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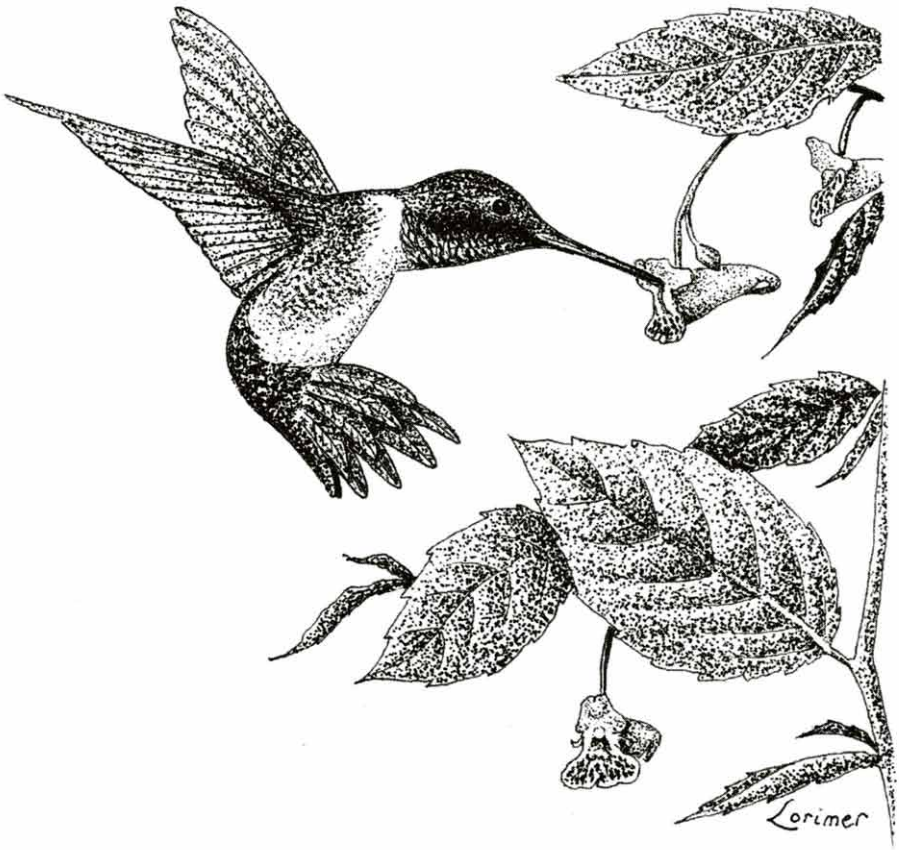

Journal of the Ontario Field Ornithologists
Volume 16 Number 3 December 1998

Ontario Field Ornithologists

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Articles

Twenty-two Years of Ruby-throated Hummingbird Migration at Holiday Beach Conservation Area, Ontario

Allen Chartier

Introduction

This paper presents both data and observations regarding the migrations of the Ruby-throated Hummingbird (*Archilochus colubris*) at Holiday Beach Conservation Area, Essex County, Ontario, in order to provide an understanding of their movements in the region. Data were obtained from many dedicated individuals, whose participation was requested in addition to their duties as hawk counters. The data span twenty-two years, from 1976 to 1997. Ellie Cox provided the data from 1976, and from 1977 through 1982, the author was the sole source of data. From 1982 to the end of the season in early October 1997, observers from the Holiday Beach Migration Observatory, and others, were largely responsible for the daily tallies, which have been compiled by the author. Data associated with specific hours and weather conditions prior to 1990 are entirely the author's. Data from more than 9,000 birds are included in this study.

Study Site and Methods

Holiday Beach Conservation Area is located in extreme southwest Essex County in extreme southwestern Ontario (see Figure 1), about 5 km south-southeast of Amherstburg. The northern edge of the park is bounded by Essex County Road 50, the west edge by the eastern side of the mouth of Big Creek, the east edge by farmland and the south edge by Lake Erie. Habitats present include lakeshore, freshwater marsh, open deciduous woodland (mainly maple and cottonwood) and open areas (parking lots). There are some pines and cedars near the northern end of the park.

This area has long been known as a hawk migration site and the data contained in this study were obtained in addition to the hawk count by volunteer observers. Data concerning weather were gathered from that taken for the hawk count. In order to maximize the view of the sky, the main site for counting is a parking area at the southwestern corner of the park. Hummingbirds were counted, hour by hour, as they flew past the ground-based observer(s) from 1976–1988. In 1989, a

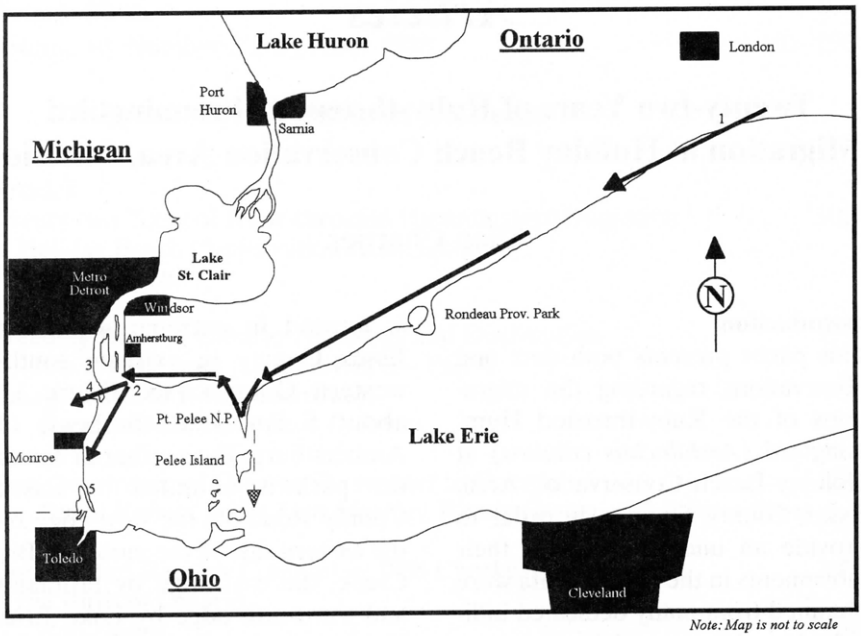

Figure 1: Holiday Beach location (2) and some hummingbird migration routes through the area.

new observation tower (13 m high) was erected at the site, and observations were made from it through 1997. Care must be taken to distinguish the rapid and difficult-to-detect hummingbirds from the migrating dragonflies and large bees also flying through. All observers were experienced enough to make this distinction. Coverage was most consistent from 1983–1997 (Figure 2).

Annual Cycles of Migration

After an initial low period from 1976–1979, when there was also low observer effort, the annual totals appear to be cyclical. Figure 3 shows an approximate two year cycle of high and low numbers between 1981 and 1988. From 1988 to 1991, the cycle appears to have leveled off, but this could be due to the effects of observers adjusting to counting from the new hawk tower at 13 m above the ground.

Seasonal Migration Pattern

Ruby-throated Hummingbirds have been detected at Holiday Beach from 18 August to 11 October. Evidence from other sites indicates that adult males can begin migration as early as late July, but efforts

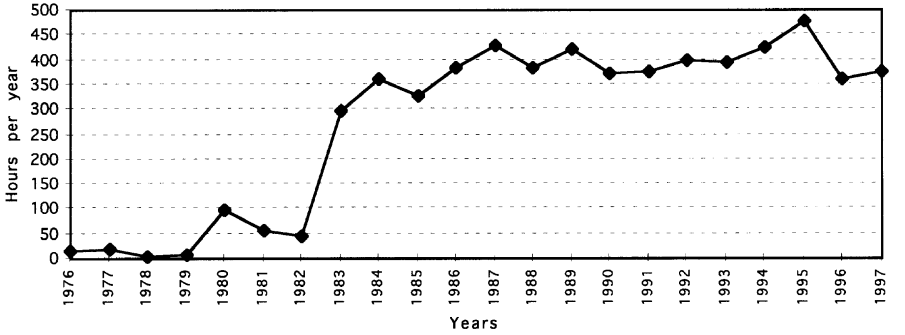

Figure 2: Annual observer effort between 15 August and 12 October (1976–1997).

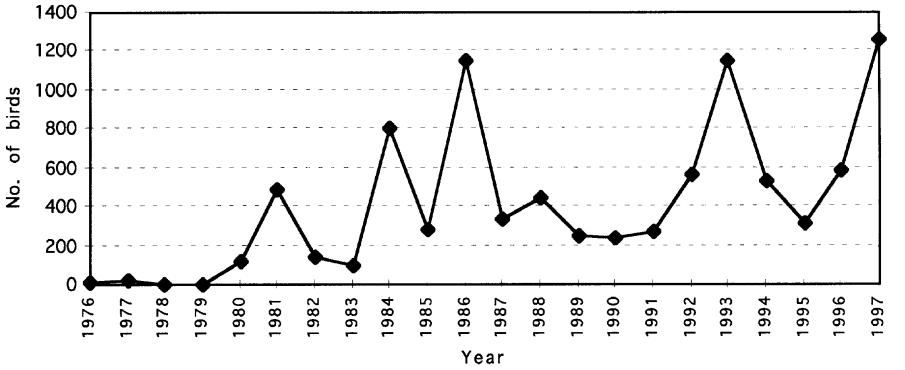

Figure 3: Annual Ruby-throated Hummingbird totals at Holiday Beach (1976–1997).

to locate adult males, or migration earlier in August, have thus far been unsuccessful. Since the birds rarely are observed hovering or feeding, there is little likelihood that any data regarding differential migrations based on age or sex classes will be possible without conducting banding studies at the site. It is possible, given a good view, to distinguish an adult male in flight as it passes the observer, but to date there have been very few reports. The male birds may take different routes. Incidental catches of hummingbirds at nearby Metrobeach

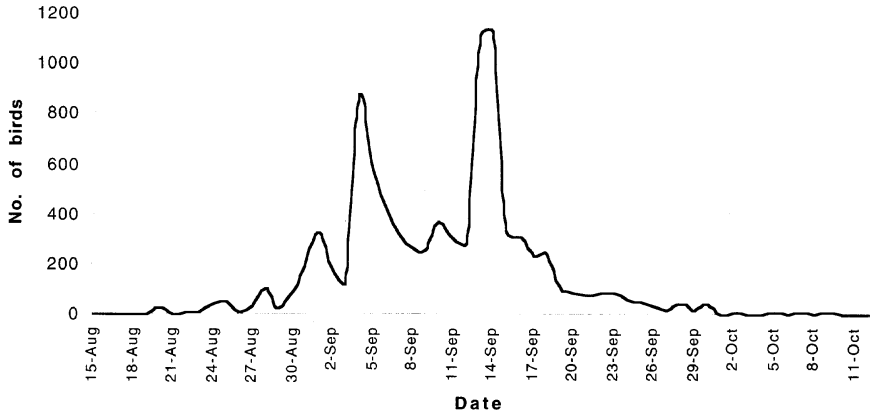

Figure 4: Daily abundance of migrating Ruby-throated Hummingbirds at Holiday Beach (composite of all data from 1976–1997).

Metropark, Macomb County, Michigan (pers. obs.) imply a pattern of adult females followed by immature males, followed by immature females. The pattern of seasonal occurrence shown in Figure 4 hints at a possible dual peak of numbers, one around 5 September and another around 15 September. These peaks may coincide with the adult females and immatures of both sexes, respectively, although this is only speculation in the absence of banding studies. Very few adult males have ever been identified during the migration study at Holiday Beach. It is interesting that there have been hummingbirds through to October annually since 1984 (total of 54 birds, 0.59% of the total). The data from Hawk Mountain, Pennsylvania (Willimont et al. 1988) do not show any migration into October.

Daily Migration Pattern

Data from Hawk Mountain (Willimont et al. 1988) portrayed the daily rhythms of hummingbird migration as limited in the morning, typically not beginning until 1000h (E.S.T.) and finishing before 1400h. This was attributed to the birds' apparent need to warm up in the morning before commencing migration. The data from Holiday Beach (with an average of five times as many birds per season as Hawk Mountain) show a much wider range of migration time (Figure 5). The earliest birds were through between 0500h and 0600h, and the latest were through between 1700h and 1800h. In fact,

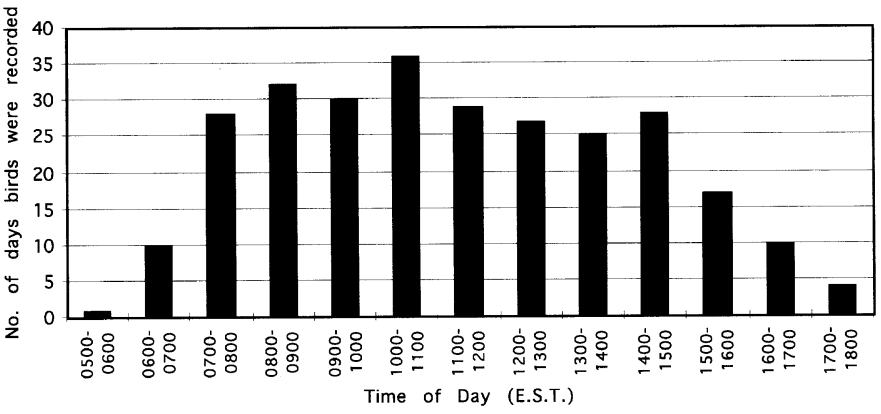

Figure 5: Hours of Ruby-throated Hummingbird migration at Holiday Beach (data collected principally by the author from 1983–1990).

as shown in Figure 6, 38% of all hummingbirds at Holiday Beach migrated *before* 1000h! The difference in the two sets of data may be attributable to the higher altitude of the Hawk Mountain site, as Holiday Beach is at roughly 195 m (650 feet) above sea level, and is in an extremely flat area of southwestern Ontario. Conditions on Hawk Mountain may be colder during the birds' migration period, requiring longer morning "warm-ups". The October records from Holiday Beach are mainly of birds seen in the afternoon.

Migration Pattern Relative to Wind Direction

As at Hawk Mountain, there was a strong correlation between northwest and west winds and peak migrations of hummingbirds (Figure 7). The large peak for southerly winds in Figure 7 is due to an apparently anomalous single day where 520 birds passed in one afternoon! Factoring this day out, there were only 38 birds that passed on southerly winds.

Food Plants

Once the birds have flown out of the woods and are heading across the parking lot to be counted, there is little to distract them. Artificial red flowers placed on the tower in 1990 only caused about 5% of the birds to pause. Natural food items were present in the medians between parking lanes (through 1996, when many lanes were removed for construction of a pond). Only about 5% of all birds

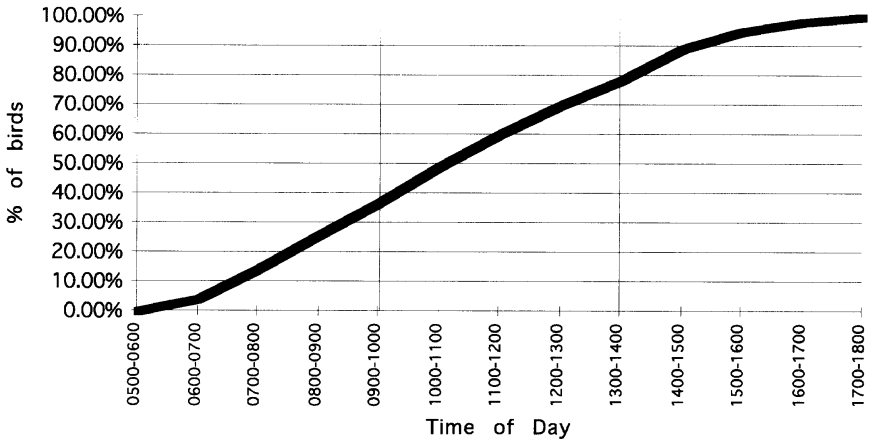

Figure 6: Percent of Ruby-throated Hummingbirds accumulated by hour (same data as Figure 5).

