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by *Ron Ridout*

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First Documented Nest Record of Pine Grosbeak in Ontario

Mark K. Peck, Glenn Coady, Gerry Binsfeld, and Karl R. Konze

Introduction

The Pine Grosbeak (*Pinicola enucleator*) breeds throughout subarctic and subalpine regions of Scandinavia, Russia, Japan, United States and Canada. They winter within their breeding range and are irregularly found farther south, locally and usually in small groups. During the summer, they nest in open mixed woodlands and boreal forests in the north and throughout western mountain ranges in the U.S. and Canada (Adkisson 1999). Within Canada, this species is a permanent resident in all provinces and territories, and is seen more frequently during the winter months around feeders and orchards, where they can be approached easily. Godfrey (1986) indicated an extensive breeding range throughout the coniferous-forested areas of the country, with the exception of Prince Edward Island.

Although widespread and tame, there is little information on the nesting habits of the Pine Grosbeak, possibly due to its northern range and secretive nature in summer (Helleiner 1987). A review of the British Columbia, Prairie and Maritime Nest Record Schemes reports yielded very few nest records. In Manitoba, the breeding range likely covers the northern third or half of the province, although there is some evidence to suggest occasional breeding in the southeast (Taylor 2003). In Churchill, there has been evidence of breeding since the early 1930s and several nests have been found in the ensuing decades (Jehl and Smith 1970; G.K. Peck, pers. comm.; J.M. Richards, pers. comm.). Historically, there are records of this species nesting in Quebec but there were no nests reported during the Quebec Breeding Bird Atlas (1984-1989). Confirmation of breeding during that atlas was obtained in only 5.9% of squares, on the basis of recently fledged young and adults carrying nesting material (Breton 1996).

In Ontario, Pine Grosbeaks were first found breeding in the mid 1930s, when adult birds were observed feeding young in the Temagami Forest Reserve, Nipissing District (Baillie 1960). In 1940, Hugh Funell reported a July

nest from the Temagami Forest Reserve, Nipissing District, and another nest was reported that year by Percy Ghent at Sundridge, Parry Sound District (Baillie 1960). Both nests were undocumented. Since that time, there have been several sightings of birds during the breeding season but breeding and nesting information remain scant (Baillie 1960, Speirs 1985). During the first Ontario Breeding Bird Atlas (OBBA), no nests were found, but fledged young being fed by adults were reported near the headwaters of the Black Duck River. Many other family groups were also noted in the area (Helleiner 1987).

The Pine Grosbeak has been accepted as a provincial breeding bird by the Ontario Bird Records Committee (OBRC), based on the collection of a female with an unshelled egg in the oviduct at Hawley Lake, Kenora District, in 1958 (Wormington and James 1984, James 1984). It is still considered an unconfirmed breeding species by the Ontario Nest Records Scheme (ONRS) due to the lack of documented evidence of nesting (Peck and James 1987). The purpose of this paper is to document the nest of a Pine Grosbeak found on 12 June 2003, north of the Swan River, Kenora District.

Nest Record

From 9-19 June 2003, the authors surveyed land 25 km north of the Swan River on the coast of James Bay (17U 425558 5966359 – North American Datum 1983; 53° 50' 25.47" N, 82° 7' 52.89" W) as volunteers for the second Ontario Breeding Bird Atlas. There were three major habitats in the area: coastal beach ridges and mudflats with minimal vegetation; extensive sedge meadows mixed with networks of small, shallow ponds; and narrow, treed, gravel beach ridges (Figure 1). Moving away from the coast, the treed ridges changed from willow thickets to mature coniferous woodlands composed mainly of White Spruce (*Picea glauca*) and Tamarack (*Larix laricina*), with a willow (*Salix* sp.) and Speckled Alder (*Alnus incana*) border. Ground cover increased on the ridges also, culminating in a thick lichen/moss bed.

On 12 June 2003, a female Pine Grosbeak was observed feeding on the ground near a small stream in an open, mature White Spruce forest on one of the inland beach ridges. The bird then flew to the edge of the forest, where it continued to feed on cranberries (*Vaccinium* sp.). We continued to observe her for several minutes until she eventually flew southeast out of sight, low to the ground, along an animal trail. She did not appear to make any vocalizations during foraging. We began a search of the area and a nest (ONRS #175427) was quickly located in the adjacent open, mixed woodland (Figure 2), less than 10 m from the small stream mentioned previously (Nest location: 17U 423462 5965303

Figure 1: Aerial view of forested beach ridges and sedge meadows along James Bay coast north of the Swan River, Kenora District. Photo by *Karl R. Konze*.

– North American Datum 1983; 53° 49' 50.21" N, 82° 9' 46.6"). The female was sitting on the nest and repositioned herself several times when we first arrived. The nest was checked using a mirror and contained three eggs. Initial photographic documentation of the nest habitat and nest site was taken before leaving the area. A brightly coloured adult male was also seen in this general vicinity. It did not appear to be associated with the female and was not seen again on any subsequent visits. The male was singing and feeding at the top of a 13 m White Spruce approximately 70 m from the nest site in an area near to where the nesting female had first been found.

On 13 June, we returned to the site to obtain more detailed information. The nest was situated 236 cm high in a 600 cm White Spruce with a 7 cm diameter at breast height (DBH). It was a bulky, loosely constructed nest, positioned against the trunk and placed atop three horizontal branches. The female was easily visible from several vantage points and the nest was not particularly well hidden (Figure 3). It was constructed of primarily dead Tamarack twigs and was lined exclusively with dead, mostly round-stemmed, grasses. The nest had an outside depth of 85 mm, inside depth of 40 mm, an outside diameter of 120 mm and an inside diameter of 60 mm. It contained three long oval, richly coloured, light blue eggs, marked with black

and lilac blotches (Figure 4). The eggs were measured as accurately as possible with a small metric tape measure and were the following sizes: 26 x 18 mm, 27 x 19 mm, and 29 x 18 mm. The female was very tame and allowed extremely close approach during nest and egg measurements, and for photographic documentation. The nest and egg measurements are in the range stated in Adkisson (1999), except for the outside and inside diameters, that are smaller than other reported nests.

Figure 2: Pine Grosbeak nest tree and surrounding habitat located in open woods with White Spruce, Tamarack, willow and alder on 13 June 2003. Photo by *Mark K. Peck*.

We returned to the site again on 17 June for our final visit. The female was incubating, and the nest still contained three eggs. We continued observations for approximately 30 minutes. During that time, we observed a russet-coloured male Pine Grosbeak approach the nest and feed the female. This male stood on a branch above and to the side, and reached over to feed the female which remained on the nest during the exchange. Although approachable, this russet male was more wary than the female, but we were able to obtain video documentation of the feeding exchange. The male left after two minutes and was not seen again during our observations. On

Figure 3: Female Pine Grosbeak on nest on 13 June 2003. Photo by *Mark K. Peck*.

Figure 4: Nest and eggs of Pine Grosbeak on 13 June 2003. Photo by *Mark K. Peck*.

this visit, a second female was also briefly encountered foraging in an area slightly to the west of the nesting female, near the area where the bright red male was previously observed singing.

This nest was located within 300 metres of the first documented nest of Bohemian Waxwing *(Bombycilla garrulus)* in Ontario (Peck et al. 2004). Other birds found in the area, with confirmation of breeding, included Green-winged Teal *(Anas crecca)*, American Robin *(Turdus migratorius)* and Rusty Blackbird *(Euphagus carolinus)*. Also found nearby were Yellow-bellied Flycatcher (*Empidonax flaviventris*), Boreal Chickadee *(Poecile hudsonica)*, Winter Wren *(Troglodytes troglodytes)*, Swainson's Thrush *(Catharus ustulatus)*, Cape May Warbler *(Dendroica tigrina)*, Blackpoll Warbler *(D. striata)*, Northern Waterthrush *(Seiurus noveboracensis)* and Fox Sparrow *(Passerella iliaca)*.

Discussion

Nests of Pine Grosbeak have been reported rarely in Canada, with the accepted explanation being the bird's secretive nature and the remoteness of its preferred habitat (Helleiner 1987, Breton 1996). While we certainly agree with the remoteness of the nest site location, we do question the secretive nature of the bird. Although both the male and the female were quiet in the vicinity of the nest, we did not find the birds reticent to approach in our presence. Both birds flew directly to the nest while we were in view, and both appeared tame and very approachable. At one point, the female was even lifted off the nest with a mirror on a short stick so we could determine nest contents. In addition, the nest was in open woodland, was low to the ground, bulky and not well concealed. The female was easily visible on the nest and repositioned herself several times during each of our visits.

Pine Grosbeaks are considered highly territorial during the breeding season and are known to defend territories of about 400 m (Cramp and Perrins 1994), so we were surprised to see a second male singing in a nearby tree, and later a second female foraging in nearly the same location. The males were easily distinguished from one another by their plumage, since the male attending the female at the nest was a russet-coloured individual, possibly an immature bird. Pine Grosbeaks are not known to be semi-colonial, but we may have observed adjacent territories of two separate pairs. It is possible that they may nest in greater density in very suitable habitat with an abundance of favourite food resources, or they may have had smaller territories due to the beach ridge limitations and restricted forest size found in the area.

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We would like to thank Mike Cadman and Nicole Kopysh of the

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First Documented Nest Record of Bohemian Waxwing in Ontario

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Introduction

The Bohemian Waxwing (*Bombycilla garrulus*) is familiar to most of us as an irregular winter visitor throughout much of Ontario. This ephemeral species usually arrives in groups of varying sizes to feed on berries and other food sources, often until the tree or bush is stripped of fruit, and then quickly moves on (Pittaway 1990, Elder 2002). They breed in northern boreal forests throughout Europe, Asia and western North America. In Canada, their nomadic winter irruptions extend their range south and east of their breeding grounds, covering much of the southern half of the country.

Bohemian Waxwings have been confirmed breeding throughout much of the Yukon, British Columbia, western Alberta, North-west Territories, northern Saskatchewan and northern Manitoba (Witmer 2002). Breeding has not been confirmed in Nunavut (Richards et. al. 2002), and the distribution in Manitoba remains poorly defined, with most of the records coming from Churchill (Bouchart and Taylor 2003). Their breeding range in eastern Canada remains unclear. In Quebec, there have been several recent summer sightings but, as yet, no confirmation of breeding (Letourneau 1996). The easternmost summer sighting is a June record from Sable Island, Nova Scotia (Tufts 1986).

The first evidence of breeding in Ontario was in the early 1960s near the junction of the Sutton and Warchesku Rivers (Schueler et al. 1974). Since then, there have been summer records from Kapuskasing (Speirs 1985) and several sightings of family groups during the first Ontario Breeding Bird Atlas (OBBA) from the extreme northwest of the province (Cadman 1987). Provisionally, the second OBBA (2001-2003) has reported a number of scattered sightings and one confirmation of fledged young throughout the Hudson Bay Lowlands (Donald A. Sutherland, pers. comm.). Confirmation of breeding in Ontario took place in 1984 when George Fairfield photographed young birds being fed by adults along the Winisk River (Peck and James 1987), but a nest of this species was still awaiting discovery east of the Manitoba border. The purpose of this paper is to document a nest of Bohemian Waxwing found on 12 June 2003, north of the Swan River, Kenora District.

