfowl were made at 32 lakes. A lengthy departmental report deals with each of these individually. In the



(Top) Looking South across Eastern Extremity of Keeping Lake, 2.5 Miles East of Alberta-British Columbia Boundary. July 10, 1944.

(Middle) Bulrushes and Sedges on East Shore of Flood Lake, Looking South. Water-level Greatly Reduced. August 13, 1944.

(Bottom) Magliore Lake, Looking West from East Shore. Notable for its Isolated Stands of Bulrushes. August 14, 1944.

present instance, only a brief summary of status, ratios of abundance, and distribution can be given, together with some information on reproduction.

Previous to the present investigations, very little was known about the birds of the Albertan region under consideration. We had practically no information on the smaller birds in most of the area and only scattered, miscellaneous data in regard to the larger ones. The widespread, waterfowl survey in the summer of 1944 was the first of its kind ever undertaken in this part of the province. Most of the lakes had never been visited by any naturalist.

Of particular interest in this connection is the work done by Cowan (1939) in the Peace River Block of British Columbia; this area of prairie-parklands flanks the Grande Prairie-Peace River territory of Alberta and possesses comparable ecological conditions, with an essentially similar fauna. Also related are papers by Soper (1942) and Rand (1944) for tracts of near by country. For comparative reference in relation to the regional avifauna, as a whole, these publications have a special interest and value.

Investigations under the North Pacific Project commenced in the country between Clyde and Athabaska on May 23, 1944. A day was devoted to bird observations along Athabaska River, followed by several days at Baptiste Lake. Before the end of the month, preliminary waterfowl and other inquiries were carried out at Island, Long and Lawrence lakes and Lesser Slave River. Further attention was given to these water areas later in the season on the return from Peace River.

The early part of June was spent at Lesser Slave and Sturgeon lakes. Operations were then transferred to the Grande Prairie district where, up to the end of the month, investigations were carried out chiefly at Clairmont, Ferguson, Bear, Hermit, Hughes and Saskatoon lakes and adjacent areas. During the early half of July much of the northern portion of the Grande Prairie district received attention, as well as the territory between Saskatoon Lake and the British Columbia border. Among the areas studied on this occasion were Buffalo, Valhalla, La Glace, Updike, Brainard, Sinclair and Ray lakes. Some field work was then conducted south of Wapiti River and in the Spirit River district.

Most of the early half of August was devoted to the country north of Peace River. Though a general wildlife reconnaissance was carried out over a relatively wide tract of country, most of the observations were made in the district north of Fairview to Eureka River and Clear Hills, and at Cardinal and Flood lakes. Some ornithological data

were also secured in the Peace River Valley between the town of Peace River and the mouth of Smoky River. The remainder of August was fully occupied with work at Magliore, Kimawan and Winagami lakes, with a brief coverage of the parklands country from McLennan to Watino, in the valley of Smoky River. The return journey was now commenced. Further observations were conducted en route at Lesser Slave and Mitsue lakes and the several small bodies of water which lie along the main road from Lesser Slave Lake to Athabaska. Early in September these inquiries came to a close, and Winnipeg headquarters was reached again on September 11, after an absence of four months.

#### TOPOGRAPHY AND VEGETATION

For the most part the region consists of a vast, rolling plain with an average elevation of about 2,000 feet above sea level. By far the greater part of it is still in a primitive condition, widely crowned by a boreal forest of varying density and quality. This wilderness sweeps almost unbrokenly northward from the vicinity of Edmonton to the Arctic Ocean and west to the Rocky Mountains. The mean slope of the terrain is a gradual one from the south and west to the lower lands of the Mackenzie River Basin. It lies wholly upon the Arctic watershed, with the principal drainage by way of Athabaska, Peace and Slave rivers, whose combined waters, forming Mackenzie River, flow to Beaufort Sea.

From point to point, difference in elevation is considerable. Thus, in the eastern section on the lower Peace-Athabaska drainage, the land descends to an altitude of about 700 feet and rises in some western localities to over 3,000 feet, exclusive of Rocky Mountain districts.

Within the territory covered in 1944, the largest of these eminences is a long, bold ridge known as the Swan Hills. It lies immediately south of Lesser Slave Lake, rises in places to 4,000 feet above sea level and thus towers above the waters of the lake to a height of about 2,000 feet. An almost equally conspicuous landmark is the Beaver Hills to the north of this lake. Scattered hills and ridges of lesser prominence occur in the Grande Prairie-Peace River territory. Among the larger of these, south of Peace River, may be mentioned Saskatoon, Blueberry and Saddle hills and immediately north of that stream, Clear and Whitemud hills. Many of these major ridges rise from 500 or 600 to over 1,000 feet above the surrounding terrain. A well-developed drainage system is effected by numerous streams, many of which are large and played an important part in the early fur trade and

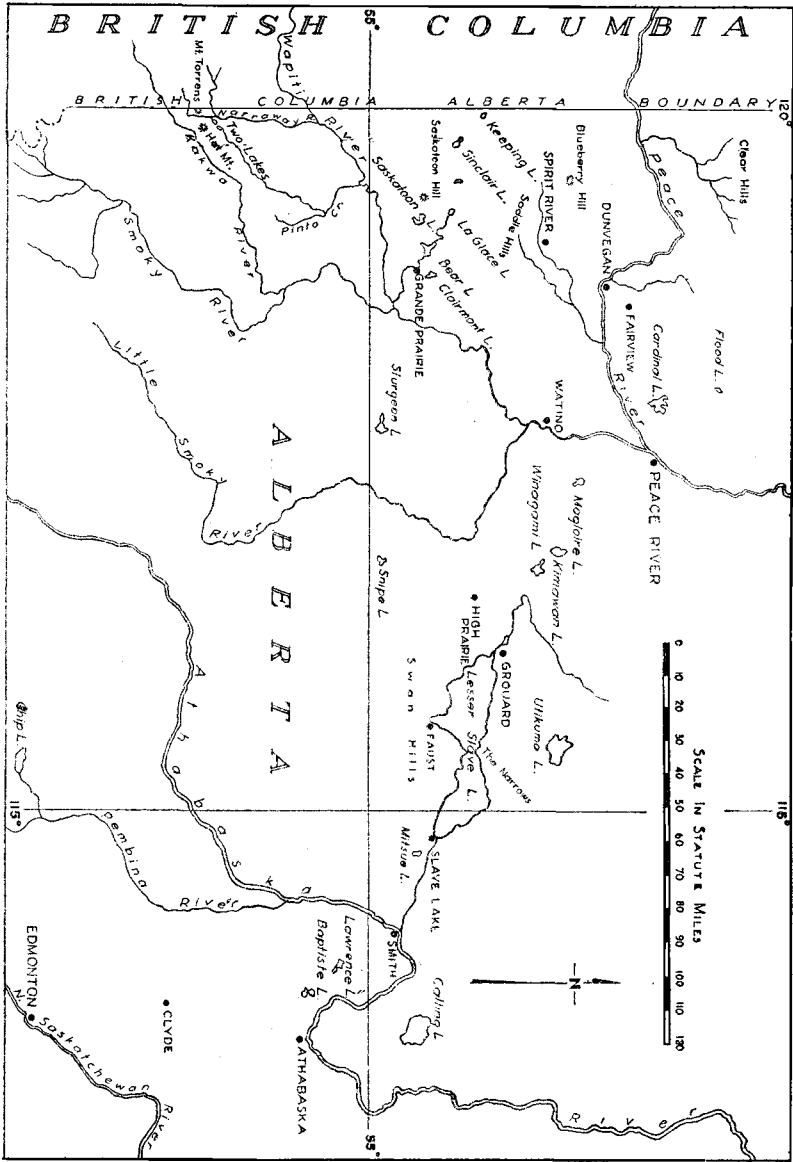


FIGURE 1.—Sketch map of west-central Alberta from Edmonton to Grande Prairie and Peace River.

settlement of the region. Lakes are numerous in some areas, Lesser Slave being the largest in the precise territory being surveyed.

Characteristic of this region are scattered areas of prairie-parklands which, in primitive times, were overrun by large herds of elk and bison. Today, they have been almost wholly brought under cultivation. They are far from being even nearly continuous and are broken up into isolated tracts with broad belts of boreal forest intervening. Chief of these open, agricultural lands are the areas which may be referred to as the High Prairie, Grande Prairie, Spirit River, Peace River and Smoky River blocks, respectively. All are separated from the nearest, extensive farming lands of central Alberta by an unbroken expanse of mixed-wood forest over 200 miles in width.

In the Dominion classification of the plant cover, the present territory comes totally within the Boreal Forest Region. Coniferous tree growth is predominant. The characteristic association is a mixture, in varying proportions, of: white spruce, *Picea canadensis*; balsam fir, *Abies balsamea*; aspen and balsam poplar, *Populus tremuloides* and *P. balsamifera*; and white birch, *Betula alba*. Superior development of white spruce is often pronounced along streams and the shores of lakes. On the heavier-textured soils are extensive, highly-developed stands of aspen and balsam poplar, usually mixed with conifers. Jack pine, *Pinus Banksiana*, associations tend to predominate on sandy soils. A mixture of this species and black spruce, *Picea mariana*, are often characteristic of the rolling tops of ridges and plateaus, but the latter is also a dominant in the numerous tracts of muskeg at all elevations. In more western areas the jack pine is replaced by the lodgepole pine, *Pinus murrayana*.

Also typical of the regional flora is a rich growth of shrubbery, of which many species and varieties of willow, *Salix*, and alder, *Alnus*, are the most prominent. They often form almost impenetrable thickets. Among the characteristic species are: serviceberry, *Amelanchier florida*; silverberry, *Elaeagnus argentea*; red-osier dogwood, *Cornus stolonifera*; chokecherry and pincherry, *Prunus virginiana* and *P. pennsylvanica*; buffaloberry, *Shepherdia canadensis*; snowberry, *Symphoricarpos pauciflorus*; and wolfberry, *S. occidentalis*.