(estimate) have ever been observed to pause in these areas. The plants fed upon at these times include (in order of occurrence) Purple Loosestrife (*Lythrum salicaria*), Small White Aster (*Aster lateriflorus*), and Turtlehead (*Chelone glabra*) once. On the edge of the open woodland are stands of Spotted Jewelweed (*Impatiens capensis*), where birds have been seen occasionally feeding prior to striking out across the open areas.

Flight Style

Laboratory studies of the bioenergetics of flying hummingbirds made to determine their ability to cross the 800 km (500 mile) wide Gulf of Mexico have, necessarily, concentrated on hovering birds enclosed in bell jars (Odum et al. 1961, Lasiewski 1962). The actual flying style of migrating birds is quite different, and may extend significantly their flying range (pers. obs.). Birds have been observed consistently to flap vigorously for about 1 second or more, followed by a period of "free fall", where the wings are either folded or not flapped, for about 0.5 seconds or more. This gives the birds a somewhat bounding flight style, and the technique is used at all altitudes thus far observed. This technique is known to conserve energy in woodpeckers and other species (Tobalske 1996), but apparently has not been described previously for the Ruby-throated Hummingbird.

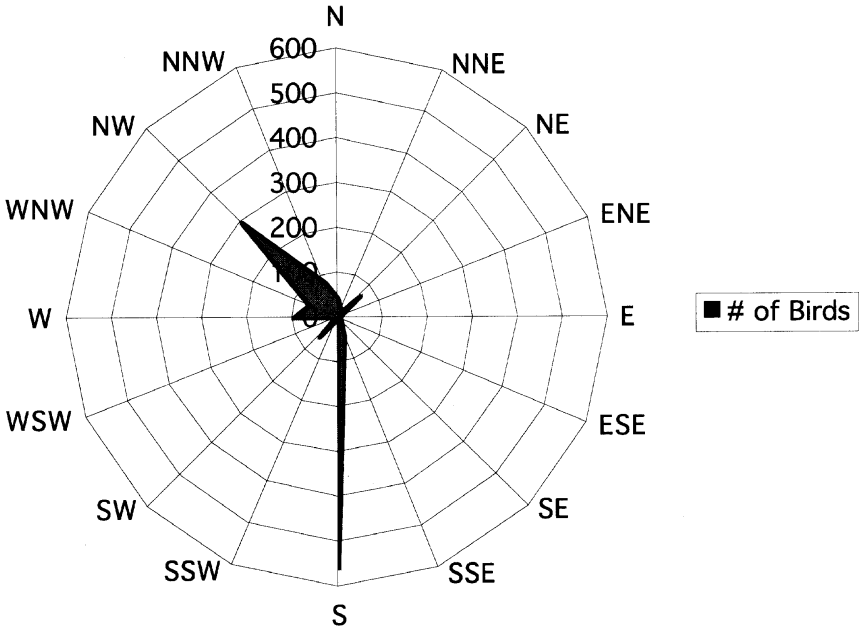

Figure 7: Number of birds by wind direction (same data as Figures 5 and 6).

Flight Speed

Published flight speeds of the Ruby-throated Hummingbird have ranged from 40 to 80 km/h. On 8 September 1980, I measured two distances on frequently used flight lanes. One was 15 m and was between the vegetated medians between parking lanes. The other was 21 m. A stopwatch was used to time the birds as they flew between these measured lanes. The birds were able to be detected momentarily before reaching the starting

Distance (m)	Time (secs.)	Speed (km/h)	Wind
15	1.0	54	crosswind 8 km/h
15	1.0	54	crosswind 16 km/h
15	1.4	38	against 5 km/h
15	2.1	26	against 8 km/h
21	1.2	63	crosswind 8 km/h

Table 1: Flight speeds of Ruby-throated Hummingbirds at Holiday Beach.

point. Times were obtained ranging from 26 km/h against an 8 km/h headwind to 63 km/h with an 8 km/h crosswind. Data from the five timed flights are shown in Table 1.

Altitude of Flight

Altitude of flight data were collected only for 1990 from the volunteer hawk counters that year. Observations were made from the top of the tower (13 m high). Birds are rarely, if ever, observable below eye level from here. They blend in with the vegetation, and their size and direct flight make them extremely difficult to detect under these circumstances. About 90% of all birds noted in 1990 were from 2–5 m overhead, or 15–18 m above the ground. About 4% were over 5 m overhead, up to a maximum of about 30 m, which may be as far as hummingbirds in flight can normally be detected. Rare individuals (~1%) were picked up in binoculars and could have been 50 m or more overhead. These data could be misleading, as they may represent observer location more than true altitude of flight. Data from ground-based counts prior to 1990, although lacking, can be estimated based on my 22 years of experience. About 80% came through from eye level to 10 m overhead, 18% came through from 10 to 30 m overhead, and 2% were detected only in binoculars at 30 m or more overhead.

Migration Routes

All hummingbirds that were observed migrating past the site were flying from east to west, parallel to, and about 20–300 m north of the shore of Lake Erie (Figure 1). It is interesting to note that the birds seemed to be exhibiting the same "water avoidance" behaviour as the hawks during their migration. One observer (Michael Kielb) has commented that this pattern, combined with the scarcity of Ruby-throated Hummingbirds in the Yucatan Peninsula of Mexico (des Montes 1988, Loftin 1991, pers. obs.), suggests that far fewer birds may actually *attempt* the crossing of the Gulf of Mexico than is currently assumed. Studies to date have concentrated on the bioenergetics pertaining to whether Ruby-throated Hummingbirds *could* make the crossing (Odum et al. 1961, Lasiewski 1962). Another observer (Alan Wormington) has noted numbers of Ruby-throated Hummingbirds leaving the southern tip of Point Pelee (east of Holiday Beach, see Figure 1) in the fall, so birds do cross the lake. The maximum water crossing from this point to Pelee Island is about 14 km, where they can then hop another 15 km to Kelley's Island (where birds have been noted in mid-August; pers. obs.), then on the final 15 km to the southern shore of Lake Erie in northern Ohio. Near Holiday Beach, the crossing is more on the order of 60 km, but this is far

short of the 800 km (500 miles) across the Gulf of Mexico! Studies of trans-Gulf migration published in the literature (Van Tyne and Trautman 1945, Williams 1945, Lowery 1946, Williams 1948, Bullis and Lincoln 1952, Williams 1952, Paynter 1953, Bullis 1954, Siebenaler 1954, Stevenson 1957) only contain about a dozen sightings of Ruby-throated Hummingbirds. This bird is very numerous in coastal Texas in September and October (Stokes and Stokes 1989, pers. obs.), so the magnitude of Ruby-throated Hummingbird migration crossing the Gulf of Mexico could be a very small proportion of the species' migration as a whole.

Acknowledgements

I wish to thank the numerous hawk-watchers who divided their attention from the primary task and contributed data to this study over the past 22 years. I also thank Paul Pratt for providing the data for the 1997 season, and Mike Kielb, Alan Wormington, and Laurie Goodrich for helpful discussions that resulted in ideas presented in this paper.

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Breeding Birds of Ontario: Nidiology and Distribution

Volume 2: Passerines
(First Revision – Part C: Tanagers to Old World Sparrows)

George K. Peck and Ross D. James

In this, the final part of the current revision of Volume 2 of Breeding Birds of Ontario (Peck and James 1987), we are following the arrangement as proposed in the seventh edition (AOU 1998) of the American Ornithologists' Union Check-list. In this part of the present revision, the Northern Cardinal and its allies (Family Cardinalidae) have been moved to follow Snow Bunting (Family Emberizidae), and precede Bobolink (Family Icteridae). The only other sequential change is the insertion of Harris's Sparrow between White-throated Sparrow and White-crowned Sparrow. Fifty breeding species are included in this part of the revision, 47 species with confirmed breeding status, and three (Snow Bunting, Pine Grosbeak, and Hoary Redpoll) still unconfirmed, as indicated by the use of brackets [ ] around their names in the species accounts.

Again, our primary data source is the Ontario Nest Records Scheme (ONRS), but all additional known published and unpublished data have been considered.

Breeding Bird Species

Scarlet Tanager, *Piranga olivacea*

84 nests representing 30 provincial regions. Nests from Haldimand-Norfolk (1997), Haliburton (1996), Lincoln (1936), and Sudbury (1988) were new regional additions. A nest photograph submitted from Manitoulin (1988) provided nesting documentation for that district.

Deciduous trees and saplings (12 spp., 43 nests) were favoured over coniferous (5 spp., 25 nests). One nest was in a grape vine tangle. The trees chosen most often were maple spp. (15 nests), hemlock (13 nests), beech spp. (10 nests), birch spp. (4 nests), elm spp. (4 nests), oak spp. (4 nests), pine spp (4 nests), and spruce spp. (4 nests). Heights of 69 nests ranged from 1.8 to 20 m (6 to 66 ft), with 34 averaging 4.3 to 9.8 m (14 to 32 ft).

EGGS 35 nests with 1 to 4 eggs; 1E (3N), 2E (5N), **3E** (6N), **4E** (21N).

Average clutch range 4 eggs (21 nests).

Cowbird parasitism 44 nests with 7 parasitized (15.9%).

EGG DATES 33 nests, 24 May to 13 July (37 dates); 17 nests, 5 June to 12 June.

Eastern Towhee, *Pipilo erythrophthalmus*
165 nests representing 31 provincial regions. Elgin (1996) and Manitoulin (1986) were recent regional nesting additions, from the southern and northern limits of the species' provincial breeding range, respectively.

Outside diameters of 10 nests ranged from 7 to 17 cm (2.8 to 6.7 inches); inside diameters of 10 nests ranged from 4 to 9 cm (1.6 to 3.5 inches); outside depths of 5 nests ranged from 5 to 14 cm (2 to 5.5 inches); and inside depths of 8 nests ranged from 4.5 to 7.5 cm (1.8 to 3 inches).
EGGS 107 nests with 1 to 6 eggs; 1E (6N), 2E (9N), **3E** (29N), **4E** (53N), **5E** (6N), **6E** (4N).
Average clutch range 3 to 4 eggs (82 nests).
Cowbird parasitism 164 nests with 30 parasitized (18.3%).

American Tree Sparrow, *Spizella arborea*
13 nests representing 1 provincial region. Five nests were reported in 1990 a few kilometres east of the mouth of the Little Shagamu River, 1.5 to 2 km (.9 to 1.2 mi) from the Hudson Bay shoreline, on old beach ridges covered with lichen, herbs and small shrubs. The new data are added and the following is presented.

Twelve nests were on the ground, usually under dwarf willow or stunted spruce; and one nest was on the lowest bough of a Black Spruce at a height of 30.5 cm (1 ft). In all instances where nest linings were described they contained feathers.
EGGS 10 nests with 1 to 6 eggs; 1E(1N), 4E(1N), **5E**(6N), **6E** (2N).
Average clutch range 5 eggs (6 nests).
EGG DATES 9 nests, 21 June to 9 July (10 dates); 5 nests, 24 June to 1 July.

Figure 1: Nest of Eastern Towhee containing 3 towhee eggs and 4 smaller eggs of Brown-headed Cowbird, 15 May 1969, Nassagaweya Twp., Halton County. (Photo by *G.K. Peck*).

Chipping Sparrow, *Spizella passerina*
1893 (1896 nests) representing 48 provincial regions.
Cowbird parasitism 1600 nests with 484 parasitized (30.3%). During the last decade only 33 of 188 nests with known contents were parasitized (17.6%), thus slightly lowering the overall percentage parasitism. In a 1995 Haldimand-Norfolk nest, a cowbird egg was covered over by the host (Peck 1996).
INCUBATION PERIOD Incubation often began with the penultimate egg, and ambient air temperatures were also probably responsible for those incubation periods of less than 10 days, listed in Volume 2 (Peck and James 1987).

Clay-colored Sparrow, *Spizella pallida*
42 nests representing 21 provincial regions. New regional nestings were Lanark (1985), Nipissing (1989), and Rainy River (1994).
EGGS 29 nests with 2 to 5 eggs; **2E** (2N), **3E** (8N), **4E** (18N), **5E** (1N).
Average clutch range 4 eggs (18 nests).
Cowbird parasitism 35 nests with 11 parasitized (31.4%).
EGG DATES 27 nests, 19 May to 20 July (36 dates); 14 nests, 10 June to 26 June.

Field Sparrow, *Spizella pusilla*
392 nests representing 34 provincial regions.
Outside diameters of 16 nests ranged from 4 to 11.4 cm (1.6 to 4.5 inches), with 8 averaging 6.3 to 9 cm (2.5 to 3.5 inches); inside diameters of 15 nests ranged from 3.5 to 7 cm (1.4 to 2.8 inches), with 8 averaging 4.5 to 5.6 cm (1.8 to 2.2 inches); outside depths of 14 nests ranged from 3 to 10 cm (1.2 to 3.9 inches), with 7 averaging 5 to 7.3 cm (2 to 2.9 inches); and inside depths of 13 nests ranged from 2.5 to 5 cm (1 to 2 inches), with 7 averaging 3.3 to 4.5 cm (1.3 to 1.8 inches).
Cowbird parasitism 378 nests with 63 parasitized (16.7%).

Vesper Sparrow, *Pooecetes gramineus*
528 (529 nests) representing 44 provincial regions. Kent (1967) was an added nesting region.
With the inclusion of measurements from 2 more nests, the outside diameter of 7 nests ranged from 7.6 to 10 cm (3 to 4 inches), inside diameters of 4 nests from 4 to 6.4 cm (1.6 to 2.5 inches), outside depths of 2 nests were 2 and 5 cm (0.8 and 2 inches), and inside depths of 2 nests were 1 and 5 cm (0.4 and 2 inches).
Cowbird parasitism 494 nests with 52 parasitized (10.5%).

Lark Sparrow, *Chondestes grammacus*
9 nests representing 4 provincial regions. No additional information.

Savannah Sparrow, *Passerculus sandwichensis*
662 (664 nests) representing 45 provincial regions. Hastings (1985) was a new nesting region.
Eggs were laid daily.
Cowbird parasitism 607 nests with 44 parasitized (7.2 %).
INCUBATION PERIOD Another 9-day period from a nest in Kenora near Hudson Bay, again suggested that true incubation begins before the clutch is complete, particularly in colder regions.