Nest Record

From 9-19 June 2003, the authors, as

volunteers for the second OBBA, camped 25 km north of the Swan River on the coast of James Bay (17U 425558 5966359 – North American Datum 1983; 53° 50' 25.47" N, 82° 7' 52.89" W) and surveyed the surrounding environs. There were three major habitats in the area: coastal beach ridges and mudflats with minimal vegetation; extensive sedge meadows mixed with networks of small, shallow ponds; and narrow, treed, gravel beach ridges (Figure 1). Moving away from the coast, the treed ridges changed from willow thickets to mature coniferous woodlands composed mainly of White Spruce (*Picea glauca*) and Tamarack (*Larix laricina*) with a willow (*Salix* sp.) and Speckled Alder (*Alnus incana*) border. Ground cover also increased on the ridges, culminating in a thick lichen/moss bed.

On the morning of 12 June, a pair of Bohemian Waxwings was observed at the edge of a sedge meadow feeding in a small bush, low to the ground. The birds were seen several times in the general vicinity during the next several hours, hawking for insects or feeding on berries or cones. They appeared to concentrate their foraging in one specific area and a careful search of the location eventually revealed a suspected nest (nest location: 17U 423171 5965427 – North American Datum 1983; 53° 49' 54.07" N, 82° 10' 2.62" W). We kept the nest (ONRS card #175433) under observation for 15 minutes, but the birds did not return in our presence so we left to avoid any further disturbance.

This nest was located within 300 metres of the first documented nest of Pine Grosbeak (*Pinicola enucleator*) in Ontario (Peck et al. 2004). Other birds found in the area with confirmation of breeding included Green-winged Teal *(Anas*

Figure 1: Aerial view of forested beach ridges and sedge meadows along James Bay coast north of the Swan River, Kenora District. Photo by *Karl R. Konze*.

Figure 2: Bohemian Waxwing nest tree and surrounding habitat located in the middle of an open-canopied woods with White Spruce, Tamarack, willow and alder on 13 June 2003. Photo by *Mark K. Peck*.

crecca), American Robin *(Turdus migratorius)*, and Rusty Blackbird (*Euphagus carolinus*). Also found nearby were Red-tailed Hawk *(Buteo jamaicensis)*, American Three-toed Woodpecker (*Picoides*

Figure 3: Nest and eggs of Bohemian Waxwing on 13 June 2003. Photo by *Mark K. Peck*.

dorsalis), Yellow-bellied Flycatcher (*Empidonax flaviventris*), Boreal Chickadee (*Poecile hudsonica*), Winter Wren (*Troglodytes troglodytes*), Swainson's Thrush (*Catharus ustulatus*), Blackpoll Warbler (*Dendroica striata*), and Dark-eyed Junco *(Junco hyemalis)*.

We returned on 13 June and found the birds in the same area, but not on the nest. A check of the nest using a mirror and pole revealed it contained four eggs. The nest and the eggs matched the general description for those of Bohemian Waxwing. The nest was located 3.2 m high in a 7 m tall White Spruce with a 24 cm diameter at breast height (DBH), and was located in the middle of an open woods with White Spruce, Tamarack, willow and alder (Figure 2). The tree was climbed and photographs and nest measurements were taken. The nest was on a horizontal branch with some additional branches supporting it along the side. It was loosely constructed and poorly concealed but it blended in well with the moss and other twigs at the site. The edge of the nest was 15 cm out from the trunk. It had an outside depth of 100 mm, inside depth of 54 mm, an outside diameter of 150 mm and an inside diameter of 90 mm. It was constructed using spruce and Tamarack twigs, lichens and moss, and lined with grasses, black and green mosses, lichens, plant fibre and down. The nest contained four oval, pale blue eggs, randomly spotted with black and grey blotches (Figure 3). The eggs were not measured due to safety concerns.

Our final visit to the site was on 17 June. A Bohemian Waxwing flew

off the nest as we approached and did not return while we remained at the site. The nest contained four eggs when checked with the mirror. Both birds were seen in the general vicinity of the nest during this visit.

Discussion

At present, this represents the easternmost nest record of Bohemian Waxwing for North America. Whether or not this is a reflection of an eastern range extension or simply enhanced range definition of another poorly documented northern breeding species in Ontario is not easily answered. Avian surveys throughout the Hudson Bay Lowlands prior to the first and second Ontario Breeding Bird Atlases were rare and of limited duration. The OBBAs have no doubt provided critical information on the distribution of northern species, unavailable historically. Difficulty in assessing the distribution of erratic species like Bohemian Waxwing may be further compounded by their annual movements in response to regional climatic conditions and/or seasonal ripening of fruit. The numerous sightings from the second OBBA and the recent work summarized in the Quebec Breeding Bird Atlas (Letourneau 1996) certainly suggest that this species is now established as a summer resident in both Ontario and Quebec.

The circumstances of the nest and eggs of the Bohemian Waxwing described above match the descriptions throughout this species' range with two minor exceptions: nest commencement timing, and propensity for semi-colonial breeding. Witmer (2002) states that Bohemian Waxwings may begin nesting later than other species, possibly because of late ripening of new-season fruits. Based on this nest and the breeding records of Fairfield and Sutherland, we find no evidence to suggest later nesting by this species. The previous records of fledged young were both recorded in mid-July. Working back from those dates, and assuming a 13-14 day incubation period and a 16-day nestling period (Baicich and Harrison 1997), nest commencement would have begun in early to mid June. The Swan River nest had a complete clutch of four eggs on 13 June, similar to a number of other tree-nesting passerines we found in the area. The behaviour of the birds around the nest and the amount of time both birds were seen together, away from the nest, suggest that incubation had been initiated recently. According to Lyle Walton (pers. comm.) of the Ontario Ministry of Natural Resources, 2003 was an average spring with regard to temporal weather pattern. Berries were abundant in the area and there is no reason to suspect that there were insufficient food resources in the area to delay nesting. Finally, despite spending several hours over a three-day period in the vicinity, we did not observe any additional Bohemian Waxwings and we do not suspect any semi-colonial breeding in this instance, as has been previously doc-

umented in other areas (Cadman 1987).

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Wintering Warblers in Cuba

David W. Tomlinson

Introduction

From 2 to 16 January 2003, I went on vacation to the Bay of Marea del Portillo on the southeast coast of Cuba. It lies on a narrow coastal plain below the backdrop of the Sierra Maestra Mountains. The area I visited was not particularly noted as a good birding location, but within walking distance of our hotel I saw 59 species of birds, including nine that are endemic to Cuba. An interesting observation concerning the bird population was that the Cuban or tropical species seen were mainly seedeaters, nectar feeders, wetland, or sea birds. The only small insectivorous birds I saw were our own migrant North American wood-warblers.

One of the more common wood-warblers was the Prairie Warbler (*Dendroica discolor*). It was found generally on its own in dry open scrubby areas, or occasionally along the edge of mangrove swamps. Another solitary warbler that frequented the mangroves on the edge of the sea and vegetation along a riverbank was the Northern Waterthrush (*Seiurus noveboracensis*). Palm Warblers (*D. palmarum*) were also common, and I saw one defending a tall yellow spike of Agave flowers from a trespassing Cuban Emerald (*Chlorostilbon ricordii*). Every time the hummingbird tried to feed on the flower's nectar, it was driven off by the warbler, which visited the flowers frequently to drink nectar. It was noticeable that I often saw them in the same location throughout my stay.

On the third day, I saw a new species of warbler, unfamiliar to me, a Yellow-throated Warbler (*D. dominica*), in a small patch of woodland along the edge of a rock-strewn shallow river. This warbler was in the company of a female American Redstart (*Setophaga ruticilla*), a male Black-throated Blue Warbler (*D. caerulescens*), a Black-and-white Warbler (*Mniotilta varia*), a Palm Warbler, and two or three Northern Parulas (*Parula americana*). Two days later, I visited the same woods, and to my surprise, the Yellow-throated Warbler was still in the same location, accompanied by a female American Redstart and the same group of bird species.

Winter Habitat

This aroused my interest and led me to spend many hours spaced over several days in this small patch of woodland that measured 127 m x 30 m. The vegetation in the woods consisted of only four species. Ninety-eight percent of the vegetation was a large-leafed shrub (*Cordia* sp.), with yellow flowers similar in shape to Mountain Laurel (*Kalmia latifo-*

lia), and clusters of white berries. They were about 4.5 m high, multi-stemmed, with the 1 to 6 stems being 50 to 150 mm in diameter and covered in rough bark. There were two other shrubs in the woods, a small tree-like shrub (*Nectandra* sp.) with thick, shiny, dark green leaves and clusters of white flowers, and a 1 m high shrub that was sparsely scattered along the sunny edge of the woods. This had very small, almost brown flowers and thick, stiff stems. Rising above the predominant shrub layer were five large trees with bipinnate leaves and large hanging bean pods. These were scattered and well spaced out along the edges of the woods.

Due to heavy grazing pressure by free-roaming horses, cattle, sheep, goats and pigs, there was no foliage below 2 m, and a herb layer was completely absent, with no natural regeneration occurring. The ground was 60 percent bare earth, and the remaining 40 percent was covered in a shallow layer of dry leaf litter.

Behaviour

Although this woods appeared very degraded due to over-grazing, it did have a remarkably high population of migratory warblers that consistently appeared to be grouped into three flocks. The largest occurred at the northern end and consisted of the Yellow-throated Warbler, a female American Redstart, a male Black-throated Blue Warbler, a Palm Warbler, a Black-and-white Warbler, and two or three Northern Parulas. The flock that occupied the southern end of the woods was smaller and consisted of a male American Redstart, a male Black-throated Blue Warbler, a Palm Warbler, a Black-and-white Warbler, and one or two Northern Parulas.

As the woods was so small and the lower level free of vegetation, it was possible to observe the northern flock and dash quickly to the southern end to ensure that I was not just seeing the same birds twice. Occasionally, I would come across a third and even smaller group in the centre. These came from a similar narrow strip of woodland on the opposite side of the river. This consisted of a male American Redstart, a male Black-throated Blue Warbler, a Palm Warbler, and two Northern Parulas. On one occasion, they came into contact with the northern flock. When this happened, birds of each species challenged other members of their species. For instance, the male and female American Redstarts made short U-shaped flights toward each other, with much flashing of wing and tail bars. The Black-throated Blue Warblers and Palm Warblers gave loud call notes and chased their rivals for short distances. The smallest flock quickly gave way and moved back toward the centre of the woods. I found this territorial behaviour very interesting and assumed that the flock did not hold a collective territory but each species within the flock defended

an individual territory. All the birds forming the flock fed collectively over the area of land that was common to all their territories.

