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NATIONAL PARKS BRANCH
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THE BIRDS OF RIDING MOUNTAIN NATIONAL PARK, MANITOBA, CANADA

by

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Wildlife Management Bulletins are produced to make available to wildlife administrators the information contained in reports which are submitted by officers of the Canadian Wildlife Service.

The reports do not, in most cases, cover extensive studies and are not written primarily for publication. Recommendations arising from the studies are not included.

Foreword

Riding Mountain National Park is located in southwestern Manitoba within easy reach of important centres of population. From park headquarters at Wasagaming, it is only 140 miles southeast to Winnipeg, 57 miles south to Brandon, 35 miles north to Dauphin, and 102 miles to the International Boundary. Most of the surrounding country is devoted to agriculture.

The total park area approximates 1,148 square miles. Except for restricted tourist areas, it remains in a primitive condition, with unspoiled forests, prairies, streams, and lakes.

Up to the time the area was set aside as a park in 1929, comparatively little was known about its native wildlife, and no complete faunal survey had been attempted. Most of the information available pertained to the big game and fur-bearing mammals. Preliminary ornithological investigations were undertaken by Angus Shortt and Richard Sutton in 1938 and 1939. In 1940 the writer commenced for the Department of the Interior, Ottawa, a general faunal survey which was carried on at intervals as opportunity permitted, from 1940 to 1946. The mammal results are incorporated in a separate bulletin in this series. This report attempts to present all pertinent data on the birds of the park available to the writer. It includes the observations of Sutton and Shortt for the National Museum of Canada, June 3 to August 12, 1938, and observations by the former incidental to other work in the park during the summer of 1939. Sutton's list was later consolidated by Taverner (1940) with other data available in the National Museum at Ottawa.

Since 1940 a distinct advance has been made in the ornithological knowledge of the park, but the area is so large and complex that there is still much to be learned.

Acknowledgments

The efficiency of the work and the value of the results obtained were increased by the courtesies extended by Park Superintendent, O.E. Heaslip and assistance given by Wardens Binkley, Hand, Carter, Allen, Hyska, McKinnon, and Tully.

Information about birds and mammals of the park was received from Richard Sutton and various shrubs and sphagnum mosses recorded in the park were identified by C.W. Lowe.

Physical Geography and Climate

Riding Mountain, of which the park occupies the greater part, is an erosion plateau of Mesozoic sedimentaries, consisting chiefly of the Foxhill and Pierre Formations. It rises well over 1,000 feet above the adjacent lowlands to the south, east, and north. The incline is most abrupt along the eastern and northern escarpments. To the west the plateau merges gradually into the second prairie steppe of Saskatchewan.

Average elevation of the mountain is approximately 2,000 feet above sea-level. Some hills and ridges may exceed this by up to 200 feet. Much of the land is gently rolling or nearly flat, but the hills are fairly prominent in some places. Many of the natural features are of glacial origin, among these the sand and gravel ridges, immense deposits of boulder clay, and frequent bogs, potholes, and lakes.

Many small streams have their sources on various parts of the plateau and radiate out in various directions in valleys and ravines carved into the encircling slopes. There are few lakes in the eastern part of the plateau, but lakes are relatively common in central and western sections. Most of them are small (Fig. 4). The largest bodies of water are Clear, Whitewater, Audy, Moon, Shoal, Edwards, Fawn, Gunn, and Tillson Lakes. Clear and Moon Lakes are the most accessible for tourists.

In the northern part of the park the subsoil consists chiefly of

unmodified glacial till or boulder clay. The surface soil varies from fine black or sandy loam to clay loam, which in most places is relatively free from stones, but in some areas contains an abundance of glacial erratics. Much of the southern part of the park is broadly referable to a morainic type of topography consisting of marginal deposits thrown up by the ancient ice sheet. The surface features are mainly irregular hills, low ridges, and undrained depressions.

Because of its altitude as well as its northern continental location, the park is subject to great extremes of climate. Lakes and streams are usually frozen over by early November, and permanent snow may fall even earlier. Winter is rather uniformly cold. Spring break-up in April is more tardy than on the plains. The summer season is from mid-June to the end of August. The autumn months are perhaps the most pleasant of the year, with bright colour in the woods, moderate temperatures, and freedom from insect pests.

The mean yearly precipitation is approximately 17 inches, of which about 10 inches falls in the months April to September, inclusive.

Average length of the growing season (from average date of seeding to average date of first frost) is between 130 and 140 days. Extremely cold spells usually occur in either January or February. The average temperature of this period is approximately -5°F. The warmest weather normally occurs in July, when there is an average temperature of about 63°F. and occasional extremes up to 90°F. Very hot periods are usually of short duration. Regardless of day-time heat, nights on the plateau are invariably cool.

Faunal Life Zone

The greater part of the park lies within the Canadian Life Zone, which largely coincides with the Northern Coniferous Forest Belt shown on the Forestry Map of Canada, 1930. Halliday (1937) places most of the area in the Mixedwood Section, which is predominately coniferous, with a high proportion of poplar and birch (Fig. 2).

The northern, and some parts of the eastern slopes, as well as large areas on the plateau, are boreal in character and have vegetational cover such as is usually found in more northern latitudes. Such conditions extend south to Clear Lake and west to the longitude of Whitewater Lake, and typical boreal patches occur locally even in the far west, particularly along the northern slope.

In the western and southern parts of the park are large areas less characteristic of the boreal forest than of the Aspen Grove or Parklands Belt, equivalent to the zoologist's Transition Life Zone. There are many small prairies with campestrian flowering plants and tree and shrub associations typical of the parklands (Fig. 3). Other large areas contain varying mixtures of the elements of both zones (Figs. 1 and 8).

Birds of the Canadian Life Zone make up the larger number both of individuals and of species. Characteristic species of that zone are: common loon; spruce grouse; Bonaparte's gull; pileated and Arctic three-toed woodpeckers; Hudsonian chickadee; hermit thrush; Tennessee, magnolia, and blackburnian warblers; purple finch; slate-coloured junco; and white-throated sparrow. Species of the minority group characteristic of the Transition Life Zone are: broad-winged hawk; sharp-tailed grouse; upland plover; black tern; black-billed cuckoo; chimney swift; crested flycatcher; barn swallow; purple martin; house wren; Wilson's thrush; eastern bluebird; Sprague's pipit; yellow warbler; bobolink; western meadowlark; and clay-coloured sparrow.

Vegetation

For the most part, the soil is unsuited to agriculture, but well adapted to the production of forest cover. The best forest areas occur in the eastern part of the park. Coniferous trees are conspicuous in that section and along the northern escarpment (Fig. 6), becoming more scattered to the west and south.

The most characteristic trees of the mixedwood forest are white spruce (Picea glauca), black spruce (P. mariana), aspen poplar (Populus tremuloides) and balsam poplar (P. balsamifera). White spruce and aspen poplar are widely distributed on the uplands. Balsam poplar is most abundant along lakes and streams, forming pure stands in some lowland areas, as the aspen poplar occasionally does on high ground.

In eastern park areas the balsam fir (Abies balsamea) occurs in varying abundance, and Banksian pine (Pinus Banksiana) is locally common on sandy ridges and well-drained uplands. White birch (Betula papyrifera) is also well represented in the eastern part of the plateau, most abundantly in the ravines and deeper valleys along the eastern and northern escarpments (Fig. 6). Black spruce (Picea mariana) is widely distributed in muskegs and other poorly drained depressions, and in association with it grow tamarack (Larix laricina) and various kinds of willows (Salix) and alders (Alnus). A few other tree species of limited abundance and distribution occur, chiefly on the eastern and northern escarpments; these include the bur oak (Quercus macrocarpa), white elm (Ulmus americana), green ash (Fraxinus pennsylvanica), mountain ash (Sorbus americana) and the mountain maple (Acer spicatum).

As might be expected, the bog areas - some of which are of considerable extent -- support a distinctive vegetation. Usually the most prominent growth consists of black spruce and tamarack, but many other plants occur in varying abundance. Among these are the dwarf birches (Betula glandulosa and glandulifera), bog cranberry (Vaccinium Oxycoccos), Labrador tea (Ledum groenlandicum) and the muskeg mosses (Sphagnum magellanicum and fuscum). Occasional tracts of bog are clothed almost exclusively by sphagnum mosses and Labrador tea.

In association with the grasses in the grassy prairies in the western part of the park are various vascular plants including shrubs common on the

Great Plains such as snowberry (Symphoricarpus albus), silverberry (Elaeagnus argentea), wild rose (Rosa acicularis) and the shrubby cinquefoil (Potentilla fruticosa).

Other shrubs more or less common to the adjacent mixedwood forest areas are the chokecherry (Prunus virginina), pincherry (P. pennsylvanica), wild plum (P. migra), hazelnut (Corylus americana), saskatoon (Amelanchier alnifolia), redosier dogwood (Cornus stolonifera), buffalo-berry (Shepherdia canadensis), red raspberry (Rubus strigosus), black currant (Ribes americanum), gooseberry (R. oxyacanthoides) and highbush cranberry (Viburnum opulus). In some suitable areas the trailing mat type of vegetation is not uncommon and is composed of such plants as bearberry (Arctostaphylos Uva-ursi), prostrate juniper (Juniperus horizontalis), and Canada blueberry (Vaccinium canadense).

The larger lakes of the park are clear, relatively cold, and not notable for aquatic vegetation, thus bearing a close resemblance to lakes of the boreal forest much farther north. This is especially the case in lakes of the high coniferous forest of the east and northeast, including Clear Lake. To the westward bodies of water may support more marsh emergents and subaquatic growth, and Whitewater and Audy Lakes had the best conditions for waterfowl and the largest waterfowl populations of lakes visited.

The commonest marsh plant is a roundstemmed bulrush (Scirpus), often found in even the clearest and coldest waters of the plateau, although under such conditions it usually forms only a narrow, thin fringe along shore. The cattail (Typha) and marsh cane (Phragmites) occur in Audy, Whitewater, and other lakes of the western section, but were nowhere seen in abundance.

Relatively little attention could be given to subaquatic vegetation, but such species as pondweeds (Potomogeton), which are valuable duck foods; water milfoil (Myriophyllum); arrowhead (Saggittaria); muskgrass (Chara); star duckweed (Lemna); and smartweed (Polygonum) were found locally in fair abundance.

Most of the typical muskeg ponds and small lakes are strikingly poor in aquatic plant life; the plants found are mostly algae and a few other lowly species. Typical shoreline associations consist of mosses, horsetail (Equisetum), arrowgrass (Triglochin), various sedges (Carex), cottongrass (Eriophorum), and other plants.