Grasshopper Sparrow, *Ammodramus savannarum*
86 nests representing 25 provincial regions. Niagara RM (1986) and Waterloo (1968) were the last nesting regions added.
Outside diameters of 6 nests ranged from 8 to 10 cm (3.1 to 3.9 inches), inside diameters ranged from 5 to 7 cm (2 to 2.8 inches), outside depths ranged from 4 to 8 cm (1.6 to 3.1 inch-

Figure 2: Nest and eggs of Savannah Sparrow, 4 June 1970, near Mer Bleue bog, Carleton County. (Photo by *G.K. Peck*).

es), and inside depths ranged from 3 to 5 cm (1.2 to 2 inches).
EGGS 66 nests with 1 to 5 eggs; 1E (1N), 2E (4N), **3E** (6N), **4E** (25N), **5E** (30N).
Average clutch range 4 to 5 eggs (55 nests).
Cowbird parasitism 83 nests with 7 parasitized (8.4%).

Henslow's Sparrow, *Ammodramus henslowii*
13 nests representing 11 provincial regions. No evidence of nesting in the last decade has been noted, and other than the occasional sighting of territorial males, e.g., Prince Edward County in 1996, it is feared that the species may be all but extirpated from the province as a breeding species. It is listed as endangered by COSEWIC (Austen and Cadman 1993).

Le Conte's Sparrow, *Ammodramus leconteii*
8 nests representing 3 provincial regions. Cochrane (1983) was an added nesting region. A 1987 breeding record was reported from Dundas County (Weir 1987b). In 1988, males and females in breeding condition were collected in Kenora near Attawapiskat, and also in 1998 in Cochrane near Moosonee (J.D. Rising, pers. comm.).

Two new nest records have been received, the Cochrane District nest in a 'graminoid-dominated super-tidal marsh', and a Rainy River District nest in a wet meadow bordering a lake. The Cochrane nest was situated beneath a flattened *Juncus* sp.clump at a height of ca 17 cm (6.7 inches); the Rainy River nest was placed in stems of Canada Blue-joint, *Calamagrostis canadensis*, and its exterior was formed of coarse grasses with a lining of fine grasses. The Rainy River nest had an outside diameter of 10 cm (3.9 inches), and an outside depth of 6 cm (2.4 inches).
EGGS 8 nests with 4 to 5 eggs; **4E** (6N), **5E** (2N).
EGG DATES 7 nests, 3 June to 18 June (8 dates).

Nelson's Sharp-tailed Sparrow, *Ammodramus nelsoni*
3 nests representing 1 provincial region. Only one nest, the third, has been reported since the publication of Volume 2 (Peck and James 1987). This nest was found on 5 July 1983 at North Point, 27 km NNE of Moosonee, Cochrane District, but details of the find have only recently been received. In addition, males and females in breeding condition were collected in 1988 in Kenora near Attawapiskat, and also in 1998 in Cochrane near Moosonee (J.D. Rising, pers. comm.).

The 1983 nest was near James Bay as were also the two previously discovered nests of this secretive and seldom encountered provincial breeding species. It was located in a 0.3 to 0.4 m (1 to 1.3 ft) tall, dry, 'grass-sedge-forb' area. The nest was formed entirely of grasses and sedge stems and contained 4 eggs.

Fox Sparrow, *Passerella iliaca*
5 nests representing 2 provincial regions. No new information for this northern-breeding sparrow has been received.

Song Sparrow, *Melospiza melodia*
2128 (2132 nests) representing all 52 provincial regions.

A small Haliburton nest had an outside diameter of 7.8 cm (3.1 inches), inside diameter of 4.9 cm (1.9 inches), outside depth of 5 cm (2 inches), and an inside depth of 3.2 cm (1.3 inches).
Cowbird parasitism 2032 nests with 457 parasitized (22.5%). During the last decade only 37 of 220 nests with known contents were parasitized (16.8%), thus slightly lowering the overall percentage parasitism.
INCUBATION PERIOD 18 nests, 11 to 15 days, with 9 averaging 11 to 12 days.

A triple brood was reported in Haldimand-Norfolk in 1994, with the second and third broods in the same nest and both nests in the same small tree; the total observed nesting period ranged from 20 May to 7 August.

Lincoln's Sparrow, *Melospiza lincolnii*
29 nests representing 8 provincial regions.
EGGS 26 nests with 3 to 5 eggs; 3E (2N), **4E** (20N), **5E** (4N).
Average clutch range 4 eggs (20 nests).
Cowbird parasitism 28 nests with 1 parasitized (3.6%).

Swamp Sparrow, *Melospiza georgiana*
269 nests representing 41 provincial regions. Nest records from Haliburton (1981) and Waterloo (1972) were added.

With the inclusion of measurements from 4 more nests, 10 nests had outside diameters ranging from 7 to 15 cm (2.8 to 6 inches), inside diameters from 5 to 8 cm (2 to 3.1 inches), outside depths from 7 to 11.4 cm (2.8 to 4.5 inches), and inside depths from 4 to 7.6 cm (1.6 to 3 inches).
Cowbird parasitism 257 nests with 34 parasitized (13.2%).

White-throated Sparrow, *Zonotrichia albicollis*
512 (514) nests representing 33 provincial regions.
Cowbird parasitism 449 nests with 24 parasitized (5.3%).

Harris's Sparrow, *Zonotrichia querula*
1 nest representing 1 provincial region. No new information for this northern breeder.

Figure 3: Lincoln's Sparrow during spring migration. It is a widespread breeding bird, primarily in northern Ontario. (Photo by *G.K. Peck*).

Figure 4: Nest and eggs of Swamp Sparrow in marsh, 19 May 1968, Dover Twp., Kent County. (Photo by *G.K. Peck*).

Figure 5: White-throated Sparrow feeding young in nest, 20 June 1987, Benneweis Twp., Sudbury District. (Photo by *G.K. Peck*).

White-crowned Sparrow, *Zonotrichia leucophrys*
22 nests representing 2 provincial regions, and an adjacent island in James Bay (Akimiski Island, NWT). Five new nest records have been received and the following data includes the addition of the new records.

Three 1990 Kenora nests near Hudson Bay and 1 to 2 km (0.6 to 1.2 miles) east of Little Shagamu River were on raised tundra ridges covered with lichens, herbaceous plants, and scattered shrubs and small spruce. The 1995 Akimiski Island nest was also on a vegetated coastal ridge.
EGGS 20 nests with 3 to 5 eggs; **3E** (1N), **4E** (8N), **5E** (11N).
Average clutch range 5 eggs (11 nests).
EGG DATES 19 nests, 8 June to 24 July (28 dates); 10 nests, 23 June to 30 June.

Dark-eyed Junco, *Junco hyemalis*
186 nests representing 25 provincial regions. A nest record from Manitoulin (1990) was added, and a 1986 breeding record from Haldimand-Norfolk was noted well south of the species' present breeding range (Weir 1986).

With the inclusion of measurements of 8 more nests, the outside diameters of 10 nests ranged from 6.8 to 16.5 cm (2.7 to 6.5 inches), inside diameters of 19 nests from 4 to 12 cm (1.6 to 4.7 inches), outside depths of 4 nests from 3.2 to 8.9 cm (1.3 to 3.5 inches), and inside depths of 18 nests from 2 to 6.5 cm (0.8 to 2.6 inches).
Cowbird parasitism 177 nests with 7 parasitized (4%).

Lapland Longspur, *Calcarius lapponicus*
14 nests representing 1 provincial region.
EGGS 13 nests with 3 to 6 eggs; 3E (3N), **4E** (3N), **5E** (5N), **6E** (2N).
Average clutch range 4 to 5 eggs (8 nests).
EGG DATES 10 nests, 17 June to 21 July (14 dates); 5 nests, 27 June to 30 June.

Figure 6: Nest and eggs of White-crowned Sparrow near James Bay coast, 1 July 1970, in Polar Bear Provincial Park, Kenora District. (Photo by *G.K. Peck*).

Smith's Longspur, *Calcarius pictus*
16 nests representing 1 provincial region.
EGGS 14 nests with 3 to 5 eggs; 3E (1N), **4E** (8N), **5E** (5N).
Average clutch range 4 eggs (8 nests).
EGG DATES 9 nests, 22 June to 14 July (13 dates); 5 nests, 29 June to 2 July

[Snow Bunting], *Plectrophenax nivalis*
No further information on this possible but unconfirmed breeder has been received (Peck and James 1987, Cadman et al. 1987).

Northern Cardinal, *Cardinalis cardinalis*
432 (434 nests) representing 29 provincial regions. Prince Edward (1993) was a recently added nesting region.

One nest was 8 m (26 ft) from an active nest of a Cedar Waxwing. A very unusually high nest was reported at a height of 22 m (72 ft) in a 27 m (89 ft) White Pine in Haldimand-Norfolk (A. Sandilands, pers. comm.).
EGGS 308 nests with 1 to 8 eggs; 1E (20N), **2E** (75N) - 24.4%, **3E** (148N) - 48.1%, **4E** (52N) - 16.9%, **5E** (11N) - 3.6%, 6E (1N), 8E (1N).
Average clutch range 2 to 3 eggs (223 nests).
Cowbird parasitism 358 nests with 72 parasitized (20.1%).

Several double broods were reported.

Rose-breasted Grosbeak, *Pheucticus ludovicianus*
527 (530 nests) representing 43 provincial regions. A nest record was submitted in 1995 from Prince Edward.

Figure 7: Male Rose-breasted Grosbeak feeding young in nest, 18 June 1965, Nassagaweya Twp., Halton County. (Photo by *G.K. Peck*).

A large nest from Haldimand-Norfolk had an outside diameter of 20 cm (7.9 inches), inside diameter of 15 cm (5.9 inches), outside depth of 12 cm (4.7 inches), and inside depth of 9 cm (3.5 inches).
Cowbird parasitism 367 nests with 28 parasitized (7.6%).
INCUBATION PERIOD 12 nests, 11 to 14 days: 2 of 11 days, 1 of no more than 11 days, 3 of at least 11 days, 2 of no more than 12 days, 2 of at least 12 days, 1 of ca. 13 days, 1 of at least 14 days.

Indigo Bunting, *Passerina cyanea*
212 nests representing 36 provincial regions. Victoria (1986) was an added nesting region, and a breeding record for Dufferin (1996) was reported.
EGGS 144 nests with 1 to 6 eggs; 1E (4N), **2E** (13N), **3E** (72N), **4E** (53N), **6E** (1N).
Average clutch range 3 eggs (72 nests).
Cowbird parasitism 193 nests with 51 parasitized (26.4%).
EGG DATES A late egg date of 20 August was recorded at a 1937 nest from Lincoln County, and a nestling in pinfeathers was noted on 4 September in a 1987 nest from Bruce County, indicating an even later egg date.

Dickcissel, *Spiza americana*
30 (33 nests) representing 7 provincial regions. Kent, Lambton, Niagara, and York were all new nesting regions in 1988, the result of a sporadic breeding invasion into southern Ontario that year. Also in 1988, nests were reported from Essex (mainland) and Pelee Island, and were the first for the county since 1884.

New and mostly well detailed data from 29 nests were received following the 1988 invasion and are herein summarized.

The availability of suitable breeding habitat rather than a colonial formation would appear

to explain the often relatively close proximity of nesting pairs during the 1988 breeding season.

Most nests were situated in old or abandoned fields of grasses, other herbaceous plants, and various shrubs. One nest was in a hay field. Nests at low elevations (23 nests) greatly out-numbered those on the ground (2 nests). Elevated nests were placed in herbaceous plants (5 species), and also in deciduous shrubs and saplings (6 species). One ground nest was at the base of a plant and another was concealed in stalks of timothy. Heights of 20 nests ranged from 0.08 to 1 m (0.3 to 3.3 ft), with 10 averaging 0.3 to 0.6 m (1 to 2 ft).

Nests were described as neat cups, although one was flimsy and poorly constructed. Nest exteriors were of coarse grasses and herbaceous stalks. Linings were composed of fine grasses, leaves and fine rootlets. Outside diameters of 16 nests ranged from 6 to 12.1 cm (2.4 to 4.8 inches), with 8 averaging 8.9 to 11.2 cm (3.5 to 4.4 inches); inside diameters ranged from 5 to 7 cm (2 to 2.8 inches), with 8 averaging 5.7 to 6.4 cm (2.3 to 2.5 inches); outside depths ranged from 5 to 10.2 cm (2 to 4 inches), with 8 averaging 7 to 8.6 cm (2.8 to 3.4 inches); and inside depths ranged from 4 to 6.6 cm (1.6 to 2.6 inches), with 8 averaging 4.4 to 5.6 cm (1.8 to 2.2 inches).
EGGS 24 nests with 2 to 5 eggs; 2E (1N), **3E** (6N), **4E** (15N), **5E** (2N).
Average clutch range 4 eggs (15 nests).
Cowbird parasitism 25 nests with 1 parasitized (4%).
INCUBATION PERIOD 4 nests: 2 of 9 days, 1 of 9 or 10 days, 1 of 10 days. These periods are shorter than usually stated (Baicich and Harrison 1997), and probably indicate that incubation commences before the clutch is complete.
EGG DATES 17 nests, 6 June to 27 July (27 dates); 9 nests, 12 July to 17 July.

Bobolink, *Dolichonyx oryzivorus*
156 (157 nests) representing 37 provincial regions. Haliburton (1988) was the only added nesting region.
EGGS 108 nests with 1 to 7 eggs; 1E (2N), 2E (3N), **3E** (4N), **4E** (21N), **5E** (55N), **6E** (22N), **7E** (1N).
Average clutch range 5 eggs (55 nests).
Cowbird parasitism 149 nests with 8 parasitized (5.4%).
EGG DATES 109 nests, 19 May to 16 July (115 dates); 55 nests, 2 June to 12 June.

Red-winged Blackbird, *Agelaius phoeniceus*
7831 (ca 12 296 nests) representing all 52 provincial regions. The average size of 124 colonies was 18 nests.

A tree nest of this species was located on the same branch as an active nest of Mourning Dove, and at a distance of 1 m (3.3 ft).

In Kent County, a nest with 1 egg was found on 23 June. A single young was noted on 25 June and was banded on 1 July. This record suggests that 1 egg may occasionally be a complete clutch.
Cowbird parasitism 6554 nests with 170 parasitized (2.6%).

Eastern Meadowlark, *Sturnella magna*
423 nests representing 38 provincial regions.
Cowbird parasitism 390 nests with 11 parasitized (2.8%).

Western Meadowlark, *Sturnella neglecta*
9 nests representing 9 provincial regions. No new nesting information has been received. While the northwestern Ontario population appears stable, occurrences of the Western Meadowlark have decreased in southern Ontario since the 1970s (Austen et al. 1994).