Characteristic bog and muskeg cover includes: Labrador tea, *Ledum groenlandicum*; dwarf birch, *Betula glandulosa*; cloudberry, *Rubus chamaemorus*; bog cranberry, *Vaccinium Oxycoccus*; and sphagnum moss, *Sphagnum capillaceum*. In some areas, particularly on the scattered prairies, flowering vascular plants occur seasonally in prolific and showy abundance.

## FAUNAL ZONES

All of the territory under discussion lies in the Coniferous Forest Biome, or the Canadian Life Zone, as more familiarly known under the Merriam system of classification. It is also comparable to the nearly continent-wide, mid-section of the Boreal Forest Region, as the northern wooded territory east of the Rockies is classified by the Dominion Forest Service (Halliday, 1937).

Any observer will note that many species are notoriously local in their occurrence, though they may be distributed in a spotty fashion over large geographical range. This holds true for many birds that are typical summer, or permanent, residents within the Canadian Life Zone. This is ordinarily the case even in territory which is broadly homogeneous throughout, but where some of the species concerned are restricted to a narrow choice of selected habitats of very local and specialized character. Occasionally, as in the open parklands areas of the Grande Prairie-Peace River region, occurrence and differentiation of the population complex exist on a wider basis.

I wish particularly to draw attention to the more or less peculiar faunal characteristics of the latter territory. As previously mentioned, large tracts are of an insular character arising from the presence of a prairie-parklands type of environment. The predominant vegetation is composed of various grasses, vascular plants, shrubs and aspen-poplar. The majority of the numerous lakes are comparatively shallow and usually support a wealth of emergent and subaquatic vegetation. While many avian species inhabiting these prairies and their lakes are normally to be regarded as typical, or more characteristic of, the Transition Life Zone, the majority are unquestionably those of the Canadian Zone. This circumstance does not exist among the mammals, as the nearest approach to campestrian species is 200 miles, or more, to the southeast.

Despite this broad "barrier" of intervening coniferous-deciduous forest, many members of the regional avifauna that are characteristically, though not, of course, exclusively of Transition Zone complexion, attain and breed in the prairie-parklands of northwestern Alberta. The same is true of adjacent parts of British Columbia (Cowan, 1939). Some of these which may be mentioned are: ring-necked pheasant (introduced), sharp-tailed grouse, upland plover, Wilson's phalarope, Franklin's gull, eastern phoebe, purple martin, blue jay, long-billed marsh wren, western meadowlark, Brewer's blackbird, Nevada cowbird, and Leconte's, vesper and clay-colored sparrows. Many other species, with which one may have first become

familiar in a Transition or Upper Austral Zone setting, also range deeply within the Canadian Zone. Aside from these isolated, northwestern prairies of superficial transitional zone aspect, the whole of the region is of unmodified Canadian Zone character.

#### ACKNOWLEDGEMENTS

I wish to express my indebtedness to the many kindly people of the northwestern region who assisted me in many ways during the 1944 expedition. My thanks are also tendered to Dr. A. L. Rand, at that time in the National Museum of Canada, Ottawa, who read the manuscript of this paper and offered valuable suggestions.

#### ANNOTATED LIST OF BIRDS

*Gavia immer* (Brunnich). Common Loon.—Comparatively rare, particularly in the western portion. Pairs were recorded at Baptiste, Lawrence, Lesser Slave and Sturgeon lakes from late May to mid-June, 1944. Not again observed until the latter part of July when a pair, with two immatures, was found inhabiting a small lake south of Wapiti River, north of Nose Mountain, Canadian Rockies. The species was nowhere encountered on the lakes of the Grande Prairie-Peace River Region.

*Colymbus grisegena* Boddaert. Red-necked Grebe.—Of fairly common occurrence, in a few places abundant. Noted in nearly all areas from Baptiste Lake to Sturgeon Lake; at the latter point during the second week of June, nests were found with practically fresh eggs. To the westward it was recorded at Saskatoon, Cutbank, Sinclair, Ray, Updike, Keeping and La Glace lakes. The birds were particularly common at Ray Lake, where from July 3 to 5, numerous nests were found with clutches of eggs numbering from two to four; many young were hatching at this time. Similar conditions existed at Sinclair Lake, July 6 to 8. The species was fairly common at Winagami Lake, with well-developed young, during the third week of August.

*Colymbus auritus* Linnaeus. Horned Grebe.—A rare inhabitant of the region. Observed only at Saskatoon and Cutbank lakes where it was represented by only a few pairs. Undoubtedly breeds, but neither nests nor young were noted.

*Colymbus nigricollis* (Brehm). Eared Grebe.—Common and widely distributed. In some lakes of the Grande Prairie district this bird is much more abundant than any species of duck. It was observed at all but a few of the 32 lakes examined during the season. By a wide margin this is the most abundant diver in the region. The greatest colony was observed at Clairmont Lake, June 18 and 19, where there were an estimated 3,000 individuals; about 1,200 nests were located amid pondweeds in the open lake. The species was also notably abundant at Hermit Lake on June 22; there were an estimated 700 individuals, with at least 300 nests built in the fringe of bulrushes on the east side of the lake; all contained from one to four eggs. The birds were also common at Saskatoon, Cutbank, Sinclair, Updike, La Glace, Buffalo, Cardinal, Magliore and Winagami lakes. First newly hatched young were seen at Sinclair Lake on July 7. Lesser numbers were observed in several lakes to the southeast as far as Baptiste Lake.

*Aechmophorus occidentalis* (Lawrence). Western Grebe.—Sparingly distributed in Baptiste and some other lakes in the Smith district and at Lesser Slave Lake. In the Grande Prairie area it was only once detected; this was a solitary individual at Bear Lake, on June 20. On the other hand, the species is a common breeder north



of Peace River, where adults and immatures were seen in considerable numbers at Cardinal Lake (August 4 to 8), and it is said to be numerous at St. Germain Lakes. The birds were fairly common at Magliore Lake and of sparing occurrence at Winagami Lake, August 14 to 21, where they were accompanied by well-grown immatures.

*Podilymbus podiceps* (Linnaeus). Pied-billed Grebe.—One noted at Baptiste Lake on May 27. Not observed throughout the summer at any other body of water west to the boundary between Alberta and British Columbia.

*Pelecanus erythrorhynchos* Gmelin. White Pelican.—Rarely observed. Seventy-four were seen at Faust, Lesser Slave Lake, on June 5 and 6. A solitary example was noted, on June 20, at the south end of Bear Lake. It was next recorded on August 23, when six were frequenting "The Narrows" of Lesser Slave Lake north of Kinuso.

*Ardea herodias* Linnaeus. Great Blue Heron.—Not personally observed. I was informed on apparently good authority that a few years ago a small colony of these herons nested on Dog Island near the eastern end of Lesser Slave Lake. The description of these birds and the character of their bulky nests in the trees leave no doubt as to their former occurrence at this point.

*Botaurus lentiginosus* (Montagu). American Bittern.—Reported as occurring at Baptiste Lake; along Lesser Slave River; and at the small, marshy lakes immediately east of Lesser Slave Lake. On June 19 one was flushed from the fringe of bulrushes at Ferguson Lake, Grande Prairie. No other individual was recorded in the region.

*Cygnus columbianus* (Ord). Whistling Swan.—My entry into northwestern Alberta in late May, and departure in late August, was too late and too early, respectively, to witness the migrants of this species. However, it was reported as occurring, during spring and fall, at many lakes in the region, west to Grande Prairie, at Winagami, Kimawan and Magliore lakes, in the McLennan district, and at Cardinal, Flood and Pluvius lakes, north of Peace River. It was said at some of these places that many hundreds of the birds put in an appearance to rest and feed on the lakes.

*Cygnus buccinator* Richardson. Trumpeter Swan.—Broadly speaking, the trumpeter swan is now sparingly distributed in the region from the east end of Lesser Slave Lake westward to lakes immediately west of Hythe, Alberta. This distribution, though spotty, is, therefore, seen to have a breadth of about 200 miles. The species was not detected at any lakes between Athabaska and Lesser Slave Lake, nor did any data secured from residents indicate its present occurrence in that district.

During the course of the expedition, the species was personally seen, or reported as occurring recently, at 13 lakes in the area indicated. In all, 64 adults and 14 cygnets were observed during the season, together with a nest containing six eggs. The majority of the adults and all the young encountered were noted in the Grande Prairie district. The birds were apparently absent from all small lakes of the heavily forested territory between Sinclair Lake and the British Columbia boundary. Since Cowan (1939) does not mention this species, it evidently does not occur in the adjacent British Columbia territory. Nothing was seen or heard of these birds south of Wapiti River or north of Peace River. In fact, I gained no evidence of their presence north of Saddle Hills. Consequently, it would appear that in this immediate territory the trumpeter swan is confined to the lakes of the Grande Prairie country.

*Branta canadensis* (Linnaeus). Canada Goose.—Considering the type and breadth of territory traversed, it is surprising that these geese were rather seldom observed. On May 29, a flock of 102 individuals was seen a few miles south of Smith flying to the northeast. A group of 10 birds was noted along the northeast shore of Lesser Slave Lake a few days later. During June, pairs were recorded at Faust; Sturgeon Lake; Hughes Lake (six immatures); and Saskatoon Lake. Only one pair was ob-

served during July; this was at Sinclair Lake. At Cardinal Lake (August 4 to 8) numbers were noted daily; the largest group was composed of 17 members (adults and immatures). A flock of 40 individuals was observed at Kimawan Lake on August 19. According to local reports, the birds are common during the spring and fall migrations at many lakes both north and south of Peace River.