Annotated List of Birds

The following list of Riding Mountain Park birds follows the order and terminology of the American Ornithologists' Union "Check-List of North American Birds, Fourth Edition, 1931", and Supplements 19 to 27, inclusive. Binominal names are used as the subspecies was not certain in many cases. The list comprises a total of 193 species.

1. COMMON LOON. Gavia immer (Brunnich).

These birds are fairly common summer residents, arriving on the plateau as soon as the lakes are open in the spring. They were noted in summer at Clear, Moon, Katherine, Edwards, and smaller forest lakes around the headwaters of Vermilion River. Presumably the species breeds throughout the park. Adults with young were seen in early summer at Clear and Audy Lakes. They appeared to have become much scarcer by early October, and it is likely that most of them had migrated by that time, but in 1940 a pair was observed at Clear Lake as late as November 1.

2. RED-NECKED GREBE. Colymbus grisegena Boddaert.

These grebes are scarce or absent in eastern park areas, but well distributed in suitable nesting waters in the west. They were especially common at Audy and Whitewater Lakes. Early in June, 1941, numerous nests, some still in construction, were seen at Audy Lake, with clutches ranging from two to six eggs (Fig. 7). The species remains until well into October. In 1946, despite freezing temperatures and heavy snowfall from October 6 to 8, the birds continued to resort to Whitewater Lake.

3. HORNED GREBE. Colymbus auritus Linnaeus.

Only a few scattered examples of these birds were observed during the investigations and they are undoubtedly scarce and thinly distributed in the park. A few are known to breed in marshes along the southwest shore of Clear Lake and at Lake Audy; and undoubtedly a number nest at Whitewater Lake and other lakes to the westward. Several were recorded at Whitewater Lake in October, 1946.

4. EARED GREBE. Colymbus caspicus Hablizl.

These grebes were not observed in the park until early October, 1946. At that time they occurred at Whitewater Lake in about the same abundance as red-necked grebes. Most were in family groups. The immatures are assumed to have been hatched and reared at this lake where there are ideal nesting habitats. At best, the species is a scarce summer resident and apparently confined to a few localities in the western part of the plateau.

5. WESTERN GREBE. Aechmophorus occidentalis (Lawrence).

On September 22, 1940, one of these birds was seen at the west end of Clear Lake. Several others were observed in the same locality on June 2, 1941, and a few days later one was noted at Lake Audy. Several were seen at Lake Audy during the first week of October, 1945.

6. PIED-BILLED GREBE. Podilymbus podiceps (Linnaeus).

Shortt and Sutton reported this grebe breeding in a large marsh immediately south of Clear Lake during the summer of 1938. On September 19, 1940, six were observed at Lake Audy and three days later, another at the west end of Clear Lake. On October 1, 1946, a solitary example was seen in a marshy area at Whitewater Lake where the species is believed to nest.

7. WHITE PELICAN. Pelecanus erythrorhynchos Gmelin.

This species occurs as a migrant. Taverner and Sutton (1940) state that occasional flocks pass through the park and sometimes alight on the larger lakes and marshes. No breeding colonies are known to exist in this area.

8. DOUBLE-CRESTED CORMORANT. Phalacrocorax auritus (Lesson).

These birds occur in varying numbers as migrants both in spring and in autumn. Taverner and Sutton report that "sometimes large numbers can be seen on the waters or the rock-strewn points at the northwest end of Clear Lake". Two were observed by the writer at the north end of Lake Audy, September 19, 1940. During subsequent investigations on the plateau no others were found.

9. GREAT BLUE HERON. Ardea herodias Linnaeus.

This is a not uncommon summer resident in the southern part of the park. Individuals were seen during all summer visits chiefly from Clear Lake to Lake Audy. The birds nest here and there in small heronries, the bulky stick nests being located in spruces or in mixed stands of balsam and aspen poplar. Taverner and Sutton (1940) reported three nesting colonies, one in the Whirlpool Lake area, one directly north of Clear Lake, and the third south of the latter lake. All were in the vicinity of marshes.

10. AMERICAN BITTERN. Botaurus lentiginosus (Montagu).

Bitterns are rather scarce summer residents, occurring chiefly in the south-central and western parts of the park. Individuals were seen frequently from Clear Lake west to Lake Audy and one was noted at a small marshy lake near the headwaters of Vermilion River. The wardens said that they occurred at Whitewater, Gunn, and other western lakes. They undoubtedly nest throughout the area including these lakes. The latest autumn record

is for one seen by the writer at Minnedosa River, near the Lake Audy outlet, on October 3, 1945.

11. WHISTLING SWAN. Olor columbianus (Ord).

Whistling swans were not recorded by the writer, but according to several of the wardens, occasional groups of them migrate over the park and less frequently rest for a time on some of the lakes. The species is listed by Taverner and Sutton (1940) with the remarks: "Migrant spring and fall. A few flocks pass over the park".

12. CANADA GOOSE. Branta canadensis (Linnaeus).

Many of these geese fly over Riding Mountain and some stop to rest and feed at the lakes during the latter part of April and again in September and early October. They are not known to nest on the plateau. On September 24, 1941, five were seen at Clear Lake. They are fairly common migrants at Whitewater Lake. At that point during the first week of October, 1946, several flocks were seen flying south; on October 10, two flocks, aggregating 48, migrated over the lake to the southeast flying at about 1,000 feet altitude.

13. LESSER SNOW GOOSE. Chen hyperborea (Pallas).

On September 25, 1941, a mixed flock of lesser snow and blue geese was seen migrating south-southwest high over the forest at Kennice Creek. A flock of geese thought to be hyperborea was seen in the distance at Whitewater Lake on October 4, 1946. That the identification was correct is highly probable as Wardens Hand and Binkley have noted snow geese at lakes in the western part of the park during normal periods of migration. A species not yet officially recorded, but which probably occurs at times with the present species, is the white-fronted goose (Anser albifrons).

14. BLUE GOOSE. Chen caerulescens (Linnaeus).

Only a few of these birds were with the much larger numbers of lesser snow geese seen on September 25, 1941 at Kennice Creek (see next preceding subsection).

15. COMMON MALLARD. Anas platyrhynchos Linnaeus.

This is a fairly common breeder in southern and western parts of the park about as far east as Clear Lake. During late September, 1940, it was found plentiful at Clear and Audy Lakes. Late in October small flocks were repeatedly seen at Edwards Lake and many flocks were still present at Clear Lake on November 1. In succeeding years many were seen at various ponds and lakes of the plateau to the north and northwest and eastward to Katherine and Whirlpool Lakes. It is probable that a few scattered pairs nest in the eastern and northern areas. The species was particularly numerous at Whitewater Lake in autumn; in early October, 1946, it was third in abundance of the species of ducks and made up 16.6 per cent of total numbers.

16. GADWALL. Anas strepera Linnaeus.

It is not positively known whether the gadwall nests on Riding Mountain, but as a few occur in summer it is assumed that it does. The species is most common as a migrant in autumn. More were observed at Lake Audy than elsewhere.

17. AMERICAN PINTAIL. Anas acuta (Vieillot).

A few of these ducks occur in the park during the summer, but their breeding status is uncertain. In June and July of various seasons they were recorded at South, Clear, and Audy Lakes and along Swanson and Whitewater Creeks. They are somewhat more common during migration, especially in autumn. In early October, 1946, they were scarce at Whitewater Lake, being ninth among the ducks in relative abundance and making up only 1.3 per cent of the total.

18. GREEN-WINGED TEAL. Anas carolinensis Gmelin.

The green-winged teal appeared to be scarce everywhere, both as a summer resident and as a migrant, but was observed most often in autumn. A few have been seen in summer at South, Clear, and Audy Lakes where it is assumed to nest. Small groups are usually present in autumn in the same area. The largest flock seen was one of 20 flushed from Minnedosa River, near the Lake Audy outlet, on October 3, 1945.

19. BLUE-WINGED TEAL. Anas discors Linnaeus.

This is a relatively common summer resident that nests about many lakes, ponds, and marshes in the south-central and western parts of the park. In the areas investigated it was found most numerous at South Lake, along the southwestern part of Clear Lake, and at Audy and Whitewater Lakes. During early October, 1946, it was the fourth commonest duck around Audy and Whitewater Lakes, making up 12.7 per cent of all ducks seen there. After snowstorms and freezing temperatures October 6 to 8 of that year, the species disappeared.

20. BALDPATE. Mareca americana (Gmelin).

The baldpate breeds in suitable habitats throughout southern and western parts of the park, but appears to be uncommon in summer. During migration it occurs in fairly large numbers. During the third week of September, 1940, the birds were noted frequently over a wide area. They were particularly common at Lake Audy where large rafts comprised many hundreds. During the same period many were present along the south shore of Clear Lake and in adjoining marshes and ponds.

21. SHOVELLER. Spatula clypeata (Linnaeus).

A few shovellers nest in a number of suitable localities. In most areas it was not observed in summer. More were noted at South and Audy Lakes than elsewhere. The birds are somewhat more common during spring and autumn,

especially the latter. The latest they were recorded was at Lake Audy in late September.

22. REDHEAD. Aythya americana (Eyton).

A few redheads visit the park during spring and autumn, but the species has not yet been noted there in summer. At Whitewater Lake during the first week of October, 1946, it was seventh in order of abundance of the ducks (2.9 per cent), and it was seen up to near the middle of the month.

23. RING-NECKED DUCK. Aythya collaris (Donovan).

This is an uncommon summer resident and an infrequent breeder at various lakes and marshes of the plateau. It is more frequently observed in autumn. In September and October, and up to November 1, the birds were recorded at Clear, Whirlpool, Edwards, Audy, and Whitewater Lakes. On no occasion were many observed.

24. CANVAS-BACK. Aythya valisineria (Wilson).

This is an infrequent summer resident and breeder with much the same status and distribution as A. collaris. At Whitewater Lake in early October, 1946, it held eighth place among the ducks, and made up 2.2 per cent of the total population, about the same as the redhead.

25. LESSER SCAUP DUCK. Aythya affinis (Eyton).

The lesser scaup was observed in only small numbers during summer. A few are known to nest at South, Clear, Audy, and Whitewater Lakes. During migrations it is very common, especially in autumn when large rafts of the birds appear on some of the larger lakes. At Whitewater Lake in early October, 1946, many flocks numbering up to 100 or more were present; on that occasion it was the most abundant of the ducks, making up 26.8 per cent of the total duck population. In some seasons at least, the birds remain until early November.

26. AMERICAN GOLDEN-EYE. Bucephala clangula (Linnaeus).

In summer these ducks are present in not very large numbers in the park, and are known to nest there. Adults with young were observed on several occasions at Clear and Audy Lakes during the month of July. They become common in the autumn. The golden-eye was one of the most abundant duck species at Whitewater Lake in early October, 1946, ranking second only to A. affinis, and making up 22.5 per cent of the ducks. At that season many flocks were seen also at Audy, Clear, and South Lakes. Like the lesser scaup, it remains until late in the season, or until the lakes freeze over.