Foraging Method

It was noticeable that each species, while occasionally feeding together in the leaf canopy, fed generally in a definite ecological zone. The Palm Warblers fed on the ground among the leaf litter or within the low shrubs along the woods edge. The Black-and-white Warblers fed, like a treecreeper (*Certhia* sp.), on insects they found on the thickest stems and branches. The American Redstarts gathered insects from the mid-section of the shrubs, among the thicker stems and branches, and often chased and caught the flying insects they disturbed. The Black-throated Blue Warblers and the Yellow-throated Warblers fed in the same zone, just under the leaf canopy, but not together, often picking and jumping to remove insects from the underside of the leaves. The Northern Parulas did not seem to hold a territory; normally there were between two and four together. On one occasion, when birding in the mountains, I saw 15 of them feeding together in a small tree covered in Spanish moss (*Usnea* sp.), accompanied by a female American Redstart and a male Black-throated Blue Warbler. The Northern Parulas tended to hunt insects in the top edge of the canopy, often hovering to pick insects from the tip of the thinnest twigs or by removing insects from within curled dead leaves.

Occasionally, there were other birds in the woods, but these did not form part of the flock. The most frequent was a Greater Antillean Flycatcher (*Contopus latirostris*), a phoebe-like flycatcher that hunted flying insects in the shade. On two occasions, the woods was visited by a Loggerhead Kingbird (*Tyrannus caudifasciatus*) that did not hunt in the woods, but chased and caught large insects along the sunny edges. Also, Green Herons (*Butorides virescens*) and White-winged Doves (*Zenaida asiatica*) frequently rested in the woods during the hottest part of the day, and once the woods was visited by a male Yellow-bellied Sapsucker (*Sphyrapicus varius*).

Discussion

There is a growing body of research findings concerning migratory songbirds on their Neotropical wintering grounds, including the following information relevant to my warbler observations in Cuba.

During winter, many wood-warblers occupy a variety of relatively open, often disturbed, areas (Garrett and Dunning 2001). "Warblers that are strictly territorial on their breeding grounds ... may join a mixed-species foraging flock in their wintering areas" (Berger 2000). Many warblers that are insect-eaters on the breeding range eat fruit and drink nectar on the wintering grounds, and will drive off competitors such as humming-

birds at prized food sources (Berger 2000). Research has shown that American Redstarts and Black-throated Blue Warblers tend to return to the same Neotropical wintering areas in subsequent years (Holmes and Sherry 1992), with fidelity to wintering sites being even higher than for northern breeding areas, in both species.

At least 12 warbler species, including American Redstart, Black-throated Blue Warbler and Northern Parula, segregate by sex into different habitats during winter (Berger 2000, Garrett and Dunning 2001). "In the American Redstart, that sexual habitat segregation is a result of behavioral dominance of older males", with "the least suitable habitat being occupied predominantly by females" (Marra and Holmes 2001). "Because most female redstarts are forced to overwinter in these kinds of habitats, they may often be in poor physiological condition prior to departing on spring migration for the breeding grounds" (Marra and Holmes 2001). The later arrival in spring and poorer condition of these female redstarts may then have adverse effects on reproductive success (Marra et al. 1998).

Rubenstein et al. (2002) "used the natural abundance of stable isotopes (carbon and hydrogen) in the feathers" of Black-throated Blue Warblers "to determine where birds from particular breeding areas spend the winter and the extent to which breeding populations mix in winter quarters". Their results indicated that a majority of the Black-throated Blue Warblers that winter in Cuba are from the northern portion of the breeding range, including Ontario.

Conclusion

Such a large concentration of northern wood-warblers (19 birds) in such a small area surprised me, particularly when considering how ecologically poor and over-grazed the woods and its surrounds (mainly open scrubby pasture) appeared to be when compared to Canadian woods where these species breed at considerably lower densities. I was told that over the last 100 years, Cuba has lost over 85 percent of its woodland cover, and is trying to increase the remaining 15 percent to 25 percent through tree planting and reforestation projects. It will be difficult for them to achieve this aim owing to the heavy grazing within the existing woodlands. This is gradually denuding the tree cover and preventing regeneration, particularly in this location on the south-facing slopes of the Sierra Maestra Mountains. These slopes are rapidly being stripped of woody vegetation and becoming grass-covered, which provides no habitat for northern migratory wood-warblers, but better pasture for livestock.

This land use pattern is occurring not only in Cuba, but also in other countries in the Caribbean and Central America. If we do not wish our wood-warbler populations to decline further, we must remem-

ber that they spend seven months of the year in the tropics, in these diminishing wooded areas. Consequently, as naturalists, we should consider investing some of our conservation funds in Central America and the Caribbean, and particularly in poor countries like Cuba that have such a high winter population of our warblers. These countries desperately need money to finance nature reserves, to extend reforestation projects, and to compensate poor farmers for their loss of grazing lands. It is pointless to concentrate on preserving their Canadian breeding habitats while ignoring their fast degenerating wintering grounds. It is, therefore, vital to educate their citizens and ours on the ecological importance of protecting their remaining woodlands.

Acknowledgements

I would like to thank Ron Tozer for assistance with the literature concerning warblers wintering in the tropics.

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Potential Impacts of Climate Change on the Summer Distributions of Southern Ontario's Passerine Birds

Jeff Price

Introduction

Water vapor, carbon dioxide (CO_2), methane, and other trace gases in the Earth's atmosphere act much like the glass in a greenhouse, helping to retain heat by trapping and absorbing infrared radiation. This "greenhouse effect" acts to keep the Earth's surface temperature significantly warmer than it would otherwise be, allowing life, as we know it, to exist. However, since pre-industrial times, there have been significant increases in the concentration of greenhouse gases in the atmosphere. The current levels of the two primary greenhouse gases are now greater than at any time during at least the past 420,000 years (likely much longer) and are well outside of the bounds of natural variability (IPCC 2001).

Accompanying the increases in greenhouse gases has been an increase in temperature. The 1990s were the warmest decade and the 1900s the warmest century of the last 1000 years. Of the more than 100 years for which instrumental records are available, 1998 was the warmest year on record, and 7 of the top 10 years all occurred in the 1990s. The annual global mean temperature is now 0.6°C above that recorded at the beginning of the century. Limited data from other sources indicate that the global mean temperature for the 20th century is at least as warm as any other period since approximately 1400 AD (IPCC 1996, 2001). And, "there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities" (IPCC 2001). These activities include the burning of fossil fuels, increases in agriculture, and other land use changes (such as deforestation).

Increases in greenhouse gases (past and projected), coupled with the length of time these gases remain in the atmosphere, are expected to cause a continued increase in global temperatures. Models estimate that the **average** global temperature, relative to 1990 values, will rise by 1.4°–5.8°C by the year 2100 (IPCC 2001). Warming due to increases in greenhouse gases is expected to be even greater in some areas, especially Northern Hemisphere land areas. Models based on various scenarios for population growth, economic well being, improvements in technology, and fossil fuel use project annual average temperature increases in southern Ontario of 3°–6°C in winter and 4°–8°C in summer by 2100 (Kling et al. 2003). This could leave

southern Ontario with a summer climate similar to that currently experienced in Maryland and northern Virginia in the United States.

How might these changes impact the summer distributions of southern Ontario's passerine birds? "Recent regional changes in climate, particularly increases in temperature, have already affected hydrological systems and terrestrial and marine ecosystems in many parts of the world" (IPCC 2001). For example, changes in growing season, earlier spring green-up and earlier arrival and breeding in some birds have all been documented (Root et al. 2003). If these changes have been observed with only a small rise (0.6°C) in the global average temperature, what might happen if temperatures continue to rise? In addition to rising temperatures, many climate models also project an overall increase in evaporation—leading to increases in precipitation (mostly in storms) but also to overall declines in soil moisture. Lake levels in each of the Great Lakes are projected to decline, potentially by as much as 0.23–0.47 m in Lake Superior and 0.99–2.48 m in Lake Huron (Kling et al. 2003). Shifts in the timing of precipitation and snowmelt and declines in duration of ice cover are also all possible. Even after emissions are reduced, CO_2 concentrations, temperature and sea level will all continue to rise for a period ranging from decades/centuries (CO_2 stabilization, temperature rise) to millennia (sea-level rise). Thus, climate change will likely have a continuing impact on southern Ontario's birds and their habitats for some time to come.

Projected Habitat Changes

Temperature, precipitation and soil moisture are important factors limiting the distribution of both plants and animals. As the climate changes, so will plant and animal distributions. In general, the geographic range of North American plants and animals will tend to shift poleward and/or upwards in elevation in response to temperature changes. Range shifts in plants will be dependent upon factors such as soil types, migratory pathways (e.g., no cities blocking the way), seed dispersal mechanisms and pollinator availability. Range shifts of wildlife populations will be dependent upon factors such as the availability of migration corridors, suitable habitats and the concurrent movement of forage and prey. It is very unlikely that plant and animal species will respond in the same manner to climate change. The best available evidence from paleoclimatic studies, models and observations suggests that each plant and animal species will move independently. Thus, communities as we now know them will look different in the future. Indeed, there is evidence indicating that many ecosystems have already begun to change in response to observed climatic changes (Root et al. 2003).

Models project possible major changes in the suitable climates of many vegetation communities

occurring over the next 75–100 years. In the neighbouring Great Lake states, for example, these models estimate that climate suitable for maple (*Acer*) - beech (*Fagus*) - birch (*Betula*) and elm (*Ulmus*) - ash (*Fraxinus*) - cottonwood (*Populus*) forests will ultimately become more suitable for oak (*Quercus*) - hickory (*Carya*) forests (NAST 2000). It is not unreasonable to expect some of these changes to occur in southern Ontario as well. Increasing temperatures may also lead to declines in the extent of boreal forest, at least along its southern boundary.

As many tree species are long-lived and migrate slowly, it could potentially take decades to centuries for species in some vegetation communities to be replaced by others (Davis and Zabinski 1992). However, as increased temperatures and drought stress plants, they become more susceptible to fires and insect outbreaks. These disturbances could play a large role in the conversion of habitats from one type to another. There could very well be instances where existing plant communities are lost to disturbance but climatic conditions and migration rates limit the speed at which they are replaced. Thus, invasive species, grasslands and shrublands may transitionally replace some of these areas.

Projected Changes in Bird Distributions

Summer bird ranges often are assumed to be tightly linked to specific habitats. This generalization is only partially true. While certain species are usually only found in specific habitats, e.g., Kirtland's Warbler (*Dendroica kirtlandii*) breeding in jack pines, others may be more flexible in their habitat use. Species found in a particular habitat type throughout their breeding range may not be found in apparently equivalent habitat north or south of their current distribution. Birds are also limited in their distributions by their physiology and food availability. The link between physiology and the winter distributions of many species is well established (Kendeigh 1934; Root 1988a, 1988b). Research increasingly shows that physiology plays a role in limiting summer distributions as well (Dawson 1992; T. Martin, pers. comm.). Often, the choice of a specific habitat may actually be to provide a microclimate suitable for a species' physiology. While habitat selection, food availability, and competition may all play a role in influencing *local* distributions of a given bird species, looking at a species' overall distribution often yields different results. This paper presents results from a study that examined the association between summer bird distributions and climate and how these distributions may change with a changing climate.