*Chen hyperborea* (Pallas). Snow Goose.—Not personally observed. At many points I obtained information on the occurrence of these birds, during migration, at various lakes of the Grande Prairie-Peace River Region. It is only assumed that the species is the lesser snow goose.

*Anas platyrhynchos* Linnaeus. Mallard.—This is the predominant duck of the region, but it has only slight numerical superiority over the lesser scaup. Mallards were omnipresent in the waters of the entire territory, often varying only slightly in relative abundance from one lake to another. In only a few lakes were its numbers surpassed by any other species of ducks. In relation to all other ducks, its ratio varied from as low as 11 per cent to as high as 42, the average for 32 lakes being 26.3 per cent. Many hundreds of juveniles were observed. The first downy young were seen at Sturgeon Lake early in June.

*Anas strepera* Linnaeus. Gadwall.—Of sparing and irregular distribution. Of 32 lakes examined, it was recorded at only 15, all in the Grande Prairie district, with the single exception of one noted at Sinclair Lake, a few miles northwest of Hythe. Cowan (1939) does not record it for the adjoining Peace River Block of British Columbia. In relative abundance, the gadwall takes 13th place among the recorded ducks. From lake to lake it varied from approximately 1.1 to 5.0 per cent of the entire duck population; its average was 2.4 per cent. It doubtless breeds at all of the lakes in which it was observed during the height of the season. Juveniles were recorded positively only at Saskatoon Lake.

*Anas acuta* Linnaeus. American Pintail.—One of the scarcer ducks. While it was recorded in exactly half of the lakes investigated, as a rule very few birds were present. Specific ratios were: minimum, 0.2 per cent; maximum, 11.5; average, 2.5. The pintail ranks 12th in relative abundance among all ducks. It was decidedly more numerous at Magliore, Kimawan and Winagami lakes than elsewhere in the territory to the west and northwest.

*Anas carolinensis* Gmelin. Green-winged Teal.—In May, June and July, observed only at wide intervals and in very small numbers from Lesser Slave Lake west to the lakes of Grande Prairie. During August, adults with immatures were found more numerous in lakes north of Peace River and at Kimawan and Winagami lakes near McLennan. Of 32 lakes examined the species was recorded at 14. Specific ratios varied in different lakes from 0.3 to 7.7 per cent; average, 2.3. In scale of abundance, this teal takes 14th place among the ducks. The first newly hatched young were noted at La Glace Lake on July 11, but it is highly probable that some broods appeared about two weeks earlier. Several broods of well-developed immatures were observed at Cardinal Lake on August 7 and 8.

*Anas discors* Linnaeus. Blue-winged Teal.—This teal had a much more uniform distribution than the preceding species and was about twice as numerous. It was recorded at 25 lakes. Numerical ratios exhibited local variation from 0.3 to 15.3 per cent, the average being 4.5. In relative abundance, its place was 8th among the ducks. The species was found in nearly all the lakes: from Baptiste west to British Columbia; north of Peace River; and between Peace River and Winagami Lake. The earliest, downy juveniles were recorded at Sinclair Lake on July 6; thereafter, young were seen regularly and in some numbers at most of the lakes.

*Mareca americana* (Gmelin). Baldpate.—Widely distributed and an abundant breeding species throughout the territory. Recorded at 30 of 32 lakes. It ranks as the third most numerous duck of the region; its specific ratio varied from 2.2 to 45.8, the average being 12.7 per cent. It was most plentiful at Ferguson Lake. Large numbers of young were encountered in practically all lakes of the region visited after the third week of June.

*Spatula clypeata* (Linnaeus). Shoveller.—The sixth most abundant duck of the region. Variation in specific ratio ranged locally from 1.1 to 37.3 per cent; average 7.2. Recorded in 26 lakes, but in most localities the species was relatively, or actually scarce. It was found most abundant at the west end of Lesser Slave and at Winagami and South Buffalo lakes. Recently hatched, downy juveniles were first noted at La Glace Lake on July 11. After that date immatures were more or less regularly and frequently observed at other lakes.

*Aythya americana* (Eyton). Redhead.—Recorded only at Lesser Slave, Sturgeon, Clairmont, Ferguson, Bear, Hermit, Saskatoon, Cardinal and Winagami lakes. As a rule, only a few pairs were seen in any one lake, and sometimes only a single individual or a pair. The largest numbers were recorded at Buffalo Bay, Lesser Slave Lake, on June 8. In relative abundance the species assumes 11th place among the ducks; local ratios varied from 0.2 to 7.3 per cent; average 3.8. While it would appear almost certain that redheads breed in favorable habitats throughout this region, not a single immature bird was recorded.

*Aythya collaris* (Donovan). Ring-necked Duck.—On the whole, these ducks were scarce, as they were sparingly represented in only 10 lakes. The species ranks 15th in relative abundance among the ducks. Local ratios ranged from 0.4 to 4.0 per cent, with an average of 1.8. More were observed at Saskatoon and La Glace lakes than elsewhere. In the latter area, July 10 to 12, many broods of young were encountered, some of which were very small and obviously only a few days old. Cowan (1939) failed to see this species in the adjacent area of British Columbia, which is of essentially comparable character.

*Aythya valisineria* (Wilson). Canvas-back.—Ranks 10th numerically among the ducks of the region. It was recorded at 15 of the 32 lakes investigated in detail. Local ratios varied from 0.8 to 16.2 per cent; average, 4.0. The species was most common at Buffalo Bay, Lesser Slave Lake. With rare exceptions, only a few pairs were seen in any one lake. Juveniles were first noted at La Glace Lake on July 11, and thereafter were found in small numbers at scattered points north of Peace River and south of Winagami Lake.

*Aythya affinis* (Eyton). Lesser Scaup.—Next to the mallard, this is the most plentiful duck in the region. It was present in varying degrees of abundance at every lake visited from Baptiste Lake on the east, to British Columbia on the west, and in the lakes north of Peace River. A few were also observed in small lakes near, and within, the first range of the Rocky Mountains south-southwest of Beaverlodge. Numerical ratios varied from 6.4 to 58.6 per cent, the average being 25.3, only 1.0 per cent less than that of the mallard. The first downy young were observed at Urdike Lake on July 9. From this time on, juveniles were frequently encountered; they were particularly conspicuous at Cardinal Lake during the first week in August, but every lake visited harbored considerable numbers.

*Bucephala clangula* (Linnaeus). American Golden-eye.—A relatively common duck, but only about one-third as numerous as the preceding species. For the most part, it is well distributed, but in various lakes, here and there, the birds appeared to be totally wanting. The species was recorded in 17 of the lakes. Relative abundance

from area to area undergoes great variation, as the local ratios ranged from 1.2 to as high as 40 per cent, the average being 8.9, as based on sample counts. It stands 5th in abundance among the ducks. The first newly hatched juveniles were met with at Sturgeon Lake on June 11. They were commonly seen after that date in other lakes, west of Keeping Lake, north of Cardinal Lake, and southward from the town of Peace River.

*Bucephala islandica* (Gmelin). Barrow's Golden-eye.—Extremely scarce and widely scattered. A single male was observed at Bear Lake on June 21; another at Brainard Lake July 9; and a pair at Keeping Lake the following day.

*Bucephala albeola* (Linnaeus). Buffle-head.—A common and widely distributed species which was recorded in varying degrees of abundance in 22 lakes. Numerically, it occupied 9th place among the ducks, with an average ratio of 4.3 per cent (min. 0.8; max. 23.0). It was found most numerous in Buffalo Bay, Lesser Slave Lake (June 8), in Sturgeon Lake (June 10 to 16), where next to the mallard it was the second most abundant duck, and at Keeping Lake, July 10. The species was definitely less common in the lakes north of Peace River and in the McLennan district, than in the Grande Prairie area and west. The first downy young of the season were noted at Saskatoon Lake on June 27. Many were met with during the following week at Sinclair and Updike lakes.

*Clangula hyemalis* (Linnaeus). Old-squaw.—A pair was recorded at Baptiste Lake on May 25, 26 and 27, after which the species was not again observed. The above birds were probably late migrants en route to Arctic nesting grounds.

*Melanitta fusca* (Linnaeus). White-winged Scoter.—This is one of the commonest ducks and is fourth in the list of relative abundance. It was seen at 26 lakes, where the ratios in relation to other ducks varied widely, from 1.0 to 38.0 per cent, the average being 11.9. The species was found relatively more numerous at Baptiste, Long, Clairmont, Cutbank, Saskatoon, Ray, Sinclair, Updike, and Cardinal lakes than in other localities.

A nest with seven eggs was found at Sinclair Lake on July 10, secreted in thick poplar woods 15 yards from the shore. Relatively small juveniles were commonly observed at Cardinal Lake in early August, and during the next two weeks at Magliore, Kimawan and Winagami lakes many larger ones were in evidence.

*Oxyura jamaicensis* (Gmelin). Ruddy Duck.—Of moderately common occurrence, with wide distribution, being recorded in 25 lakes. It stands seventh in the list of relative abundance among the ducks. Like all other species, it showed marked variation in relative and actual abundance from lake to lake; ratios were from 0.4 to 18.5 per cent, the average being 4.6. Highest percentages prevailed in Clairmont, Hermit, Sinclair and Mitsue lakes. On June 22, two nests were located at Hermit Lake, containing six and seven eggs, respectively, and one with 13 eggs was found at Sinclair Lake on July 6. The following day, in the same lake, the first newly hatched young were seen. During the next few days, many others were observed here and at Brainard, Updike, Keeping, Valhalla, and La Glace lakes. In August, numerous, increasingly larger immatures were seen at Cardinal, Magliore, Kimawan, Winagami, and Mitsue lakes.

*Mergus merganser* Linnaeus. American Merganser.—Rarely observed. The only records are: several at Baptiste Lake, May 25; a pair at Sturgeon Lake, June 11; and a pair at Winagami Lake, August 21.