27. BUFFLE-HEAD. Bucephala albeola (Linnaeus).

Apparently this species is uncommon in the park at all times. It was not positively identified during summer, nor is there any record of nesting. A few are present during migration.

28. WHITE-WINGED SCOTER. Melanitta deglandi (Bonaparte).

Warden Binkley saw several of these birds at Lake Audy about mid-May, 1941, thus establishing the first record of the species in the park. A few were observed by the writer in the same lake on October 1 of that year and two were noted there in early October, 1945. A small group was recorded at Clear Lake on September 29, 1946. The status of this species in the park is apparently that of a rather rare and erratic spring and autumn migrant, as it is not known to visit any of the lakes during the summer.

29. RUDDY DUCK. Oxyura jamaicensis (Gmelin).

As a summer resident this duck is present in at least small numbers in southern and western parts of the park. Shortt and Sutton found it nesting during the summer of 1938 in the big marsh near the south

shore of Clear Lake. There is circumstantial evidence of its breeding at Audy, Whitewater, and other lakes on the plateau. It was fairly plentiful at Lake Audy in early October, 1945, and fairly common during the same period in 1946 at Whitewater Lake. In the latter area it was sixth in order of abundance, making up 7.1 per cent of the total, about the same as the American merganser.

30. AMERICAN MERGANSER. Mergus merganser Cassin.

This is an uncommon summer resident, much more numerous during migration. In September and October it was noted at several places from Katherine and Whirlpool Lakes, northward and westward. It appeared to be most plentiful at Clear, Audy, and Whitewater Lakes. At the last named in early October, 1946, it ranked fifth among the ducks (7.6 per cent). It usually remains on the plateau until freeze-up.

31. TURKEY VULTURE. Cathartes aura (Linnaeus).

This bird was not observed in the park by the writer, but it is listed by Taverner and Sutton (1940) with the remarks, "Occasional casual visitor. Has been noted in May and early June".

32. GOSHAWK. Accipiter gentilis (Linnaeus).

Apparently the goshawk is scarce, having been seen on only two occasions, at Clear Lake, October 22, 1938; and at Edwards Lake, October 29, 1940. At times during migration it may be more numerous than these records imply.

33. SHARP-SHINNED HAWK. Accipiter striatus Vieillot.

A few of these hawks were seen at widely scattered points during May, June, and July and possibly some of them remain to nest. In the autumn they are relatively common, with wide distribution over the plateau. Most were recorded during late September and early October.

34. COOPER'S HAWK. Accipiter cooperi (Bonaparte).

This species is obviously uncommon as it was seen on only a few occasions. The records are: one near the headwaters of Vermilion River on June 1, 1941; and two at Whitewater Lake on October 6 and 8, 1946, respectively. There is as yet no evidence of breeding within the park.

35. RED-TAILED HAWK. Buteo jamaicensis (Gmelin).

These familiar hawks were seen during all visits to the park from 1936 to 1946. They were well distributed and nested in many localities both in mixedwood forests and in poplar woods close to central and western prairie tracts. The bulky nests are easily discerned. Red-tailed hawks were noted occasionally as late as mid-October.

36. BROAD-WINGED HAWK. Buteo platypterus (Vieillot).

An uncommon summer resident, this hawk may breed in the park, but no direct evidence of nesting was obtained. An occasional individual was noted on various visits from late May until near the end of September.

37. AMERICAN ROUGH-LEGGED HAWK. Buteo lagopus Pontoppidan.

During the period September 26 to October 3, 1941, one or more of these birds were seen daily in the area from Whirlpool Lake west to Lake Audy and north to Kennice Creek. At that time there was a small but distinct southward movement of the species. These were the first records for the park.

On October 3, 1945, many were seen in similar migratory flight over the country around and north of Lake Audy. Many were observed at Whitewater Lake from September 29 to October 10, 1946. In that year also the southward movement of the largest numbers took place during the first few days of October.

38. BALD EAGLE. Haliaeetus leucocephalus (Linnaeus).

This is by no means a common species but it was observed on several occasions from Whirlpool and Clear Lakes north to Moon Lake and west to Audy and Whitewater Lakes. In all districts it was reported by the wardens and was said to nest sparingly. It seemed to be a little commoner in the country north of Clear Lake than elsewhere. A juvenile of the species is shown in Figure 5.

39. MARSH HAWK. Circus cyaneus (Linnaeus).

The marsh hawk occurs in moderate numbers in large areas of the park, and nests in suitable locations around the shores of lakes and marshes. It is less numerous east of the longitude of Clear Lake than in the more open centre and west. The species was not observed on the plateau later than the first week of October. It remains somewhat longer on the plains to the south.

40. OSPREY. Pandion haliaetus (Linnaeus).

The osprey is a rare visitor on Riding Mountain where it has not yet been recorded during spring and summer. The first park record is for one observed by the writer at Whitewater Lake on October 7, 1946. An osprey, presumably the same one, was noted on each of the two following days.

41. DUCK HAWK. Falco peregrinus Tunstall.

The first record of this species in the park was established when an individual was observed by the writer at Clear Lake on October 5, 1945. It was not seen during subsequent investigations.

42. PIGEON HAWK. Falco columbarius Linnaeus.

Taverner and Sutton (1940) remark: "Reported as a migrant in 1883 but not noted in the park since, though it can be expected to be a more or less common seasonal visitor and probably an occasional breeder".

Its occurrence is confirmed by personal observations as follows: September 22, 1940, in the Shoal Lake - Jackfish Creek locality; September 26, 1941, between Clear and Whirlpool Lakes; October 9, 1946, at Whitewater Lake; and October 11, 1946, between Audy and Clear Lakes. There appear to be no summer records for the park.

43. SPARROW HAWK. Falco sparverius Linnaeus.

The sparrow hawk was noted on numerous occasions in summer and autumn from 1936 to 1946. It is widely distributed and evidently nests more or less throughout the park but in some areas it is rare. At least a few remain until the first or second week of October.

44. SPRUCE GROUSE. Canachites canadensis (Linnaeus).

The spruce grouse is a fairly common permanent resident in the tracts of heavy coniferous forest. Its abundance varies, depending upon habitat conditions and it is subject to periodical fluctuations in number. In some large areas it is absent. The largest numbers are found in thick spruce woods of eastern districts; in such habitats the species was common in the autumn of 1940 and was said to be on the increase. By 1946 the birds were very much scarcer. As the summer population is apparently much smaller than that of late autumn and winter, presumably an influx takes place from more northern areas such as Duck and Porcupine Mountains at the beginning of cold weather.

45. RUFFED GROUSE. Bonasa umbellus (Linnaeus).

This grouse is also a permanent resident with wide distribution in forest areas. Its numbers vary through a cycle of about 10 years. In 1940 it was fairly common and was reported by the park staff as steadily increasing in numbers, and it was perceptibly more abundant in 1941. During the following two years a sharp decline occurred and the species was scarce everywhere up to 1946. In 1941 a tally of the two colour phases of plumage

was made; the ratio obtained was 14 grey-tailed to one brown-tailed.

46. SHARP-TAILED GROUSE. Pedioecetes phasianellus (Linnaeus).

This is a permanent resident that is widely dispersed on tracts of prairie in the centre and west. Fair numbers were observed in 1940, chiefly on the Lake Audy plain and at scattered grasslands north to the headwaters of Vermilion River. The species was distinctly more abundant in the autumn of 1941 when flocks of 10 to 12 were often flushed from prairie openings in the forest. In succeeding seasons, up to 1946, it became much scarcer and was seldom seen.

47. EUROPEAN PARTRIDGE. Perdix perdix (Linnaeus).

This partridge was first reported in 1940 by a warden in the eastern part of the park. His record was substantiated by the writer who observed the birds on two occasions in the autumn of 1941. A flock of 12 was flushed from the prairie east of Lake Audy on September 28, and on October 1 a flock of six was seen on a small prairie at Kennice Creek. These seem to be the only definite park records.

48. SANDHILL CRANE. Grus canadensis (Linnaeus).

Taverner and Sutton state: "Flocks seen in migration.... July, 1938, a large circular platform that appeared to be a deserted nest of the species was found in the marsh at the south end of Clear Lake....." The migrating flocks were undoubtedly the common, Arctic-breeding, G.c. canadensis, while if pairs had formerly nested in the park they were almost certainly the now scarce greater sandhill crane (G.c. tabida) that once bred commonly in the Great Plains region.

The species was not observed by the writer in the park.

49. VIRGINIA RAIL. Rallus limicola Vieillot.

This species was recorded only by Taverner and Sutton (1940) with the brief statement, "A scarce summer resident and breeder". Sutton collected

a juvenile at Clear Lake, August 10, 1938.

50. SORA RAIL. Porzana carolina (Linnaeus).

This species is common and well distributed in the park wherever suitable marshy habitats exist for nesting. It was heard or seen on numerous occasions during the spring and summer months from Swanson Creek and Clear Lake, northwest to Kennice Creek and through the district including Audy and Whitewater Lakes.

51. AMERICAN COOT. Fulica americana Gmelin.

The coot is a common summer resident of marsh-bordered lakes in the southern and western part of the park. It was most commonly observed at South, Clear, Audy, and Whitewater Lakes where there are attractive nesting conditions. In late September and early October, 1946, the species was very common at Whitewater Lake, forming dense rafts of up to several hundreds. At that time the total coot population of the lake was estimated at about 800. Coots were locally common on the plateau until October 5 or 6, after which most of them had departed. A few may linger a little later.

52. SEMIPALMATED PLOVER. Charadrius hiaticula Linnaeus.

Taverner and Sutton reported these plovers fairly common in migration, and stated that they might be seen on bare mud flats at Lake Audy. The writer did not succeed in finding them. They are evidently uncommon and may be erratic in migrational occurrence.

53. KILLDEER PLOVER. Charadrius vociferus Linnaeus.

This species appeared to be scarce in the park either as migrants or as summer residents. A few were noted on all visits to the park from 1936 to 1946, between the latter half of May and early October. The latest record was for one seen at Whitewater Lake on October 3, 1946.

54. GOLDEN PLOVER. Pluvialis dominica (Muller).

A small migrating flock of these birds was observed at close range along the upper Vermilion River on May 30, 1941. This is the first and only record for the park.

55. BLACK-BELLIED PLOVER. Squatarola squatarola (Linnaeus).

This is an uncommon spring and autumn migrant that may be seen occasionally on open beaches and flats at the larger lakes. The latest record obtained was for October 1, 1946, at Whitewater Lake.