Methods

Logistic regression was used to develop models of the association

between bird distributions (from Breeding Bird Survey data) and climate. The climate variables used in this study encompassed both temperature and precipitation—the climate variables acting as surrogates for the many factors potentially limiting a species distribution (e.g., physiology, habitat, food availability). One way of determining how "accurate" these models are is to compare how well the predicted species distribution map based on climate (Figure 1b) matches a map of the actual distribution (Figure 1a) based on similar bird data (Price et al. 1995). This comparison (and various statistical tests) indicated that at least a portion of the summer distributions of many North American birds could be modeled accurately based on climate alone.

The next step was to examine how bird distributions might change in response to climate change. For this study, climate projections from the Canadian Climate Centre (CCC) were used to determine what the average climate conditions might be once CO_2 has doubled, sometime in the next 75–100 years. For example, for a given point, the difference in average summer temperature between the "current" and "future" (both model-derived) climate might be +2°C. This value is then added to the *actual* average summer temperature at that point to estimate what the climate at that point might be with a doubling of CO_2. These new climate data were then used to estimate the probability of a given BBS route having the proper climate for a species. A more complete explanation of methods used to develop the models and maps has been published elsewhere (Price 1995; Price, in press).

These results were then used to create maps of the projected possible future climatic ranges for almost all North American passerine birds (e.g., Figure 1c). What these maps actually show are areas projected to have the proper climate for a species, or *climatic range*, under conditions derived from the CCC model. While the results of the models cannot be used to look at the fine points of how a given species' distribution might change, they can provide an impression of

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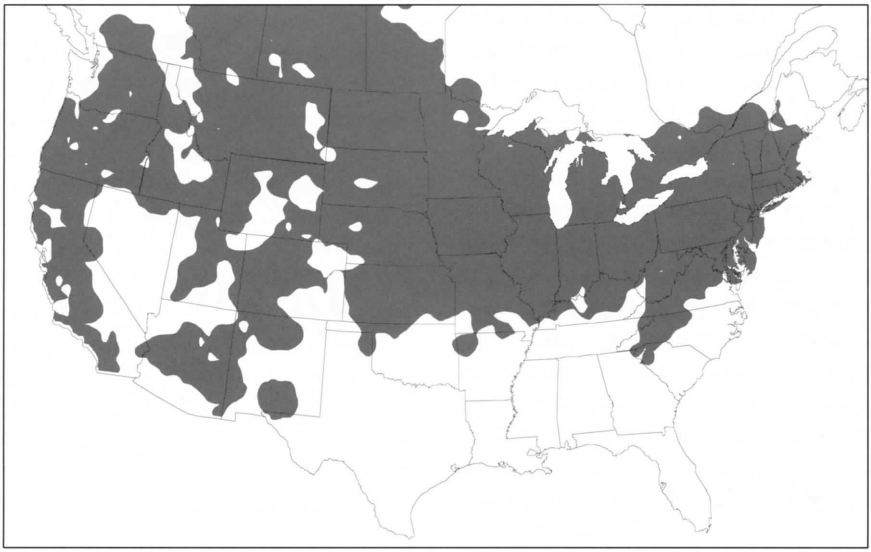

Figure 1a: Map depicting the distribution of House Wren as detected by the Breeding Bird Survey. This map is based on one found in Price et al. (1995).

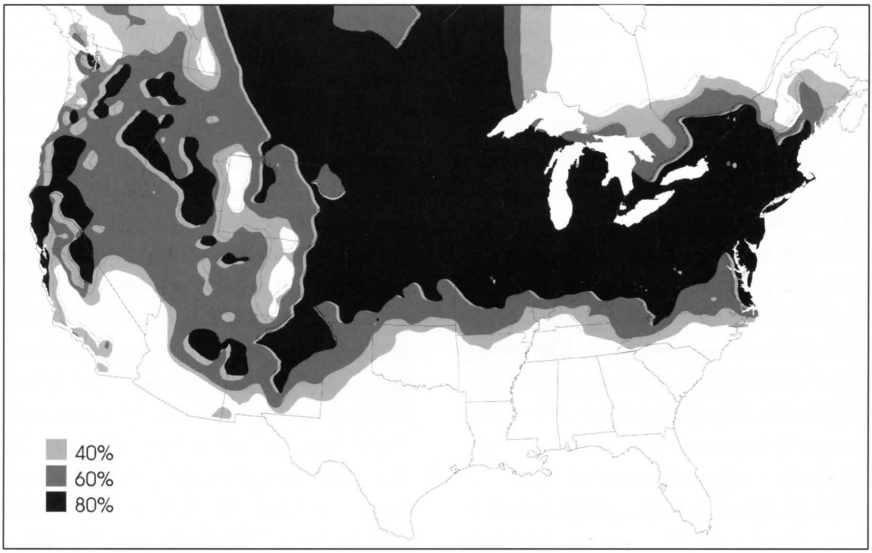

Figure 1b: Map depicting a *model* of the distribution of House Wren based solely upon the climate of 1985-1989. The scale represents the probability of the species' occurrence, with shaded areas depicting the distribution of the species (i.e., areas with suitable climate).

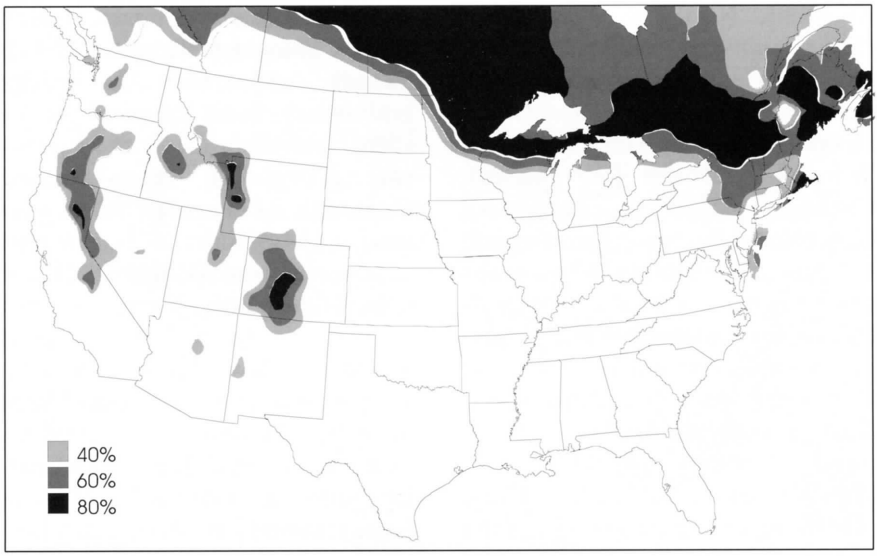

Figure 1c: Map depicting the possible distribution of House Wren under the doubled CO_2 climate conditions projected by the CCC. The scale represents the probability of the species' occurrence, with shaded areas depicting the distribution of the species (i.e., areas with suitable climate for the species).

the possible direction and potential magnitude of the change in the suitable climate for the species. These maps of projected summer climatic ranges of birds were then compared with the maps and information found in *Atlas of the Breeding Birds of Ontario* (Cadman et al. 1987) to determine how southern Ontario's avifauna might change under this climate change scenario.

Results

Species whose future climatic summer ranges might exclude southern Ontario (i.e., possibly extirpated as summer residents) – Olive-sided Flycatcher (*Contopus cooperi*), Yellow-bellied Flycatcher (*Empidonax flaviventris*), Alder Flycatcher (*E. alnorum*), Blue-headed Vireo (*Vireo solitarius*), Philadelphia Vireo (*V. philadelphicus*), Bank Swallow (*Riparia riparia*), Cliff Swallow (*Petrochelidon pyrrhonota*), Boreal Chickadee (*Poecile hudsonica*), Red-breasted Nuthatch (*Sitta canadensis*), Winter Wren (*Troglodytes troglodytes*), Blue-winged Warbler (*Vermivora pinus*), Tennessee Warbler (*V. peregrina*), Nashville Warbler (*V. ruficapilla*), Magnolia Warbler (*Dendroica magnolia*), Cape May Warbler (*D. tigrina*), Yellow-rumped Warbler (*D. coronata*), Black-throated Green Warbler (*D. virens*), Blackburnian Warbler (*D. fusca*), Bay-breasted Warbler (*D.*

castanea), Northern Waterthrush (*Seiurus noveboracensis*), Connecticut Warbler (*Oporornis agilis*), Mourning Warbler (*O. philadelphia*), Hooded Warbler (*Wilsonia citrina*), Wilson's Warbler (*W. pusilla*), Canada Warbler (*W. canadensis*), Clay-colored Sparrow (*Spizella pallida*), Savannah Sparrow (*Passerculus sandwichensis*), Lincoln's Sparrow (*Melospiza lincolnii*), White-throated Sparrow (*Zonotrichia albicollis*), Dark-eyed Junco (*Junco hyemalis*), Rusty Blackbird (*Euphagus carolinus*), Brewer's Blackbird (*E. cyanocephalus*), Purple Finch (*Carpodacus purpureus*), Pine Siskin (*Carduelis pinus*) and Evening Grosbeak (*Coccothraustes vespertinus*).

Species whose future climatic summer ranges in southern Ontario might contract – Willow Flycatcher (*Empidonax traillii*), Least Flycatcher (*E. minimus*), Warbling Vireo (*Vireo gilvus*), Tree Swallow (*Tachycineta bicolor*), Black-capped Chickadee (*Poecile atricapillus*), White-breasted Nuthatch (*Sitta carolinensis*), House Wren (*Troglodytes aedon*), Gray Catbird (*Dumetella carolinensis*), Golden-winged Warbler (*Vermivora chrysoptera*), Northern Parula (*Parula americana*), Yellow Warbler (*Dendroica petechia*), Chestnut-sided Warbler (*D. pensylvanica*), Black-throated Blue Warbler (*D. caerulescens*), Black-and-white Warbler (*Mniotilta varia*), American Redstart (*Setophaga ruticilla*), Ovenbird (*Seiurus aurocapilla*), Scarlet Tanager (*Piranga olivacea*), Vesper Sparrow (*Pooecetes gramineus*), Song Sparrow (*Melospiza melodia*), Swamp Sparrow (*M. georgiana*), Rose-breasted Grosbeak (*Pheucticus ludovicianus*), Bobolink (*Dolichonyx oryzivorus*) and Baltimore Oriole (*Icterus galbula*).