Yellow-headed Blackbird, *Xanthocephalus xanthocephalus*
42 (15 colonies, 55 nests) representing 4 provincial regions. A nest record was received from Thunder Bay in 1988, and a breeding record in 1996 was noted from Simcoe. At the Thunder

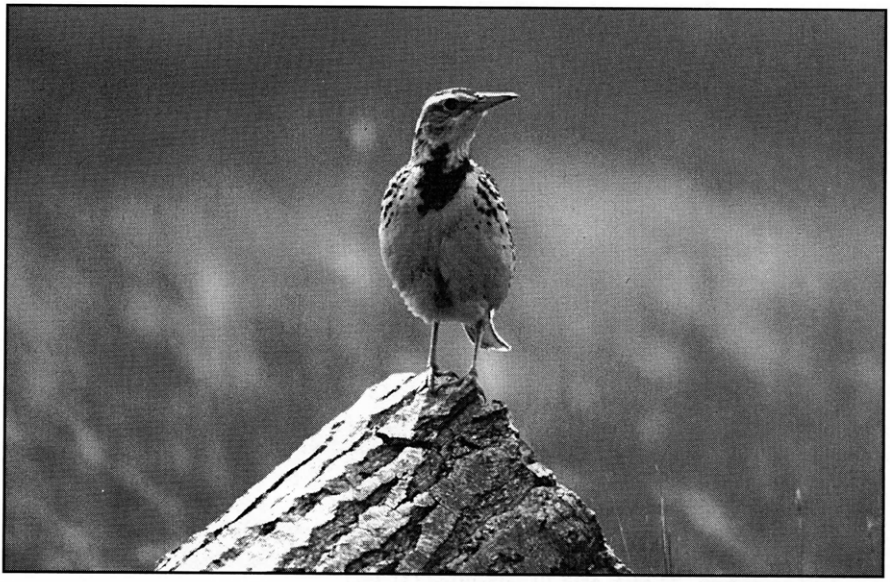

Figure 8: Western Meadowlark near its nest. Identification problems as well as a small provincial population are the main reasons for the few known Ontario nests. (Photo by *G.K. Peck*).

Bay location, 10 pairs were reported in 1989 (Weir 1989).
EGGS 33 nests with 1 to 5 eggs; 1E (3N), **3E** (10N), **4E** (18N), **5E** (2N).
Average clutch range 4 eggs (18 nests).
EGG DATES 31 nests, 30 May to 9 July (40 dates); 16 nests, 7 June to 19 June.

Rusty Blackbird, *Euphagus carolinus*
38 nests representing 14 provincial regions. No new nesting or breeding infomation has been received in the past decade.

Brewer's Blackbird, *Euphagus cyanocephalus*
209 (56 colonies, 14 isolated nestings, ca 264 nests) representing 15 provincial regions. The average size of 56 colonies was 4 to 5 nests.

A compact nest from Bruce had an outside diameter of 12 cm (4.7 inches), inside diameter of 9 cm (3.5 inches), outside depth of 7 cm (2.8 inches), and inside depth of 5 cm (2 inches).
Cowbird parasitism 206 nests with 1 parasitized (0.5 %).
EGG DATES 130 nests, 6 May to 4 July (157 dates); 65 nests, 27 May to 1 June. The data continue to indicate a fairly short breeding season during which only one brood is raised, and especially show a narrow height of the season.
BREEDING DISTRIBUTION

New colony sites were reported in 1991 in Bruce and Parry Sound (Weir 1991b), and on 21 May 1993 more than 100 pairs were noted in the southern half of Bruce County (Ridout 1993a).

Common Grackle, *Quiscalus quiscula*
2817 (2441 isolated nestings, ca 310 colonies, ca 5029 nests) representing all 52 provincial

regions. The average size of 310 estimated colonies totalling 2588 nests was 8 nests.

A small colony of grackles was found nesting near nesting House Finches. Two Common Grackle nests in a marsh contained buried eggs of Red-winged Blackbirds, indicating that the grackles had built on occupied nests of that species.

A nest from Prince Edward contained 5 grackle eggs which hatched and 1 egg of American Robin which did not.

Cowbird parasitism 2245 nests with 4 parasitized (0.2%).

Brown-headed Cowbird, *Molothrus ater*

RECORDS Eggs or young in 3508 hosts' nests, representing 50 provincial regions. With the addition in 1988 of the Dickcissel, the Brown-headed Cowbird has parasitized a total of 87 species in Ontario.

The eastern race of the Warbling Vireo, *Vireo g. gilvus*, is now known to be a rejecter of cowbird eggs, and the smallest of the 7 species which employ this strategy (Sealy 1996).

Orchard Oriole, *Icterus spurius*

75 nests representing 15 provincial regions. A nest record was received for York RM in 1990.

Outside diameters of 17 nests ranged from 7 to 10 cm (2.8 to3.9 inches), inside diameters from 5 to 8 cm (2 to 3.1 inches), outside depths from 5 to 10 cm (2 to 3.9 inches), and inside depths from 3.5 to 7.7 cm (1.4 to 3 inches).

EGGS 24 nests with 1 to 5 eggs; **1E** (3N), **2E** (2N), **3E** (2N), **4E** (13N), **5E** (4N).

Average clutch range 4 eggs (13 nests). Eggs were laid at daily intervals.

Cowbird parasitism 32 nests with 10 parasitized (31.3%).

EGG DATES 21 nests, 24 May to 12 July (26 dates); 11 nests, 3 June to 19 June.

Baltimore Oriole, *Icterus galbula*

844 (848 nests) representing 44 provincial regions.

EGGS 130 nests with 1 to 6 eggs; 1E (3N), 2E (3N), **3E** (17N), **4E** (37N), **5E** (46N), **6E** (24N).

Average clutch range 4 to 5 eggs (83 nests).

Cowbird parasitism 181 nests with 10 parasitized (5.5%).

INCUBATION PERIOD 1 nest, of ca. 14 days.

EGG DATES 128 nests, 18 May to 24 June (134 dates); 64 nests, 3 June to 11 June.

Only one brood is raised in the short breeding season.

[Pine Grosbeak], *Pinicola enucleator*

No new information on the status of this hypothetical breeding species has been received.

Purple Finch, *Carpodacus purpureus*

129 nests representing 30 provincial regions. Nestings apparently occurred in Oxford in 1990 (Weir 1990b) and 1993 (Ridout 1993b). A probable breeding was reported from Haldimand-Norfolk in 1997 (A. Davidson, pers. comm.).

EGGS 91 nests with 1 to 6 eggs; 1E (12N), 2E (10N), **3E** (28N), **4E** (27N), **5E** (13N), **6E** (1N).

Average clutch range 3 to 4 eggs (55 nests).

Cowbird parasitism 99 nests with 37 parasitized (37.4%).

EGG DATES 88 nests, 11 May to 5 August (115 dates); 44 nests, 8 June to 29 June.

BREEDING DISTRIBUTION

Purple Finches are decreasing as a breeding species in Ontario, particularly in the agricultural south. A 50% decline in breeding populations has been noted in the northeastern U.S. and southern Canada (Wooton 1996). Fewer provincial nest records have been received in the past decade and most of those were earlier or even historical records. It has been suggested that this decline is due, at least in part, to the huge increase of House Finches in southern Ontario, and the resulting interspecific competition (Wooton 1987, Shedd 1990).

Figure 9: Pendant nest containing 3 eggs of Orchard Oriole. This species breeds mainly in the Deciduous Forest region, in southern Ontario. (Photo by *G.K. Peck*).

Figure 10: Male Baltimore Oriole at nest, removing fecal sac from young, 6 June 1990, Medonte Twp., Simcoe County. (Photo by *G.K. Peck*).

House Finch, *Carpodacus mexicanus*
276 (280 nests) representing 26 provincial regions. Since the publication of Volume 2 (Peck and James 1987), many new nest records have been submitted for this rapidly expanding species. The following 19 regions have reported nest records: Brant (1986), Bruce (1988), Dufferin (1995), Essex (1989), Frontenac (1987), Grey (1988), Haldimand-Norfolk (1986), Halton (1993), Hamilton-Wentworth (1996), Middlesex (1988), Muskoka (1995), Oxford (1990), Peterborough (1986), Prince Edward (1993), Simcoe (1992), Victoria (1994), Waterloo (1991), Wellington (1986), and York (1990).

Although the majority of nests were near or on residences and buildings in both urban and rural areas, three nests were in conifer plantations, three in park woodlands, three in cemeteries, two in abandoned pastures, and one in a hawthorn meadow.

Many nests were in hanging flower pots. One unusual site was a space between bricks on a building and was used for two successive years. Another nest was located in a factory fan duct. Nests were also reported in old nests of Mourning Dove, Barn Swallow, Cliff Swallow, and House Sparrow. A nest was observed 1.5 m (4.9 ft) distant from an active nest of Chipping Sparrow, and another 1 m (3.3 ft) distant from an active nest of House Sparrow.
EGGS 128 nests with 1 to 6 eggs; 1E (1N), **2E** (5N), **3E** (10N), **4E** (49N), **5E** (57N), **6E** (6N).
Average clutch range 4 to 5 eggs (106 nests). Eggs were laid daily.
Cowbird parasitism 182 nests with 50 parasitized (27.5%). Since 1987, 23 of 95 nests were parasitized (24.2%). These substantial decreases in percentage parasitism from the 42.2% reported in Volume 2 (Peck and James 1987) may already be significant in light of the 100% mortality of cowbird nestlings in nests of this granivorous host (D. Koslovic, pers. comm.), and an indication of an adaptation by the brood parasite.
EGG DATES 159 nests, 22 March to 6 August (257 dates); 80 nests, 27 May to 19 June.
Re-nestings and second broods were frequently reported in both the same and in different nests. A triple brood was reported from Waterloo, and a third nesting attempt was noted in different but nearby nests in York. Nestlings fledged 16 days after hatching in a Northumberland nest.
BREEDING DISTRIBUTION
Nests were reported as far north as Bruce, and Muskoka. Spring and summering individuals in Nipissing, Rainy River, and Thunder Bay (Weir 1991a, Ridout 1994) further indicate the continuing northern expansion of the species.

Red Crossbill, *Loxia curvirostra*
8 nests representing 4 provincial regions. No new information has been received.

White-winged Crossbill, *Loxia leucoptera*
7 (9 nests) representing 6 provincial regions. New nesting regions were Haldimand-Norfolk (1993), Oxford (1989), and Sudbury (1992). Four more nest records of this sporadically occurring fringillid have been submitted and their incorporated data are presented.

Two of the 9 nests were in coniferous forests (Nipissing), one was in a conifer plantation (Oxford), three were in a mixed second-growth forest (Sudbury), and another was in a mixed Carolinian Zone woods (Haldimand-Norfolk).

All 9 nests were in conifers: Black Spruce (2 nests), White Spruce (2 nests), Norway Spruce (1 nest), spruce sp. (1 nest), Balsam Fir (1 nest), Jack Pine (1 nest), and cedar sp. (1 nest). Nests were variously situated at the trunk (2 nests), and up to 2 m (6.6 ft) away from the trunk (3 nests). Heights of 8 nests ranged from 2.4 to 12.5 m (8 to 41 ft), with 4 averaging 5 to 10 m (16.4 to 32.8 ft).

Nests were described as cups (one flimsy), with exteriors of small spruce twigs. They were variously lined with grasses, feathers, plant down, animal hair, rootlets, plant fibres, moss, *Usnea* lichen, and pine needles. One nest had an outside diameter of 9.5 cm (3.7 inches), inside diameter of 6 cm (2.4 inches), outside depth of 5 cm (2 inches), and inside depth of 3.5 cm (1.4 inches).

One nest contained 3 eggs, one contained 3 young, another contained an unspecified number of eggs, and a fourth contained an unspecified number of young.

The recorded dates for 4 occupied nests were 3 April, 19, 20, and 22 August.

Common Redpoll, *Carduelis flammea*

20 nests representing 2 provincial regions. Only one new record has been submitted describing a nest under construction just east of the Little Shagamu River, near Hudson Bay, Kenora District (1990). The nest was located in an open Black Spruce forest, and was situated in a Black Spruce at an unusually high height of 4 m (13.1 ft).

[Hoary Redpoll], *Carduelis hornemanni*

This species was listed as a probable breeder in 1985 in extreme northwestern Kenora District (Cadman et al. 1987). Until documented evidence of breeding is obtained its status must remain hypothetical.

Pine Siskin, *Carduelis pinus*

40 (43 nests) representing 24 provincial regions. New nesting regions were Elgin (1988), Haldimand-Norfolk (1986), Haliburton (1995), Middlesex (1988), and Niagara (1996). Probable breeding records were reported in 1987 from Frontenac, Ottawa-Carleton, and Waterloo (Weir 1987a, 1987b); and in 1990 from Oxford (Weir 1990a).

EGGS 21 nests with 1 to 5 eggs; 1E (1N), **2E** (6N), **3E** (3N), **4E** (8N), **5E** (3N).

Average clutch range 3 to 5 eggs (14 nests).

Cowbird parasitism 20 nests with 3 parasitized (15%).

EGG DATES 19 nests, March to 23 July (24 dates); 10 nests, 26 April to 14 May.

BREEDING DISTRIBUTION

As is typical of the appearances and nestings of some other fringillids, Pine Siskins are sporadic in the timing and distribution of their nestings. However, it is notable that almost all recent nestings and breeding records have been reported from southern Ontario, with a peak year occurring in 1987.

American Goldfinch, *Carduelis tristis*

1456 nests representing 44 provincial regions. Glengarry (1995) was a new nesting region.

Cowbird parasitism 1221 nests with 101 parasitized (8.3%). The relatively low rate of parasitism is due in part to the lateness of the host's breeding season, and additionally may be influenced by an adaptation by the brood parasite to the almost 100% mortality suffered by its offspring in nests of this highly granivorous host (Middleton 1993).

An early egg date of 28 May was submitted from a nest in Wellington County in 1991. In addition, nests under construction on 21 May 1994 and 26 May 1962 were reported from Durham RM and Ontario County, respectively.

Evening Grosbeak, *Coccothraustes vespertinus*

12 nests representing 8 provincial regions. A nesting in Durham (1983), and an apparent nest in 1991 in Leeds were added reports.

The Durham nest contained four young, and three young fledged from the Leeds nesting.

House Sparrow, *Passer domesticus*

1528 (1658 nests) representing all 52 provincial regions.

EGGS 260 nests with 1 to 7 eggs; 1E (6N), 2E (13N), **3E** (25N), **4E** (75N), **5E** (102N), **6E** (35N), 7E (4N).

Average clutch range 4 to 5 eggs (177 nests).

Cowbird parasitism Brood parasitism of this species is only occasionally reported (Friedmann

et al. 1977), and has never been reported in Ontario. This lack of noted parasitism could possibly be explained by a superficial resemblance of the eggs of the host to those of the parasite causing their presence to be overlooked.

EGG DATES Nests under construction on 3 February, 4 March, and 9 March in York; and on 29 March in Grey, indicate probable earlier egg dates than were recorded in Volume 2 (Peck and James 1987). Adults feeding young in the nest on 3 November in York definitely imply a much later egg date than was previously reported.

On 8 December 1988, in York, at least two pairs were observed adding nest material to a site, but were possibly reacting to a mild spell of weather.

Acknowledgements

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1999
OFO Annual General Meeting

Please mark your calendars now for the 1999 Ontario Field Ornithologists' AGM to be held at Point Pelee National Park on Saturday and Sunday, 2 and 3 October 1999. Enjoy a weekend of great fall birding in one of Ontario's finest areas. Experienced leaders will take small groups and focus on bird identification in the field. Join Paul Pratt, Alan Wormington and others to explore the park and nearby areas.

We will come together in Leamington on Saturday evening for a banquet and special presentation by Tom Hince on the "Birds of Point Pelee".