*Accipiter gentilis* (Linnaeus). Goshawk.—Observed only at wide intervals. First noted at Ray Lake, July 4, an adult pair with a nest 20 feet from the ground in a pine tree; two immatures had left the nest and two were still in it. One immature was

collected. Two adults were noted near Pipestone Creek, Wapiti River, July 14 and 15. On July 31, a solitary example was seen near Henderson Creek, west of Spirit River, and another on August 1, a few miles south of Dunvegan.

*Accipiter striatus* Vieillot. Sharp-shinned Hawk.—Very rarely detected. My only records are: east end of Lesser Slave Lake, June 1; Cardinal Lake, August 5; Magliore Lake, August 14; and Lesser Slave River, north of Overlea, August 24.

*Accipiter cooperii* (Bonaparte). Cooper's Hawk.—A medium-sized hawk, thought to be referable to this species, was seen about halfway between Triangle and Sturgeon Lake on June 10.

*Buteo jamaicensis* (Gmelin) Red-tailed Hawk.—Generally, though sparingly distributed throughout the region, it was more frequently recorded around the lakes of the Grande Prairie district, and from Magliore Lake south and east to Lesser Slave Lake, than in any other areas. Southwest of Wembley to the Rockies, one or two individuals were observed almost daily. Most were in usual phase of plumage, but several melanistic individuals were also seen.

*Buteo platypterus* (Vieillot). Broad-winged Hawk.—On August 23, one was noted along the south shore of Lesser Slave Lake near Wagner. Within the next three days, two others were observed, one in the vicinity of Mitsue Lake, and the other a few miles south of Athabaska.

*Haliaeetus leucocephalus* (Linnaeus). Bald Eagle.—Not personally recorded. However, it unquestionably occurs within the territory under review, as Cowan (1939) observed it at Swan Lake, B. C., a point along the Alberta boundary a few miles northwest of Demmitt.

*Circus cyaneus* (Linnaeus). Marsh Hawk.—This is the commonest raptor over the region at large. One, or more, was seen almost daily en route from Athabaska to the western boundary of Alberta, in the Spirit River and Peace River parklands, and throughout most of the district visited east of the lower Smoky River, the McLennan country, and High Prairie. Individuals were less numerous in continuous wooded areas than in the Grande Prairie parklands and similar territory. On the journey southwest from Wembley to the Rocky Mountains, it was not seen beyond points 15 to 20 miles southward of Wapiti River.

*Pandion haliaetus* (Linnaeus). Osprey.—Only one noted throughout the summer, a single individual that frequented the eastern end of Lesser Slave Lake in late May and early June.

*Falco peregrinus* Tunstall. Duck Hawk.—A single bird was observed at Bear Lake, Grande Prairie, on June 23.

*Falco columbarius* Linnaeus. Pigeon Hawk.—Examples were recorded at widely-spaced intervals: Lesser Slave Lake, May 30 to June 7; Cutbank Lake, June 28; Wapiti River, south of Wembley, to Pinto Creek, July 15 to 18; and Winagami Lake, August 20.

*Falco sparverius* Linnaeus. Sparrow Hawk.—Noted very sparingly throughout most of the territory traversed. Occasionally, days would pass without observing any. Rarely more than one or two were seen in any locality. A few were in evidence for a distance of 30 to 40 miles south of Wapiti River. The birds were more regularly observed, in the latter part of August, from Magliore Lake south and east to Lesser Slave Lake, Athabaska and Edmonton.

*Canachites canadensis* (Linnaeus). Spruce Grouse.—In the whole of the Grande Prairie-Peace River area, the species was only once observed. This was at Ray Lake, on July 5, when an adult female was encountered with eight downy juveniles barely capable of flight. In the latter part of the month a few others were met with

along the trail from Nose Mountain southwest to Two Lakes and Torrens River. Several of the adult females were accompanied by young of the year.

*Bonasa umbellus* (Linnaeus). Ruffed Grouse.—Recorded sparingly from Baptiste Lake west to the British Columbia boundary, south to the Rocky Mountains and north to Cardinal and Flood lakes. Many localities were visited and wide areas covered, at times without detecting a single individual. A few juveniles, perhaps two weeks old, were seen at Saskatoon Lake on June 26, 29 and 30. An adult female with several immatures was found July 27, between Nose and Pinto creeks.

*Pedioecetes phasianellus* (Linnaeus). Sharp-tailed Grouse.—Apparently very scarce in the Grande Prairie-Peace River region during 1944, but reported as common, or fairly common, during certain periods in the past. My only records are two solitary birds noted near Grande Prairie (June 17), and a few miles south of Wembley (July 14), respectively. I was informed that a few inhabited the fields and prairies around Spirit River and in the area between Fairview and Cardinal Lake.

*Perdix perdix* (Linnaeus). European Partridge.—Numbers are now reported in the country from Edmonton north to Athabaska and westward to fields in the locality of Baptiste Lake. On my return to Edmonton in late August, a flock of 20 birds was flushed from the roadside about 10 miles west of Smith, north of the Athabaska. This is the northernmost record of *perdix* of which I have any knowledge.

*Phasianus colchicus* Linnaeus. Ring-necked Pheasant.—Several years ago numbers of these birds were introduced to the Grande Prairie district. They are said to have thrived in a few favorable habitats, particularly about Wembley and, to a lesser extent, Beaverlodge. The species was not personally observed.

*Grus canadensis* (Linnaeus). Little Brown Crane.—I was informed by local residents at Lesser Slave Lake and at various lakes in the Grande Prairie-Peace River territory that brown cranes were more or less common migrants at these points. I have no data on breeding in the region involved.

*Porzana carolina* (Linnaeus). Sora Rail.—Widely distributed and, in some marshes, apparently common. The species was first detected at Sturgeon Lake on June 11. It was only sparingly recorded in marshes of the Grande Prairie lakes, but it was abundant at Sinclair, Brainard, and Updike lakes. A downy juvenile was found dead in a marshy fringe of La Glace Lake on July 11. Probably fortuitously, it was not seen or heard at any point north of Peace River. One was observed at Baptiste Lake on August 25.

*Fulica americana* Gmelin. American Coot.—Depending upon the nature of the habitat, these birds varied from a state of scarcity to one of abundance. In some lakes they were much more numerous than most species of ducks. Very few lakes were examined in which the birds were absent. Scores of nests with eggs were found from Sturgeon Lake, June 10 to 16, to Ray Lake, July 3 to 5. In time of nesting, wide variation exists between different pairs. Thus, at Sturgeon Lake, the first observed young of the season were just hatching in early June, while others were making their appearance in lakes far to the west fully a month later. Taken as a whole, the coot may be rightly regarded as one of the commonest, breeding waterfowl of the region.

*Charadrius hiaticula* Linnaeus. Semipalmated Plover.—A pair was first seen at La Glace Lake on July 11. Between August 5 and 21, a few were observed daily at Cardinal, Flood, Magliore, Kimawan and Winagami lakes.

*Charadrius vociferus* Linnaeus. Killdeer.—A relatively common inhabitant of the region. It was recorded at nearly every lake and was also present at many ponds, creeks and rivers. South of Wapiti River, the species was detected only at Iroquois

Creek. Nests and eggs were found at Lesser Slave, Sturgeon and Bear lakes, June 1 to 23. The first newly hatched young were observed at Saskatoon Lake on June 29. Many juveniles and subadults were met with in numerous localities during the remainder of the summer.

*Squatarola squatarola* (Linnaeus). Black-bellied Plover.—A bird of passage, which was noted as follows: one, east end of Lesser Slave Lake, June 1; three at Cardinal Lake, August 5 to 8; six at Magliore Lake, August 14 to 16; one at Winagami Lake, August 21; and one at Baptiste Lake on August 25.

*Capella gallinago* (Linnaeus). Wilson's Snipe.—Apparently extremely scarce and widely scattered. A male in mating flight was noted daily at Baptiste Lake, May 25 to 28. Two were flushed immediately east of Lesser Slave Lake, in early June, and one was heard performing on the wing at the south end of Saskatoon Lake on June 27.

*Bartramia longicauda* (Bechstein). Upland Plover.—Only twice recorded, as follows: one at the south end of Kimawan Lake, August 18; another, eight miles north of Kinuso, below The Narrows, Lesser Slave Lake, August 23.

*Actitis macularia* (Linnaeus). Spotted Sandpiper.—Generally, though sparingly distributed. It was recorded at nearly all of the lakes visited and was also met with along streams of all sizes, including Lesser Slave, Smoky, Wapiti and Peace rivers. A nest with four eggs was found at Bear Lake on June 20. On July 15, three juveniles barely capable of flight were observed along Wapiti River south of Wembley. Several well-developed immatures were seen at Cardinal Lake, August 4 to 8.

*Totanus melanoleucus* (Gmelin). Greater Yellow-legs.—Several put in an appearance at Cardinal Lake on August 5, the only record for the season.

*Totanus flavipes* (Gmelin). Lesser Yellow-legs.—A common summer resident with territory-wide and nearly uniform distribution. With only a few exceptions, it was met with at all the lakes of the region. In some areas, the species was of only casual occurrence, in others, common to abundant. About the only place it was not observed embraced the heavily forested and almost lakeless country between Wapiti River and Rocky Mountains. Adults and immatures were plentiful in small flocks at Cardinal Lake, in early August, and abundant at Magliore, Kimawan and Winagami lakes, later in the month.

*Erolia melanotos* (Vieillot). Pectoral Sandpiper.—A small flock of six individuals was observed in association with a number of Baird's sandpipers at the east end of Lesser Slave Lake on June 1.