Species whose future climatic summer ranges in southern Ontario might expand – Acadian Flycatcher (*Empidonax virescens*), Loggerhead Shrike (*Lanius ludovicianus*), White-eyed Vireo (*Vireo griseus*), Yellow-throated Vireo (*V. flavifrons*), Horned Lark (*Eremophila alpestris*), Purple Martin (*Progne subis*), Tufted Titmouse (*Baeolophus bicolor*), Carolina Wren (*Thryothorus ludovicianus*), Eastern Bluebird (*Sialia sialis*), Northern Mockingbird (*Mimus polyglottos*), Pine Warbler (*Dendroica pinus*), Prairie Warbler (*D. discolor*), Cerulean Warbler (*D. cerulea*), Louisiana Waterthrush (*Seiurus motacilla*), Kentucky Warbler (*Oporornis formosus*), Yellow-breasted Chat (*Icteria virens*), Eastern Towhee (*Pipilo erythrophthalmus*), Field Sparrow (*Spizella pusilla*), Grasshopper Sparrow (*Ammodramus savannarum*), Northern Cardinal (*Cardinalis cardinalis*), Dickcissel (*Spiza americana*), Eastern Meadowlark (*Sturnella magna*) and Orchard Oriole (*Icterus spurius*).

Species whose future climatic summer ranges might eventually include southern Ontario – Say's Phoebe (*Sayornis saya*), Scissor-tailed Flycatcher (*Tyrannus forficatus*), Bell's Vireo (*Vireo bellii*), Carolina Chickadee (*Poecile carolinensis*), Bewick's Wren (*Thryomanes bewickii*), Blue Grosbeak (*Guiraca caerulea*) and Great-tailed Grackle (*Quiscalus mexicanus*).

Discussion

These lists are not all-inclusive, since results obtained from models of some species were not adequate to assess how their climatic ranges might change. Nor do the lists include those species whose climatic ranges in southern Ontario may undergo little change. Finally, these lists are based on output from a single commonly used climate model. Using output from different climate models may yield somewhat different results. In addition, the geographic scale of these models, like those of the underlying climate change model, is relatively coarse. As such, the models are unable to take into account localized topographic changes and the possible existence of suitable microclimates (e.g., along rivers or on north-facing mountain slopes). Therefore, some of the species whose *climatic* ranges are projected as shifting out of southern Ontario may be able to persist in refugia if suitable microclimates are available.

It is helpful to consider how species' ranges may change to know what sorts of changes to look for in the future. As the average temperature (climate) increases, weather will still occur—some years being cooler and others warmer than otherwise expected. So, colonization will most likely occur in fits and starts before a species can truly be considered to be established as part of southern Ontario's breeding avifauna. In some cases, a species may start appearing as a vagrant, off and on, for several years before breeding is attempted. In other cases, a species may start breeding in an area, then become extirpated, and then resume breeding—possibly in greater numbers than before.

How quickly these distributional changes might occur is unknown; the rate of change will largely

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depend on whether limits to a given species' distribution are more closely linked with physiology (i.e., climate), vegetation, or some other factor. The rate of change will also likely be tied to the rate of change of the climate itself. If the climate changes relatively slowly, then species may be able to adapt to the new climate. However, many changes could occur (and are occurring) relatively quickly. One pilot study found that the average latitude of occurrence of some species of Neotropical migrants has already shifted significantly farther north in the last 20 years, by an average distance of almost 60 miles (100 km) (Price and Root 2001; Price, unpublished data). In another study, the arrival date of 20 species of migratory birds in Michigan was found to be 21 days earlier in 1994 than in 1965 (Price and Root 2000; Root, unpublished data). Many other species have been found to be arriving and breeding earlier, not only in North America but also in Europe and elsewhere (Root et al. 2003).

Conclusion

Projected future rapid climate change is of major concern, especially when viewed in concert with other population stresses (e.g., habitat conversion, pollution, invasive species). Research and conservation attention needs to be focused not only on each stressor by itself, but also on the synergies of multiple stressors acting together. These synergistic stresses are likely to prove to be the greatest challenge to bird conservation in the 21st century. Because anticipation of change improves the capacity to manage, it is important to understand as much as possible about the responses of birds to a changing climate.

Society may ultimately need to adapt not only to range changes but also to the loss of ecological services normally provided by birds. For example, it may be necessary to develop adaptations to losses of natural pest control, pollination and seed dispersal. While replacing providers of these services may sometimes be possible, the alternatives may be costly. Finding a replacement for other services, such as contributions to nutrient cycling and ecosystem stability/biodiversity are much harder to imagine. In many cases, any attempt at replacement may represent a net loss (e.g., losses of the values of wildlife associated with recreation, subsistence hunting, cultural and religious ceremonies).

In summary, a high probability exists that climate change could lead to changes in bird distributions. Some of these changes could occur (and may be occurring) relatively quickly. While these changes may have some ecological and, possibly, economic effects, the magnitude of these effects is unknown. Ultimately, the greatest impact on wildlife and vegetation may not come from climate change itself, but rather from the rate of change. Given enough time, many species likely would be able to adapt to cli-

matic shifts, as they have done in the past. However, the current projected rate of warming is thought to be greater than has occurred at any time in the last 10,000 years (IPCC 1996). This rate of change could ultimately lead to many changes in southern Ontario's avifauna.

Birders can help scientists look for and document changes in bird ranges and populations. Besides participating in regular events like the Breeding Bird Survey or Christmas Bird Count, information is also needed on nesting, arrival and departure. If you, or your club, have 10 or more years of data, please contact me at the address listed below.

Acknowledgments

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OFO Annual Convention
Oakville, Ontario
2 and 3 October 2004

Plan to attend the OFO Annual Convention in Oakville on 2 and 3 October 2004. It will be a great weekend of fall birding, interesting presentations and displays, and fun with friends. On both Saturday and Sunday, experienced OFO birders will lead groups of convention participants to local hotspots for waterfowl, shorebirds, and other fall migrants.

Saturday's events at the Pavilion On The Park in Oakville will include Ron Scovell's popular book sale, an evening banquet, and a special presentation by expert birder Bruce Mactavish on "Newfoundland Birds: Land, Sea and Vagrants". Watch for further details and registration information with the June issue of *OFO News*.

Notes

Third Reported Nest of Solitary Sandpiper in Ontario

Jake Walker

On the morning of 10 June 2003, I found myself in a beautiful tract of mature forest just east of Wakami Lake Provincial Park in Sudbury District, near Chapleau, Ontario. I was conducting point counts on foot for the Boreal Forest Birds Project of Bird Studies Canada, and simultaneously gathering data for the Ontario Breeding Bird Atlas. The day started well when two Gray Wolves (*Canis lupus*) made a brief appearance on the ATV trail I was following, apparent harbingers of good fortune. By the end of my first transect of six point counts, I had found three nesting species of birds: Hermit Thrush (*Catharus guttatus*), Black-backed Woodpecker (*Picoides arcticus*), and Boreal Chickadee (*Poecile hudsonica*). I resumed hiking the ATV trail, heading south toward the starting point of my second transect. The trail became muddy shortly before the forest opened up at the edge of a large beaver pond, where I spotted an old nest in a dead tree. To my surprise, there was a Solitary Sandpiper (*Tringa solitaria*) sitting on the nest.

The Solitary Sandpiper nest was located 3 m up in a dead Black Spruce (*Picea mariana*), standing in a metre of water. It was in atlas square 17LN76, and the specific location determined by GPS (NAD 83) was: UTM Zone 17; Easting 378182; Northing 5262221. The composition of the nest was mostly twigs covered with lichen, and it appeared to have been built by an American Robin (*Turdus migratorius*). The nest had definitely endured inclement weather, for it was tattered and beginning to fall from the tree in such a manner that the cup of the nest was on a plane nearly 45 degrees below horizontal. Despite the tilt of the nest in my direction, I was unable to see its contents because the adult never flushed, nor did it leave on a subsequent visit.

From the ATV trail facing east (toward the nest), there was a one-metre high beaver dam that had created a 200 m by 100 m pond. There were approximately 100 dead Black Spruce trees in the near side of the pond, one of which contained the Solitary Sandpiper nest. To the west, below the beaver dam, lay a dense Speckled Alder (*Alnus incana*) thicket. On either side of the pond, mature Jack Pine (*Pinus banksiana*) forest dominated the

hills, while Black Spruce grew in low wet areas.

Discussion

Of the world's 87 sandpipers, phalaropes and allies (Scolopacidae), only the Solitary Sandpiper, the Green Sandpiper (*Tringa ochropus*), and occasionally the Wood Sandpiper (*T. glareola*) lay their eggs in old tree nests of other birds, instead of on the ground (Moskoff 1995, Warnock and Warnock 2001). Solitary Sandpipers commonly utilize abandoned nests of American Robin, Rusty Blackbird (*Euphagus carolinus*), Eastern Kingbird (*Tyrannus tyrannus*), Gray Jay (*Perisoreus canadensis*), and Cedar Waxwing (*Bombycilla cedrorum*).

Harris (1987) stated that the Solitary Sandpiper "probably nests throughout northern Ontario" from "south of the tree-line" to the "southern edge of the largely coniferous Timagami Forest section, just north of Sudbury". There have been various reports of downy young, females in breeding condition, and territorial behaviour in Ontario, but only two previous nest records (Schueler et al. 1974, Peck and James 1983, Tallman and Tallman 1986, Harris 1987). Typical nesting habitat consists of boreal forest near boggy ponds and lakes. The breeding biology of the Solitary Sandpiper is poorly known due to "the difficulty of gaining access to breeding habitat and finding nests" (Moskoff 1995).

The first confirmed Solitary Sandpiper nest in Ontario was discovered on 28 June 1964 in a Black Spruce forest on a hill above the southern end of Sutton Lake, Kenora District (Schueler et al. 1974, Peck and James 1983). It was the old nest of an American Robin, situated 2 m up in a 4.5-metre Black Spruce, against the trunk, and contained four eggs. Both the nest and the eggs were collected and deposited in the Royal Ontario Museum (ROM #9479).

The second reported Ontario Solitary Sandpiper nest was located near a road about 60 m from the shore of Tobacco Lake (45° 51' N, 82° 27' W), Gordon Township, Manitoulin District (Peck 1995), a little south of the breeding range described by Harris (1987). The nest site was heavy second growth woods of White Birch (*Betula papyrifera*), Red Maple (*Acer rubrum*), and Beaked Hazel (*Corylus cornuta*), with some Balsam Fir (*Abies balsamea*) and White Spruce (*Picea glauca*). It was an old American Robin nest, at a height of 1.4 m in a small Balsam Fir, and contained four young when found on 17 June 1992 by Steve Hall and his son, Gordon. The adult Solitary Sandpiper put on a vigorous distraction display after two of the young flushed from the nest when it was approached by the observer's dogs.

Details of the third reported Ontario nesting of Solitary Sandpiper described in this note have been forwarded to the Ontario Nest Records Scheme.

Acknowledgements

I would like to thank Ron Tozer for assistance with the literature and researching Solitary Sandpiper breeding behaviour and Ontario nest records. Details in the Ontario Nest Records Scheme concerning the second Ontario nest were kindly provided by Mark Peck of the Royal Ontario Museum.