More details will follow in the coming months. *Jean Iron*

First Occurrence of Greater Shearwater in Ontario

David Brewer, Barry Kent MacKay, Wendy Hunter and Paloma Plant

On 20 August 1997, a member of the public found an exhausted bird on the Lake Ontario shore, at Budapest Beach, in the grounds of the Canadian National Exhibition, Toronto, Ontario. The bird was given to fairground staff, who passed it on to Wendy Hunter and Paloma Plant, of the Wildlife Department of the Toronto Humane Society. They, in turn, contacted Barry Kent MacKay, who confirmed from their verbal description that the bird did, indeed, match the description of a Greater Shearwater (*Puffinus gravis*).

When the bird was brought to MacKay late in the evening of 20 August, it was obviously ill beyond all help, being moribund and barely capable of movement. It was, therefore, euthanized that evening. Photographs of the body were taken two days later, when cloud cover dispersed, allowing good light, and the bird was shown to David Brewer.

The bird was prepared as a study skin by MacKay, and is now in the Royal Ontario Museum (specimen number 159988). Fat was nil, body entirely emaciated, stomach empty, and oil gland dry. Sex was male; testes measured 4.5 X 4.0 mm. The weight of the bird, recorded upon its arrival at the Toronto Humane Society, was 390 g. Adult birds in good condition weigh about 715 to 950 g (Cramp and Simmons 1977). Since the specimen was in hand, no notes were taken of plumage; however, detailed notes of soft part colours, which change on preservation, were attached to the specimen. The identity of the bird was clearly established by its very large size, distinct capped appearance, and dark belly patch (see Figures 1 and 2). The record was accepted by the Ontario Bird Records Committee as the first occurrence for Ontario (Dobos 1998).

Discussion

Aside from a single breeding record from the Falkland Islands (Woods 1988), the Greater Shearwater nests exclusively in the Tristan da Cunha group in the South Atlantic (AOU 1998). After breeding in the southern summer, adults and juveniles migrate, apparently in a northwestern direction, past the horn of Brazil, moving offshore from the Carolinas in late May or June, New England somewhat later, and as far north as the Davis Strait by July or August, before heading across the North

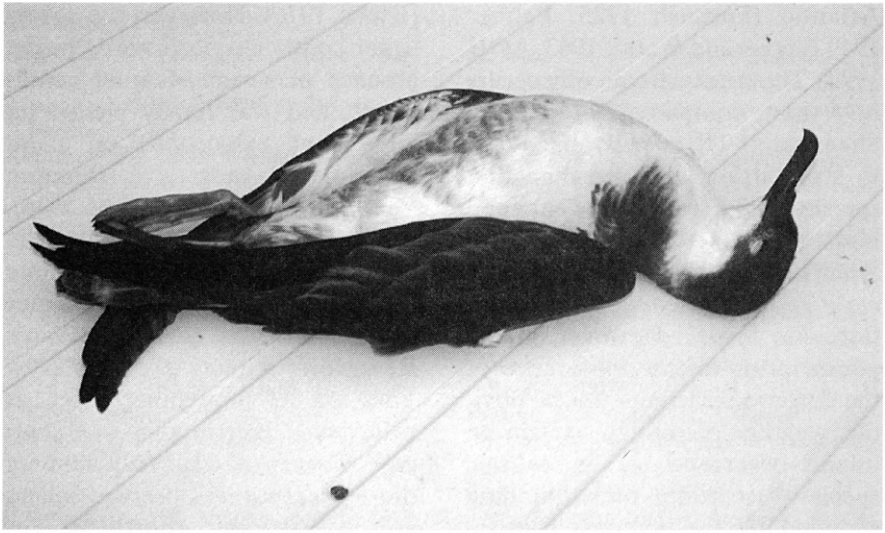

Figure 1: Greater Shearwater, 22 August 1997, Toronto, Ontario. Photo by *Barry Kent MacKay.*

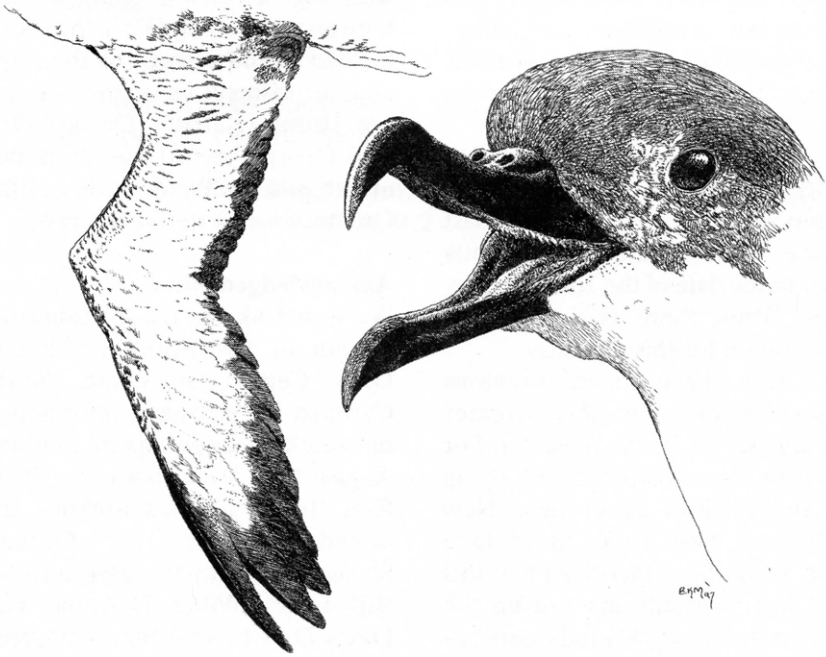

Figure 2: Greater Shearwater. Drawing by *Barry Kent MacKay.*

Atlantic (Forbush 1925, Palmer 1949, Voous and Wattel 1963, AOU 1998). The species frequently occurs in the company of Sooty Shearwaters (*P. griseus*), but tends to stay farther offshore than that species. "Wrecks" of weakened birds occur on the eastern North American seaboard, sometimes as early as June, when weather conditions are severe. However, in the period prior to the appearance of the Toronto bird, there was no obvious weather pattern to explain an inland occurrence of an oceanic species (according to storm data supplied by the National Climate Data Center, Asheville, NC). Hurricane Danny (a Category 1 storm) was active from about 16 to 26 July, but its influence was entirely confined to the Gulf of Mexico, where the Greater Shearwater does not occur.

There were no unusual inshore concentrations of Greater Shearwaters recorded on the eastern coast of the United States and Canada prior to the date of the Toronto specimen. Thus, there is no obvious explanation for this vagrancy.

There have been previous inland records of the Greater Shearwater in North America. For example, one was observed flying up the Hudson River near New Baltimore, New York, on 14 June 1976. It was later theorized that this bird was "partially assisted up the Hudson by strong S. winds associated with a storm off Long Island" (Kibbe 1976). However, the shearwater continued northward "in the absence of severe weather conditions", and was finally picked up alive (but exhausted) on Lake Champlain near Burlington, Vermont on 17 June (Kibbe 1976). It became the second Vermont specimen after it died on 19 June (Askildsen 1998). Another Greater Shearwater was seen at Alcove Reservoir, Albany County, New York on 23 September 1989, as "Hurricane Hugo's rain was abating" (Paxton et al. 1990). One of these shearwaters observed inland at Sandersville (northeast of Macon), Georgia on 14 and 15 July 1997 "could not fly and later died, with the specimen going to the University of Georgia"; it "provided the 3rd inland record for the state, and, surprisingly, its occurrence was not storm related" (Davis 1997). This Georgia record was about one month prior to the discovery of the Greater Shearwater at Toronto.

Acknowledgements

We would like to thank Robert A. Magan of the National Climate Data Center, Asheville, North Carolina for providing information on weather conditions in July and August 1997. We also want to thank Ron Tozer for researching the inland records of Greater Shearwater, with the assistance of Bill Crins, Willie D'Anna, Phil Davis, Dick Ferren, Jim Flynn, Jean Iron, Ron Pittaway, and Sy Schiff.

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Ontario Bird Records Committee: 1998 Checklist of the Birds of Ontario

Robert Z. Dobos

In 1984, the Ontario Bird Records Committee (OBRC) first published its Checklist of the Birds of Ontario (Wormington and James 1984). It included a total of 427 species at that time, and followed the classification and nomenclature of the then recent sixth edition of the American Ornithologists' Union (AOU) *Check-list of North American Birds* (AOU 1983).

Since 1982, additions and other changes to the Ontario checklist have been summarized each year in the annual reports of the OBRC published in *Ontario Birds*. Changes to the North American bird checklist have also occurred, based on the decisions of the AOU since their sixth edition checklist (AOU 1983). These changes have been regularly published in *The Auk*, as the thirty-fifth to forty-first supplements to the AOU checklist. The forty-first AOU supplement outlined significant changes to the order of families and species in the checklist (AOU 1997). More recently, the AOU has published its seventh edition of the checklist (AOU 1998), which incorporates all of these taxonomic and nomenclatural changes.

The current Ontario checklist is listed below in its entirety, based on the seventh edition of the AOU checklist (AOU 1998). A total of 470 species are included. Taxonomic order and family names are listed, and for each species, English and scientific names are provided. Species which have been accepted by the OBRC as breeding in Ontario are indicated with an asterisk preceeding the English name. A total of 288 species are known to have bred.

The OBRC has divided the province into north and south regions due to its large geographic size, with the 47th north parallel line of latitude as the division (running roughly north of the cities of Sault Ste. Marie, Sudbury and North Bay). This line is shown on the official Ontario road map. Species which have occurred in the north and south regions are indicated with an "N" and "S", respectively, following the English name. A total of 375 species has been recorded for the north, while 456 have occurred in the south.

Species for which the OBRC requires documentation for their

occurrence in either the north or south regions, based on the current OBRC Review List (October 1998), are indicated with parentheses around the respective "(N)" and "(S)" following the English name. Documentation for occurrences of any species so indicated on this list should be forwarded to the Secretary of the OBRC.

1998 Checklist of the Birds of Ontario

Legend:

N - Species recorded in North; (N) indicates the OBRC requires documentation when the species is recorded in the region.
S - Species recorded in South; (S) indicates the OBRC requires documentation when the species is recorded in the region.
* - Species recorded as breeding in Ontario.

GAVIIFORMES
GAVIIDAE
*Red-throated Loon N/S
Gavia stellata
*Pacific Loon N/(S)
Gavia pacifica
*Common Loon N/S
Gavia immer
Yellow-billed Loon (S)
Gavia adamsii

PODICIPEDIFORMES
PODICIPEDIDAE
*Pied-billed Grebe N/S
Podilymbus podiceps
*Horned Grebe N/S
Podiceps auritus
*Red-necked Grebe N/S
Podiceps grisegena
*Eared Grebe (N)/S
Podiceps nigricollis
Western Grebe (N)/(S)
Aechmophorus occidentalis

PROCELLARIIFORMES
PROCELLARIIDAE
Northern Fulmar (N)/(S)
Fulmarus glacialis
Black-capped Petrel (S)
Pterodroma hasitata
Greater Shearwater (S)
Puffinus gravis
Audubon's Shearwater (S)
Puffinus lherminieri

HYDROBATIDAE
Wilson's Storm-Petrel (S)
Oceanites oceanicus
Leach's Storm-Petrel (N)/(S)
Oceanodroma leucorhoa
Band-rumped Storm-Petrel (S)
Oceanodroma castro

PELECANIFORMES
SULIDAE
Northern Gannet (N)/(S)
Morus bassanus

PELECANIDAE
*American White Pelican N/S
Pelecanus erythrorhynchos
Brown Pelican (N)/(S)
Pelecanus occidentalis

PHALACROCORACIDAE
*Double-crested Cormorant N/S
Phalacrocorax auritus
Great Cormorant (S)
Phalacrocorax carbo

ANHINGIDAE
Anhinga (S)
Anhinga anhinga

FREGATIDAE
Magnificent Frigatebird (S)
Fregata magnificens

CICONIIFORMES
ARDEIDAE
*American Bittern N/S
Botaurus lentiginosus
*Least Bittern (N)/S
Ixobrychus exilis
*Great Blue Heron N/S
Ardea herodias
*Great Egret (N)/S
Ardea alba
*Snowy Egret (N)/S
Egretta thula
Little Blue Heron (N)/(S)
Egretta caerulea
Tricolored Heron (N)/(S)
Egretta tricolor
*Cattle Egret (N)/S
Bubulcus ibis
*Green Heron (N)/S
Butorides virescens
*Black-crowned Night-Heron (N)/S
Nycticorax nycticorax
Yellow-crowned Night-Heron (S)
Nyctanassa violacea

THRESKIORNITHIDAE
White Ibis (S)
Eudocimus albus
Glossy Ibis (S)
Plegadis falcinellus
White-faced Ibis (S)
Plegadis chihi

CICONIIDAE
Wood Stork (S)
Mycteria americana

CATHARTIDAE
Black Vulture (N)/(S)
Coragyps atratus
*Turkey Vulture N/S
Cathartes aura

ANSERIFORMES
ANATIDAE
Black-bellied Whistling-Duck (S)
Dendrocygna autumnalis
Fulvous Whistling-Duck (S)
Dendrocygna bicolor
Greater White-fronted Goose N/S
Anser albifrons
*Snow Goose N/S
Chen caerulescens
*Ross's Goose N/(S)
Chen rossii
*Canada Goose N/S
Branta canadensis
Brant N/S
Branta bernicla
*Mute Swan (N)/S
Cygnus olor
Trumpeter Swan S
Cygnus buccinator
*Tundra Swan N/S
Cygnus columbianus
*Wood Duck N/S
Aix sponsa
*Gadwall N/S
Anas strepera
Eurasian Wigeon (N)/S
Anas penelope
*American Wigeon N/S
Anas americana
*American Black Duck N/S
Anas rubripes
*Mallard N/S
Anas platyrhynchos
*Blue-winged Teal N/S
Anas discors
*Cinnamon Teal (N)/(S)
Anas cyanoptera
*Northern Shoveler N/S
Anas clypeata
*Northern Pintail N/S
Anas acuta
Garganey (N)/(S)
Anas querquedula
*Green-winged Teal N/S
Anas crecca
*Canvasback N/S
Aythya valisineria
*Redhead N/S
Aythya americana
*Ring-necked Duck N/S
Aythya collaris

Tufted Duck (N)/(S)
Aythya fuligula
*Greater Scaup N/S
Aythya marila
*Lesser Scaup N/S
Aythya affinis
*King Eider N/S
Somateria spectabilis
*Common Eider N/(S)
Somateria mollissima
Harlequin Duck (N)/S
Histrionicus histrionicus
*Surf Scoter N/S
Melanitta perspicillata
*White-winged Scoter N/S
Melanitta fusca
Black Scoter N/S
Melanitta nigra
*Oldsquaw N/S
Clangula hyemalis
*Bufflehead N/S
Bucephala albeola
*Common Goldeneye N/S
Bucephala clangula
Barrow's Goldeneye (N)/S
Bucephala islandica
Smew (S)
Mergellus albellus
*Hooded Merganser N/S
Lophodytes cucullatus
*Common Merganser N/S
Mergus merganser
*Red-breasted Merganser N/S
Mergus serrator
*Ruddy Duck N/S
Oxyura jamaicensis