*Erolia bairdii* (Coues). Baird's Sandpiper.—On June 1, a small group, evidently the last of the spring migrants, frequented the sandy shore at the eastern extremity of Lesser Slave Lake. Small flocks were next noted at La Glace and Valhalla lakes, July 11 to 12. The birds were common at Cardinal Lake (where a specimen was taken) August 4 to 8, and, from the 13th to the 23rd of the month, varying numbers were observed at Flood, Magliore, Kimawan and Winagami lakes.

*Erolia minutilla* (Vieillot). Least Sandpiper.—Observed in small companies and larger flocks, from August 4 to 24, at Cardinal, Flood, Magliore, Kimawan, Winagami and Lesser Slave lakes. The birds were very common at Kimawan Lake. In most instances they were associated with *E. bairdii*.

*Limnodromus griseus* (Gmelin). Dowitcher.—One recorded at Sturgeon Lake, June 14; another at Sinclair Lake on July 6. Single examples and small flocks, up to 30 in number, were daily observed at Valhalla, La Glace and Buffalo lakes, from July 10 to 12. The last seen was a solitary example at Kimawan Lake on August 17.

*Ereunetes pusillus* (Linnaeus). Semipalmated Sandpiper.—One recorded on May 30 at the east end of Lesser Slave Lake. Not again positively identified.

*Steganopus tricolor* Vieillot. Wilson's Phalarope.—During June and July, observed sparingly at Grouard, and Bear, Saskatoon and La Glace lakes. Newly hatched young were found on a patch of prairie at Benson Point, Bear Lake, on June 20. In August, a few were noted at Cardinal Lake, a flock of 20 individuals at Flood Lake, and many hundreds at Winagami Lake on the 19th and 20th of August.

*Larus argentatus* Pontoppidan. Herring Gull.—A few subadults were seen at the east end of Lesser Slave Lake, in late May and early June, and at Winagami Lake on August 20 and 21.

*Larus californicus* Lawrence. California Gull.—In late May and early June, a few scattered individuals were observed: at Baptiste Lake; along the south shore of Lesser Slave Lake, south of Dog Island; at Widewater; and at Auger and Giroux bays. There is also a queried entry in the records for an individual noted at Kimawan Lake on August 17.

*Larus delawarensis* Ord. Ring-billed Gull.—Fairly well distributed in the region from Athabaska west to the lakes of Grande Prairie. In July, two were seen at Updike Lake and one at Wapiti River, near Pipestone Creek. During the early half of August, casuals were met with at Cardinal, Flood and Kimawan lakes. Later in the month, individuals and small flocks were commonly distributed along the south shore of Lesser Slave Lake, particularly in the vicinity of Jousard, Faust, The Narrows, Assineau and Canyon Creek.

*Larus canus* Linnaeus. Short-billed Gull.—Only one record, east end of Lesser Slave Lake, June 2, when one was seen with a few herring gulls.

*Larus pipixcan* Wagler. Franklin's Gull.—Positively identified only twice during the season; about a dozen individuals were observed at Baptiste Lake in late May and a flock of six at Flood Lake on August 13.

*Larus philadelphia* (Ord). Bonaparte's Gull.—Noted sparingly and irregularly in late May and early June from Baptiste Lake to Sturgeon Lake. During this period, the largest flock consisted of 28 members. The species was nowhere seen in the Grande Prairie district, or south, from mid-June to the end of July. In early August, fair numbers frequented Cardinal Lake and, a little later, a few were seen flying along Peace River. During the third week in August the birds were abundant at Kimawan and Winagami lakes, where flocks numbering as high as 1,000 to 1,500 individuals were seen. They were also common at Lesser Slave and Mitsue lakes a few days later. A high percentage of these birds were immatures of the year.

*Sterna hirundo* Linnaeus. Common Tern.—This was one of the rarer birds of the region. During June and July only a few pairs were seen, collectively, at Lesser Slave, Sturgeon, Sinclair, Updike and La Glace lakes. The largest number (12) was recorded at Updike Lake on July 9. On August 21 and 23, respectively, a few scattered examples were noted at Lesser Slave and Mitsue Lakes. No evidence of nesting was obtained.

*Chlidonias niger* (Linnaeus). Black Tern.—A relatively common to abundant, breeding, summer resident in suitable places throughout the region. It was recorded at most of the lakes. Many immatures were observed at Cardinal Lake in early August.

*Zenaidura macroura* (Linnaeus). Mourning Dove.—In late May, solitary examples were seen at Baptiste Lake and at the southeastern extremity of Lesser Slave Lake.

*Bubo virginianus* (Gmelin). Great Horned Owl.—This owl was seen, or heard, in



most localities from Athabaska to British Columbia, south to the Rocky Mountains and north of the Peace. It appeared to be nearly as common in the prairie-parklands of Grande Prairie as in the heavier mixed-wood forest. Several individuals observed at close range around Bear, Hermit, and Saskatoon lakes possessed very pale plumage and were evidently referable to *subarcticus*. Darker birds noted at Sinclair and Ray lakes, and in the heavily timbered region between Wapiti River and Torrens River, Rocky Mountains, were apparently *saturatus*. Birds of intermediate plumage were also observed in the latter region.

*Asio flammeus* (Pontoppidan). Short-eared Owl.—Observed only three times during the entire season: Faust, Lesser Slave Lake, June 7; and Ferguson and Bear lakes, Grande Prairie, June 20 and 21, respectively.

*Chordeiles minor* (Forster). Nighthawk.—Noted sparingly and irregularly throughout the entire country except in the higher and heavily forested area between the upper waters of Nose Creek and Torrens River, Rocky Mountains.

*Archilochus colubris* (Linnaeus). Ruby-throated Hummingbird.—Not personally detected. I was assured by local residents that the species occurs at Athabaska and at Baptiste, Lesser Slave and Sturgeon lakes. A farmer informed me that he had once seen it in the vicinity of Cardinal Lake, north of Peace River.

*Megaceryle alcyon* (Linnaeus). Belted Kingfisher.—Rare. One or two noted daily at Baptiste Lake in late May; one at Nose Creek, July 18, in about Latitude 54° 45' N.; one at Dunvegan, Peace River, August 1; and, a solitary example at Cardinal Lake, on August 7.

*Colaptes auratus* (Linnaeus). Yellow-shafted Flicker.—This is a widely distributed, breeding species which was seen in nearly all parts of the territory. In relative abundance it varied in numbers from a few casuals, in some localities, to a state of moderate prevalence in others. It was recorded daily throughout the summer except during the period spent at the higher altitudes between Nose Mountain and Torrens River. Only one was seen during three days spent in the latter locality.

*Hyalatomus pileatus* (Linnaeus). Pileated Woodpecker.—The unmistakable notes of one of these birds were heard at the south end of Mitsue Lake on August 24. This is the only record.

*Sphyrapicus varius* (Linnaeus). Yellow-bellied Sapsucker.—Moderately common from Athabaska west to Smoky River, but appreciably less numerous in the Grande Prairie parklands district where in several working localities it was not recorded. It was again more numerous in the heavily wooded country between Hythe and the British Columbia boundary. Cowan (1939: 36), with reference to it in the adjoining territory, says it is the most abundant woodpecker in the district; this does not hold for the Alberta territory to the east, where the yellow-shafted flicker is the predominant member of the family. *Varius* was seen nowhere in the higher country, south of the Wapiti, from a point southwest of Pinto Creek to the Rocky Mountains.

*Dendrocopos villosus* (Linnaeus). Hairy Woodpecker.—Widely distributed but scarce. One or two were noted almost daily from Athabaska to Smoky River, but it was recorded only at wide intervals in the Grande Prairie district and west to British Columbia. Not one was noted south of Wapiti River. It was again observed somewhat more frequently in the heavy woods west of Spirit River, north of the Peace, and about Kimawan and Winagami lakes.

*Dendrocopos pubescens* (Linnaeus). Downy Woodpecker.—Only two individuals were recorded all summer: one at Baptiste Lake, May 26, and the other at Sturgeon Lake on June 10.

*Picoïdes tridactylus* (Linnaeus). American Three-toed Woodpecker.—Recorded only

at Sturgeon Lake where four were observed in heavy coniferous forest between June 10 and 15.

*Tyrannus tyrannus* (Linnaeus). Eastern Kingbird.—Universally distributed in moderate numbers all over the region, with the exception of the more elevated territory from a point south of Pinto Creek, southwest to the Rocky Mountains. In some parts of Grande Prairie the birds were common, as was also the case in the parklands of Spirit and Peace Rivers and along the south shore of Lesser Slave Lake.

*Sayornis phoebe* (Latham). Eastern Phoebe.—From one to several of these flycatchers were observed almost daily from Athabaska west to and including most localities in the Grande Prairie district. In this general sector it was also noted at Sinclair, Updike and Ray lakes and Pipestone Creek, Wapiti River, but nowhere south and southwest of the latter stream. A few scattered individuals were seen at Cardinal Lake, Peace River, and Magliore Lake. A nest containing four well-grown nestlings was located at Sturgeon Lake on June 12. Another with five eggs was found at Bear Lake on June 20; these hatched June 23.

*Empidonax flaviventris* (Baird and Baird). Yellow-bellied Flycatcher.—On May 29, one was observed near the confluence of Lesser Slave and Atauwan rivers and another in poplar-spruce woods on the high sand dunes at the east end of Lesser Slave Lake, June 2.

*Empidonax traillii* (Audubon). Alder Flycatcher.—This species was heard, or seen, almost daily over the vast expanse of territory from Athabaska to British Columbia. It was apparently absent, or extremely scarce, in the hilly and mountainous terrain south of Wapiti River, to Torrens River. Noted several times in the woods west of Spirit River to Henderson Creek, and once at Cardinal Lake.