56. WILSON'S SNIPE. Capella gallinago Linnaeus.

This snipe occurs as a summer resident, but very few were seen in that season. It was commoner during autumn when individuals were noted in widely separated localities. One or two were seen daily in the district including Kennice Creek and Audy and Whitewater Lakes, and elsewhere. None was recorded after October 3, and in some seasons they may all depart a few days earlier.

57. UPLAND PLOVER. Bartramia longicauda (Bechstein).

On July 14, 1938, a single upland plover was seen at the eastern end of the Lake Audy prairie and another at the western extremity near the lake. Four were observed on June 1, 1941, in the latter locality where the species nests regularly each year. Warden Binkley stated that they remained in the area until late August or early September. During some seasons the local population may be increased by migrants from the north.

58. SPOTTED SANDPIPER. Actitis macularia (Linnaeus).

This is a widely dispersed nesting species found in small numbers at most of the principal lakes and some of the creeks of the plateau. In many superficially suitable areas it was apparently absent and, on the whole,

it cannot be regarded as common. Most of the birds were noted at Clear and Audy Lakes. The latest available park record is for September 23, 1940.

59. SOLITARY SANDPIPER. Tringa solitaria Wilson.

This is a rare summer resident that is more numerous in spring and autumn. There is only one record of occurrence in summer, that of a single example seen July 17, 1942, at a woodland pond near Rowland Lake, in the vicinity of which it was presumed to have nested. The latest autumn record is for a pair seen at the Whirlpool Lake outlet on October 5, 1945.

60. GREATER YELLOW-LEGS. Totanus melanoleucus (Gmelin).

This is a transient, seen only in small numbers in autumn. In early October, 1945, scattered individuals and small groups were noted at Audy, Clear, Katherine, and Whirlpool Lakes. In 1946, the species was seen at intervals from September 29, when observation commenced, up to and including October 10. Of the 20 listed during this period, 13 were observed at Whitewater Lake in early October.

61. LESSER YELLOW-LEGS. Totanus flavipes (Gmelin).

This species occurs as a migrant in spring and autumn. It may be a rare breeder in the park, but as yet there is no positive evidence of nesting. In 1940, several were seen at Clear and Audy Lakes on September 17 and 18, and others near Fawn Lake on the September 20. In late May and early June, 1941, the species was sparingly distributed in the district including Kennice Creek and upper Vermilion River, and at Clear Lake. On several subsequent visits to the park up to 1946, mone was observed.

62. PECTORAL SANDPIPER. Erolia melanotos (Vieillot).

During the third week of September, 1940, this species was fairly common along the shores of Clear and Audy Lakes and others were seen at smaller

observed along the east shore of Lake Audy. It is to be rated as an uncommon migrant.

69. WILSON'S PHALAROPE. Steganopus tricolor Vieillot.

Taverner and Sutton describe this species as "A summer resident and undoubted breeder". The writer observed it in the park only once, when a few were seen at South Lake on June 3, 1941.

70. HERRING GULL. Larus argentatus Pontoppidan.

A few of these gulls were seen at Clear and Audy Lakes in 1936, 1938, and 1940. They are not known to nest in the park and these may have been only wanderers from the breeding colonies of the great lakes in the lowlands to the east. Even as transients they are scarce everywhere within the park. They were not positively identified during the investigations from 1941 to 1946, although several gulls were tentatively recorded as argentatus at Lake Audy in late September of the latter year.

71. RING-BILLED GULL. Larus delawarensis Ord.

This is a rather regular inhabitant at Clear Lake where it was noted on numerous occasions in summer and autumn from 1936 to 1946. It is most plentiful in autumn when it sometimes becomes common. More were seen at Clear Lake than elsewhere in the park. At times, in September, the species is well represented at Lake Audy and, to a lesser degree, at Whitewater Lake. It is not known to nest on the plateau. As in the case of the herring gull, stragglers undoubtedly come into the park from large nesting colonies on islands of the big lowland lakes to the east.

72. FRANKLIN'S GULL. Larus pipixcan Wagler.

According to the writer's observations, very few of these birds find their way into the park. Several were seen flying over upper Vermilion River on May 30, 1941, and on the following day others were present at

Lake Audy, but none were noted in later years. Although there are several excellent marshes, the species appears to be only a scarce non-breeding transient.

73. BONAPARTE'S GULL. Larus philadelphia (Ord).

This is a rather scarce summer resident, nesting locally in spruce trees, chiefly about muskeg ponds and lakes. It was occasionally seen in various seasons from Katherine Lake west to Whitewater Lake, where it is believed to breed. Nests were found near the south shore of Clear Lake and in the vicinity of Lake Audy. It was most numerous in the autumn when small flocks were sometimes seen. Latest recorded date was October 9, 1946, at Whitewater Lake.

74. SABINE'S GULL. Xema sabini (Sabine).

The only park record for this rare gull is that of a single example in winter plumage observed by the writer at Lake Audy on October 4, 1945.

75. COMMON TERN. Sterna hirundo Linnaeus.

Small numbers of this species inhabit the park from spring until autumn, but there is no positive proof of their breeding there. They were noted only at Audy and Clear Lakes. The latest recorded date of occurrence was September 27, 1941.

76. CASPIAN TERN. Hydroprogne caspia (Pallas).

This species was not recorded by the writer. It is listed by Taverner and Sutton as a casual summer visitor from breeding colonies on islands of Lake Manitoba.

77. BLACK TERN. Chlidonias niger Linnaeus.

This is a comparatively common resident in suitable tracts throughout the southern part of the park. It nests in bulrush-cattail marshes adjoining Clear and Audy Lakes and probably at Whitewater Lake. Most of these

terns appear to leave the park about mid-August.

78. MOURNING DOVE. Zenaidura macroura (Linnaeus).

This species occurs sparingly along the southern boundary of the park and in the central area north to the upper waters of Vermilion River and Kennice Creek. As it resides in this general area throughout the summer it is assumed to nest therein.

79. BLACK-BILLED CUCKOO. Coccyzus erythropthalmus (Wilson).

This cuckoo is referred to by Taverner and Sutton as an occasional summer straggler to the park. It was observed by the writer only once, on July 14, 1942, when an immature was seen about two miles north of Rowland Lake. This is strong circumstantial evidence that the species occasionally nests on the plateau.

80. SCREECH OWL. Otus asio (Linnaeus).

This is a scarce permanent resident that was found nesting by Sutton at Wasagaming. The writer observed it only once, when one was heard calling at Whitewater Creek on the night of September 23, 1940.

81. GREAT HORNED OWL. Bubo virginianus (Gmelin).

This owl is a common to fairly plentiful permanent resident and breeder in heavy forest. It was seen and heard on numerous occasions and in many localities during the investigations, most often in autumn when several at a time were frequently seen.

82. SNOWY OWL. Nyctea scandiaca (Linnaeus).

The wardens reported that this species occasionally visited central and western parts of the park during winter months.

83. BARRED OWL. Strix varia Barton.

This owl was observed by the writer only once, on September 21, 1940, when one was flushed from a thick stand of spruces along Whitewater Creek. It is referred to by Taverner and Sutton as an occasional visitor

or scarce permanent resident and probable nester.

84. NIGHTHAWK. Chordeiles minor (Forster).

These birds are fairly common and well distributed in the park. Evidently they are most numerous in the prairie-parklands of the centre and west. They are sometimes found nesting on Banksian pine ridges in typical Canadian Life Zone districts.

85. CHIMNEY SWIFT. Chaetura pelagica (Linnaeus).

A few pairs are summer residents at Wasagaming where they are said to nest. As far as is known, the species has not been seen elsewhere in the park.

86. RUBY-THROATED HUMMINGBIRD. Archilochus colubris (Linnaeus).

These diminutive creatures have been observed frequently in the southern part, and casually at a few other places in the park. Most records are for Wasagaming and the warden quarters at Lake Audy, where numerous flower beds attract hummingbirds. Taverner and Sutton remark: "A common summer resident and undoubted breeder. After early summer few or no ruby-throated males are to be seen but duller coloured females and juveniles with only stray rubies in the throat may be seen on the flower patches until late September... An albino was noted by the Park Superintendent the summer of 1939".

87. BELTED KINGFISHER. Megaceryle alcyon (Linnaeus).

The kingfisher is widely distributed in various localities on the plateau, but is by no means common; it evidently breeds wherever found. It was most often observed by the writer at Clear and Audy Lakes, but was also noted at Moon Lake, and along Jackfish, Whitewater, and Kennice Creeks. Latest record in the park was for October 2, 1941.

88. YELLOW-SHAFTED FLICKER. Colaptes auratus (Linnaeus),

This is a common summer resident, the most abundant of the woodpeckers. Largest numbers are found in southern and western localities and fewest in the heavy coniferous forest and wooded muskegs of the eastern and northern sections. The population gradually diminishes in the latter part of September, but the birds may continue to be fairly common until early October, and a few remain until late in the month.

89. PILEATED WOODPECKER. Dryocopus pileatus (Linnaeus).

This species occurs in fair numbers as a permanent resident, especially in fully characteristic Canadian Life Zone areas in eastern and northern parts of the plateau. In some localities the species was fairly common, and one or more were seen nearly every day.

90. YELLOW-BELLIED SAPSUCKER. Sphyrapicus varius (Linnaeus).

This species was found in moderate numbers throughout the summer in large areas of the park. The population density varied greatly, being low in some districts and high in others. It was seen in the park as late as early October.

91. HAIRY WOODPECKER. Dendrocopos villosus (Linnaeus).

This is a fairly common permanent resident in some park areas, but much scarcer in others. In some years it appeared to be less common in summer than in autumn, suggesting a moderate influx from the north.

92. DOWNY WOODPECKER. Dendrocopos pubescens (Linnaeus).

Like villosus, this is a permanent resident, but it is definitely not as numerous. Throughout the investigations only casual examples were seen at wide intervals. In some districts it appeared to be totally absent, and during two work periods in the park not one was recorded.

93. ARCTIC THREE-TOED WOODPECKER. Picoides arcticus (Swainson).

This species occurs on Riding Mountain throughout the year,

but in fluctuating numbers. The birds were never noted as often in summer as during autumn and early winter. While some of the species do nest in the park, it appeared to be very scarce or absent in many areas during the breeding season.

94. AMERICAN THREE-TOED WOODPECKER. Picoides tridactylus (Linnaeus).

A permanent resident, this species is somewhat more numerous than arcticus, but only a few nest in the park. Its numbers increase perceptibly at the beginning of winter, and vary from district to district and apparently to some extent from year to year.

95. EASTERN KINGBIRD. Tyrannus tyrannus (Linnaeus).

Fair numbers of this species resort to suitable areas over the whole plateau, but they are more common in semi-open poplar-grasslands in the south-central and western districts. They were noted in many places on all summer visits to the park from late May until late August or early September. Nests and young were observed on several occasions.