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Lapland Longspur Feeding on "Hidden" Grains

Bill Crins

During migration, and in the shoulder seasons on the breeding grounds (late spring and early autumn), the Lapland Longspur (*Calcarius lapponicus*) typically feeds on seeds, and particularly, although not exclusively, on the fruits of grasses and sedges (Williamson 1968a, 1968b; Custer and Pitelka 1978; West and Peyton 1980; Hussell and Montgomerie 2002). In most species of plants used as food by Lapland Longspurs, the fruits are visible and relatively easily accessible. In a study in the southern Yukon Territory, for example, over 77 percent of identifiable plant materials in the diet of migrating Lapland Longspurs consisted of Foxtail Barley (*Hordeum jubatum*), Canada Bluejoint (*Calamagrostis canadensis*), Tickle Grass (*Agrostis scabra*), Aquatic Sedge (*Carex aquatilis*), and other *Carex* species (West and Peyton 1980). All of these grasses and sedges have erect inflorescences with readily accessible fruits.

On 20 October 2002, Michael Runtz, Rory MacKay, Brad Steinberg and I were birding at an open old sawmill clearing and railway yard known as Odenback, at the west end of Radiant Lake in Algonquin Provincial Park, Nipissing District. A small group of Horned Larks (*Eremophila alpestris*) and Lapland Longspurs was present in the large clearing once occupied by the sawmill buildings. While attempting to get a better view of the longspurs, I focussed on one individual that was feeding actively in low-lying grasses. Upon close examination, I realized that this longspur was feeding on the fruits of Ensheathed Dropseed (*Sporobolus vaginiflorus*), a grass in which most or all of the inflorescence is enclosed within the uppermost leaf sheaths. The longspur was able to manipulate the plant with its bill and tongue in such a way that the overlapping leaf sheaths could be separated, and the enclosed grains eaten. Clearly, this longspur had solved the puzzle of extracting grains that were fully (and tightly) enclosed and not visible, since this bird fed only on this species of grass during my five-minute observation.

The ability of the Lapland Longspur to feed on Ensheathed Dropseed or any other grass with flowers that remain enclosed within the sheaths (and where self-fertilization takes place, a process called cleistogamy; Clayton and Renvoize 1986) raises some interesting questions. Are the cues visual, or is there an olfactory component? Do individual birds learn about potential

seed food sources from their parents? Ensheathed Dropseed does not occur within the breeding range of Lapland Longspur (Porsild 1957, Hultén 1968, Dore and McNeill 1980, Porsild and Cody 1980). These sources also indicate that there are few, if any, other grasses with ensheathed, cleistogamous flowers in its breeding range. Thus, it is highly unlikely that longspurs could gain experience feeding on such "hidden" sources of grains before migrating southward. There appears to be no published evidence of Lapland Longspurs using such grasses as food sources. So, questions remain about how seasonal granivores find and use food sources, especially cryptic ones.

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Turkey Vulture Nest Sites in Southeastern Ontario

Daniel F. Brunton

In his review of nesting by Turkey Vulture (*Cathartes aura*) in Ontario, Peck (2003) illustrated a rather spotty distribution for this species in southeastern Ontario. No breeding was reported for the City of Ottawa (former Region of Ottawa-Carleton), for example, and only a "sight record" is offered as evidence for adjacent Lanark County. The following documents such a nesting in Lanark County and draws attention to previous documentation of a City of Ottawa record.

Lanark County Nesting

A Lanark County nest of Turkey Vulture was examined on 28 June 1998 by K.J. Keddy, K.L. McIntosh and this writer on the Keddy property (45° 3.9' N, 76° 14.2' W) in Drummond Township, Lanark County, ca. 8 km southwest of Carleton Place. Like so many recent nests in southern Ontario and elsewhere in Canada (Peck 2003, Houston and Terry 2003), the nest was situated in a small, abandoned, wooden building (a hunt shack). This structure (Figure 1), however, is in an area of extensive deciduous forest with no sufficiently large canopy opening within at least 75-100 m to accommodate the take-off of a vulture. Adult birds likely would have accessed the structure from the nearest clearing along an overgrown cart track which runs by the building.

One large, downy chick was observed at the nest site, perched on the remains of a sleeping bench (Figure 2). P.A. Keddy (pers. comm.) photographed two comparably-sized young here the year before (June, 1997), and based on observations of adults in the vicinity, suspects that nesting occurred in years prior to that.

City of Ottawa Record

Allison and Allison (2001) reported and illustrated the nesting of Turkey Vultures in a rural landscape within the former City of Kanata. This nest was in an abandoned log building also, and was situated behind a fallen door amid the ruins of a staircase. Allison and Allison (2001) included a photograph, taken on 25 June 2000, of a single large, downy chick in the nest. Based on their discovery of a Turkey Vulture primary feather in the building a year earlier, they suspected this site was used for nesting in 1999 as well.

Turkey Vultures have been known to summer and presumably nest east of Ottawa on or about the

Figure 1: Entrance to Turkey Vulture nest site in abandoned hunt shack, 28 June 1998, Drummond Township, Lanark County. Photo by *Daniel F. Brunton*.

Figure 2: Turkey Vulture chick at nest site, 28 June 1998, Drummond Township, Lanark County. Photo by *Daniel F. Brunton*.

massive cliffs of the Eardley Escarpment (the southern face of the Canadian Shield), in western Quebec since at least the 1980s. That population is likely the source (or at least a major contributor) of breeding birds in adjacent southeastern Ontario.

Breeding status in Southeastern Ontario

Cadman (1987) and Peck (2003) described the Turkey Vulture as breeding across southern Ontario. The Turkey Vulture population in southeastern Ontario has increased tremendously in recent decades. What was once a rare sighting in the early 1980s has become an everyday event along major roadways in the Ottawa Valley. Indeed, it is not uncommon to see concentrations of 10 or more vultures (both adults and young) roosting or resting in dead trees or on fence posts along Highway 417 west of Ottawa in late summer and fall (pers. obs.). It seems reasonable to assume that nesting is occurring in this area on a regular basis now, despite the surprisingly inconspicuous nature of such activity by this large animal.

Given the frequency with which Turkey Vultures are seen in extreme southeastern Ontario along major highways such as Highways 416, 417 and 401, it is expected that the absence of nesting records noted in the former counties of Prescott, Stormont and Dundas (Peck 2003) does not reflect actual distribution gaps. Natural Turkey Vulture breeding habitat (extensive forest with large individual trees or cliffs and caves; Cadman 1987) is relatively rare in these areas, however. Accordingly, nesting will most likely be confirmed here in isolated, abandoned buildings as has been the case in adjacent areas of southeastern Ontario.

Acknowledgements

Paul Keddy and Kathy Keddy kindly provided access to the Lanark nest, a confirmational photograph of the 1997 nestlings, and information on the history of the landscape surrounding the site.

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Anting by Common Grackles

Paul D. Smith and Ron Tozer

At about 1840h on the evening of 30 July 2003, Paul Smith and his wife, Anna-Marie, watched a group of three adult and four young Common Grackles (*Quiscalus quiscula*) that were busily picking something off the ground and then preening themselves, in an area no more than a few metres across on their front lawn in West Flamborough, Hamilton, Ontario. Eventually, there were 10 adult and seven young grackles all crowded into the same small area of lawn. About 15 minutes later, they were startled and all left, but within two minutes, four young and two adults returned. At 1904h, the four adults and five young that had gathered for the second time left for good.

The grackles seemed to work over their whole bodies, the undersurface and along the leading edge of the wings, along their sides, at the upper and lower base of their tails, on their backs and up on their breast and neck areas, as far as they could reach. They occasionally stopped to scratch about their heads or sides.

After the birds left, Smith inspected the area where they had been concentrated and found the ground covered with small, pale "red" ants, all with wings, and apparently preparing to swarm. They were spread over an oval-shaped area about 2 by 2.5 metres across. The density of the ants was estimated to be about 20 per decimetre squared. Smith collected a number of the ants and preserved them in alcohol.

Over the 12 years the Smiths have lived in West Flamborough, they have seen anting by Blue Jays (*Cyanocitta cristata*), grackles, and American Robins (*Turdus migratorius*) on three or four occasions, but never more than one or two birds at a time. The number of birds crowded into such a small area, and the amount of aggression between them, was surprising to them. Frequently, the adults would lunge at the young, and would often present the typical aggressive stance toward each other: bill pointed skyward; spread tail, wings and body plumage; and frequent "screeching" as they did. This was in marked contrast to their behaviour toward each other when they fed. The Smiths have an area of about 2 by 3 metres covered in flagstone on their side lawn where they spread cracked corn daily. This frequently attracted up to 20 or 30 grackles at a time. Here there was the occasional confrontation between adult males, but the young were just as likely to be fed by the adults as chased off.

It appeared to be near the peak of molting by these birds, as evidenced by the many grackle feathers scattered across the lawn, and it was tempting to speculate that the anting was somehow related to this. However, there were many other anthills sprinkled across the lawn, and the jays, judging by the feathers, were just as far into their molt as the grackles. It was a mystery as to why the grackles were the only species taking part in the anting, and why they were so concentrated and aggressive.

Discussion

According to *The Audubon Encyclopedia of North American Birds* (Terres 1980), over 200 species of birds (all passerines) have been known to practice anting, and 24 species of ants have been identified as having been utilized in this behaviour. However, Whitaker (1957) listed 16 non-passerine species that have been reported also to undertake anting. Common Grackles are among those species that have been reported previously in the anting literature (e.g., Brackbill 1948, Groskin 1950, Whitaker 1957).

Anting has been observed most often during August in North American birds, coinciding with "the seasonal molt and new feather growth", and it is presumed that it "does have possible effectiveness in soothing skin irritation" during that process (Terres 1980), apparently due to formic acid from the ants. It has been suggested also that anting probably would "kill or discourage ectoparasites" (Terres 1980), although Potter (1970) "found no positive evidence to support the theory that birds ant to soothe skin irritated by ectoparasites".

With respect to the aggressiveness exhibited by the grackles anting on the lawn, perhaps the concentration of ants in that one small area was a particularly attractive and scarce resource, causing the birds to compete vigorously and vociferously to gain access to it. Other bird species may have been discouraged from joining the aggressive grackle melee that ensued.

The ants were later identified as *Acanthomyops interjectus* (G. Umphrey, pers. comm.), a species previously reported to have been used by birds for anting (Whitaker 1957). The *Acanthomyops* genus of ants are "exclusively subterranean ants (that) are rarely found above ground except during the nuptial flight". They often can be identified by "the strong lemon verbena or citronella odor that is emitted as a defense chemical" (UNC 2004). These characteristics of the ants involved in this incident may have made them very attractive and infrequently available.

Acknowledgements

We would like to thank Rob Dobos for his early encouragement and assistance with the literature, and Gary Umphrey of the University of Guelph for his identification of the ants.

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Distinguished Ornithologist Award

The Distinguished Ornithologist Award is granted by the Ontario Field Ornithologists to individuals who have made outstanding and authoritative contributions to the scientific study of birds in Ontario and Canada, who have been a resource to OFO and the Ontario birding community, and whose research on birds has resulted in numerous publications and a significant increase in new ornithological knowledge. Recipients to date have been: Earl Godfrey (1997), Ross James (1998), Murray Speirs (2000), George Peck (2001), Bruce Falls (2002), and Bob Curry (2003). The editors of *Ontario Birds* (Bill Crins, Ron Pittaway and Ron Tozer) form a committee responsible for proposing candidates for this award to the OFO Board of Directors.