*Empidonax minimus* (Baird and Baird). Least Flycatcher.—A common summer resident in most of the region, including the parklands of Grande Prairie, Spirit and Peace rivers, and High Prairie. It was detected as far south as Nose Creek Meadows, near Nose Mountain. The last positive entry was for a male heard calling at Winagami Lake on August 20. Individuals had almost entirely given up "singing" for a full three weeks before this date.

*Contopus richardsonii* (Swainson). Western Wood Pewee.—Moderately common over practically the whole of the territory, including localities north of the Peace. The species was somewhat more numerous in the Grande Prairie parklands farther north. It was apparently absent from the higher ground of the mountains from Two Lakes to the Torrens River. The birds were last heard singing at Henderson Creek, west of Spirit River, on August 31.

*Nuttallornis borealis* (Swainson). Olive-sided Flycatcher.—Recorded almost daily from Athabaska to Smoky River but was not detected at any point in the parklands of Grande Prairie. West of this open district, however, it was occasionally noted at Ray, Sinclair and Updike lakes. It was seen or heard every day south of Wapiti River from Pipestone Creek to Torrens River where one was observed at an altitude of about 5,000 feet. No individual was heard in song after July 28. During August, one was noted at Cardinal Lake and another at Winagami Lake.

*Eremophila alpestris* (Linnaeus). Horned Lark.—At least a few pass through the Grande Prairie-Peace River Region during migration. Strangely enough, since the northwestern prairies appear ideal for summer occupation by these birds, not a single individual was observed throughout the season. Cowan (1939: 39) saw but one example in the Peace River District of British Columbia; it was collected May 6.

*Iridoprocne bicolor* (Vieillot). Tree Swallow.—A common breeder in most of the region. Observed daily in nearly every locality from May to the end of July. None

was recorded in August. Ten were seen at Two Lakes, Rocky Mountains, on July 24, the only ones noted southwest of Pinto Creek.

*Riparia riparia* (Linnaeus). Bank Swallow.—Observed on only one occasion, when on July 15 a flock of 14 individuals was seen flying about a steep bank at the Wapiti River a short distance east of Pipestone Creek. The presence of several nesting holes in this clay exposure indicated that the birds were breeding.

*Petrochelidon pyrrhonota* (Vieillot). Cliff Swallow.—Several were observed flying about over the outlet of Lesser Slave Lake on June 2; they probably intended nesting at some one of the old buildings still standing on the site of the former village of Sawridge. On August 14, six individuals were noted at Dixonville, 17 miles north of Cardinal Lake.

*Progne subis* (Linnaeus). Purple Martin.—Several were noted between Edmonton and Athabaska in the third week of May, and a few were recorded daily at the south end of Sturgeon Lake, June 11 to 15. To the westward of this point the species is evidently extremely rare, as the only entries are as follows: eight individuals, July 31, 12 miles west of Spirit River; a pair at Fairview, August 2; and six birds on August 3, about 10 miles north of Hines Creek.

*Perisoreus canadensis* (Linnaeus). Canada Jay.—Occurs in varying degrees of abundance practically throughout the entire territory westward from a point south of Athabaska. The one notable exception to this was a complete specific hiatus in the true parklands districts of Grande Prairie and Peace River. The birds were found more numerous, than elsewhere, in the coniferous forest south of Wapiti River to Two Lakes and Torrens River, Rocky Mountains; in the territory westward from Hythe to the British Columbia border; and, in only a slightly lesser degree, at Clear Hills and Cardinal, Flood, Kimawan and Winagami lakes.

*Cyanocitta cristata* (Linnaeus). Blue Jay.—Observed daily at Baptiste Lake in late May. Not again recorded until July 15, when one was seen at Wapiti River, south of Wembley. Thirteen days later another was met with at Iroquois Creek, six miles south of Wapiti River. The only other record for this far western Alberta territory concerns one observed about 14 miles north of Grimshaw, August 13. This is apparently the northernmost record of the species in this longitude. It is not listed by Cowan (1939) or Rand (1944). On the return journey in late August, a few were noted along the southeast shore of Lesser Slave Lake, at Mitsue Lake, and between this point and Athabaska.

*Pica pica* (Linnaeus). American Magpie.—Encountered only at Baptiste Lake (late May) and at two or three points north to Smith and westward to Lesser Slave River (August).

*Corvus corax* (Linnaeus). Northern Raven.—This species was rarely observed. My only records are: Sinclair Lake, July 9; and Kimawan, Winagami and Lesser Slave lakes, August 17 to 23.

*Corvus brachyrhynchos* Brehm. American Crow.—Observed almost daily, usually in small numbers, throughout the entire territory. As a general rule, no more than one to two or three pairs were seen in any one day. However, the birds were more common in a few localities: around the eastern end of Lesser Slave Lake; at Deep, Cutbank and La Glace lakes; and in the Spirit River district. A flock of 120 individuals was recorded at La Glace Lake on July 11. Several good-sized flocks were also seen, on August 1, between Spirit River and Fairview. At a nest under observation at Bear Lake, the immatures began leaving on June 21.

*Parus atricapillus* Linnaeus. Black-capped Chickadee.—Sparingly, but almost universally distributed in the region. The only territory in which the species was

not recorded was that lying at the higher elevations from about Two Lakes to Torrens River, Rocky Mountains. Its place was taken here by *hudsonicus*.

*Parus hudsonicus* Forster. Brown-headed Chickadee.—Observed in few localities. In late July, the birds were common in the heavy coniferous forest from Nose Mountain southwest to Torrens River. The only other localities in which they were seen were Baptiste and Sturgeon lakes, May and June, and at Winagami and Mitsue lakes in the latter part of August.

*Sitta canadensis* Linnaeus. Red-breasted Nuthatch.—It occurred in moderate numbers at Baptiste, Lesser Slave and Sturgeon lakes, and was common to abundant, at the height of summer, in the heavier coniferous forest southwest of Pinto Creek to the slopes of the Rockies at Torrens River. During late August a few were met with in stands of spruce at Winagami and Mitsue lakes, and along Lesser Slave River en route to Smith.

*Troglodytes aedon* Vieillot. House Wren.—Observed almost daily in nearly all working localities throughout the region. The only blank in the records concerns the country traversed, in the latter half of July, from about Pinto Creek southwest to Torrens River. Undoubtedly breeds wherever observed. Males were last heard singing during the second week of July.

*Telmatodytes palustris* (Wilson). Long-billed Marsh Wren.—Recorded in the following localities: West end of Lesser Slave Lake, including Buffalo Bay; Sturgeon, Clairmont, Ferguson, Hermit, Sinclair, Brainard, La Glace, and Magliore lakes. The birds were more abundant at Sinclair Lake (July 6 to 8) than elsewhere, where they were commonly nesting and in full song. It was not listed by Cowan (1939).

*Turdus migratorius* Linnaeus. American Robin.—Robins were met with in varying degrees of abundance all over the region. A few were seen even in the mountain valleys and subalpine forests from Nose Mountain to Two Lakes and Torrens River. Nests with full complements of eggs were seen at Baptiste and Lesser Slave lakes in late May and early June.

*Hylocichla guttata* (Pallas). Hermit Thrush.—Locally common, but rather capriciously distributed. It was noted regularly at Baptiste Lake, occasionally along Lesser Slave Lake, and daily at Sturgeon Lake. It was recorded nowhere in the true parklands of Grande Prairie, but was found fairly numerous in the mixed-wood forests west of Hythe and south of Wapiti River to about Nose Mountain (about Lat. 54° 35' N.). An immature was taken at Magliore Lake on August 15. A nest with four eggs was found in poplar-spruce woods at Baptiste Lake on May 25.

*Hylocichla ustulata* (Nuttall). Olive-backed Thrush.—Not detected until June 4, when we reached Giroux Bay on the south shore of Lesser Slave Lake. Here the species was fairly numerous in heavy mixed-wood forest and was in full song. During the second week of June the birds were common at Sturgeon Lake where two specimens were collected. They were moderately well represented at Saskatoon Lake, in the heavily wooded district westward from Hythe, and from south of Wapiti River to the Rockies. One was noted at Cardinal Lake, August 7. Individuals were heard singing up to the third week of July.

*Sialia currucoides* (Bechstein). Mountain Bluebird.—Comparatively rare. The only ones recorded during the summer were: east end of Lesser Slave Lake; Hythe; Sinclair Lake; Pinto Creek, and Pipestone Creek. On July 29, four were seen a few miles west of Spirit River. In early August, family groups were recorded near Clear Hills and a short distance north of Grimshaw.

*Regulus satrapa* Lichtenstein. Golden-crowned Kinglet.—During the second week of June, singing males were occasionally noted at Sturgeon Lake, and a pair was seen

in a muskeg at Sinclair Lake on July 7 and 8. During the latter half of July, the species was common in the coniferous forests from Pinto Creek southwest to the Torrens River Valley, Rocky Mountains. No songs were heard at this time. In late August, a few were observed at Kimawan and Winagami lakes.

*Regulus calendula* (Linnaeus). Ruby-crowned Kinglet.—On the whole, notably scarcer than the preceding species. A few individuals in voluble song were recorded at Baptiste and Sturgeon lakes, during late May and the second week of June, respectively. Silent birds were noted in July at Sinclair and Ray lakes and at widely scattered points from Wapiti River to the Rocky Mountains.

*Bombycilla garrulus* (Linnaeus). Bohemian Waxwing.—A pair of waxwings, tentatively referred to this species, was seen flying along the east shore of Flood Lake on August 13.

*Bombycilla cedrorum* Vieillot. Cedar Waxwing.—Generally distributed, but nowhere notably common. Observed in most working localities from Baptiste Lake west to Keeping Lake and for about 20 miles southwest of Pipestone Creek, Wapiti River. Nowhere was it detected in the higher region of foothills and mountains in the latter direction. In August, a few were seen daily at Cardinal and Flood lakes, and intervening territory, southward to Lesser Slave Lake, Smith, Athabaska and Edmonton.