96. CRESTED FLYCATCHER. Myiarchus crinitus (Linnaeus).

This species evidently occurs as a summer resident in only small numbers, chiefly in semi-open Transition Zone country. Personal records are: one, July 25, 1936, between Clear and Audy Lakes; two, June 13, 1940, on the eastern escarpment opposite Norgate; and several, in late May and early June, 1941, along the upper waters of Vermilion River and at Kennice Creek. It nests in hollow trees and stubs.

97. PHOEBE. Sayornis phoebe (Latham).

The phoebe inhabits the park in fair numbers, although it is possible to travel from one locality to another without observing any. They are seen most often around buildings, bridges, and large culverts in which they locate their nests. They appear to arrive in late April and

to depart during the early half of September.

98. YELLOW-BELLIED FLYCATCHER. Empidonax flaviventris (Baird and Baird).

Three were seen and one specimen was collected at upper Vermilion River in late May and early June, 1941. A few days later several more were observed in the locality of Swanson Creek. The short, explosive "song" is distinctive. The above records of occurrence are the first for the park and the only ones known.

99. ALDER FLYCATCHER. Empidonax traillii (Audubon).

These birds are rather common summer residents frequenting alder and willow thickets on wet lowlands near marshes, lakes, and streams. Some were seen on all summer visits to the park, distributed over a large area. They normally arrive in late May and appear to leave in late August or early September.

100. LEAST FLYCATCHER. Empidonax minimus (Baird and Baird).

This little flycatcher occurs locally in favourable situations in large areas of the park, especially in the aspen poplar parklands. It is a breeding bird of both Transition and Canadian Zones, but in the Great Plains region it reaches its maximum abundance in the former zone. The species was found most numerous in the upper Vermilion River-Kennice Creek areas during late May and early June, 1941. Evidently the last of the species leave the mountain in early September.

101. WESTERN WOOD PEWEE. Contopus richardsonii (Swainson).

On the basis of personal records this species occurs infrequently and its distribution is spotty within the park. A few inhabit the country from at least Swanson Creek in the east to Lake Audy and undoubtedly farther west. In late May and early June, 1941, several were recorded in the area containing Jackfish and Kennice Creeks and Vermilion River and one was

collected near the latter stream on June 1.

102. OLIVE-SIDED FLYCATCHER. Nuttallornis borealis (Swainson).

This species was observed only a few times, in widely separated localities from Swanson Creek and Whirlpool River west to Clear and Audy Lakes, and north to Vermilion River. All records were obtained in late May, June, and early July. For breeding and "singing" sites it seems to prefer burned over areas, particularly near water.

103. HORNED LARK. Eremophila alpestris (Linnaeus).

Horned larks were first added to the park list when the writer flushed a small flock from a prairie tract north of Lake Audy on September 21, 1940. Two were observed on a small prairie near Upper Vermilion River on May 31, 1941, and several more the following day on the Lake Audy plain. They were obviously transients, as there is no evidence of summer occurrence and nesting within the park.

104. TREE SWALLOW. Iridoprocne bicolor (Vieillot).

This species regularly visits the park in small numbers and nests in widely separated localities. Only a few were observed during some summer visits, and it was not seen at other times. None was noted after late August, but a belated individual was observed a few miles southeast of the park on September 25, 1940.

105. BANK SWALLOW. Riparia riparia (Linnaeus).

This species was never seen by the writer on Riding Mountain, but Taverner and Sutton say of it, "It nests in holes it excavates in raw earth banks, lacking which it occurs mostly as a migrant in the park with other swallows, or as an exploratory visitor".

106. BARN SWALLOW. Hirundo rustica (Linnaeus).

A few barn swallows were noted in the southeastern part of the park in July, 1936, and in 1938, and they were seen on several occasions

at Lake Audy between September 17 and 22, 1940. They were observed only at wide intervals and usually in the vicinity of buildings, where they nest. In 1941 several were seen along upper Vermilion River in late May, and others were present at Lake Audy on June 1. A few days later a pair was found nesting under a bridge at the second crossing of Swanson Creek, east of Whirlpool River. They also nest at Wasagaming. The last stragglers appear to leave the park during the last week of September.

107. PURPLE MARTIN. Progne subis (Linnaeus).

This is a summer resident that is relatively uncommon and localized in distribution. It utilizes both nesting boxes and hollow trees for nesting. It was found nesting at Swanson Creek, Wasagaming, Lake Audy, and upper Vermilion River. Individuals or pairs were noted from late May until the second week of August. A few stragglers may remain later.

108. CANADA JAY. Perisoreus canadensis (Linnaeus).

These birds are highly characteristic of the plateau. They are permanent residents and may be observed almost anywhere in the park that conifers predominate, although not strictly confined to such an environment. They nest in the latter part of the winter while deep snow and subzero temperatures still prevail.

109. BLUE JAY. Cyanocitta cristata (Linnaeus).

Blue jays inhabit the park throughout the year. They are fairly common in some large areas, but not as numerous as Canada jays. Evidently there are more of them in the central part of the park than elsewhere. In two different years many more were recorded in September and October then during any two-month period in summer.

110. AMERICAN MAGPIE. Pica pica (Linnaeus).

Magpies are now fairly well distributed over large parts of Riding Mountain where, in the early days, they were unknown. They appear to be slowly but steadily increasing in number as the years go by. Curiously enough, they were not noted during summer but they roam the park singly or in small flocks during autumn and winter.

111. NORTHERN RAVEN. Corvus corax Linnaeus.

Perhaps fortuitously, no ravens were observed during summer, but they were recorded with fair regularity from about mid-September throughout the autumn and early winter. The wardens reported that they were resident during most or all the winter.

112. AMERICAN CROW. Corvus brachyrhynchos Brehm.

Crows were commonly observed on all visits to the park from spring until autumn. They breed in numerous localities on the plateau, but favour open to semi-open poplar woods in the south and west. Apparently most of them have left the park by the third week of September, but a few linger until later. The latest record obtained by the writer is for one seen at Whitewater Lake on October 7, 1946.

113. BLACK-CAPPED CHICKADEE. Parus atricapillus Linnaeus.

This is a common permanent resident in most parts of the park and in varying types of habitat. It appears to be more numerous in autumn than in summer; possibly some move down from Duck and Porcupine Mountains at the coming of cold weather. The largest increase seems to occur during the last three weeks of October, particularly towards the end of that month.

114. HUDSONIAN CHICKADEE. Parus hudsonicus Forster.

Like atricapillus, the present species resides in the park throughout the year. It prefers the larger stands of coniferous timber. It

is seen fairly regularly and, in some areas, about as frequently as atricapillus, although the latter is often locally more numerous in summer. In several years hudsonicus apparently increased in number during late September and early October, suggesting an influx from the north.

115. WHITE-BREASTED NUTHATCH. Sitta carolinensis Latham.

During summer this species may be fairly scarce, rare, or apparently absent in various localities. It was noted somewhat more frequently during early and mid-autumn after which its numbers again diminished. Apparently a few of the species are permanent residents, but it seems clear that the majority leave the park for the winter.

116. RED-BREASTED NUTHATCH. Sitta canadensis Linnaeus.

This species was not recorded in the park until the autumn of 1940. Between September 17, and early November of that season, the writer saw many individuals and small flocks north of Lake Audy and around Moon and Edwards Lakes. During subsequent autumn investigations a few were seen in various eastern and central localities west almost to Whitewater Lake. No records of occurrence were obtained from late May to about mid-September in any year.

117. BROWN CREEPER. Certhia familiaris Linnaeus.

Two of these birds were observed in 1941 at Kennice Creek, one on September 30 and one on October 1. They were frequenting dense spruce woods with a sparse admixture of poplar. These were the first and only park records.

118. HOUSE WREN. Troglodytes aedon Vieillot.

This is a fairly common summer resident that was found in practically all localities investigated and at many intervening points. It is a familiar songster at Wasagaming and usually about the buildings of various warden stations. House wrens normally arrive on the mountain during the third

week of May; evidently the majority have departed by mid-September or little later, but a few were seen up to October 2.

119. LONG-BILLED MARSH WREN. Telmatodytes palustris (Wilson).

Small numbers of these wrens occur in the park during summer. A few are known to breed in the marshes at Clear and Audy Lakes and remains of old nests indicated that they also breed in the marshes at Whitewater Lake. The period of residence in the park is from about mid-May until mid-September.

120. SHORT-BILLED MARSH WREN. Cistothorus platensis Latham.

These wrens breed in fair numbers in the marshes bordering Audy and Clear Lakes. Several were seen and heard singing along upper Vermilion River during late May and early June, 1941, and one specimen was collected. They were not found elsewhere in the park. The period of summer residence is very similar to that of Telmatodytes palustris.

121. CATBIRD. Dumetella carolinensis (Linnaeus).

This is a common summer resident at Wasagaming and is fairly well represented in the central part of the park. Perhaps fortuitously, it was seen nowhere east of Clear Lake. It arrives in late May and departs about mid-September.

122. BROWN THRASHER. Toxostoma rufum (Linnaeus).

This species is fairly well distributed in the park but it is not common except in some small southern and central localities, and in many areas it is apparently absent. Records of occurrence extend from the latter part of May until the third week of September, at which time the population has noticeably diminished.

123. AMERICAN ROBIN. Turdus migratorius Linnaeus.

These well-known birds are among the earliest arrivals in the

spring, appearing in the park about mid-April. They are rather commonly dispersed as nesters from Clear Lake west but are distinctly scarce over extensive areas of the plateau. Much larger numbers are to be seen in late September and early October when flocks are moving south on migration. Scattered examples were noted up to mid-October.

124. HERMIT THRUSH. Hylocichla guttata (Pallas).

These thrushes are most numerous as migrants, but evidently a few remain to breed in suitable situations. They are birds of the dense coniferous forests and are shy and retiring. They are possessed of one of the most beautifully clear and haunting songs among American birds. The largest numbers were observed in late September and early October, 1941, when a pronounced migrational wave passed through the country around and north of Lake Audy. The latest record is for a single individual sighted at Whitewater Lake on October 11, 1946.

125. OLIVE-BACKED THRUSH. Hylocichla ustulata (Nuttall).

Like H. guttata this is a bird of the deep woods. It is the commonest breeding thrush in most parts of the park and was seen and heard singing on many occasions in June and July. The largest numbers are present during the spring and autumn migrations around mid-May and mid-September. A few stragglers were noted until the first week of October.