Book Reviews

Eighteenth-Century Naturalists of Hudson Bay. 2003. By *Stuart Houston, Tim Ball, and Mary Houston.* McGill-Queen's University Press, Montreal, Quebec, and Kingston, Ontario. Hardcover, 16 x 23 cm, 333 pages, 8 colour plates, 38 black and white illustrations, 3 maps. $49.95 Cdn. ISBN 0-77352285-9.

This impeccably researched volume states in its introduction that one of its goals is to "make amends for past neglect: the outstanding achievement of a small group of early weather observers and natural-history collectors around Hudson Bay have long been overlooked by most naturalists and historians".

Indeed, the scientific achievement of the men who accompanied the Hudson Bay Company (HBC) explorations and fur trade provides a remarkable story of a rich legacy of both pioneering North American natural history and science, early encounters with Canada's First Nations, and much insight into the early environmental impacts of these European explorers as they established settlements in this new frontier.

The meteorological and weather data recorded at the Hudson Bay trading posts has been collected meticulously and continuously for over three centuries, perhaps the longest continuous series anywhere in the world. In all of North America, the ornithological discoveries of the Hudson Bay Company naturalists rank second only to the work of Mark Catesby in South Carolina in describing new species of birds to science—nineteen species of birds (and nine additional subspecies) were newly described to science by the collections of the eighteenth century Hudson Bay naturalists.

Drawing on years of extensive research of the archives of the Hudson Bay Company and the Royal Society, the authors piece together the fur trade service and scientific accomplishments of Alexander Light, James Isham, Humphrey Marten, Andrew Graham, Thomas Hutchins, Moses Norton, Samuel Hearne and Peter Fidler.

The introduction frames the story by giving a brief but very useful history of the Hudson Bay Company, a sense of the place occupied by the Hudson Bay territory in the late seventeenth and eighteenth centuries, the people (both Hudson Bay Company men and their First Nations counterparts) who plied the fur trade, and the temper of the times in which they lived.

This is followed by a chapter on the connection of the Hudson Bay naturalists to the European scientific community of the eighteenth century through the Royal Society. This close connection provided encouragement and allowed for the thor-

ough examination and publication of the natural history collections from Hudson Bay by Sir Hans Sloane, George Edwards, Carolus Linnaeus, Johann Reinhold Forster, Thomas Pennant, and John Latham, among others.

Each of the eight prominent Hudson Bay naturalists is then profiled in a chapter on their own lives, Hudson Bay Company service, and their contributions to natural history, science and anthropology. Those interested in the history of Ontario ornithology will find the chapters on Humphrey Marten and Andrew Graham, the first two ornithological collectors in the province, particularly informative. The authors also explain in detail how the accomplishments of these eight naturalists came to be, for so long, either confused or overlooked in the subsequent natural history literature.

In one of the most important contributions of the book, the authors provide a firm rationale for the thesis that the manuscripts of Andrew Graham and Thomas Hutchins support the conclusion that, in the final analysis, their collective works represented a product of collaboration rather than an act of plagiarism by Hutchins, as had been previously postulated.

This is followed by a chapter summarizing the collective natural history contributions of all eight men (including a comprehensive tabulation of the bird specimens sent back from Hudson Bay as revealed in the published literature and ten Hudson Bay Company manuscripts), a chronology of their collections, and a synopsis of the errors and omissions contained in all previously published overviews of the Hudson Bay collections.

A chapter on climatology discusses the weather and meteorological data from Hudson Bay and its unique usefulness in helping to reconstruct past patterns. The final chapter contrasts the weather and natural history discoveries of the Hudson Bay area with those of the Charles Town, South Carolina, area of the same period.

Seven appendices provide an additional wealth of information. These include: a log of sailing ships that visited York Factory, 1716-1892; a history of the provenance of the Hudson Bay Company journals by Deidre Simmons; an extensive "detective story" on the ten manuscripts of Andrew Graham/Thomas Hutchins in the HBC archives and how they reveal the collaboration of the two naturalists; the HBC fur catch records and how they demonstrate the ten year population cycle now known to involve Snowshoe Hare, Lynx, Muskrat, Pine Marten, Red Fox, Fisher, Ruffed Grouse, Spruce Grouse, Sharp-tailed Grouse, Great Horned Owl and Northern Goshawk (and a history of the study of these cycles); a review of the statistics of the nineteenth-century trade in swan skins and quills and how it led to the near extinction of the Trumpeter Swan; an interesting account of how the Canada

Goose got its name before there was an official Canada; and an extensive list of eighteenth century Cree names for birds, mammals and fish.

All of the chapters and appendices provide extensive footnotes (forty pages worth!) so that original sources can be traced by the reader. In addition, on the date of the book's launch, the authors established a web site where they have provided the reader with supplementary natural history documents from the HBC archives that are referred to extensively within the book <http://www.mqup.mcgill.ca/books/houston/eighteenth-century>.

The writing in this book is both well-organized and easy to read. It is surprisingly free of any typographical errors. The only one I noted was that the header for the chapter on Andrew Graham misidentifies him as Alexander Graham.

This book is chock full of tidbits of information that should delight anyone interested in birds, such as: Humphrey Marten's establishment of Tree Swallow nest boxes as early as 1771 and his unsuccessful experiment to have a domestic hen incubate Sharp-tailed Grouse eggs; Samuel Hearne's inherent understanding of molt-migrant Canada Geese over two centuries ago; the unfortunate failure of Forster to name Andrew Graham's Rusty Blackbird as a new species; Hutchins' habit, two centuries ago, of taking weights and measurements of birds and providing descriptions of their soft parts in life to accompany specimens; and Marten's collection of a Black-billed Magpie at Fort Albany!

Another bonus is the reproduction of eight plates in colour from George Edwards' *A Natural History of Birds*, including six species of birds collected by James Isham that were new to science (Great Blue Heron, Whooping Crane, Snow Goose, Surf Scoter, Red-necked Phalarope and Hudsonian Godwit).

Stuart Houston, Tim Ball and Mary Houston have gone to much loving effort to make amends for the past neglect of the Hudson Bay naturalists. This book will no doubt create many beneficiaries who will understandably consider that mission accomplished. I wholeheartedly recommend this book very highly and hope it generates much further interest in the archives of the Hudson Bay Company.

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In Memoriam

Tom Murray, 1916–2003

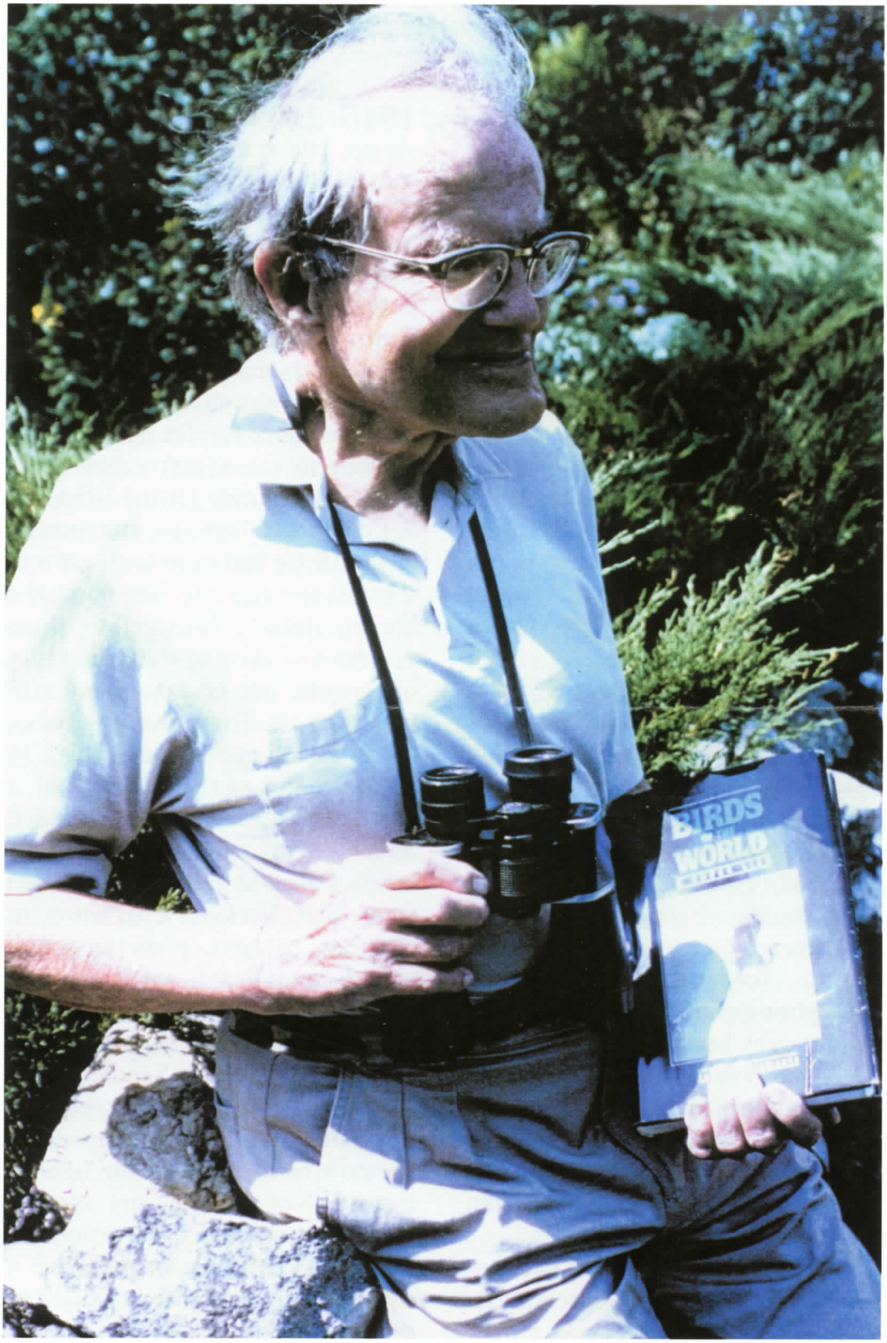
Peter Middleton

On the ninth of March 2003, one of the elder statesmen of Ontario's birdwatching community died in Owen Sound. Tom Murray was eighty-six. Tom was born in Owen Sound on 24 July 1916, but due to the untimely death of his father, two months before Tom's birth, his mother and he moved to Toronto, where he grew up. Upon completing his university studies at Toronto and Oxford, Tom returned to Owen Sound to work and live.

Tom's interest in birds began as a school assignment which required him to observe and identify thirty species. With little knowledge and no experience, he sought out a friend who did and undertook his first birding field trips in the area of High Park and the Humber River in Toronto. They were memorable outings. Tom would fondly recall the sighting of his first ever warbler. A blue-grey back and striking black necklace were set off against a bright yellow breast that shone in early morning light. The date was 20 May 1930, and the bird, a Magnolia Warbler. The die was cast and Tom was hooked.