*Vireo solitarius* (Wilson). Blue-headed Vireo.—One or two were heard, or seen, daily at Sturgeon Lake, June 10 to 15, and likewise at Ray, Updike and Sinclair lakes, July 3 to 9.

*Vireo olivaceus* (Linnaeus). Red-eyed Vireo.—Common from Athabaska and Baptiste Lake westward to Sturgeon Lake, but less numerous in the Grande Prairie district and west to the British Columbia border. It was traced south of Wapiti River to about Nose Mountain, but not recorded anywhere in the foothills and mountains to the southwest. In late July, and during August, it was sparingly observed: from Grande Prairie to Spirit River; west to Henderson Creek; at several points north of Peace River to Flood Lake; and southeast to Lesser Slave and Mitsue lakes. The last regular songs were heard at Cardinal Lake on August 8.

*Vireo philadelphicus* (Cassin). Philadelphia Vireo.—The only record was of a singing male observed at Baptiste Lake on May 26.

*Vireo gilvus* (Vieillot). Warbling Vireo.—Fairly common and well distributed from Athabaska west to Sturgeon Lake and Smoky River, but nowhere seen or heard in the parklands-farming area of Grande Prairie. Occasional birds were noted in the heavily wooded country westward from Hythe to Keeping Lake and a few in mid-July at Wapiti River and southwest to Iroquois Creek. The last songs were heard at this time. Probably owing to the fact that singing had ceased in late July and August, the species was not noted anywhere in the Spirit and Peace River areas. A single individual was seen at Kimawan Lake on August 18.

*Mniotilta varia* (Linnaeus). Black and White Warbler.—Commonly distributed from Athabaska to a point west of Smoky River, but rare in the semi-open country of Grande Prairie where it was observed only at Saskatoon Lake. In the heavily wooded country to the west, the species was sparingly noted every day. South of Wapiti River it was traced through widely-spaced individuals to the region of Nose Mountain. On August 13, one was seen a few miles north of Cardinal Lake. No songs were heard after July 19.

*Vermivora peregrina* (Wilson). Tennessee Warbler.—These birds were common to abundant from Athabaska to the limits of heavier forests west of Smoky River but

were nowhere recorded in the Grande Prairie district. In early July, a few were noted at Sinclair and Ray lakes where the males were still singing.

*Vermivora ruficapilla* (Wilson). Nashville Warbler.—Several recorded at Kimawan Lake on August 17 and 18, in company with magnolia and myrtle warblers.

*Dendroica pelechica* (Gmelin). Yellow Warbler.—Fairly common throughout the entire region from Edmonton to Athabaska and west to British Columbia. In travelling southwest from Wapiti River, below Wembley, it was observed only as far as Pinto Creek. The species was noted in all localities northward from Grande Prairie to Clear Hills and Flood Lake, and southward to Lesser Slave Lake. A nest with four eggs was found at Bear Lake on June 20; these hatched four days later. Songs were heard up to August 4.

*Dendroica magnolia* (Wilson). Magnolia Warbler.—Rarely encountered. Two singing males were met with in heavy mixed-wood forest at the northeastern angle of Lesser Slave Lake on May 30 and 31. Casually observed between Pinto Creek and Torrens River, Rocky Mountains, July 17 to 25. During the third week of August numbers were seen at Kimawan and Winagami lakes.

*Dendroica tigrina* (Gmelin). Cape May Warbler.—Several singing males were met with at Baptiste Lake, Lesser Slave River, Lesser Slave Lake, and Sturgeon Lake, between May 25 and June 13.

*Dendroica coronata* (Linnaeus). Myrtle Warbler.—Common from late May to mid-June from Baptiste Lake to Sturgeon Lake and Smoky River. The species was absent from the farming-parklands area of Grande Prairie but was occasionally noted westward from Hythe and southwest of Wembley to the Rocky Mountains. The birds were fairly common in the latter part of August from Magliore Lake south and east to Lesser Slave Lake and Athabaska. The last songs of the season were heard near Nose Mountain on July 17.

*Dendroica virens* (Gmelin). Black-throated Green Warbler.—Rare, and apparently confined to the eastern part of the region. On June 5, one was heard singing in deciduous-coniferous forest south of Faust, Lesser Slave Lake. At least two different males were recorded at Sturgeon Lake between June 10 and 15; both were in full song and observed at a distance of a few yards. The last record is of a male seen on the edge of a spruce muskeg at Kimawan Lake on August 17.

*Dendroica castanea* (Wilson). Bay-breasted Warbler.—Met with only in early June along the northeast shore of Lesser Slave Lake, Giroux Bay at Faust, and Sturgeon Lake. One was collected south of Faust on June 7. Males were heard singing in all of these localities.

*Dendroica striata* (Forster). Black-poll Warbler.—Of rather casual occurrence from Athabaska west to the heavy forest east of Grande Prairie. Several were noted in every working locality between these two points. It was not detected in the true parklands of the Grande Prairie area but was noted regularly in the thickly wooded district west of Hythe and Valhalla. Three were seen between Pinto Creek and Nose Mountain. The last singing was recorded on July 18.

*Seiurus aurocapillus* (Linnaeus). Oven-bird.—A relatively common breeding bird throughout the territory from Athabaska west to Sturgeon Lake and the wooded fringe of Grande Prairie. Not once recorded in the latter area, but in the thickly wooded territory west of it to British Columbia the species was recorded daily. One was observed at Cardinal Lake on August 8. Its ringing song was last heard at Sinclair Lake on July 7.

*Seiurus noveboracensis* (Gmelin). Water-thrush.—Occurs in moderate numbers over a wide geographical range. It was recorded in the following localities: Baptiste

Lake; throughout the length of Lesser Slave Lake; Sturgeon Lake; Ray, Sinclair and Updike lakes; and occasionally at Iroquois, Pinto and Nose creeks, south of Wapiti River. Singing was last heard on July 28.

*Geothlypis trichas* (Wilson). Connecticut Warbler.—Observed in the same localities as the preceding species, with the exception of the places mentioned south of Wapiti River. It was, perhaps fortuitously, seen nowhere in the latter territory. Singing continued until at least the second week in July.

*Oporornis philadelphia* (Wilson). Mourning Warbler.—In late May and early June, observed with fair regularity from Baptiste Lake to Sturgeon Lake, at which time the males were commonly in song.

*Oporornis tolmiei* (Townsend). Macgillivray's Warbler.—Two were observed on July 26 along Nose Creek north of Nose Mountain Meadows, and another the following day near Pinto Creek.

*Geothlypis trichas* (Linnaeus). Yellow-throat.—Observed in numerous localities from Baptiste Lake west to, but not within, the Grande Prairie parklands. West of this, however, it was detected sparingly in the wooded, lake district between Hythe and the western border of Alberta. On July 19 and 26, one was observed at Two Lakes, Rocky Mountains. Three days later another male was seen and heard singing at Iroquois Creek.

*Setophaga ruticilla* (Linnaeus). American Redstart.—A common and widely distributed species which was recorded almost daily in varying numbers from Athabaska to British Columbia, except within the Grande Prairie district. It was nowhere recorded south of Wapiti River, or north of Peace River, except at Flood Lake. On August 17 and 18, several were observed at Kimawan Lake. Singing was regular until the second week of July.

*Passer domesticus* (Linnaeus). English Sparrow.—Generally distributed in towns and villages and about farm buildings throughout the settled parts of the region. Occasionally noted in wooded areas.

*Sturnella neglecta* Audubon. Western Meadowlark.—On previous brief and hurried trips to the Grande Prairie-Peace River Region, this species had not been observed. However, in the season of 1944, it was found in several localities in full song, and evidently breeding. Records are as follows: June 17, 10 miles west of Smoky River; June 18 and July 1 and 2, in grassy fields on the eastern outskirts of the town of Grande Prairie; Clairmont, Ferguson, Bear, Hermit, Cutbank and Saskatoon lakes, June 18 to 30; near North Buffalo Lake, July 12; and August 1, about two miles north of Dunvegan, the only individual observed north of the Peace.

*Xanthocephalus xanthocephalus* (Bonaparte). Yellow-headed Blackbird.—Noted only at the west end of Lesser Slave Lake, and at Sturgeon, Clairmont, Ferguson and Hermit lakes. In the three latter localities, the species was fairly common.

*Agelaius phoeniceus* (Linnaeus). Red-winged Blackbird.—A common to abundant breeder in suitable localities throughout the entire region. Its abundance was particularly marked at Clairmont, Ferguson, Saskatoon, Sinclair and La Glace lakes. A few were seen along creeks south of Wapiti River and as far south as Two Lakes in the Rocky Mountains. The species was sparingly noted north of the Peace at Cardinal and Flood lakes, and south of it at Magliore Lake. Fair-sized flocks were noted at Baptiste Lake on August 25.

*Icterus galbula* (Linnaeus). Baltimore Oriole.—This bird was met with occasionally from Edmonton to Athabaska and west to Grande Prairie. In the latter area it was specifically recorded at the town of Grande Prairie and at Bear, Deep and Saskatoon lakes. It was not recorded by Cowan (1939) in the Peace River country of British Columbia.

*Euphagus carolinus* (Müller). Rusty Blackbird.—Not positively identified anywhere during the early part of the summer. From August 15 to 23, small groups and fairly large flocks were noted at Magliore, Kimawan, and Winagami lakes, and at intervals along the road to Triangle, High Prairie and Lesser Slave Lake.