126. WILLOW THRUSH. Hylocichla fuscescens (Stephens).

This species is only moderately represented in the park where it was recorded infrequently during various summer investigations. It is found chiefly in the deciduous woodlands of Transition Zone character in south, central and western sections, but it is also found along the southern edges of the Canadian Life Zone. Its summer residence extends from about the second week of May to the early part of September. Unlike the two immediately

preceding species, it was not noticeably more numerous at the close of summer.

127. EASTERN BLUEBIRD. Sialia sialis (Linnaeus).

On June 2, 1941, a pair was seen near Lake Audy and on October 2 and 3 of the same year, a total of 12 was observed in the country around Kennice Creek and upper Vermilion River. In mid-July, 1942, several were seen near the headwaters of Swanson Creek. On the whole, the species is uncommon; during some summer visits to the plateau none was observed; but undoubtedly a few pairs nest at widely separated points.

128. MOUNTAIN BLUEBIRD. Sialia currucoides (Bechstein).

This is a somewhat more common and consistently distributed species than the eastern bluebird, but extensive areas may be covered at any season without observing it. More were noted in the Clear Lake district and westward than elsewhere in the park. Evidently most of the summer population remains until well on in September, after which migrants begin to arrive from more northern regions. At Whitewater Lake in early October, 1946, a well defined migration was in progress. The last individual was observed on October 5.

129. GOLDEN-CROWNED KINGLET. Regulus satrapa Lichtenstein.

Fair numbers pass over the plateau as migrants in spring and autumn, apparently more of them in the latter season. The duration of their spring sojourn is not known, but it is probably from late April to early June. On June 4 and 5, 1941, six were observed at Swanson Creek. Evidently a few may nest in coniferous forest tracts, as several were recorded near the headwaters of Swanson Creek on July 16 and 17, 1942, the males still in song. They are much more plentiful in late September and early October. Stragglers were noted at various times up to late October and early November.

130. RUBY-CROWNED KINGLET. Regulus calendula (Linnaeus).

These diminutive and remarkable songsters are common migrants, but as none was seen in midsummer it is doubtful whether any nest in the park. From June 3 to 7, 1941, they were relatively common in the Swanson Creek-Whirlpool River area; these were the latest noted in the early part of the season. In various parts of the plateau the species was not uncommon during the second and third weeks of September.

131. AMERICAN PIPIT. Anthus spinoletta (Linnaeus).

On October 1 and 2, 1946, a few of these birds were resorting to the shores of Whitewater Lake. This is the first and only record for Riding Mountain.

132. SPRAGUE'S PIPIT. Anthus spragueii (Audubon).

This species was listed by Taverner and Sutton as an uncommon summer resident nesting on the open prairie just south of Clear Lake. It was not observed in the park by the writer.

133. CEDAR WAXWING. Bombycilla cedrorum Vieillot.

Cedar waxwings are fairly common as summer residents over at least the southern part of the park. They inhabit Transition Life Zone districts chiefly, especially near lakes and streams. They are usually present on the mountain from late May or early June until at least mid-September; the latest record by the writer is for September 19, 1940.

134. NORTHERN SHRIKE. Lanius excubitor Linnaeus.

The only park records are for solitary examples seen a few miles north of Clear Lake on October 22, 1938, and along Vermilion River near the northern boundary on October 26, 1940. Unquestionably, the species is a rare migrant in the park as it had not been noted again when the investigations terminated in October, 1946.

135. BLUE-HEADED VIREO. Vireo solitarius (Wilson).

Manifestly this is an uncommon migrant and summer resident, as it was rarely observed in any season. It was noted infrequently in late May and early June, principally in the Swanson Creek area. The only summer record is that of a singing male observed on July 14, 1942, near Rowland Lake, where it was possibly nesting. The latest date of occurrence was for one seen at Whitewater Creek on September 17, 1940.

136. RED-EYED VIREO. Vireo olivaceus (Linnaeus).

This is the common vireo of Riding Mountain; where deciduous woods exist its distribution is almost universal. Its persistent singing is one of the most familiar of bird sounds during the nesting season. Its normal time of arrival is late in May. Most of the species appear to migrate in late August and early September, but strays were seen up to September 20.

137. WARBLING VIREO. Vireo gilvus (Vieillot).

This species is evidently a scarce migrant and a rare breeder in the park since only a single record was secured. On July 18, 1942, one was seen and heard singing on the eastern escarpment, just within the park in deciduous woods of the Transition Life Zone and at an altitude of about 1,050 feet above sea level. In view of the date, it was sssumed to have nested in that locality.

138. BLACK AND WHITE WARBLER. Mniotilta varia (Linnaeus).

This is a moderately common summer resident, inhabiting the park from about mid-May until early September. It is widely dispersed in different types of habitat, but appears to prefer mixed woods of spruce and poplar. It appears to be most abundant in the eastern part of the plateau and along the northern slope.

139. TENNESSEE WARBLER. Vermivora peregrina (Wilson).

This warbler is rather widely but locally distributed throughout the summer in Canadian Life Zone habitats. During the breeding season it is invariably found near conifers. Sutton found the species nesting in a tamarack--black spruce muskeg along the south side of Clear Lake. The earliest migrants arrive in the park about the middle of May and a few scattered examples were recorded up to September 20. Diminution of numbers indicates most of the birds quit the plateau in late August and early September.

140. ORANGE-CROWNED WARBLER. Vermivora celata (Say).

A few of these warblers were seen daily in late May and early June, 1941, from Lake Audy north to Kennice Creek and in the area drained by Swanson Creek and Whirlpool River. A specimen was collected at upper Vermilion River on May 31 of the same season. Taverner secured an adult female at Riding Mountain on August 17, 1921.

141. NASHVILLE WARBLER. Vermivora ruficapilla (Wilson).

Fair numbers of this species were recorded during most summer visits to the park, where they displayed a decided preference for lowland coniferous woods and especially for fully developed black spruce -- tamarack swamps and muskegs. It doubtless nests wherever found at this season. Its period of residence in the park is from about the second week of May until mid-September. During exceptionally warm autumns a few may linger a little later.

142. YELLOW WARBLER. Dendroica petechia (Linnaeus).

At all seasons this species was decidedly scarce on most of the plateau, both as a migrant and as a summer resident. It was somewhat commoner well down on the eastern escarpment and in deciduous woods at lower elevations to the south. A few scattered examples were recorded in early June and mid-summer from Clear Lake to Lake Audy, where they may be regarded

as scarce breeders.

143. MAGNOLIA WARBLER. Dendroica magnolia (Wilson).

As a summer resident this species occurs only casually, and in small numbers, but it is more plentiful than D. petechia. Its general distribution in the park was notably erratic and spotty in widely separated stands of lowland conifers. The birds arrive during the third week of May and most of them depart in late August or early September. Later stragglers are sometimes noted.

144. CAPE MAY WARBLER. Dendroica tigrina (Gmelin).

Taverner and Sutton listed this species as an uncommon migrant. This was confirmed by personal observation, as the species was seen in only one locality: three singing males on June 3 and 4, 1941, at Swanson Creek.

145. MYRTLE WARBLER. Dendroica coronata (Linnaeus).

During migration these warblers pass through the park in large numbers. As summer residents, however, they are thinly dispersed; they are about as common as magnolia warblers, although locally there may be somewhat more of them. Of the swarms that pass over the plateau in spring, obviously only a very few remain to nest. The main spring migration reaches the park in late April or early May. On the return journey they are usually most abundant during the third week of September and a few days of October.

146. BLACK-THROATED GREEN WARBLER. Dendroica virens (Gmelin).

This species was not found on Riding Mountain until 1941 when the writer located a singing male at Swanson Creek on June 4. During the following year it was a pleasant experience to find it again in the park. Between July 14 and 16, three singing males and one female were observed in the Swanson Creek area and in the vicinity of Rowland Lake. There is no definite evidence of breeding, but the circumstances clearly point to nesting in the above

localities. Manifestly, only a few of the birds spend the summer on the plateau.

147. BLACKBURNIAN WARBLER. Dendroica fusca (Muller).

These warblers are fairly common in coniferous tracts throughout the summer. They are visibly more numerous during migration in late May and early June and again in late August and early September, indicating that many pass the summer farther north.

148. CHESTNUT-SIDED WARBLER. Dendroica pensylvanica (Linnaeus).

A few breed locally on Riding Mountain, but they cannot be regarded as generally common. Taverner and Sutton speak of the species as being numerous in the area south of Clear Lake. They appeared to be absent in much of the country covered in summer investigations. The period of summer residence, for most of the species, extends from late May until late August and early September. Evidently they are not very common as migrants.

149. BLACK-POLL WARBLER. Dendroica striata (Forster).

The writer observed these warblers only during the spring migration of 1941. Several were seen daily along the upper Vermilion River, May 29 to June 1, and a single example was observed at Swanson Creek on June 3. These are the only records for the park. The species evidently does not nest on the plateau and is very scarce even as a migrant.

150. PINE WARBLER. Dendroica pinus (Wilson).

Four observations of males of this species were made in the Swanson Creek-Whirlpool River area between July 14 and 18, 1942. As they were in well separated locations, they were thought to be four different birds. The species had not formerly been recorded in the park. It was first located only by the songs of the males which consist of weak, simple trills not unlike those of the chipping sparrow, or slate-coloured junco,

but readily distinguishable when well known. The species is undoubtedly rare and local in the park as it was never again observed.

151. PALM WARBLER. Dendroica palmarum (Gmelin).

This species is not known to nest in the park, but it is relatively common over wide areas during the height of the migrations in the latter part of May and the third week of September. Smaller numbers remain on the plateau in spring until early June, and in autumn until the beginning of October. They may be locally abundant for a day or two around September 20.

152. OVENBIRD. Seiurus aurocapillus (Linnaeus).

This is a fairly common summer resident, especially in the southern portion of the plateau, both in Transition and in Canadian Zone habitats. Fewer are observed in the dense timber of eastern and northern sectors. The times of arrival and departure are approximately the third week of May and the first week of September.

153. WATER-THRUSH. Seiurus noveboracensis (Gmelin).

The water-thrush was nowhere noted by the writer in summer, but it was often observed in late May and early June. The National Museum has two specimens taken on the mountain on August 18, 1921, and August 11, 1938.

154. CONNECTICUT WARBLER. Oporornis agilis (Wilson).

This is one of the rarest warblers over the whole plateau. A few remain to nest, but they are scarce and very localized during summer. They are most numerous in late May and early June and again in late August and early September. During investigation in different seasons not one was observed.

155. MOURNING WARBLER. Oporornis philadelphia (Wilson).

This warbler is locally distributed as a moderately common summer resident in tangles of shrubbery and balsam poplar along the margins of lakes

and streams. It occurs in both Transition and Canadian Zone habitats but tends to favour the latter. Its time of arrival is approximately May 28 and it departs during the last few days of August. A few may tarry until early September.