Over the next seven decades, Tom's experiences and observations were legion. Starting out as a birdwatcher in the 1930s, when it was not a well known or respected activity, Tom would, in later years, jet off to watch birds around the world. His goal was not to establish a record setting number of species, but rather to attempt to see a representative of every avian family. Of the 195 families described, Tom saw members of all but 18. He had plans for those too, if health and time had permitted. His life list totalled 2,788 species.

As a student at the University of Toronto, Tom became active with birders in the Toronto area. One of these was Richard M. Saunders. In 1932, the two of them undertook a trip to South Carolina which Saunders later recorded in his book, *Carolina Quest*. They sailed from New York to Charleston to pick up pelagics, something few would countenance in this age of cars. Most of their time was spent exploring the lowlands surrounding Charleston and the Santee River. The trip provided 48 life species for Tom, but two of the observations are now remarkable in the light of history. Not gaining any specific mention were the observations of Bachman's Warbler, at that time a still not uncommon bird of southern river bottomlands. The decade


BIRDS
WORLD

of the thirties saw the great river forests of the south suffer devastating logging and clearing. With the forests went the Bachman's. The other bird of note, and already on the verge of extinction when Tom and Richard visited, was the Ivory-billed Woodpecker. Following up on rumours, they tracked down a young man who had been successful in locating the woodpecker for a group only a few weeks earlier. Arrangements were made and, on 12 June 1936, their search began in a dugout canoe. Threading narrow channels, they probed far into the recesses of the cypress bottomlands along the Santee River. Finally, landing on a tiny island, they heard "a low, wheezing, nasal cry". They soon had the vocalists in view—a pair of magnificent Ivory-billed Woodpeckers. Tom would later comment: "I've done a lot of birding ... my world list is around 2,800, but that [Ivory-billed Woodpecker] was most certainly the crown jewel". He was among a very select group of people who, at the end of the millennium, could recount seeing these two now-vanished North American species.

Tom was a member and Secretary of the Toronto Ornithological Club. He was a founding and Life Member of OFO. He conducted two Breeding Bird Survey routes in Grey County for over a quarter of a century. He was a regional coordinator for the initial Ontario Breeding Bird Atlas. He was also a founding member of the Grey-Bruce Records Committee and compiler of the annual Owen Sound Christmas Bird Count for fifteen years. Tom brought a wealth of knowledge and experience to all these groups and projects. In recognition of his contributions to birding, Tom was awarded an honorary life membership in the Owen Sound Field Naturalists Club.

It was as Tom's partner on the Breeding Bird Surveys that I came to fully appreciate one of the most finely attuned ears which I have ever encountered. Its acuity was demonstrated one morning, when Tom picked up the faint "rattle" of a Sedge Wren at a distance of about 100 metres; it was even more remarkable as the marsh behind the bird resonated with a cacophony of awakening Red-winged Blackbirds. On one of the last outings which we shared, his hearing remained undimmed, despite declining health. As he sat in the car, he easily picked up the wispy calls of unseen kinglets and creepers as they moved through a grove of hemlocks close by.

In 1983, Tom undertook the challenge of seeing 300 species in Ontario in one year. He was successful, ending up with a final count of 306. But in the later years, Tom's birding would be focussed more sharply upon his interest in observing at least one species in each family of birds found in the world. Major trips were planned specifically with that quest in mind: Costa Rica in 1987, Australia in 1989, Kenya in

1991, Indonesia (Java and Sulawesi) in 1992, and Argentina in 1993. Two major pelagic trips were also undertaken as part of the exercise—one from Charleston, South Carolina, was a month-long passage south through the Caribbean and the Panama Canal to the Pacific and west via the Galapagos Islands and New Zealand to Australia. This immediately preceded his three and a half month solo journey around the Australian continent by car, at the age of seventy-three. The second major Pacific transect took him north from New Zealand to Alaska, via Hawaii. He was nothing if not intrepid and indefatigable in his birding travels.

Yet, he always kept the pursuit of new species in balance with the simple joy of birdwatching. Outings with Tom were always filled with appreciation for the everyday around him. He knew and appreciated the delight of birding in its simplest form; the return of the first larks, the first loon on the lake, or the song of the first Pine Warbler behind his home in Leith each spring, were always noted and commented on with genuine pleasure.

Tom was a man of gentle demeanor, quick wit, and inextinguishable enthusiasm. His company and the sight of his slight, waterproof-clad figure at birding venues around the province will be missed greatly by all who knew him.

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Nikon

Photo Quiz

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April 2004 Quiz

Glenn Coady

This issue's photo quiz is of a shorebird, in anticipation of the imminent return of these sometimes difficult to identify birds to Ontario. It is obvious that this bird is not one of the long-legged, large-billed species like a curlew, godwit, avocet, stilt, yellowlegs or Willet. It is not squat and plump like a woodcock or snipe, and it is not gaudy in plumage like turnstones, phalaropes or oystercatchers. It is not plain-backed in pattern like the belted plovers of the genus *Charadrius* (Semipalmated Plover, Wilson's Plover, Snowy Plover, Piping Plover, Killdeer) and lacks the large-eyed, large and round-headed appearance of the larger plovers of the genus *Pluvialis* (American Golden-Plover and Black-bellied Plover). It lacks the slim, longer-necked, small-headed profile of an Upland Sandpiper.

One of the first things that we notice about this bird is that it has black legs. This one feature alone eliminates a host of other shorebirds like Solitary Sandpiper, Spotted Sandpiper, both dowitchers, Ruff, Wandering Tattler, Buff-breasted Sandpiper, Purple Sandpiper, Stilt Sandpiper, Pectoral Sandpiper, Sharp-tailed Sandpiper and Least Sandpiper, all of which have yellow or greenish-yellow legs. Beware that you are assessing true leg colour in shorebirds though, and not merely apparently dark, mud-caked legs. We are able to see from this fine photograph that this bird appears to have truly black legs.

I think it is fair to say that most observers would quickly and intuitively recognize this bird as one of the dark-legged, medium-sized shorebirds of the genus *Calidris*. Of those species seen in Ontario, this group includes Red Knot, Dunlin, Curlew Sandpiper, Sanderling, Baird's Sandpiper, White-rumped Sandpiper, Western Sandpiper, Little Stint and Semipalmated Sandpiper.

Another structural clue that would be very useful in identifying this bird would be the size and shape of its bill, and in the field, we would likely be able to assess this with some patience. However, working from this single photo of a bird with its bill deeply placed in the mud, we are unlikely to discern much about bill size and shape.

Our quiz bird does not appear to be a good match for a Red Knot. It lacks the sturdy, "pot-bellied" profile characteristic of Red Knots, and lacks the warm, brick red ventral colour of alternate-plumaged Red Knots or the cold uniform grey plumage of their basic plumage. Red Knots, even at the nest, are not likely to show legs this dark.

Sanderling can be ruled out by the lack of any hint of black

plumage usually visible on the leading edge of the bend in the wing. This is usually apparent in Sanderlings in any plumage. Our quiz bird does not demonstrate any of the very pale grey coloration of basic-plumaged Sanderlings, nor any hint of the bright rufous neck and chest of its alternate plumage.

Similarly, our quiz bird shows none of the dark rufous neck and breast colour of a Curlew Sandpiper in alternate plumage, nor the cold, pale silvery grey of that species in basic plumage.

Our bird shows no hint of the bright rufous upperparts or the large black ventral patch on the belly of an alternate-plumaged Dunlin. Also, it is not consistent with the plain and uniform brownish-grey back, wings and head of a basic-plumaged Dunlin.

Having eliminated these other large *Calidris* sandpipers, we are left with only the smaller, dark-legged members of the genus that are commonly referred to as the "peep" sandpipers—Semipalmated Sandpiper, Western Sandpiper, Little Stint, White-rumped Sandpiper and Baird's Sandpiper.

Our quiz bird shows a pale rufous colour in the crown and auriculars, and pale rufous-buff edges to some dark-centred scapular feathers. It is heavily spotted in the nape, neck and breast, with streaking extending down the flanks. It shows an obvious white supercilium. This general pattern is shown in varying degrees in both Western Sandpiper and White-rumped Sandpiper (and more rarely Semipalmated Sandpiper) in alternate plumage, although the rufous areas tend to be much brighter than our quiz bird on an alternate-plumaged Western Sandpiper. In that regard, our bird is a better fit for White-rumped Sandpiper.

One field character that stands out quite well in this photo is how long and attenuated the rear end of the small sandpiper appears. This is due to the very long extension of the primaries, which we can clearly see extending well beyond both the tail and the tertials. This trait conclusively eliminates the three smallest and shortest-winged of the dark-legged peeps—Semipalmated Sandpiper, Western Sandpiper and the accidental Little Stint.

The quiz bird is thus one of the two long-winged peeps, either a White-rumped Sandpiper or a Baird's Sandpiper. Baird's Sandpiper does not demonstrate flank streaking like our quiz bird; tends to have much less profuse spotting of the chest, neck and nape; and has limited rufous and buff edging and more grey notching to its dark-centred scapulars. It also tends to have a less distinctly streaked and more buffy-washed breast than our quiz bird.

Reflecting back on that mostly buried bill, we notice one more field character that further confirms our growing confidence in our quiz bird's identification. We can clearly discern a paler pinkish-red base to

the lower mandible. This is a very good diagnostic character of White-rumped Sandpiper at any age. In adults on the breeding territory, this basal portion of the lower mandible can actually become a bright red.

This **White-rumped Sandpiper** in alternate plumage was photographed by Mark Peck at Lagoa do Peixe, Brazil, on 2 May 1999.

The White-rumped Sandpiper breeds from northern Hudson Bay, northward across the southern arctic islands. It winters as far away as southern Chile. In both spring and fall, it tends to be one of the later shorebird migrants in Ontario.

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Ontario Field Ornithologists is an organization dedicated to the study of birdlife in Ontario. It formed in 1981 to unify the ever-growing numbers of field ornithologists (birders/birdwatchers) across the province, and to provide a forum for the exchange of ideas and information among its members. The Ontario Field Ornithologists officially oversees the activities of the Ontario Bird Records Committee (OBRC); publishes a newsletter (*OFO News*) and a journal (*Ontario Birds*); operates a bird sightings listserv (ONTBIRDS), coordinated by Mark Cranford; hosts field trips throughout Ontario; and holds an Annual Convention in the autumn. Current information on all of its activities is on the OFO website (www.ofo.ca), coordinated by Sandra Eadie. Comments or questions can be directed to OFO by e-mail (ofo@ofo.ca).

All persons interested in bird study, regardless of their level of expertise, are invited to become members of the Ontario Field Ornithologists. Membership rates can be obtained from the address below. All members receive *Ontario Birds* and *OFO News*. Please send membership enquiries to: **Ontario Field Ornithologists, Box 455, Station R, Toronto, Ontario M4G 4E1**

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The aim of *Ontario Birds* is to provide a vehicle for documentation of the birds of Ontario. We encourage the submission of full length articles and short notes on the status, distribution, identification, and behaviour of birds in Ontario, as well as location guides to significant Ontario birdwatching areas, book reviews, and similar material of interest on Ontario birds.

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