FALCONIFORMES
ACCIPITRIDAE
*Osprey N/S
Pandion haliaetus
Swallow-tailed Kite (N)/(S)
Elanoides forficatus
Mississippi Kite (S)
Ictinia mississippiensis
*Bald Eagle N/S
Haliaeetus leucocephalus
*Northern Harrier N/S
Circus cyaneus
*Sharp-shinned Hawk N/S
Accipiter striatus
*Cooper's Hawk N/S
Accipiter cooperii
*Northern Goshawk N/S
Accipiter gentilis
*Red-shouldered Hawk N/S
Buteo lineatus
*Broad-winged Hawk N/S
Buteo platypterus
Swainson's Hawk (N)/(S)
Buteo swainsoni
*Red-tailed Hawk N/S
Buteo jamaicensis
Ferruginous Hawk (S)
Buteo regalis
*Rough-legged Hawk N/S
Buteo lagopus
*Golden Eagle N/S
Aquila chrysaetos

FALCONIDAE
Crested Caracara (N)/(S)
Caracara plancus
*American Kestrel N/S
Falco sparverius
*Merlin N/S
Falco columbarius
Gyrfalcon N/S
Falco rusticolus
*Peregrine Falcon N/S
Falco peregrinus
Prairie Falcon (S)
Falco mexicanus

GALLIFORMES
PHASIANIDAE
*Gray Partridge N/S
Perdix perdix
*Ring-necked Pheasant N/S
Phasianus colchicus
*Ruffed Grouse N/S
Bonasa umbellus
*Spruce Grouse N/S
Falcipennis canadensis
*Willow Ptarmigan N/(S)
Lagopus lagopus
Rock Ptarmigan N
Lagopus mutus
*Sharp-tailed Grouse N/S
Tympanuchus phasianellus
*Greater Prairie-Chicken (N)/(S)
Tympanuchus cupido

*Wild Turkey S
Meleagris gallopavo

ODONTOPHORIDAE
*Northern Bobwhite S
Colinus virginianus

GRUIFORMES
RALLIDAE
*Yellow Rail N/S
Coturnicops noveboracensis
Black Rail (S)
Laterallus jamaicensis
*King Rail S
Rallus elegans
*Virginia Rail N/S
Rallus limicola
*Sora N/S
Porzana carolina
Purple Gallinule (N)/(S)
Porphyrula martinica
*Common Moorhen (N)/S
Gallinula chloropus
*American Coot N/S
Fulica americana

GRUIDAE
*Sandhill Crane N/S
Grus canadensis
Whooping Crane (S)
Grus americana

CHARADRIIFORMES
CHARADRIIDAE
Black-bellied Plover N/S
Pluvialis squatarola
*American Golden-Plover N/S
Pluvialis dominica
Mongolian Plover (S)
Charadrius mongolus
Snowy Plover (S)
Charadrius alexandrinus
Wilson's Plover (S)
Charadrius wilsonia
*Semipalmated Plover N/S
Charadrius semipalmatus
*Piping Plover N/(S)
Charadrius melodus
*Killdeer N/S
Charadrius vociferus

HAEMATOPODIDAE
American Oystercatcher (S)
Haematopus palliatus

RECURVIROSTRIDAE
Black-necked Stilt (N)/(S)
Himantopus mexicanus
*American Avocet (N)/(S)
Recurvirostra americana

SCOLOPACIDAE
*Greater Yellowlegs N/S
Tringa melanoleuca
*Lesser Yellowlegs N/S
Tringa flavipes
Spotted Redshank (S)
Tringa erythropus
*Solitary Sandpiper N/S
Tringa solitaria
Willet (N)/S
Catoptrophorus semipalmatus
Wandering Tattler (S)
Heteroscelus incanus
*Spotted Sandpiper N/S
Actitis macularia
*Upland Sandpiper N/S
Bartramia longicauda
Eskimo Curlew (N)/(S)
Numenius borealis
*Whimbrel N/S
Numenius phaeopus
Slender-billed Curlew (S)
Numenius tenuirostris
Long-billed Curlew (S)
Numenius americanus
Black-tailed Godwit (S)
Limosa limosa
*Hudsonian Godwit N/S
Limosa haemastica
*Marbled Godwit N/S
Limosa fedoa
Ruddy Turnstone N/S
Arenaria interpres
Red Knot N/S
Calidris canutus
Sanderling N/S
Calidris alba
*Semipalmated Sandpiper N/S
Calidris pusilla
Western Sandpiper (N)/S
Calidris mauri

Little Stint (N)/(S)
Calidris minuta
*Least Sandpiper N/S
Calidris minutilla
White-rumped Sandpiper N/S
Calidris fuscicollis
Baird's Sandpiper N/S
Calidris bairdii
*Pectoral Sandpiper N/S
Calidris melanotos
Sharp-tailed Sandpiper (S)
Calidris acuminata
Purple Sandpiper N/S
Calidris maritima
*Dunlin N/S
Calidris alpina
Curlew Sandpiper (N)/(S)
Calidris ferruginea
*Stilt Sandpiper N/S
Calidris himantopus
Buff-breasted Sandpiper N/S
Tryngites subruficollis
Ruff (N)/S
Philomachus pugnax
*Short-billed Dowitcher N/S
Limnodromus griseus
Long-billed Dowitcher N/S
Limnodromus scolopaceus
*Common Snipe N/S
Gallinago gallinago
*American Woodcock N/S
Scolopax minor
*Wilson's Phalarope N/S
Phalaropus tricolor
*Red-necked Phalarope N/S
Phalaropus lobatus
Red Phalarope N/S
Phalaropus fulicaria

LARIDAE

Pomarine Jaeger (N)/S
Stercorarius pomarinus
*Parasitic Jaeger N/S
Stercorarius parasiticus
Long-tailed Jaeger N/(S)
Stercorarius longicaudus
Laughing Gull (N)/S
Larus atricilla
Franklin's Gull N/S
Larus pipixcan
*Little Gull N/S
Larus minutus
Black-headed Gull (N)/S
Larus ridibundus
*Bonaparte's Gull N/S
Larus philadelphia
Mew Gull (S)
Larus canus
*Ring-billed Gull N/S
Larus delawarensis
*California Gull (N)/(S)
Larus californicus
*Herring Gull N/S
Larus argentatus
Thayer's Gull N/S
Larus thayeri
Iceland Gull N/S
Larus glaucoides
Lesser Black-backed Gull (N)/S
Larus fuscus
Slaty-backed Gull (S)
Larus schistisagus
Glaucous Gull N/S
Larus hyperboreus
*Great Black-backed Gull N/S
Larus marinus
Sabine's Gull N/S
Xema sabini
Black-legged Kittiwake (N)/S
Rissa tridactyla
Ross's Gull (N)/(S)
Rhodostethia rosea
Ivory Gull (N)/(S)
Pagophila eburnea
*Caspian Tern N/S
Sterna caspia
Royal Tern (S)
Sterna maxima
Sandwich Tern (S)
Sterna sandvicensis
*Common Tern N/S
Sterna hirundo
*Arctic Tern N/(S)
Sterna paradisaea
*Forster's Tern N/S
Sterna forsteri
Least Tern (S)
Sterna antillarum
Sooty Tern (S)
Sterna fuscata
White-winged Tern (S)
Chlidonias leucopterus
*Black Tern N/S
Chlidonias niger

Black Skimmer (N)/(S)
Rynchops niger

ALCIDAE
Dovekie (S)
Alle alle
Thick-billed Murre (S)
Uria lomvia
Razorbill (S)
Alca torda
*Black Guillemot N/(S)
Cepphus grylle
Long-billed Murrelet (S)
Brachyramphus perdix
Ancient Murrelet (S)
Synthliboramphus antiquus
Atlantic Puffin (N)/(S)
Fratercula arctica

COLUMBIFORMES
COLUMBIDAE
*Rock Dove N/S
Columba livia
Band-tailed Pigeon (N)/(S)
Columba fasciata
White-winged Dove (N)/(S)
Zenaida asiatica
*Mourning Dove N/S
Zenaida macroura
*Passenger Pigeon (Extinct)
Ectopistes migratorius
Inca Dove (N)
Columbina inca
Common Ground-Dove (N)
Columbina passerina

CUCULIFORMES
CUCULIDAE
*Black-billed Cuckoo N/S
Coccyzus erythropthalmus
*Yellow-billed Cuckoo N/S
Coccyzus americanus
Groove-billed Ani (N)/(S)
Crotophaga sulcirostris

STRIGIFORMES
TYTONIDAE
*Barn Owl (N)/(S)
Tyto alba

STRIGIDAE
*Eastern Screech-Owl (N)/S
Otus asio
*Great Horned Owl N/S
Bubo virginianus
Snowy Owl N/S
Nyctea scandiaca
*Northern Hawk Owl N/S
Surnia ulula
Burrowing Owl (N)/(S)
Athene cunicularia
*Barred Owl N/S
Strix varia
*Great Gray Owl N/S
Strix nebulosa
*Long-eared Owl N/S
Asio otus
*Short-eared Owl N/S
Asio flammeus
*Boreal Owl N/S
Aegolius funereus
*Northern Saw-whet Owl N/S
Aegolius acadicus

CAPRIMULGIFORMES
CAPRIMULGIDAE
Lesser Nighthawk (S)
Chordeiles acutipennis
*Common Nighthawk N/S
Chordeiles minor
Common Poorwill (N)
Phalaenoptilus nuttallii
*Chuck-will's-widow (S)
Caprimulgus carolinensis
*Whip-poor-will N/S
Caprimulgus vociferus

APODIFORMES
APODIDAE
*Chimney Swift N/S
Chaetura pelagica

TROCHILIDAE
Green Violet-ear (N)
Colibri thalassinus
Broad-billed Hummingbird (S)
Cynanthus latirostris
*Ruby-throated Hummingbird N/S
Archilochus colubris
Black-chinned Hummingbird (S)
Archilochus alexandri

Rufous Hummingbird (N)/(S)
Selasphorus rufus

CORACIIFORMES
ALCEDINIDAE
*Belted Kingfisher N/S
Ceryle alcyon

PICIFORMES
PICIDAE
Lewis's Woodpecker (N)/(S)
Melanerpes lewis
*Red-headed Woodpecker N/S
Melanerpes erythrocephalus
*Red-bellied Woodpecker (N)/S
Melanerpes carolinus
*Yellow-bellied Sapsucker N/S
Sphyrapicus varius
*Downy Woodpecker N/S
Picoides pubescens
*Hairy Woodpecker N/S
Picoides villosus
*Three-toed Woodpecker N/S
Picoides tridactylus
*Black-backed Woodpecker N/S
Picoides arcticus
*Northern Flicker N/S
Colaptes auratus
*Pileated Woodpecker N/S
Dryocopus pileatus

PASSERIFORMES
TYRANNIDAE
*Olive-sided Flycatcher N/S
Contopus cooperi
Western Wood-Pewee (N)
Contopus sordidulus
*Eastern Wood-Pewee N/S
Contopus virens
*Yellow-bellied Flycatcher N/S
Empidonax flaviventris
*Acadian Flycatcher S
Empidonax virescens
*Alder Flycatcher N/S
Empidonax alnorum
*Willow Flycatcher (N)/S
Empidonax traillii
*Least Flycatcher N/S
Empidonax minimus
Gray Flycatcher (S)
Empidonax wrightii
Dusky Flycatcher (N)
Empidonax oberholseri
*Eastern Phoebe N/S
Sayornis phoebe
Say's Phoebe (N)/(S)
Sayornis saya
Vermilion Flycatcher (S)
Pyrocephalus rubinus
Ash-throated Flycatcher (S)
Myiarchus cinerascens
*Great Crested Flycatcher N/S
Myiarchus crinitus
Sulphur-bellied Flycatcher (S)
Myiodynastes luteiventris
Variegated Flycatcher (S)
Empidonomus varius
Cassin's Kingbird (S)
Tyrannus vociferans
*Western Kingbird N/S
Tyrannus verticalis
*Eastern Kingbird N/S
Tyrannus tyrannus
Gray Kingbird (S)
Tyrannus dominicensis
Scissor-tailed Flycatcher (N)/(S)
Tyrannus forficatus
Fork-tailed Flycatcher (N)/(S)
Tyrannus savana

LANIIDAE
*Loggerhead Shrike (N)/S
Lanius ludovicianus
*Northern Shrike N/S
Lanius excubitor

VIREONIDAE
*White-eyed Vireo (N)/S
Vireo griseus
Bell's Vireo (S)
Vireo bellii
Black-capped Vireo (S)
Vireo atricapillus
*Yellow-throated Vireo N/S
Vireo flavifrons
Plumbeous Vireo (S)
Vireo plumbeus
*Blue-headed Vireo N/S
Vireo solitarius
*Warbling Vireo N/S
Vireo gilvus
*Philadelphia Vireo N/S
Vireo philadelphicus

*Red-eyed Vireo N/S
Vireo olivaceus

CORVIDAE
*Gray Jay N/S
Perisoreus canadensis
*Blue Jay N/S
Cyanocitta cristata
Clark's Nutcracker (N)
Nucifraga columbiana
*Black-billed Magpie N/(S)
Pica pica
Eurasian Jackdaw (S)
Corvus monedula
*American Crow N/S
Corvus brachyrhynchos
Fish Crow (S)
Corvus ossifragus
*Common Raven N/S
Corvus corax

ALAUDIDAE
*Horned Lark N/S
Eremophila alpestris

HIRUNDINIDAE
*Purple Martin N/S
Progne subis
*Tree Swallow N/S
Tachycineta bicolor
Violet-green Swallow (N)
Tachycineta thalassina
*Northern Rough-winged Swallow N/S
Stelgidopteryx serripennis
*Bank Swallow N/S
Riparia riparia
*Cliff Swallow N/S
Petrochelidon pyrrhonota
Cave Swallow (S)
Petrochelidon fulva
*Barn Swallow N/S
Hirundo rustica

PARIDAE
Carolina Chickadee (S)
Poecile carolinensis
*Black-capped Chickadee N/S
Poecile atricapillus
*Boreal Chickadee N/S
Poecile hudsonicus
*Tufted Titmouse S
Baeolophus bicolor

SITTIDAE
*Red-breasted Nuthatch N/S
Sitta canadensis
*White-breasted Nuthatch N/S
Sitta carolinensis

CERTHIIDAE
*Brown Creeper N/S
Certhia americana

TROGLODYTIDAE
Rock Wren (N)/(S)
Salpinctes obsoletus
*Carolina Wren (N)/S
Thryothorus ludovicianus
*Bewick's Wren (S)
Thryomanes bewickii
*House Wren N/S
Troglodytes aedon
*Winter Wren N/S
Troglodytes troglodytes
*Sedge Wren N/S
Cistothorus platensis
*Marsh Wren N/S
Cistothorus palustris

REGULIDAE
*Golden-crowned Kinglet N/S
Regulus satrapa
*Ruby-crowned Kinglet N/S
Regulus calendula

SYLVIIDAE
*Blue-gray Gnatcatcher (N)/S
Polioptila caerulea

TURDIDAE
Siberian Rubythroat (S)
Luscinia calliope
Northern Wheatear (N)/(S)
Oenanthe oenanthe
*Eastern Bluebird N/S
Sialia sialis
Mountain Bluebird (N)/(S)
Sialia currucoides
Townsend's Solitaire (N)/(S)
Myadestes townsendi
*Veery N/S
Catharus fuscescens
*Gray-cheeked Thrush N/S
Catharus minimus