156. YELLOW-THROAT. Geothlypis trichas (Linnaeus).

These distinctive singers reach the park during the third week of May and a good many of them remain to breed. Favourite habitats are swampy lowlands grown to willows and alders, near streams and marshes. In some localities the birds are common. They are noticeably more numerous from Clear Lake west than in the eastern part of the plateau. Apparently most of them migrate from the park before mid-September.

157. WILSON'S WARBLER. Wilsonia pusilla (Wilson).

This warbler was listed by Taverner and Sutton with the remarks: "A common migrant, especially in the spring. Favors willow or alder shrubbery and may often be seen along the south shore of Clear Lake". It was not observed in the park by the writer.

158. CANADA WARBLER. Wilsonia canadensis (Linnaeus).

According to the records, this is a rare warbler in the park where it was seldom observed in migration and never in summer. In this latitude it appears to migrate chiefly during late May and late August.

159. AMERICAN REDSTART. Setophaga ruticilla (Linnaeus).

Redstarts were often seen in June and July from 1936 to 1940. In late May, 1941, they were noted frequently in the country northward from Lake Audy to Kennice Creek and two were observed at Swanson Creek on June 3. They are definitely known to nest in open balsam poplar woods along the south shore of Clear Lake. The species becomes more plentiful during the height of the migrations about mid-May and during late August or early September.

160. BOBOLINK. Dolichonyx oryzivorus (Linnaeus).

A few pairs occur on the Lake Audy plains where they were seen at various times between 1936 and 1946. As far as ascertained, this is the only locality within the park where the species occurs during the summer. It is much more numerous on the lowland prairies to the south.

161. WESTERN MEADOWLARK. Sturnella neglecta Audubon.

These birds were seen several times on the prairie between Kennice Creek and upper Vermilion River during late May and early June, 1941. During the same period scattered individuals were observed on the prairie east of Lake Audy. As the birds remain for the summer they unquestionably breed on these grasslands. East of Lake Audy, several were noted up to October 4, 1941.

162. YELLOW-HEADED BLACKBIRD, Xanthocephalus xanthocephalus. (Bonaparte).

This species was not found within the park by the writer, but small breeding colonies were seen in the vicinity of the southern boundary. That it occurs in the park is evident from the report by Taverner and Sutton who stated that the species was a casual migrant or visitor to the larger marshes, but that no resident or breeding population had been reported.

163. RED-WINGED BLACKBIRD. Agelaius phoeniceus (Linnaeus).

The familiar "red-wing" is a common summer resident in southern and western park localities, especially where there are extensive marshes. It is more than usually plentiful in the marshes at Clear, Audy, and Whitewater Lakes. A few breed along marsh-bordered streams. The main migration arrives in the latter part of April, when ice disappears from the lakes, and stragglers remain until the end of September or a little later. Conspicuous flocks are seen in late summer and early autumn.

164. BALTIMORE ORIOLE. Icterus galbula (Linnaeus).

Only a few orioles are summer residents in the park, although the species is well represented in deciduous woods in low country to the east and south. Only two pairs were observed, one near Clear Lake and the other at Lake Audy. On several summer visits to the park it was not observed.

165. RUSTY BLACKBIRD. Euphagus carolinus (Muller).

Locally abundant during times of migration, these blackbirds occur only sparingly in summer. Most of those observed at this period were in the partly wooded country from Clear Lake to Lake Audy. They reach Riding Mountain about mid-April, most of them migrating northward a little later. They are very common in the latter half of September, chiefly in flocks, some of which contain several hundreds. A few may stay on the plateau until early October.

166. BREWER'S BLACKBIRD. Euphagus cyanocephalus (Wagler).

In some southern park localities this species is not uncommon during the summer, but over large areas east and north of Clear Lake, it is scarce or absent. Its arrival date on the plateau is about April 20. It is somewhat commoner in the autumn, but is outnumbered by the rusty blackbird at that season. The latest record is of several seen at Kennice Creek on October 1, 1941.

167. BRONZED GRACKLE. Quiscalus versicolor Vieillot.

This species is a summer resident in moderate numbers at various places in the southern part of the park. For the most part it is very localized and is absent from most of the country. Examples were seen more regularly at Wasagaming and the nearby golf course than elsewhere, but they were also noted on several occasions westward to Jackfish Creek,

Vermilion River, and Lake Audy. Arrival and departure dates on the plateau are roughly the third week of April and late September, respectively.

168. COWBIRD. Molothrus ater (Boddaert).

A more or less common summer resident throughout the park, the cowbird arrives in the latter part of April. It is clearly more numerous in the semi-open, south-central part than anywhere east and north. None was recorded after late August, but a few may tarry on the plateau until a little later date.

169. ROSE-BREASTED GROSBEAK. Pheucticus ludovicianus (Linnaeus).

The general scarcity of this species indicates that it is an uncommon summer resident of the park. On several visits it was not recorded. The few observed were in the area between Swanson Creek and Lake Audy and north to Kennice Creek, where deciduous woods predominated. The period of residence appears to extend from late May until late August or early September.

170. EVENING GROSBEAK. Hesperiphona vespertina (Cooper).

For many years it was thought that this species was only an irregular migrant and winter visitor on Riding Mountain. When a few were observed in coniferous woods along the upper reaches of Swanson Creek in early June, 1941, they were regarded as late migrants. However, in 1942 several were seen daily in the same general area in mid-July - good circumstantial evidence that they had nested in the area.

None was recorded during the autumn. The species is obviously very scarce in the park.

171. PURPLE FINCH. Carpodacus purpureus (Gemlin).

An infrequent summer resident, the purple finch is noticeably most numerous in spring and autumn. It was most frequently recorded in the heaviest and most continuous spruce forest of eastern and northern areas.

Spring arrivals first reach the park in late April, becoming much more plentiful in May. Evidently most of the species has left by late September. The latest record is for one seen near Lake Audy on October 21, 1938.

172. PINE GROSBEAK. Pinicola enucleator (Linnaeus).

This species occurs as an early spring and autumn migrant and winter visitor. It was rarely seen even during the early and late periods of investigation, which did not include the winter months. Most of those recorded were near Edwards Lake and along the north slope of the mountain from October 27 to November 2, 1940.

173. COMMON REDPOLL. Acanthis flammea (Linnaeus).

These birds were observed in the park only from October 29 to November 1, 1940, when flocks were resorting daily to white birches at Edwards Lake and Creek. Doubtless they became more abundant later in the autumn and during the winter months.

174. PINE SISKIN. Spinus pinus (Wilson).

Fair numbers of siskins reside on the plateau throughout the summer, invariably near stands of conifers, where they nest. Spring migrants evidently arrive in the latter part of April, and soon begin nesting; small flocks of wanderers (to some extent post-breeding) were frequently seen in late May and well into June. Much country in which siskins were scarce or absent was traversed in summer. In the latter part of September the species was again much more in evidence, and numerous flocks were seen in spruce forest. A few, singly or in small flocks, were noted in the Edwards Lake locality as late as October 30.

175. GOLDFINCH. Spinus tristis (Linnaeus).

Common summer residents, these birds were seen in pairs or small

flocks, during all visits to the park at that season. By late May they were common enough to be observed frequently. As the season advanced, flocking was less in evidence and there was increased segregation and dispersal. Roving flocks were again a familiar sight during late summer and autumn. Latest record was for several seen a few miles north of Lake Audy on October 4, 1945.

176. WHITE-WINGED CROSSBILL. Loxia leucoptera Gmelin.

Several small groups of these birds were observed at Edwards Lake and along the northern slope of the mountain from October 28 to 30, 1940. The species had not previously been found in the park; and to date there is no other record.

177. SAVANNAH SPARROW. Passerculus sandwichensis (Gmelin).

This sparrow is commonly dispersed in suitable lowland habitats throughout the park, where it breeds. During mid-summer it was noted in meadows at Whirlpool River; Clear Lake; Jackfish, Kennice, and Whitewater Creeks; and at Lake Audy and other places in the west. The species normally inhabits the plateau from early May until about mid-September. During some seasons it is still fairly common for an additional week or ten days.

178. LECONTE'S SPARROW. Passerherbulus caudacutus (Latham).

The distribution of this species is sparing and very localized during summer. Owing to its shyness and weak voice, it may easily be overlooked. In June and July of 1936, 1938, and 1940, a few were seen in marshes at Clear and Audy Lakes where undoubtedly it nests; equally good potential breeding areas occur farther west. Exact data are lacking, but very probably the species resides in the park from at least mid-May until mid-September.

179. NELSON'S SPARROW. Ammospiza caudacuta (Gmelin).

This species was not seen by the writer in the park although closely watched for. Taverner and Sutton list it, but without a definite statement of occurrence in the park, or of the locality involved. In view of the specialized field work conducted by Sutton at Clear Lake, it is probable that a specimen was taken in that area. Another likely locality is Lake Audy.

180. VESPER SPARROW. Pooecetes gramineus. (Gmelin).

This species occurs sparingly all summer on prairie tracts in the Lake Audy district, north to Kennice Creek and upper Vermilion River. Average time of arrival is probably about May 1, and of departure, the third week of September. A single example was noted near Kennice Creek as late as October 1, 1941, and at the Lake Audy plain on October 4, 1945.

181. SLATE-COLOURED JUNCO. Junco hyemalis (Linnaeus).

A common summer resident, this species nests in both Transition and Canadian Zone habitats. It is most numerous, however, in areas of mixedwood forest. Migrants reach the park about the second week of April, most of them going farther north to nest. They are again fairly plentiful by the latter half of September, reaching maximum abundance about the 25th of that month. Stragglers remain until at least the second week of October.

182. TREE SPARROW. Spizella arborea (Wilson).

Large numbers of these sparrows migrate through the park during spring and autumn. The spring migration begins in early April, and most of the birds have disappeared en route to Hudsonian Zone nesting sites by early May. A few individuals have usually re-appeared by October 1 and the species again becomes common two or three weeks later; scattered examples remain on the plateau until early November.

183. CHIPPING SPARROW. Spizella passerina (Bechstein).

This is a fairly common summer resident in eastern areas, but less numerous westward from Clear Lake. In the spring it may be expected by about May 10, the population gradually building up and then diminishing as most of the migration continues northward. The population is again increased by small flocks in the latter part of August and early September, after which the birds move off the plateau to the south.

184. CLAY-COLOURED SPARROW. Spizella pallida (Swainson).

This pale little sparrow is a fairly common inhabitant of the brushy grasslands and small prairies in the south-central part of the park. It probably breeds more commonly in the larger open tracts farther west. Spring migrants reach the area about the second week in May and are well established by the end of the month. Most autumn departures appear to take place from late August to early September, but stragglers, gradually fewer in number, were noted up to October 4.