*Euphagus cyanocephalus* (Wagler). Brewer's Blackbird.—Noted daily in comparatively small numbers from Edmonton to Athabaska and west to Lesser Slave Lake. In June and early July, the species was nowhere seen in the Grande Prairie area east, south, or west of Bear Lake, but later in the month a few were encountered about Valhalla, La Glace and Buffalo lakes and along Wapiti River in the vicinity of Pipestone Creek. In late July and early August, considerable numbers were seen in flocks from Henderson Creek (west of Spirit River) northeast via Dunvegan and Fairview to Cardinal Lake. On August 25 and 26, flocks were also met with between Smith and Edmonton. It was not observed by Cowan (1939).

*Quiscalus q. versicolor* Vieillot. Bronzed Grackle.—Generally, though sparingly, distributed from Edmonton to Athabaska and west to British Columbia. They were more common about the lakes of Grande Prairie. It was not recorded south of the Wapiti or north of Peace River.

*Molothrus ater* (Boddaert). Cowbird.—As a rule, these birds were found fairly commonly, from spring until mid-July, in most of the territory westward from Athabaska to British Columbia. A few were seen southwest of Pipestone Creek to about Pinto Creek, but from there on to the Rockies they were apparently absent. In late July, two were recorded west of Spirit River and several a few days later at Cardinal Lake.

*Piranga ludoviciana* (Wilson). Western Tanager.—Found sparingly over a wide territory from Athabaska to Ray Lake. Exact localities are: Baptiste Lake; Lesser Slave Lake (northeast shore and Giroux Bay); Sturgeon and Ray lakes; Pipestone Creek to Pinto Creek; and Henderson Creek, west of Spirit River. Males were heard singing until early July.

*Phœnicurus ludovicianus* (Linnaeus). Rose-breasted Grosbeak.—During late May and early June these loud songsters were heard, or seen, along the road from Edmonton to Athabaska, at Baptiste Lake and along Lesser Slave Lake as far west as Giroux Bay. It was not detected at other points in the region, but Cowan (1939: 55) records it as a fairly abundant, breeding bird in the Peace River District of British Columbia. Undoubtedly a few, at least, occur in the more heavily wooded country of Alberta west of Grande Prairie.

*Carpodacus purpureus* (Gmelin). Purple Finch.—Except in the extreme eastern part of the territory, where it was more numerous, it was recorded very sparingly from Athabaska west to Ray and Keeping lakes. One was seen at Henderson Creek on July 31, and another on August 18 at Kimawan Lake. It was observed nowhere south of Wapiti River, and last singing was heard on July 6.

*Spinus pinus* (Wilson). Pine Siskin.—Encountered irregularly in small numbers from Lesser Slave Lake west to the British Columbia boundary, and rarest in the Grande Prairie area. In the latter half of July the birds were common in the coniferous forests between Pinto Creek and the Rockies at Torrens River. During August, pairs and small groups were observed in the Spirit River district, northward to Clear Hills and Cardinal Lake, and southeast to Lesser Slave Lake.

*Spinus tristis* (Linnaeus). Goldfinch.—Rare throughout the region; no more than 18 were observed during the entire season. It was recorded at the following points: Lesser Slave Lake (east end and Giroux Bay); town of Peace River; and a few miles north of Grimshaw.



*Passerculus sandwichensis* (Gmelin). Savannah Sparrow.—Over most of the territory, the predominant breeding sparrow. It was recorded daily in all parts of the region traversed, with the exception of that area lying between Pinto Creek and Torrens River, where it was observed only in the meadow at the eastern member of Two Lakes. The birds were particularly abundant in the grasslands about all the lakes of Grande Prairie and at Magliore, Kimawan and Winagami lakes. The final songs were heard about the middle of July. Three eggs in a nest at Bear Lake on June 20 hatched two days later. It already contained a cowbird fledgling several days old.

*Passerherbulus caudacutus* (Latham). Leconte's Sparrow.—This secretive and elusive sparrow was seldom detected. The only places in which its presence was positively established were: east end of Lesser Slave Lake; Ray, Sinclair, Updike, Keeping and La Glace lakes; near Hine's Creek; and Winagami Lake.

*Ammospiza caudacuta* (Gmelin). Nelson's Sparrow.—Noted only at Lawrence Lake, May 29, and Brainard and Keeping lakes, July 9 and 10. This is apparently a rare sparrow. However, owing to its inconspicuousness, stealth and weak voice, often rendering detection difficult, it may be more common and widely dispersed than the above records would seem to indicate.

*Poocetes gramineus* (Gmelin). Vesper Sparrow.—By no means common, but geographically widespread from the Edmonton-Athabaska district west to British Columbia. Ordinarily it was not observed in any of the heavily timbered territory but was found relatively well represented in such open or semi-open country as: High Prairie; Grande Prairie; prairie-parklands north and south of the Peace; and the farmlands between Smoky River and Kimawan Lake. Occasionally noted along roads intersecting wooded terrain, or along sandy shores of lakes and streams in the same type of territory, such as at Lesser Slave Lake and Peace River. The species was heard singing until the third week of July.

*Junco hyemalis* (Linnaeus). Slate-colored Junco.—A relatively common and widely distributed species that was met with in nearly every part of the region, excepting the true parklands of Grande Prairie, Spirit and Peace rivers. The species was very common in the territory lying between Wapiti River and the Rocky Mountains. In the subalpine spruce forest of Torrens River Valley, it was noted well above an altitude of 4,000 feet.

*Spizella passerina* (Bechstein). Chipping Sparrow.—In late May and early June, moderately common from Edmonton to Athabaska and west to Sturgeon Lake. Nowhere observed in the open parklands country of Grande Prairie, or west of there to the British Columbia border. However, a few were seen daily, during the latter half of July, while we were travelling between Pipestone Creek, Wapiti River, and Torrens River in the Rockies. At the end of July and in early August numbers were noted: in the Saddle Hills; west of Spirit River to Henderson Creek; and north and east of Clear Hills and Cardinal Lake.

*Spizella pallida* (Swainson). Clay-colored Sparrow.—Observed in nearly all parts of the region from Edmonton and Athabaska west to British Columbia. More numerous throughout the upland grass and shrubby areas of Grande Prairie than elsewhere. North of Saddle Hills, it was recorded in the Spirit River parklands farming country west to Henderson Creek and north of the Peace, between Fairview and Cardinal Lake and several miles farther north. This sparrow was also observed daily in small numbers from the town of Peace River, south to Magliore and Kimawan lakes.

*Zonotrichia leucophrys* (Forster). White-crowned Sparrow.—This sparrow was seldom seen. Solitary singing males were met with at Bear, Saskatoon, Sinclair and

Udike lakes, June 23 to July 9. The species was doubtless breeding at these points. Individuals were found at widely spaced intervals from Pinto Creek to Torrens River, during the latter half of July.

*Zonotrichia albicollis* (Gmelin). White-throated Sparrow.—Common and apparently uniformly distributed from Athabaska west to Grande Prairie. In the latter area it was scarce; only a few individuals were noted at Saskatoon Lake. Fairly common in the heavily wooded country between Hythe and the western boundary of Alberta and also over most of the route from Wapiti River to Two Lakes, Rocky Mountains. One was observed in the Saddle Hills. The species was noted daily, during August, in small numbers from Clear Hills, Flood and Cardinal lakes, southward to Lesser Slave Lake. No singing was heard after July 26.

*Passerella iliaca* (Merrem). Fox Sparrow.—In early June, this brilliant singer was fairly common in the wilderness along the south shore of Lesser Slave Lake and at Sturgeon Lake. In the Grande Prairie district it was exceedingly scarce, being recorded only at Saskatoon Lake. In the western part of the province, beyond Hythe, it was again tolerably common and still in full song on July 10. Three were seen between Pipestone and Pinto creeks, but none southward from there. It was last seen at Henderson Creek on July 30 and 31.

*Melospiza lincolni* (Audubon). Lincoln's Sparrow.—Recorded sparingly in most working localities, and occasional intervening points, from Baptiste Lake to Sturgeon Lake. Detected nowhere in the Grande Prairie parklands, it was noted daily west of there in small numbers. It was also seen between Iroquois Creek and the upper Nose Creek Valley near Two Lakes. Casuals were observed at Henderson Creek, and Cardinal, Magliore and Kimawan lakes. Individuals were still singing at the end of July.

*Melospiza georgiana* (Latham). Swamp Sparrow.—Observed with relative infrequency; over large areas it was neither seen nor heard. The daily field record carries entries for the following localities only: Sturgeon, Sinclair, Udike and Ray lakes; Iroquois, Pinto and Henderson creeks; and Magliore and Kimawan lakes. The last song was heard on July 30.

*Melospiza melodia* (Wilson). Song Sparrow.—Observed throughout the entire territory from Edmonton and Athabaska west to Ray Lake. It was fully as common about the lakes of Grande Prairie as in the territory to the east but was very scarce in the heavily wooded district to the west. One was heard singing at Pinto Creek on July 28. It was also recorded at Henderson Creek, Cardinal Lake, Peace River, and Magliore, Kimawan and Winagami lakes.

#### LITERATURE CITED

- COWAN, I. McTAGGART. 1939. The vertebrate fauna of the Peace River district of British Columbia. Brit. Columbia Prov. Mus., Occas. Papers, 1: 1-102.
- HALLIDAY, W. E. D. 1937. A forest classification for Canada. Lands, Parks and Forest Branch, Ottawa, Bull. 89: 1-50.
- RAND, A. L. 1944. Birds of the Alaska Highway in British Columbia. Can. Field-Nat., 58 (4): 111-125.
- SOPER, J. DEWEY. A waterfowl reconnaissance of Wood Buffalo Park. Trans. 20th Amer. Game Conf., New York, pp. 258-266.
- SOPER, J. DEWEY. 1942. The birds of Wood Buffalo Park and vicinity, northern Alberta and District of Mackenzie. Trans. Roy. Can. Inst., 24 (51) part 1: 19-97.

*Dominion Wildlife Service, Alberta Jasper Building,  
Edmonton, Alberta, January 8, 1947.*