Bicknell's Thrush (S)
Catharus bicknelli
*Swainson's Thrush N/S
Catharus ustulatus
*Hermit Thrush N/S
Catharus guttatus
*Wood Thrush N/S
Hylocichla mustelina
Eurasian Blackbird (S)
Turdus merula
Fieldfare (S)
Turdus pilaris
*American Robin N/S
Turdus migratorius
Varied Thrush N/S
Ixoreus naevius

MIMIDAE
*Gray Catbird N/S
Dumetella carolinensis
*Northern Mockingbird N/S
Mimus polyglottos
Sage Thrasher (N)/(S)
Oreoscoptes montanus
*Brown Thrasher N/S
Toxostoma rufum

STURNIDAE
*European Starling N/S
Sturnus vulgaris

MOTACILLIDAE
*American Pipit N/S
Anthus rubescens
Sprague's Pipit (N)
Anthus spragueii

BOMBYCILLIDAE
*Bohemian Waxwing N/S
Bombycilla garrulus
*Cedar Waxwing N/S
Bombycilla cedrorum

PTILOGONATIDAE
Phainopepla (S)
Phainopepla nitens

PARULIDAE
*Blue-winged Warbler (N)/S
Vermivora pinus
*Golden-winged Warbler N/S
Vermivora chrysoptera
*Tennessee Warbler N/S
Vermivora peregrina
*Orange-crowned Warbler N/S
Vermivora celata
*Nashville Warbler N/S
Vermivora ruficapilla
Virginia's Warbler (S)
Vermivora virginiae
*Northern Parula N/S
Parula americana
*Yellow Warbler N/S
Dendroica petechia
*Chestnut-sided Warbler N/S
Dendroica pensylvanica
*Magnolia Warbler N/S
Dendroica magnolia
*Cape May Warbler N/S
Dendroica tigrina
*Black-throated Blue Warbler N/S
Dendroica caerulescens
*Yellow-rumped Warbler N/S
Dendroica coronata
Black-throated Gray Warbler (S)
Dendroica nigrescens
*Black-throated Green Warbler N/S
Dendroica virens
Townsend's Warbler (S)
Dendroica townsendi
Hermit Warbler (S)
Dendroica occidentalis
*Blackburnian Warbler N/S
Dendroica fusca
Yellow-throated Warbler (N)/S
Dendroica dominica
*Pine Warbler N/S
Dendroica pinus
*Kirtland's Warbler (N)/(S)
Dendroica kirtlandii
*Prairie Warbler (N)/S
Dendroica discolor
*Palm Warbler N/S
Dendroica palmarum
*Bay-breasted Warbler N/S
Dendroica castanea
*Blackpoll Warbler N/S
Dendroica striata
*Cerulean Warbler S
Dendroica cerulea
*Black-and-white Warbler N/S
Mniotilta varia
*American Redstart N/S
Setophaga ruticilla

*Prothonotary Warbler (N)/S
Protonotaria citrea
Worm-eating Warbler S
Helmitheros vermivorus
Swainson's Warbler (S)
Limnothlypis swainsonii
*Ovenbird N/S
Seiurus aurocapillus
*Northern Waterthrush N/S
Seiurus noveboracensis
*Louisiana Waterthrush S
Seiurus motacilla
Kentucky Warbler S
Oporornis formosus
*Connecticut Warbler N/S
Oporornis agilis
*Mourning Warbler N/S
Oporornis philadelphia
MacGillivray's Warbler (S)
Oporornis tolmiei
*Common Yellowthroat N/S
Geothlypis trichas
*Hooded Warbler (N)/S
Wilsonia citrina
*Wilson's Warbler N/S
Wilsonia pusilla
*Canada Warbler N/S
Wilsonia canadensis
Painted Redstart (S)
Myioborus pictus
*Yellow-breasted Chat (N)/S
Icteria virens

THRAUPIDAE
Summer Tanager (N)/S
Piranga rubra
*Scarlet Tanager N/S
Piranga olivacea
Western Tanager (N)/(S)
Piranga ludoviciana

EMBERIZIDAE
Green-tailed Towhee (S)
Pipilo chlorurus
Spotted Towhee (N)/(S)
Pipilo maculatus
*Eastern Towhee (N)/S
Pipilo erythrophthalmus
Cassin's Sparrow (N)/(S)
Aimophila cassinii
Bachman's Sparrow (S)
Aimophila aestivalis
*American Tree Sparrow N/S
Spizella arborea
*Chipping Sparrow N/S
Spizella passerina
*Clay-colored Sparrow N/S
Spizella pallida
*Field Sparrow (N)/S
Spizella pusilla
*Vesper Sparrow N/S
Pooecetes gramineus
*Lark Sparrow (N)/(S)
Chondestes grammacus
Black-throated Sparrow (N)
Amphispiza bilineata
Lark Bunting (N)/(S)
Calamospiza melanocorys
*Savannah Sparrow N/S
Passerculus sandwichensis
*Grasshopper Sparrow (N)/S
Ammodramus savannarum
Baird's Sparrow (N)
Ammodramus bairdii
*Henslow's Sparrow (S)
Ammodramus henslowii
*Le Conte's Sparrow N/S
Ammodramus leconteii
*Nelson's Sharp-tailed Sparrow N/S
Ammodramus nelsoni
*Fox Sparrow N/S
Passerella iliaca
*Song Sparrow N/S
Melospiza melodia
*Lincoln's Sparrow N/S
Melospiza lincolnii
*Swamp Sparrow N/S
Melospiza georgiana
*White-throated Sparrow N/S
Zonotrichia albicollis
*Harris's Sparrow N/S
Zonotrichia querula
*White-crowned Sparrow N/S
Zonotrichia leucophrys
Golden-crowned Sparrow (N)/(S)
Zonotrichia atricapilla
*Dark-eyed Junco N/S
Junco hyemalis
*Lapland Longspur N/S
Calcarius lapponicus
*Smith's Longspur N/(S)
Calcarius pictus
Chestnut-collared Longspur (N)/(S)
Calcarius ornatus

*Snow Bunting N/S
Plectrophenax nivalis

CARDINALIDAE
*Northern Cardinal N/S
Cardinalis cardinalis
*Rose-breasted Grosbeak N/S
Pheucticus ludovicianus
Black-headed Grosbeak (N)/(S)
Pheucticus melanocephalus
Blue Grosbeak (N)/(S)
Guiraca caerulea
Lazuli Bunting (N)/(S)
Passerina amoena
*Indigo Bunting N/S
Passerina cyanea
Varied Bunting (S)
Passerina versicolor
Painted Bunting (N)/(S)
Passerina ciris
*Dickcissel (N)/S
Spiza americana

ICTERIDAE
*Bobolink N/S
Dolichonyx oryzivorus
*Red-winged Blackbird N/S
Agelaius phoeniceus
*Eastern Meadowlark N/S
Sturnella magna
*Western Meadowlark N/S
Sturnella neglecta
*Yellow-headed Blackbird N/S
Xanthocephalus xanthocephalus
*Rusty Blackbird N/S
Euphagus carolinus
*Brewer's Blackbird N/S
Euphagus cyanocephalus
*Common Grackle N/S
Quiscalus quiscula
Great-tailed Grackle (N)/(S)
Quiscalus mexicanus
*Brown-headed Cowbird N/S
Molothrus ater
*Orchard Oriole (N)/S
Icterus spurius
Hooded Oriole (S)
Icterus cucullatus
*Baltimore Oriole N/S
Icterus galbula
Bullock's Oriole (N)/(S)
Icterus bullockii
Scott's Oriole (N)
Icterus parisorum

FRINGILLIDAE
Brambling (N)/(S)
Fringilla montifringilla
Gray-crowned Rosy-Finch (N)
Leucosticte tephrocotis
*Pine Grosbeak N/S
Pinicola enucleator
*Purple Finch N/S
Carpodacus purpureus
Cassin's Finch (S)
Carpodacus cassinii
*House Finch N/S
Carpodacus mexicanus
*Red Crossbill N/S
Loxia curvirostra
*White-winged Crossbill N/S
Loxia leucoptera
*Common Redpoll N/S
Carduelis flammea
Hoary Redpoll N/S
Carduelis hornemanni
*Pine Siskin N/S
Carduelis pinus
Lesser Goldfinch (S)
Carduelis psaltria
*American Goldfinch N/S
Carduelis tristis
*Evening Grosbeak N/S
Coccothraustes vespertinus

PASSERIDAE
*House Sparrow N/S
Passer domesticus
Eurasian Tree Sparrow (S)
Passer montanus

Acknowledgements

I would like to thank Ron Pittaway, Ron Tozer and Bill Crins for comments on an earlier draft of this report.

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PUBLICATION NOTICE

Influence of food abundance, nest-site habitat, and forest fragmentation on breeding Ovenbirds. 1998. By *Dawn M. Burke and Erica Nol.* Auk 115: 96-104.

This important paper is based on a study of the density and pairing success of territorial male Ovenbirds in 31 forest fragments in southern Ontario (Peterborough County). The research found that Ovenbirds chose territories with significantly higher prey biomass. Within Ovenbird territories, invertebrate biomass was 10 to 36 times higher in large woodlots than in small woodlots. Ovenbirds in large woodlots selected nest sites that were more than 250 m from the forest edge, a distance not possible in small woodlots. The lack of potential nest sites, combined with lower food abundance in small fragments (where leaf litter tends to be shallower and drier), may explain why female Ovenbirds avoid small fragments as breeding sites and why so few males secure mates there.

Previous research suggested that female Ovenbirds avoided small tracts and edges to escape from nest predators and nest parasitism. However, forest fragmentation may also impose food scarcity on the Ovenbird and other birds in some landscapes. *Ron Tozer*

Notes

Simultaneous Anting by Three Species of Birds

Anne H. Davidson

At 0815h, on the morning of 6 July 1998, in Vanessa, Ontario, an American Robin (*Turdus migratorius*) flew down to the ground in my backyard (near the clothesline post). It ran around a bit and then returned to the spot where it had landed. The robin picked something up from the ground, but instead of eating, raised a wing and rubbed its beak several times under the wing. It repeated this action numerous times, alternating between the left wing and the right wing.

A Blue Jay (*Cyanocitta cristata*) gleaning under a nearby feeder began to watch the robin with interest and moved over close to the other side of the post, continuing to watch it. Then the jay began to perform the same actions as the robin. About two minutes later, a female Rose-breasted Grosbeak (*Pheucticus ludovicianus*) flew to the bottom of the trumpetvine on the post and looked back and forth from the robin to the jay. The grosbeak then hopped down to the ground beside the jay and exhibited the same behaviour. Within another two minutes, a male Rose-breasted Grosbeak joined the female and the jay, and also began to pick up something from the ground and rub its beak under its wings, alternating from left to right.

The four birds continued until their activity brought a Common Grackle (*Quiscalus quiscula*) over to investigate; its arrival caused the four birds to fly off. When they left, I went out to look at the spots where the robin and the other three birds had congregated. Where the robin had been was an anthill with small red ants. Where the other three birds had been were two anthills with tiny black ants. All four birds had been "anting".

The observation occurred two days after a heavy rainfall of several centimetres that followed an extended dry period. The temperature was 21.4°C, relative humidity was 75%, the barometer read 102.00 kPa, the wind was from the south at 1.8 km/h, and the dew point was 16.8°C.

Discussion

Ehrlich et al. (1988) give an account of anting which describes the behaviour I observed, and comment that "the purpose of anting is not well understood, but the most reasonable assumption seems to be

that it is a way of acquiring the defensive secretions of ants, primarily for their insecticidal, miticidal, fungicidal, or bactericidal properties and, perhaps secondarily, as a supplement to the bird's own preen oil". The account discusses possible correlations between anting and high humidity/molting seasons, and closes with the advice that "if you see anting, be sure to make detailed notes of the circumstances in which it is taking place".

There was no indication in the account that an anting bird observed by other birds would result in the other birds beginning to ant. What I found most interesting about this sighting was that the robin's anting appeared to initiate the anting activity of the jay and the two grosbeaks.

Literature Cited

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. The Birder's Handbook. Simon & Schuster, New York.

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A Colour Variant of the Fox Sparrow

George Fairfield

Between 22 October and 8 November 1997, up to three Fox Sparrows (*Passerella iliaca*) appeared daily in our backyard in north Toronto, just west of Sherwood Park. Then, on 7 November, a Fox Sparrow appeared that was very different from the others. It was noticeably larger than the other Fox Sparrows, and this was easily seen as it was accompanied closely by a "normal" Fox Sparrow.

There was very little grey on the bird, just a little dappling of grey on the upper back. The head was reddish brown, the same shade as the tail. The red-brown of the head continued down the neck without a break to the central breast, where the breast spot is usually found. There was no grey on the neck, and the throat was solid red-brown. There was some pale streaking on the lower breast, but not as light as on the bird with which it was feeding. The general appearance was of a large, almost solid red-brown Fox Sparrow, with a little light streaking on the abdomen, and smallish beak. The bird was examined for one half hour from a distance of 10 metres

with 10X Swift binoculars under bright overcast sky.

Discussion

At first I thought that this must be one of the races of Fox Sparrow that does not usually occur in Ontario, but reference to Rising (1996) showed that the Red Fox Sparrow, which is the commonly occurring race in our area, is the reddest of the Fox Sparrow races. The only reference I could find in the literature to a colour morph in the Fox Sparrow was in Roberts (1955), where he states (on page 715) that "there is a 'rufous phase' (not occurring in Minnesota) in which the upperparts are nearly uniform rufous or chestnut". Roberts provides no reference for this statement. With the assistance of Mark Peck, I examined the specimens at the Royal Ontario Museum, but found no specimens that resembled the bird in our backyard.

In summary, the Fox Sparrow described above is a colour variant and not a true morph, because morphs are regularly occurring forms within a population, such as the morphs of the Snow Goose.

Literature Cited

Rising, J.D. 1996. A Guide to the Identification and Natural History of the Sparrows of the United States and Canada. Academic Press, San Diego, California.

Roberts, T.S. 1955. A Manual for the Identification of the Birds of Minnesota and Neighboring States. University of Minnesota Press, Minneapolis, Minnesota.

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Killdeer Incubates Common Snipe Egg

Charles J. Whitelaw

On 28 May 1998, a Killdeer (*Charadrius vociferus*) nest containing four eggs (Figure 1) was discovered at the Wahnapitae sewage lagoons (Region of Sudbury). An adult Killdeer had been incubating the eggs, and its mate was nearby. Both birds offered some notes of protest and one showed a distraction display. It was noticed at this time that one of the eggs was quite different from the other three.

Upon close examination, it was ascertained that the nest contained three eggs of the Killdeer and one egg of the Common Snipe (*Gallinago gallinago*). The nest was located on gravel surrounded by scant green herbaceous vegetation, to a height of 10 cm. The location was at a corner of the dyke at the east end of the lagoon. On 3 June,

Figure 1: Nest of a Killdeer containing three Killdeer eggs and one Common Snipe egg, at Wahnapitae Sewage Lagoons, on 3 June 1998. Photo by *Charles J. Whitelaw.*

incubation continued normally, with both birds in attendance. On 4 June, the eggs were gone, and the nest and site were deserted. It is assumed that predation of some sort had taken place.