185. HARRIS'S SPARROW. Zonotrichia querula (Nuttall).

This is one of the most abundant of migrants in the area under review. Normally, the first and principal wave of the spring migration occurs during the third week of May and lasts for only a few days. In duration and numbers, even at the peak, it is inferior to the southward autumn movement. Swarms of the birds invade the plateau during the latter half of September. The aggregate gradually diminishes in late September and early October and the last stragglers are seen usually about October 10.

186. WHITE-CROWNED SPARROW. Zonotrichia leucophrys (Forster).

Based on the writer's field records, this species occurs as an irregular and very rare migrant that was observed only once, when a few were seen with Harris's sparrows at Kennice Creek on October 1 and 2, 1941, and

an immature male was collected. Taverner and Sutton refer to it simply as a spring and autumn migrant.

187. WHITE-THROATED SPARROW. Zonotrichia albicollis (Gmelin).

This species is very characteristic of the northern wilderness and is a common breeder on Riding Mountain in mixedwood forest and spruce-tamarack bogs. Migrants reach the park early in May, many passing on northward. The population is greatly increased by southbound migrants in the latter half of September. Peak numbers are reached about the 20th of that month. The species is then in close association with Z. querula, and gradually decreases in number and finally disappears in much the same way as the latter species.

188. FOX SPARROW. Passerella iliaca (Merrem).

Only a very few of these birds migrate through the park either in spring or autumn. During most periods of investigation not a single representative was observed. Spring migration occurs about mid-April and autumn migration during the latter part of September.

189. LINCOLN'S SPARROW. Melospiza lincolnii (Audubon).

This is a spring and autumn migrant rarely recorded anywhere in the park. It was never seen in summer, although in many places conditions are very favourable for nesting. The possibility that it may breed in the park was suggested by the presence of several singing males in typical breeding habitats in the Kennice Creek - upper Vermilion River country during late May and early June, 1941. Usual times of migration in this latitude are about the second week of May and mid-September.

190. SWAMP SPARROW. Melospiza georgiana (Latham).

A common and widely distributed species on Riding Mountain, this sparrow arrives in late April or early May. It breeds regularly along practically all streams and lakes where there are suitable swampy habitats.

The main autumn flight appears to take place around mid-September, but in some tracts the birds continue to be fairly numerous until late September or early October. On October 10, 1946, two were seen at Whitewater Lake, the latest available record for the park.

191. SONG SPARROW. Melospiza melodia (Wilson).

These pleasing singers are found almost everywhere along lakes and streams throughout the summer. Owing to their distinctive and melodious song, the males are readily located and so are among the more familiar breeding birds of the region. Average time of arrival is during the third week of May. Withdrawal is gradual in the latter part of September, with records of belated individuals extending into early October.

192. LAPLAND LONGSPUR. Calcarius lapponicus (Linnaeus).

A flock of these longspurs was observed on September 21, 1940, flying over open grasslands about three miles north of Lake Audy. These are the only ones so far recorded within the park, which is surprising in view of the fact that thousands may be seen on the adjacent lowlands to the east and south during late September and most of October. It would normally be anticipated that large numbers would fly over Riding Mountain at that time.

193. SNOW BUNTING. Plectrophenax nivalis (Linnaeus).

The first park record was of a small group observed by the writer on October 21, 1938, on the Lake Audy plains. A pair was seen at Edwards Lake on October 29, 1940, and a small flock at Whitewater Lake on October 5, 1946. Evidently the species is only a casual migrant in the park, despite its abundance on the nearby lowland plains from late October until early May. Possibly a larger number visit the plateau during the winter months.

Literature Cited

American Ornithologists' Union 1931 Check-List of North American Birds, 4th Edition.

Halliday, W.E.D. 1937 A Forest Classification for Canada. Department Mines and Resources, Forest Service Bulletin 89.

Taverner, P.A. 1940 Preliminary Annotated
R. Sutton. List of Birds, Riding Mountain National Park, Manitoba. National Museum of Canada (unpublished manuscript).

Fig. 1 Admixture of prairie and coniferous forest conditions east of Fawn Lake near headwaters of Vermilion River. September 20, 1940.

Fig. 2 Characteristic Canadian Life Zone conditions at Moon Lake. September 21, 1940.

Fig. 3. Transition Life Zone conditions on an isolated prairie tract north of Lake Audy. September 21, 1940.

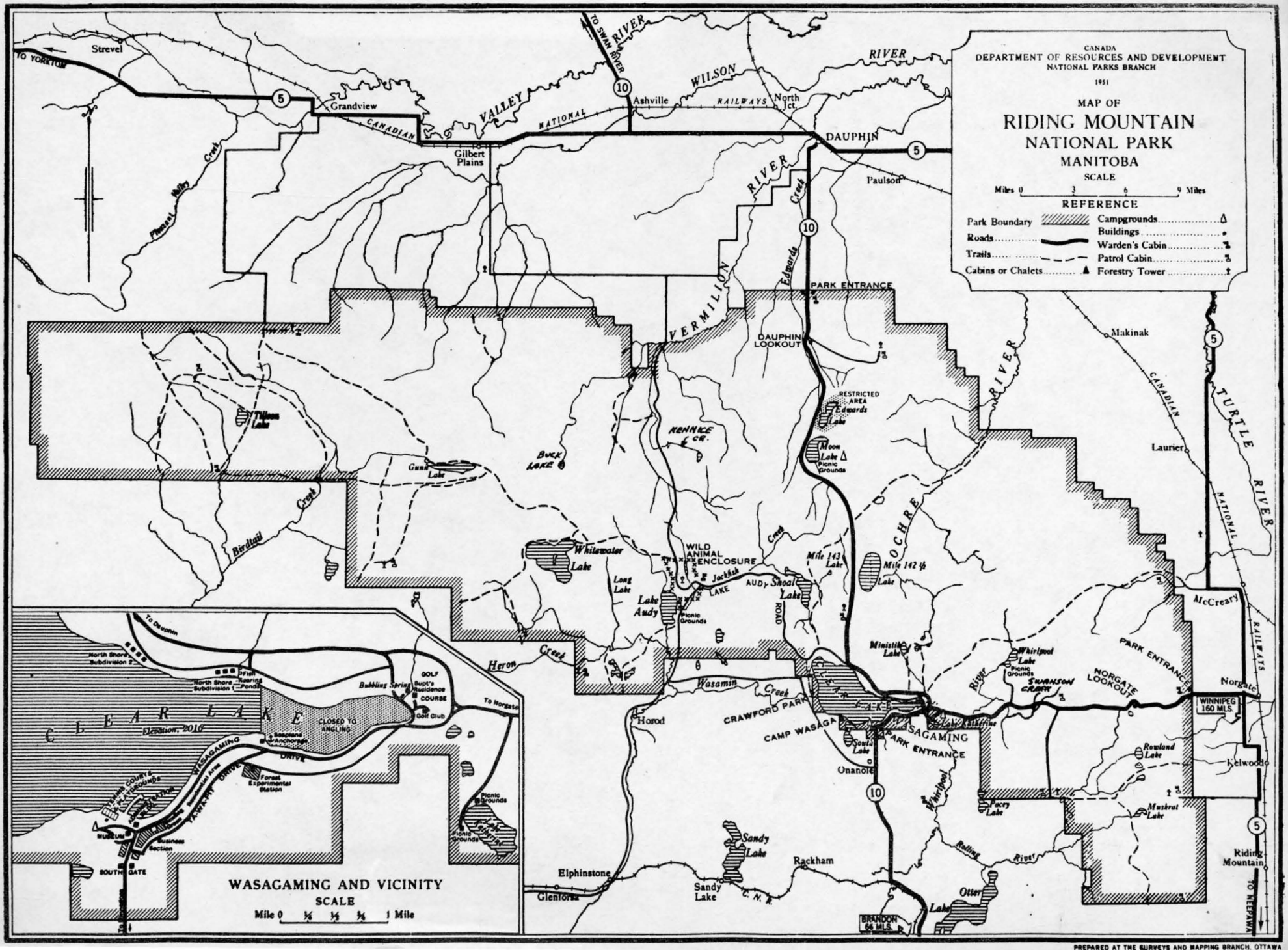
Fig. 4 Typical small lake in the mixedwood forest a few miles north of Clear Lake. September 23, 1940.

Fig. 5. Immature bald eagle resting in aspen poplar. September 23, 1940.

Fig. 6. Typical coniferous forest on northern slope of Riding Mountain along Dauphin Road. October 28, 1940.

Fig. 7. Nest and eggs of red-necked grebe at Lake Audy. June 1, 1941.

Fig. 8. Intrusion of dilute Transition Zone elements into northern coniferous forest on upper waters of Whirlpool River. June 5, 1941.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Campgrounds
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Warden's Cabin
Patrol Cabin
Forestry Tower
WASAGAMING AND VICINITY
SCALE
Mile 0 1/4 1/2 3/4 1 Mile
PREPARED AT THE SURVEYS AND MAPPING BRANCH, OTTAWA

lakes to the westward. On June 3, 1941, several were noted at South Lake. Small flocks were fairly common at Lake Audy on October 3 and 4, 1945.

63. WHITE-RUMPED SANDPIPER. Erolia fuscicollis (Vieillot).

This is evidently a rare and irregular transient in the park, being seen in some years, but not in others. Several were noted at South Lake on June 3, 1941, in association with pectoral, Baird's, and semipalmated sandpipers. This was the first record for the park and no more were seen.

64. BAIRD'S SANDPIPER. Erolia bairdii (Coues).

This is an uncommon migrant. The only ones observed by the writer in the park were at South Lake on June 3, 1941.

65. LEAST SANDPIPER. Erolia minutilla (Vieillot).

Undoubtedly this is a rare and erratic transient in the park as it was not observed there by the writer. Taverner and Sutton mention the species as a migrant, more common in the autumn.

66. DOWITCHER. Limnodromus griseus (Gmelin).

This species is seldom observed on the plateau and was not listed by Taverner and Sutton. On the morning of June 3, 1941, three were seen feeding in shallow water near the north end of South Lake where several other species of waders were similarily engaged. The next and last record was for a single individual noted at Lake Audy, October 3, 1945.

67. SEMIPALMATED SANDPIPER. Ereunetes pusillus (Linnaeus).

The first record for this species in the park was made June 3, 1941 when a number were identified along the north shore of South Lake. They are unquestionably rare transients on the plateau, as they were not seen again.

68. SANDERLING. Crocethia alba (Pallas).

This species was not observed on Riding Mountain until June 4, 1941 when one was seen feeding along the south shore of Clear Lake a short distance west of Wasagaming. On October 3 and 4, 1945, several small flocks were