In late May 1997, a Killdeer nest was located at a position some 20 m from the 1998 nest site. It too ended in tragedy. In early June 1994, I flushed a snipe from a nest with two eggs at a point some 25 m distant from the 1998 nest location. The lagoons here are bordered by cattail (*Typha latifolia*) marsh on the east and south sides. Between the marsh and the dykes is a sedge (*Carex* spp.) meadow containing clumps of small (up to 2 m high) willows (*Salix* spp.). This area is an attractive nesting habitat for the Common Snipe, and several pairs breed here annually.

Discussion

Killdeer and Common Snipe eggs differ from each other in several ways. Snipe eggs average 2.3 mm greater in length, and 1.5 mm greater in breadth than Killdeer eggs. The eggs of both species are ovate-pyriform in shape. However, Killdeer eggs are quite pointed, while those of the snipe are not so pointed. Killdeer eggs have a creamy, buff ground colour, and are irregularly and boldly splashed and scrawled with black or blackish-

brown, chiefly about the larger end. Snipe eggs generally have a dark olive green ground colour, and are heavily blotched with dark brown over most of the egg surface. Killdeer eggs have no gloss, while those of the snipe are slightly glossy.

I can find no examples in the literature of a similar type of egg laying occurrence among shorebirds. Egg dumping, where one species lays eggs in the nest of another species, is well known among some North American waterfowl, particularly the cavity-nesting mergansers (*Mergus* spp.) and the marsh-nesting divers (Bent 1925). This habit is also known to occur with the Yellow-billed Cuckoo (*Coccyzus americanus*), and with the Black-billed Cuckoo (*C. erythropthalmus*) (Harrison 1975). Of course, this habit reaches full obligate parasitic status in the Brown-headed Cowbird (*Molothrus ater*).

There are examples of egg dumping within a species. For example, among passerines, an 8-egg clutch (the product of two females) has been found in the Cedar Waxwing (*Bombycilla cedrorum*) (Peck and James 1998). Among shorebirds, nests of the American Avocet (*Recurvirostra americana*) have been found with seven or eight eggs (Bent 1927). These were without doubt the product of two different females.

The situation described here, with the Killdeer and the Common Snipe, has possibly developed as a result of the close proximity of nest sites, along with the coincidental timing of egg laying.

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Ross D. James: Distinguished Ornithologist

George K. Peck

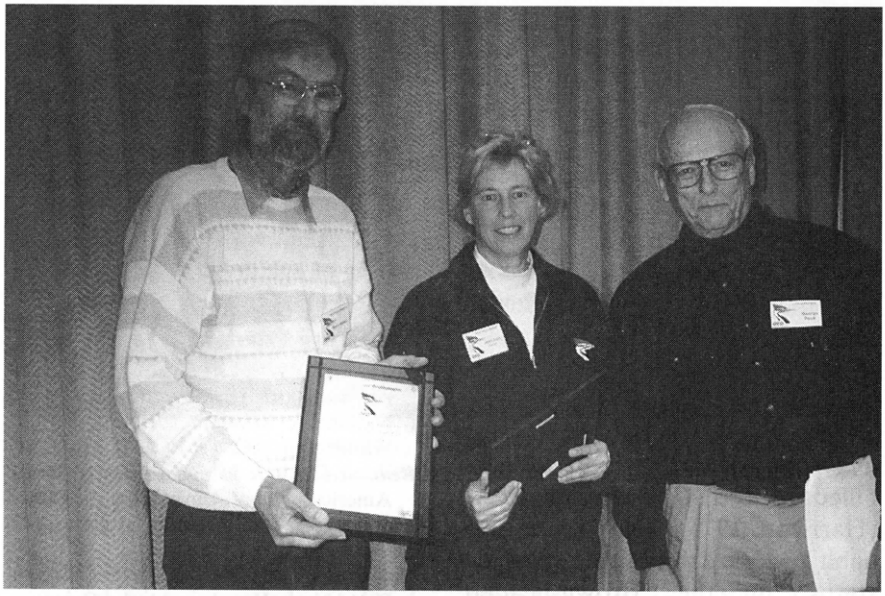

Figure 1: Ross James (left) receives Distinguished Ornithologist Award, presented by OFO President Jean Iron (centre) and George Peck (right).

Ross D. James was the second recipient of the Distinguished Ornithologist Award of the Ontario Field Ornithologists. Established in 1997, this award is granted from time to time to ornithologists whose research on birds has resulted in many publications and a significant increase in new knowledge. Award winners have also been an important resource to OFO and the Ontario birding community.

The first Distinguished Ornithologist Award was granted in 1997 to W. Earl Godfrey, Curator Emeritus of Ornithology at the Canadian Museum of Nature.

The award to Ross James was presented at the OFO Annual General Meeting held in Burlington on 17 October 1998. The following note is based on the comments of George Peck during the presentation ceremony.

It is both a privilege and a real pleasure to talk to you about Ross James, who has been a colleague and friend for more than 30 years.

Ross graduated in biology from the University of Guelph in 1966, and joined the Department of Ornithology at the Royal Ontario Museum as a technician in 1967. While earning his Masters and later his PhD involving studies with vireos, he moved up the ladder in the department to the position of Associate Curator. In 1985, he also assumed the post of Adjunct Professor of Forest Ecology and Wildlife in the Faculty of Forestry, University of Toronto. After 30 years of service, he recently retired from the ROM in 1997, and has been sorely missed since.

He served on many committees and worked with many organizations both inside and outside the ROM, and to name a few, we could include the Committee on the Status of Endangered Wildlife in Canada, the Society of Canadian Ornithologists, the Ontario Breeding Bird Atlas, the Ontario Bird Records Committee, the Ontario Nest Records Scheme, and the Nature Conservancy of Canada. Ross is an Elective Member of the American Ornithologists' Union, and has delivered papers at their annual meetings, as well as to the International Ornithological Congress.

Ross is a prodigious worker with a knack for bearing down and getting things done. He has written numerous scientific papers as well as popular articles on birds. He authored the *Annotated Checklist of the Birds of Ontario* (James 1991), in its second and revised edition; co-authored the two volume *Breeding Birds of Ontario* (Peck and James 1983, 1987), on which we worked together for 20 years in remarkable harmony; co-authored *Ontario Birds at Risk* (Austen et al. 1994) for the Federation of Ontario Naturalists and Long Point Bird Observatory; and has written the text of other books, probably more than I know about, due to his natural modesty. He is an accomplished photographer and artist, as his pen and ink sketches in *Breeding Birds of Ontario* bear witness.

After all of the above has been said, Ross's true forte, and I expect his own greatest pleasure, lies in his field work which has led him everywhere in Ontario and to many places in Canada and the United States, as well as to Mexico, Belize, Costa Rica, and even Hawaii. However, his constant focus over the years has been Ontario. If more people knew about it, his endurance, his bird identification by sight and sound, and his tree-climbing ability would be legendary! The first published record of a Great Gray Owl's nest was the result of a find made by Ross at Pickle Lake, 200 miles north of Thunder Bay in Kenora District. The owl was nesting in a large aspen near a beaver

pond. With only the aid of climbing spurs, Ross went up a bare trunk to the first branch at 55 feet, and then up another 10 feet to a final height of 65 feet in order to photograph and document that nest. Try that if you're not in shape or have been out too late the night before!

On behalf of the ROM and the ONRS, Ross and my son Mark and I made several field trips together to Hastings County and to the districts of Manitoulin, Parry Sound, and Sudbury. On these occasions, I learned of another of Ross's many attributes, and that was his mysterious ability to stay neat and tidy after a gruelling day in the field! Both Mark and I have long marvelled at that one. Over the years, I greatly enjoyed this field collaboration with Ross, but on one occasion in 1977, I was equally pleased to have had to leave camp on Manitoulin Island four days ahead of Ross, who, on his final night, was asleep in his pup tent when it was struck by lightning during a severe thunderstorm. Ross was rendered unconscious for several hours, his tent and sleeping bag zippers were fused, a hole was burnt in his sleeping bag, and the topper was the wondrous tracery of the strike outlined in burns on his back! Remarkably, no permanent damage was done, as far as we know.

I can think of no greater compliment than to say that, since Jim Baillie, no professional has been a better disciple of Ontario ornithology than Ross James.

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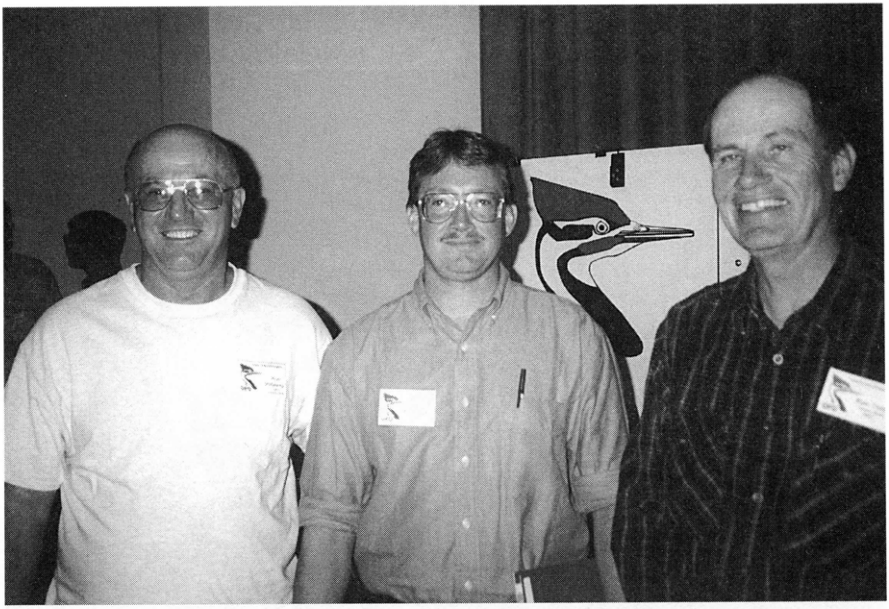
EDITORS' PROFILE



It is a pleasure to introduce the three editors of *Ontario Birds*: left to right in the photograph, Ron Pittaway, Bill Crins and Ron Tozer. Many OFO members already know them as birding friends. With this issue, they now have completed eight volumes of *Ontario Birds*, beginning in 1991. Fortunately, they have no plans to retire!

Why are our editors so successful as a team? First, they all worked together as naturalists in Algonquin Park during the 1970s. Second, they share an intense interest in birds and natural history since childhood. Third, they have kept in touch with one another in their jobs with the Ontario Ministry of Natural Resources. Bill Crins is an ecologist at main office in Peterborough, Ron Pittaway is an education coordinator at the Frost Centre near Dorset, and Ron Tozer retired recently as park naturalist in Algonquin Park.

If you have a note or article for consideration in *Ontario Birds*, please contact any of the editors directly or through the OFO mailbox. *Jean Iron*

Photo Quiz

Bob Curry

By its gestalt, most readers of this column will have instantly recognized the small passerine as a flycatcher in the family Tyrannidae. Nevertheless, it is worth analyzing the features which resulted in this impression. The small size can be determined by comparing the bird to the branches of various sizes. It has two prominent wingbars, light-edged secondaries and tertials, and a fairly long tail. The erect posture on the branch is characteristic of flycatchers. But the bill clinches it; it is rather long and pointed, with a definite hook on the tip of the upper mandible. Finally, the rictal bristles or whiskers, diagnostic of flycatchers among the passerines, can be seen on close examination.

The next task, in this analytic rather than holistic task, is to determine which genus of flycatcher is involved. In point of fact, the small size combined with the prominent wingbars eliminates most other candidate genera. The *Tyrannus* group of kingbirds and their allies can be eliminated by their much larger size, big heads, large stout bills, bold patterns, and wingbars which are weak or nonexistent. The *Sayornis* or phoebes are plain and big-headed, with essentially no eye-rings and very weak wingbars. *Myiarchus* flycatchers are larger and longer, with long stout bills and rather prominent crests. So our bird

comes down to the two very difficult genera: the *Contopus* or wood-pewees or the dreaded *Empidonax* flycatchers.

Let's look more closely at the basic features of this bird, working from head to tail. The bill in profile is fairly long (at least as long as the distance from bill base to the front of the eye). Moreover, it is quite deep at the base, giving it a triangular profile. The eyering is complete, sharp-edged and fine, and of uniform thickness. The top edge of the eyering appears to be duller or almost interrupted, but this is caused by some overlapping crown feathers. The wingbars formed by light tips to each greater and median upper wing covert are whitish and very prominent. The tail is quite long, being about the same length as the body from crown to rump. Moreover, it is rather broad throughout its length. The wings are very long, the tips of the primaries extending two-thirds of the way down the tail, and the primary extension beyond the secondaries is very long.

The eyering, boldness of wingbars and chunky shape eliminate the wood-pewees, which have no eyering and rather dull wingbars. So, now that we have identified the bird as an *Empidonax*, the features just noted help us to narrow the field even more. Least, Yellow-bellied and the Pacific-slope-Cordilleran (Western) complex all have smaller bills, tear-shaped eyerings and short primary extensions. Dusky and Hammond's Flycatchers appear to be rather big-headed, short-tailed birds with rather short and narrow bills. The bill of Gray Flycatcher may approach this bird in length, but it is narrower throughout and the lower mandible is sharply bi-coloured, with an extensive dark tip. Furthermore, Gray Flycatcher has noticeably shorter primaries than the subject bird.

So identification falls to the terrible trio of Willow, Alder and Acadian. In the absence of voice, which would be diagnostically different, and colour, which would be of some help, we are left with structure and proportions. For the remainder of this analysis, and where it makes economic sense, the Alder-Willow species pair will be called Traill's. In both Traill's and Acadian, the bill is long and deep. From underneath, if we could see it, Acadian has an even longer, broader bill than the others, but an overzealous observer can easily be convinced that any Traill's has a bill sufficiently large for Acadian. The eyering is rather more complete and especially neat for it to be Traill's, but again this is a tendency only and many birds may prove exceptions to these points. Willow most frequently has a very incomplete eyering or essentially none at all. Alder can have a complete eyering, but again it would not tend to be so fine and symmetrical. In this black and white reproduction, the shade from crown to rump is the same. In Alder, there is a tendency for more contrast between darker head and a slightly lighter back.

Identification, in this case with the many limitations of the black and white reproduction, falls then to the bird's proportions. Acadian Flycatcher has the longest primary projection, and this **Acadian Flycatcher** has extremely long outer primaries. In fact, they are so long that the pose shown here, with wings drooped down the sides of the tail rather than folded over the rectrices, is typical and highly suggestive of the species. The tail itself is rather more broad than any of the other candidates.

Empidonax flycatchers as a group are exceptions to the principle that first impressions are usually correct where bird identification is concerned. First impression (and enthusiasm) may suggest one species, but careful dissection of all the critical features is necessary to begin to put a name to these difficult birds. Never be embarrassed to say that you are not sure which of a pair or subgroup of species is the correct identification for any individual bird. Extreme caution must be observed in the identification of non-vocalizing Acadian, Willow, and Alder Flycatchers.

This Acadian Flycatcher was photographed by Michael Runtz at Point Pelee National Park.

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